Thailand: Implementation Support for a Second Stage Pilot to Operationalize the Fundamental School Quality Level (FSQL) Standards

Fundamental School Quality Level (FSQL) Instrument Validation

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Executive Summary

Background

Thailand's education system faces persistent and widening performance gaps across schools. While some schools consistently demonstrate strong student achievement on standardized assessments, others consistently lag behind. Research by the World Bank (2020)[1] indicates that these disparities are largely driven by inequitable distribution of educational resources, with teaching staff and learning materials tending to be concentrated in higher-performing schools. Addressing these inequities requires accurate and frequent data collection. Evidence from other countries, particularly Vietnam,[2] demonstrates that with better data, policymakers can allocate resources more effectively to where they are needed – and thereby help reduce these gaps.

What is FSQL?

At the request of the Equitable Education Fund (EEF), the Fundamental School Quality Level (FSQL) Standards was developed by the World Bank (2020) as a comprehensive tool for evaluating educational quality in basic education schools. The instrument draws on international experience, country-specific norms, empirical research findings from Thailand, and common minimum standards requirements observed across various countries. Unlike existing assessment tools, FSQL is designed to provide systematic, evidence-based assessments of school quality that can directly inform resource allocation decisions.

The FSQL instrument assesses schools across multiple dimensions, including school leadership, teaching quality, and infrastructure. A unique feature is its integration with a comprehensive costing framework that enables systematic planning and budgeting for facility improvements. This practical linkage between assessment and resource needs represents a significant advance in education quality monitoring.

Why is FSQL needed?

As specified in the National Education Act (1999), the Office of the Education Council (OEC) is responsible for formulating national education standards in cooperation with the offices responsible for basic, vocational, and higher education. The national education standards serve as the basis for setting assessment standards for internal and external quality assurance mechanisms. A continuous process of internal quality assurance was instituted as part of education administration.

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[1] World Bank (2020), "Thailand: Advice on Narrowing the Learning Gaps between Schools", Washington DC, World Bank.

[2] World Bank (2011), "Vietnam: High Quality Education for All by 2020", World Bank, Washington DC, http://hdl.handle.net/10986/27450 License: CC BY 3.0 IGO.

Attfield, I., Vu, B.T. (2012), "A rising tide of primary school standards—The role of data systems in improving equitable access for all to quality education in Vietnam", Int. J. Educ. Dev., doi:10.1016/j.ijedudev.2012.02.003.

The Office for National Education Standards and Quality Assessment (ONESQA), a public organization, was established in 2000 in accordance with Chapter 6 of the National Education Act (1999) and Amendment (Second National Education Act, 2002). ONESQA has been tasked with overseeing external quality evaluations of educational institutions, which should occur at least once every five years (Office of the Education Council, 2018).

However, ONESQA's "amicable assessment" approach, which emphasizes support for improvement rather than high-stakes accountability, has faced mounting criticism. The results generated do not appear to be used to inform performance discussions among any actors in the system, nor do they seem to be part of any budget discussion with the Ministry of Finance (e.g., justifying more/less spending, changes in spending, or new programs).

The disconnect between ONESQA assessments and actual school performance is striking. During 2023 (part of the fifth round covering the 2021-2025 period), ONESQA conducted external quality assessment on 7,970 basic education schools. In their published 2023 Annual Report, remarkably between 99.86-99.96 percent of the schools assessed obtained the result of "Good" or higher while 0.04-0.14 percent obtained the result of "Need improvement" across the three domains assessed (Quality of students, School-based management, and Student-centric learning management).

These results conflict sharply with student assessment results from the latest PISA 2022, where around 46 percent of Thai 15-year-old students were "functionally illiterate/innumerate," that is, their proficiency levels in all three test domains were below the basic levels. Furthermore, PISA scores across the three subjects (math, reading and science) have been on a declining trend over the last decade.

This pattern of disconnect is not new. While student performance was declining, the number of schools that passed the assessment increased dramatically from the first (2001-2005) to the second round (2006-2010) of the external quality assessment (TDRI, 2012).

Moreover, key summary statistics of national-level results from the assessments such as the distribution of scores for each standard across geographic areas of the country, or the score differences between large and small or urban and rural schools are not readily available from ONESQA website. This severely limits the ability of key stakeholders to monitor and evaluate schools effectively.

Recognizing these shortcomings, the Fundamental School Quality Level Standards for Thailand was proposed as an instrument for filling in these gaps. As will be shown in this study, the data generated by the instrument are able to more precisely inform stakeholders and policymakers on school quality and where additional resources should be allocated to raise student performance and reduce learning outcome inequality between schools.

How was FSQL developed and tested?

The FSQL tool has evolved through multiple stages of development and validation. The first version underwent extensive review between November 2020 and May 2022, including four rounds of focus

group consultations with educational experts, policymakers, and academics in Thailand. It was then piloted in 275 schools participating in The Kru Rak Thin (KRT) Project.[3]

While this initial pilot showed promise, it also revealed important limitations. Of particular concern was potential self-evaluation bias in teaching quality assessment, a crucial area given teaching quality's established importance for student learning. Additionally, the infrastructure assessment needed greater depth and practical guidance for improvements.

The second-stage pilot introduced substantial revisions to address these limitations:

1. Teaching Quality Assessment:

- Replaced self-reporting with direct classroom observations
- Trained external enumerators to ensure objective evaluation
- Developed detailed observation protocols and scoring rubrics

2. Infrastructure Evaluation:

- Expanded assessment criteria for comprehensive facility evaluation
- Strengthened evidence requirements for scoring
- Integrated with a detailed costing framework

The infrastructure costing framework, detailed in the accompanying report "Thailand: Fundamental School Quality Level (FSQL) Instrument Costing Framework for Standard 4 on School Infrastructure, Service Facilities, and Learning Materials," represents a major innovation. It provides standardized evaluation criteria and detailed implementation guidelines, enabling schools and authorities to systematically assess infrastructure needs and estimate required resources for improvements.

Does the FSQL work?

Our validation study of the revised instrument yielded several key findings that strongly support its effectiveness:

[3] The Kru Rak Thin (KRT) Project, initiated by the Equitable Education Fund (EEF), is intended to provide an opportunity for poor students in remote areas, who aspire to become teachers, to study at designated public teacher training universities. The project aims to produce quality young teachers, who are recruited locally, in response to the need of schools in remote areas with a focus on reducing inequality and increasing educational opportunities for the poor and underprivileged, and reducing teacher turnover in remote schools.

In addition, the project aims to implement whole-school improvement processes to raise the quality of teaching and management across the entire school. Specifically, expert coaching and support are to be provided to every school on: establishing a Professional Learning Community (PLC) to foster practice-based professional learning among students, teachers, and administrators within and between schools; engaging with parents and local communities to enhance school capacity and service delivery; implementing active learning practice in the classrooms; and conducting classroom action research to reflect on the process of teaching and learning in order to improve teachers' skills and practices; and collecting and using student assessment data and other educational information to improve education quality.

First, the FSQL tool demonstrates strong predictive validity. The information collected correlates significantly with student learning outcomes, confirming that the instrument measures aspects of school quality that matter for student achievement. The relationships remain robust even after controlling for student socioeconomic background, suggesting the tool captures meaningful quality differences between schools.

Second, schools show consistent response patterns across related items, indicating effective training and clear assessment criteria. This internal consistency is particularly important given the comprehensive nature of the assessment, which covers multiple aspects of school quality from leadership practices to infrastructure conditions.

Third, the tool successfully identifies systematic patterns of educational inequality. Our cluster analysis revealed distinct groups of schools with varying quality levels. Disadvantaged schools, characterized by consistently lower scores across all quality measures, tend to be significantly smaller (average enrollment of 110 students compared to 354 in advantaged schools) and serve higher proportions of poor students (16.4 vs 13.2 percent in advantaged schools). This pattern highlights the tool's utility for identifying schools needing additional support.

Fourth, and perhaps most significantly, our analysis revealed the fundamental importance of school leadership quality. While both teaching quality and infrastructure showed significant associations with student learning outcomes when considered alone, the inclusion of leadership quality measures dramatically improved predictive power. This suggests that effective school leadership may be a key underlying driver of both teaching quality and infrastructure management.

Fifth, the integration of the infrastructure costing framework provides a practical pathway from assessment to improvement. This framework enables systematic planning and budgeting for facility upgrades, ensuring that infrastructure investments are both targeted and cost-effective. The framework builds upon the FSQL standards with particular focus on infrastructure, facilities, and accessibility, providing detailed guidelines for implementing improvements.

What key questions need to be addressed?

Before nationwide implementation, several critical questions require careful consideration:

Implementation Complexity:

- While the revised instrument provides more thorough and objective measurements, it requires greater investment of time and resources
- Schools must collect substantial evidence for their assessments
- Classroom observations require trained external evaluators
- Infrastructure assessments, while necessary for the costing framework, are particularly demanding

Resource Requirements:

- Sustained funding needed for training and support
- Development of verification processes for school-reported data
- Integration with existing monitoring systems
- Resources for implementing the costing framework recommendations

Policy Decisions:

- Determining the minimum essential information all schools must provide
- Establishing how the ministry will use FSQL data for resource allocation
- Deciding whether results should be public for accountability
- Integrating FSQL with existing quality assurance frameworks

Despite these implementation challenges, our findings suggest that the FSQL instrument has strong potential as a tool for monitoring and improving school quality in Thailand. Its ability to identify meaningful patterns of school quality, predict student learning outcomes, and guide infrastructure investments through its costing framework makes it valuable for policymakers seeking to address educational inequities through evidence-based resource allocation decisions.

The instrument's comprehensive approach – combining leadership assessment, objective teaching quality measures, and detailed infrastructure evaluation with practical costing guidance – provides a foundation for systematic school improvement. While successful nationwide implementation will require significant commitment and resources, the potential benefits for educational equity and quality suggest this investment would be worthwhile.

Introduction

Thailand's education system faces a persistent challenge of widening performance gaps across schools. While some schools consistently demonstrate strong student performance on standardized assessments, others consistently lag behind. Recent research by the World Bank (2020) indicates that these disparities are largely driven by inequitable distribution of educational resources, particularly teachers and learning materials, which tend to be concentrated in higher-performing schools. Addressing these inequities requires accurate and frequent data collection to guide evidence-based resource allocation decisions.

These challenges in Thailand's education system emerge against a well-established body of school effectiveness research. International evidence consistently identifies several critical factors driving school performance: strong leadership, effective teaching practices, clear and shared school vision, and high expectations for all students. Research particularly emphasizes teacher quality, classroom management, and opportunities for active learning as crucial determinants of student achievement. Additionally, positive school climate, staff collaboration, and data-driven instruction repeatedly emerge as key elements of successful schools.[4]

The FSQL instrument's design aligns closely with these evidence-based drivers of school effectiveness. Its focus on school leadership, teaching quality, and supporting infrastructure reflects the multidimensional nature of effective schools identified in the literature.

In response to this challenge, the Equitable Education Fund (EEF) initiated the development of the Fundamental School Quality Level (FSQL) Standards. This instrument was designed as a comprehensive tool for evaluating the quality of educational provision in basic education schools, drawing on international experience, country-specific norms, empirical research findings from Thailand, and common minimum standards requirements observed across various countries.[5]

The FSQL instrument was initially designed as an annual self-assessment survey comprising 63 items spanning four key domains:

1. School Leadership (18 items)
2. Learning Outcomes (5 items)
3. Teaching Quality (11 items)
4. School Infrastructure, Utility, and School Accessibility (29 items)

Schools evaluate themselves on each item using a five-point scale ranging from 1 ("very poor") to 5 ("very good"), based on objective criteria specified in the instrument. Importantly, the assessment is

[4] See for example: Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. School Leadership & Management, 40(1), 5-22.; and Reynolds, D., Sammons, P., De Fraine, B., Van Damme, J., Townsend, T., Teddlie, C., & Stringfield, S. (2014). Educational effectiveness research (EER): A state-of-the-art review. School Effectiveness and School Improvement, 25(2), 197-230.

[5] The design was informed by established quality frameworks such as England's Ofsted framework (Chapman & Sammons, 2013), Scotland's How Good Is Our School framework (Education Scotland, 2015), and quality assurance principles from European education systems (European Commission, 2018).

designed to rely primarily on readily available information, minimizing the additional data collection burden on schools.

Initial validation of the FSQL tool was conducted between November 2020 and May 2022 through a multi-stage process. This included four rounds of focus group consultations with educational experts, policymakers, and academics in Thailand. The tool was then piloted in schools participating in The Kru Rak Thin (KRT) Project, with 275 out of 469 trained schools submitting complete self-evaluation results by April 2022.

While this initial pilot yielded promising results, particularly in terms of significant correlations between collected information and student learning outcomes, it also revealed several important limitations requiring attention. First, schools generally reported lower scores for infrastructure-related items but notably higher scores for teaching quality-related items, suggesting potential self-evaluation bias in teaching quality assessment. This is particularly concerning given the substantial evidence establishing teaching quality as the most crucial school-based determinant of student learning.

Second, the low infrastructure scores, while potentially more accurate, highlighted concerning patterns of inequality, with smaller schools serving higher concentrations of poor students reporting the lowest scores in this domain. Additionally, the pilot revealed the need for a more robust verification process for school-reported data and a more comprehensive framework for assessing infrastructure and facility standards against existing Office of the Basic Education Commission (OBEC) regulations.

This report presents findings from a second-stage pilot study with a substantially revised FSQL instrument. Major revisions from the original 75-item instrument focused on two key domains. First, the Teaching Quality domain was restructured to incorporate direct classroom observations by trained enumerators, replacing the previous self-reporting approach to provide more objective assessment of teaching practices. Second, the School Infrastructure, Service Facilities, and Learning Materials domain was extensively expanded to enable more comprehensive evaluation of school facilities and resources, with detailed assessment criteria as specified in the FSQL manual.

Through our iterative validation process, the original 75 items were reduced to 60 items:

1. 55 items measuring school inputs, from which we constructed three main composite indices:
    - School Infrastructure, Service Facilities, and Learning Materials Index (derived from eight sub-indices)
    - Teaching Quality Index (derived from two sub-indices)
    - School Leadership Index
2. 5 items measuring learning outcomes, which were used to construct the Student Learning Outcome Index

Our analysis specifically aims to:

1. Validate the content and construct validity of the revised FSQL instrument
2. Assess the ability of FSQL-derived indices to discriminate between schools of varying quality levels

3. Evaluate the predictive power of these indices in relation to student learning outcomes
4. Provide empirical evidence to support the instrument's effectiveness in identifying key determinants of educational quality

The analysis focuses on data collected from 162 schools, primarily from Ratchaburi province (134 schools out of 354), complemented with additional schools from Pathumthani (17 schools) and Tak (11 schools) provinces. While we conducted FSQL training for all schools in Ratchaburi with an original target of achieving over 90 percent response rate, the actual response rate was much lower than anticipated. Nevertheless, the relatively high coverage of schools in Ratchaburi provides sufficient geographical concentration to enable effective visualization and analysis of school quality patterns within the province.

Our findings suggest that the refined FSQL instrument effectively captures meaningful variations in school quality through its composite indices of school leadership, teaching quality, and infrastructure. These measures not only discriminate between schools of varying quality levels but also demonstrate significant predictive power for student learning outcomes. The results provide strong support for the FSQL instrument's potential as a valuable tool for monitoring school quality and guiding resource allocation decisions aimed at reducing educational inequities in Thailand.

Assessing Content Validity of the FSQL Items and Construction of School Quality Indices

Students' Learning Outcomes

This analysis utilized data from five variables measuring multiple aspects of learning outcomes to extract their underlying constructs. Descriptive statistics of the variables are presented in Table 1.1, while detailed descriptions of the scoring criteria are given in the Annex section.

Table 1.1. Descriptive Statistics of Student Learning Outcome Variables

Variable	Obs	Mean	Std. Dev.
Improvement in Lagging Students' Academic Achievement (fsql18)	162	4.340	0.706
Development of Desired Characteristics in Students (fsql19)	162	4.673	0.521
Student Competencies Alignment with Curriculum Requirements (fsql20)	162	4.747	0.502
Student Attendance and Completion of Schooling (fsql21)	162	4.593	0.646
Students' Development in National Testing (NT) and/or Local Assessment System (LAS) at the District Level in Primary Education (fsql22)	162	3.951	1.215

Each variable was standardized by subtracting its sample mean and dividing the result by its standard deviation. The Kaiser-Meyer-Olkin (KMO) test was employed to assess the appropriateness of using Principal Component Analysis (PCA). The KMO measure of sampling adequacy takes a value between 0 and 1. If the variables, in fact, have common underlying dimensions, the partial correlation coefficients should be small relative to the total correlation coefficient.[6] The test yielded a value of 0.77, indicating adequate sampling. For reference, a KMO value of 0.9 is considered 'marvelous', 0.80 'meritorious', 0.70 'middling', 0.60 'mediocre', and 0.50 or lower 'miserable.'

PCA was then performed on the covariance matrix of the standardized variables and the resulting Eigenvalues for all principal components are reported in Table 1.2.

Table 1.2. Eigenvalues of the Principal Components

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	2.742	1.907	0.548	0.548
PC2	0.835	0.243	0.167	0.715
PC3	0.592	0.161	0.118	0.834
PC4	0.431	0.030	0.086	0.920
PC5	0.401	.	0.080	1.000

[6] The formula for the KMO test is:

$$KMO_j = \frac{\sum_{i \neq j} r_{ij}^2}{\sum_{i \neq j} r_{ij}^2 + \sum_{i \neq j} \rho_{ij}^2}$$

where i and j index the variables; and r_{ij} and ρ_{ij} are the total and partial correlation coefficients respectively. The KMO measure of sampling adequacy takes a value between 0 and 1.

The Kaiser's rule recommends retaining only the components with Eigenvalues exceeding unity. The rule assumes that it is unreasonable to retain a component that explains less variance than a single original variable. According to this rule, we can see from Table 1.2 that the underlying variables are unidimensional and that the first principal component (PC1) explains as much as 55 percent of the total variation of the original variables.

The five learning outcome variables were then assessed using Cronbach's alpha to evaluate whether they measure the same construct and could be combined into an overall score. If responses to different items contradicted one another, then the test statistic would show that the responses were unreliable indicators of learning outcome. The test yielded a coefficient of 0.79, indicating reliable measurement of the learning outcome construct.[7] The good reliability score justifies combining these five measures into a single index.

The first Eigenvector or the first principal component (PC1) is presented in Table 1.3. Each element of the Eigenvector represents the component loading on each of the learning outcome variables. We employed these principal component loadings as weights to construct our new variable, which will serve as our single index for student learning outcomes of the schools.

Table 1.3. First Principal Component Loadings

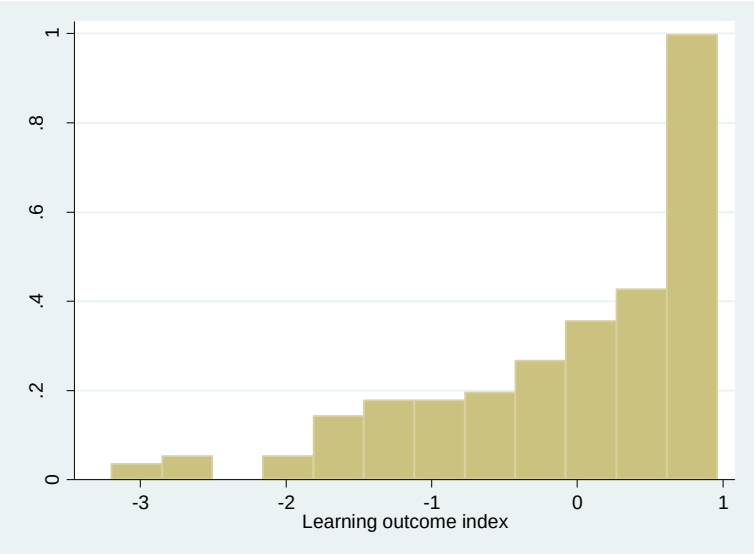
Variable	PC1
Improvement in Lagging Students' Academic Achievement (fsql18)	0.447
Development of Desired Characteristics in Students (fsql19)	0.463
Student Competencies Alignment with Curriculum Requirements (fsql20)	0.426
Student Attendance and Completion of Schooling (fsql21)	0.461
Students' Development in National Testing (NT) and/or Local Assessment System (LAS) at the District Level in Primary Education (fsql22)	0.438

Specifically, the learning outcome index score for each school was computed as a linear combination of the scores on the 5 learning outcome variables, where the aggregation of the scores was done using the principal component loadings as weights. The resulting score for the new variable was then standardized to have zero mean and unit variance in the sample of 162 schools and the histogram of the density distribution of the constructed 'Student learning outcome index' is presented in Figure 1.1.

[7] The Cronbach's alpha test produces a coefficient between 0 and 1. Generally, Cronbach's alpha is interpreted as:

- 0.9 = Excellent reliability
- 0.8 to 0.9 = Good reliability
- 0.7 to 0.8 = Acceptable reliability
- 0.6 to 0.7 = Questionable reliability
- < 0.6 = Poor reliability

Figure 1.1. Student Learning Outcome Index



School Leadership and Management Quality

Our investigation into school leadership and management quality encompassed 16 distinct variables, covering a comprehensive range of administrative and managerial aspects. Table 2.1 presents the descriptive statistics for these variables, with detailed scoring criteria available in the Annex section.

Table 2.1. Descriptive Statistics of School Leadership and Management Variables

Variable	Obs	Mean	Std. Dev.
The administrator defines the vision, mission, goals, and annual operational plan (fsql1)	162	4.772	0.463
School administrators use participatory management processes in developing operational plans, school development plans, and monitoring and evaluating school performance with stakeholders (fsql2)	162	4.753	0.460
School management builds relationships with stakeholders through community engagement activities to enhance student development and school improvement (fsql3)	162	4.636	0.577
School Management Processes for Monitoring and Continuous Improvement of School Quality (fsql4)	162	4.574	0.555
School Management Utilizes Educational Information and Data for the Development of Educational Quality (fsql5)	162	4.599	0.605
School administrators utilize operational performance assessment results from annual operational plans to improve or develop the school's resource quality (fsql6)	162	4.617	0.570
School administrators have personal development plans. Teachers have development plans in learning management (fsql7)	162	4.519	0.671
School administrators promote and support teachers to use their learning skills to foster collaboration both within and between schools, aiming to enhance the value of teaching outcomes and promote teaching and	162	4.531	0.670

Variable	Obs	Mean	Std. Dev.
learning for the development of school performance and student learning outcomes (fsql8)			
School administrators support teachers in designing and implementing quality learning management that focuses on student-centered approaches (fsql9)	162	4.710	0.554
School administrators promote and support teachers in utilizing learning resources effectively both internally and externally (fsql10)	162	4.667	0.621
School administrators seek funding and mobilize resources to enhance the quality of learning and improve school operational outcomes (fsql11)	162	4.549	0.621
School administrators utilize internal and external quality assessment results and school information system data to promote students' skills and welfare (fsql12)	162	4.556	0.630
School administrators support teachers in developing content and teaching materials for students' further education and future careers (fsql13)	162	4.481	0.750
School administrators establish a system to care for and support students, including both high-achieving students and those in vulnerable groups (fsql14)	162	4.537	0.688
The school administration has a policy to protect students from physical, emotional, and psychological harm, such as verbal and physical abuse, inappropriate behavior, and other dangers within the school (fsql15)	162	4.469	0.828
Providing opportunities for students to explore and develop their potential both academically and non-academically (fsql16)	162	4.556	0.669

Before conducting the PCA, we standardized all 16 variables and performed preliminary tests to ensure data adequacy. The Kaiser-Meyer-Olkin test produced an exceptional value of 0.95, indicating that our dataset was ideally suited for PCA.

The PCA revealed compelling patterns in the data structure, with the eigenvalues presented in Table 2.2. Applying Kaiser's criterion of retaining components with eigenvalues above 1.0, a striking pattern emerged. The first principal component demonstrated remarkable dominance, accounting for 60 percent of the total variance in school leadership and management quality. This strong first component suggests that despite the diverse aspects of school leadership measured by our variables, they fundamentally reflect a single underlying dimension of management quality.

Table 2.2. Eigenvalues of the Leading Principal Components

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	9.668	8.726	0.604	0.604
PC2	0.942	0.187	0.059	0.663
PC3	0.755	0.132	0.047	0.710
PC4	0.624	0.063	0.039	0.749
PC5	0.561	0.035	0.035	0.784

Note: Only the first 5 principal components are shown

To verify the cohesiveness of these leadership measures, we conducted an internal consistency analysis. The resulting Cronbach's alpha coefficient of 0.96 demonstrated exceptional reliability among

the 16 variables, confirming their collective effectiveness in measuring school leadership and management quality.

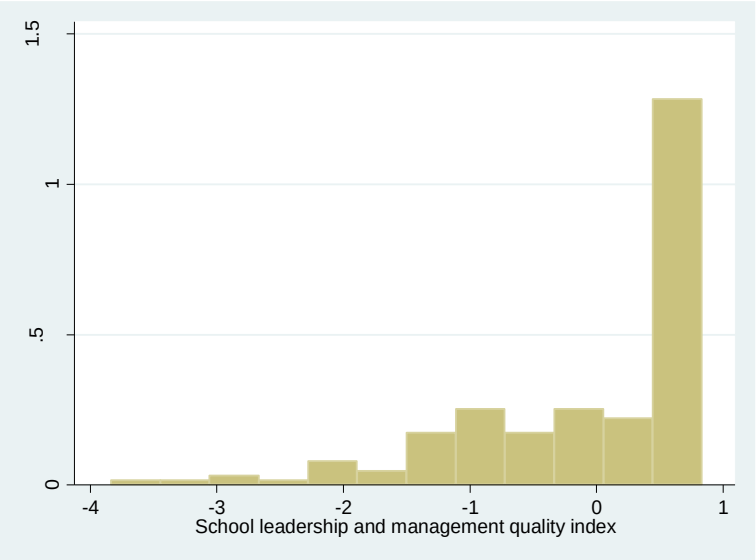
Table 2.3 displays the component loadings derived from the first eigenvector, representing the relative contribution of each leadership variable to the composite index. These loadings served as weights in constructing our comprehensive School Leadership and Management Quality Index.

Table 2.3. Loadings for the Leading Principal Component

Variable	PC1
The administrator defines the vision, mission, goals, and annual operational plan (fsql1)	0.220
School administrators use participatory management processes in developing operational plans, school development plans, and monitoring and evaluating school performance with stakeholders (fsql2)	0.208
School management builds relationships with stakeholders through community engagement activities to enhance student development and school improvement (fsql3)	0.262
School Management Processes for Monitoring and Continuous Improvement of School Quality (fsql4)	0.268
School Management Utilizes Educational Information and Data for the Development of Educational Quality (fsql5)	0.272
School administrators utilize operational performance assessment results from annual operational plans to improve or develop the school's resource quality (fsql6)	0.251
School administrators have personal development plans. Teachers have development plans in learning management (fsql7)	0.265
School administrators promote and support teachers to use their learning skills to foster collaboration both within and between schools, aiming to enhance the value of teaching outcomes and promote teaching and learning for the development of school performance and student learning outcomes (fsql8)	0.270
School administrators support teachers in designing and implementing quality learning management that focuses on student-centered approaches (fsql9)	0.227
School administrators promote and support teachers in utilizing learning resources effectively both internally and externally (fsql10)	0.244
School administrators seek funding and mobilize resources to enhance the quality of learning and improve school operational outcomes (fsql11)	0.268
School administrators utilize internal and external quality assessment results and school information system data to promote students' skills and welfare (fsql12)	0.266
School administrators support teachers in developing content and teaching materials for students' further education and future careers (fsql13)	0.252
School administrators establish a system to care for and support students, including both high-achieving students and those in vulnerable groups (fsql14)	0.247
The school administration has a policy to protect students from physical, emotional, and psychological harm, such as verbal and physical abuse, inappropriate behavior, and other dangers within the school (fsql15)	0.241
Providing opportunities for students to explore and develop their potential both academically and non-academically (fsql16)	0.227

The final step involved computing the index as a weighted combination of all 16 variables, using the principal component loadings as weights. This composite score was then normalized to a standard scale with zero mean and unit variance across our sample of 162 schools. Figure 2.1 illustrates the distribution of this standardized index through a density histogram.

Figure 2.1. School Leadership and Management Quality Index



Teaching Quality

The assessment of teaching quality presented a more complex picture, drawing upon 15 distinct variables that capture two key dimensions: teacher qualifications and classroom effectiveness. Seven items examined teacher qualification and professional development aspects (fsql23-fsql28 and fsql30), while eight items focused on classroom teaching and learning management effectiveness (fsql29_co1-fsql29_co8), as assessed through direct classroom observations by trained enumerators. Table 3.1 presents the descriptive statistics for all variables in this domain (see Annex section for detailed scoring criteria).

Table 3.1. Descriptive Statistics of Teacher Quality Variables

Variable	Obs	Mean	Std. Dev.
Teachers have educational and professional qualifications as required by law and aligned with the subjects they are assigned to teach (fsql23)	162	4.895	0.411
Teachers continuously develop their teaching skills to effectively manage the classroom and enhance student competencies (fsql24)	162	4.846	0.440
Teachers create Professional Learning Communities (PLC) to enhance instructional practices and student learning outcomes (fsql25)	162	4.815	0.463
Teachers are assigned to teach subjects that match their expertise (fsql26)	162	4.685	0.551
Teachers are responsible for teaching subjects other than those directly related to their expertise (fsql27)	162	4.235	1.172
Teachers participate in continuous training and seek new knowledge (fsql28)	162	4.858	0.400
Teachers conducting research in the classroom to develop student learning outcomes (fsql30)	162	4.617	0.670
The instructor plans learning management to enable learners to access and understand the lessons (fsql29_co1)	147	4.211	1.160
The instructor helps learners link previous knowledge or experiences with new learning (fsql29_co2)	147	3.435	0.845
The instructor helps learners create knowledge on their own or create new experiences from learning (fsql29_co3)	147	3.551	0.893

Variable	Obs	Mean	Std. Dev.
Teachers stimulate students to be motivated in learning (fsql29_co4)	147	3.156	0.850
Teachers promote students' learning development (fsql29_co5)	147	3.163	0.937
Teachers provide feedback to students for learning improvement (fsql29_co6)	147	3.395	1.037
Teachers create a classroom atmosphere that is suitable and conducive to student learning (fsql29_co7)	147	3.966	0.982
Teachers support students to pursue lifelong learning (fsql29_co8)	147	2.741	0.937

Initial data preparation involved standardizing all variables, followed by an assessment of sampling adequacy using the KMO test. The resulting value of 0.86 indicated "meritorious" sampling adequacy, confirming the appropriateness of our PCA approach.

Unlike the previous indices, the PCA revealed a more nuanced structure in teaching quality. As shown in Table 3.2, two distinct components emerged with eigenvalues exceeding unity: the first component explaining 30.9 percent of total variance, and the second accounting for an additional 21.3 percent. Together, these two components captured approximately 52 percent of the variation in the original variables.

Table 3.2. Eigenvalues of the Leading Principal Components

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	4.639	1.445	0.309	0.309
PC2	3.194	2.252	0.213	0.522
PC3	0.942	0.029	0.063	0.585
PC4	0.912	0.112	0.061	0.646
PC5	0.800	0.075	0.053	0.699

Note: Only the first 5 principal components are shown

To better understand this two-dimensional structure, we applied Varimax rotation to the principal component loadings, seeking a clearer interpretation of the underlying constructs. The rotated loadings, presented in Table 3.3, revealed a compelling pattern. The first component showed strong associations with classroom observation variables (fsql29_co1-fsql29_co8), while the second component aligned clearly with teacher qualification and professional development measures (fsql23-fsql28, fsql30). All variables demonstrated substantive loadings on their respective components, with differences in loadings between components exceeding 0.15.

Table 3.3. Loadings for the Leading Principal Components after Varimax Rotation

Variable	PC1	PC2
Teachers promote students' learning development (fsql29_co5)	0.390	0.033
The instructor helps learners create knowledge on their own or create new experiences from learning (fsql29_co3)	0.367	-0.019
Teachers stimulate students to be motivated in learning (fsql29_co4)	0.365	0.069
Teachers support students to pursue lifelong learning (fsql29_co8)	0.363	-0.040
Teachers provide feedback to students for learning improvement (fsql29_co6)	0.363	-0.029
Teachers create a classroom atmosphere that is suitable and conducive to student learning (fsql29_co7)	0.361	-0.032

Variable	PC1	PC2
The instructor helps learners link previous knowledge or experiences with new learning (fsql29_co2)	0.333	-0.046
The instructor plans learning management to enable learners to access and understand the lessons (fsql29_co1)	0.265	0.080
Teachers continuously develop their teaching skills to effectively manage the classroom and enhance student competencies (fsql24)	-0.013	0.462
Teachers participate in continuous training and seek new knowledge (fsql28)	0.037	0.432
Teachers have educational and professional qualifications as required by law and aligned with the subjects they are assigned to teach (fsql23)	-0.038	0.402
Teachers create Professional Learning Communities (PLC) to enhance instructional practices and student learning outcomes (fsql25)	-0.021	0.399
Teachers are assigned to teach subjects that match their expertise (fsql26)	0.011	0.359
Teachers conducting research in the classroom to develop student learning outcomes (fsql30)	0.033	0.273
Teachers are responsible for teaching subjects other than those directly related to their expertise (fsql27)	0.004	0.241

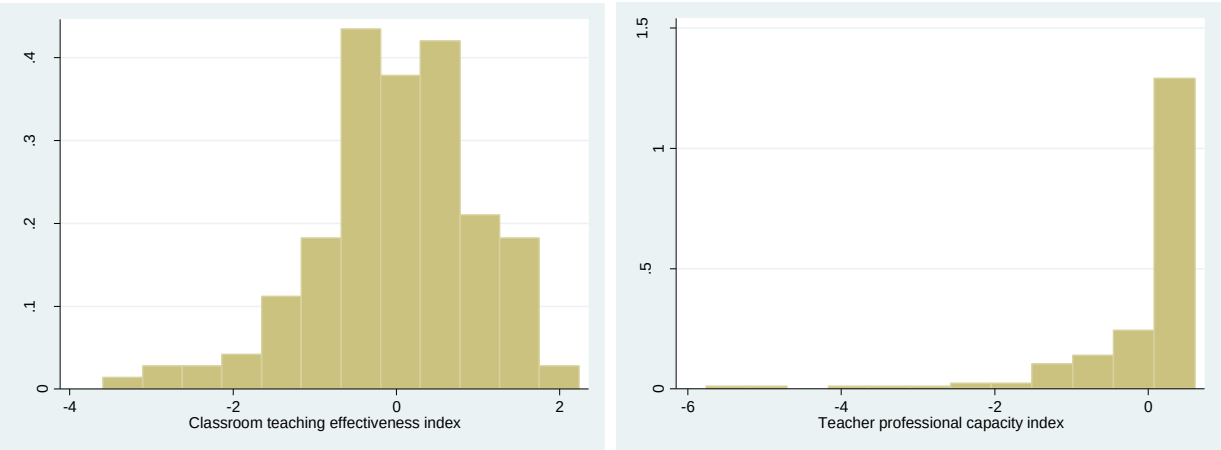
This two-factor structure suggests that teaching quality comprises two distinct but related dimensions: classroom teaching effectiveness and teacher professional capacity. The clear separation between these dimensions indicates that while teachers may possess strong qualifications and engage in professional development, their actual classroom performance represents a distinct aspect of teaching quality that requires separate consideration. Internal consistency analysis further supported this distinction, with Cronbach's alpha coefficients of 0.89 for classroom teaching effectiveness and 0.79 for teacher professional capacity, indicating good reliability for both dimensions.

Based on these findings, we constructed two separate sub-indices for teaching quality:

1. A Classroom Teaching Effectiveness Index, weighted by the first component loadings
2. A Teacher Professional Capacity Index, weighted by the second component loadings

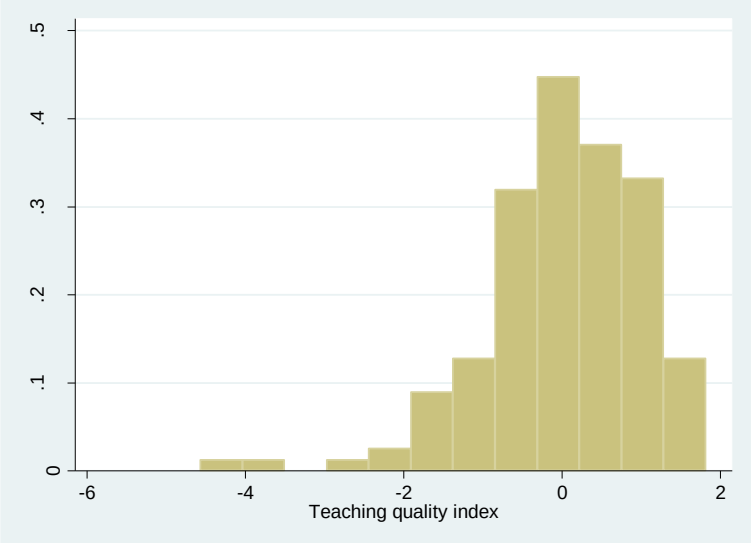
Both indices were standardized to have zero mean and unit variance across our sample of schools, providing complementary measures of teaching quality that capture its inherent multidimensional nature (see graphs in Figure 3.1 for the distributions of these two standardized indices).

Figure 3.1. Classroom teaching effectiveness (Left) and Teacher professional capacity (Right) Indices



To facilitate broader comparisons, we constructed a composite Teaching Quality Index by averaging the two sub-indices and standardizing the result to have zero mean and unit variance. While this aggregation necessarily sacrifices some of the distinct variations captured in the separate Classroom Teaching Effectiveness and Teacher Professional Capacity indices, it provides a simplified measure for general comparisons. However, given the clear two-dimensional structure revealed by our analysis, this composite index will be used primarily for descriptive purposes, with the separate sub-indices retained for more detailed analytical applications.

Figure 3.2. Teaching quality index



School infrastructure, service facilities, and learning materials

The School infrastructure, service facilities, and learning materials domain is divided into 4 subdomains: i) School Accessibility, ii) Adequate Learning Space, iii) Safety and Health, and iv) Teaching and learning materials.

School accessibility

The first subdomain of school infrastructure focuses on school accessibility, encompassing four key aspects of physical access and safety. Table 4.1 presents descriptive statistics for these items, with detailed scoring criteria available in the Annex section.

Table 4.1. Descriptive Statistics of School Accessibility Variables

Variable	Obs	Mean	Std. Dev.
The interior atmosphere of the school is clean, pleasant, convenient, aesthetically pleasing, and conducive to learning (sa_1)	162	3.753	0.547
There are security systems in place to prevent threats from both internal and external individuals. The school has security measures in place to ensure safety within its premises (sa_2)	162	3.685	0.605
The school has a communication management system in place (sa_3)	162	3.679	0.637

Variable	Obs	Mean	Std. Dev.
The roads and pathways within the school premises are in good condition, allowing students to walk and traffic to flow safely (sa_4)	162	3.068	1.437

Initial examination of the standardized variables through the KMO test yielded a value of 0.64, indicating "mediocre" but acceptable sampling adequacy for PCA. This somewhat lower KMO value, compared to previous domains, suggests more unique variance in these accessibility measures, reflecting their distinct aspects of school infrastructure.

The PCA, as shown in Table 4.2, revealed that the first component accounts for approximately 49 percent of the total variance in the original variables. While this proportion is lower than observed in some other domains, it still represents a substantial share of the common variance among these accessibility measures. Following Kaiser's criterion of retaining components with eigenvalues above unity, only the first principal component (eigenvalue = 1.943) was retained.

Table 4.2. Eigenvalues of the Leading Principal Components

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	1.943	1.093	0.486	0.486
PC2	0.850	0.119	0.212	0.698
PC3	0.731	0.254	0.183	0.881
PC4	0.477	.	0.119	1.000

The component loadings, presented in Table 4.3, show relatively balanced contributions from all four variables, with values ranging from 0.438 to 0.56. The strongest loading corresponds to the school's interior atmosphere (0.56), followed by pathway conditions (0.515), communication systems (0.479), and security systems (0.438). This pattern suggests that while all aspects contribute meaningfully to overall accessibility, the physical learning environment plays a particularly important role.

Table 4.3. Loadings for the Leading Principal Component

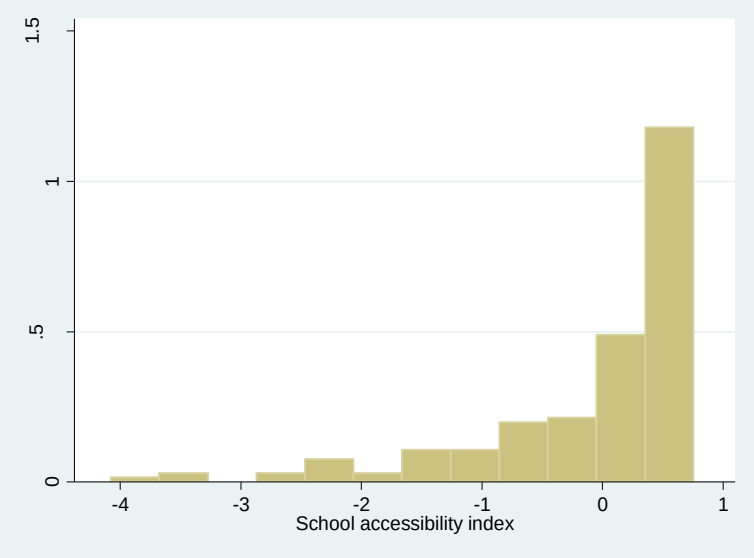
Variable	PC1
The interior atmosphere of the school is clean, pleasant, convenient, aesthetically pleasing, and conducive to learning (sa_1)	0.560
There are security systems in place to prevent threats from both internal and external individuals. The school has security measures in place to ensure safety within its premises (sa_2)	0.438
The school has a communication management system in place (sa_3)	0.479
The roads and pathways within the school premises are in good condition, allowing students to walk and traffic to flow safely (sa_4)	0.515

The relatively modest internal consistency (Cronbach's alpha = 0.64) and mediocre KMO value suggest that these four measures, while related, capture somewhat distinct aspects of school accessibility. This is not entirely surprising given the diverse nature of accessibility features being assessed, from physical infrastructure to security systems.

Following our established methodology, we constructed a School Accessibility Index using the first principal component loadings as weights. The resulting index was standardized to have zero mean and

unit variance across our sample of 162 schools. The distribution of this index, shown in Figure 4.1, reveals considerable variation in school accessibility across the sample.

Figure 4.1. School accessibility index



Adequate learning space

The analysis of adequate learning space presented unique analytical challenges, requiring a careful iterative approach to identify meaningful underlying constructs. From the initial set of variables, we excluded three items: two classroom occupancy measures (os_1 and os_2), as high scores on these items in small schools with half-empty classrooms would not necessarily indicate desirable attributes, and one laboratory equipment measure (os_11) which was only applicable to secondary schools.

Our analysis began with eight remaining variables measuring various aspects of learning space adequacy, from basic classroom furniture to specialized facilities. Table 5.1 presents the descriptive statistics for these items.

Table 5.1. Descriptive Statistics of Adequate Learning Space Variables

Variable	Obs	Mean	Std. Dev.
1) The tables and chairs for students in the classroom are sufficient in number and are safe to use, and 2) The tables and chairs for students in other areas of the school are sufficient in number and are safe to use (os_3)	162	2.951	1.240
The classroom is equipped for the teacher, with features such as a blackboard, a teacher's desk, and storage space for the teacher's belongings (os_4)	162	2.475	1.724
The school has enough computers connected to the internet for the students (os_5)	162	3.623	1.063
Schools should have safe sports fields (os_6)	162	0.593	1.084
The school should have a safe playground for children to play (os_7)	162	1.451	1.709
Conference hall/multi-purpose building (os_8)	162	2.796	1.154
The school manages the cafeteria in a clean and hygienic manner. There is a dining area and food preparation facilities or a kitchen (os_9)	162	3.772	0.560

Variable	Obs	Mean	Std. Dev.
Schools should have a library or a research center (os_10)	162	3.346	0.941

The initial exploratory phase yielded somewhat concerning results. The KMO test value of 0.63 indicated merely "mediocre" sampling adequacy. Principal component analysis revealed three components with eigenvalues exceeding unity, together explaining approximately 55 percent of the total variance (Table 5.2).

Table 5.2. Eigenvalues of the Leading Principal Components – Exploratory Stage 1

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	2.091	0.898	0.261	0.261
PC2	1.193	0.048	0.149	0.410
PC3	1.145	0.243	0.143	0.554
PC4	0.902	0.034	0.113	0.666
PC5	0.868	0.159	0.109	0.775

Note: Only the first 5 principal components are shown

To achieve a clearer structure, we employed an iterative approach using Varimax rotation. In the first stage (Table 5.3), this revealed complex patterns of loadings across components. Following standard practice, we dropped variables showing substantial cross-loadings (loading differences < 0.2 between components) or weak overall loadings (< 0.3). This led to the elimination of three variables: conference hall/multi-purpose building (os_8), library/research center availability (os_10), and sports field availability (os_6).

Table 5.3. Loadings for the Leading Principal Components after Varimax Rotation – Exploratory Stage 1

Variable	PC1	PC2	PC3
1) The tables and chairs for students in the classroom are sufficient in number and are safe to use, and 2) The tables and chairs for students in other areas of the school are sufficient in number and are safe to use (os_3)	0.527	-0.319	0.147
The classroom is equipped for the teacher, with features such as a blackboard, a teacher's desk, and storage space for the teacher's belongings (os_4)	0.526	0.124	-0.122
The school should have a safe playground for children to play (os_7)	0.495	0.134	-0.182
Conference hall/multi-purpose building (os_8)	0.358	0.177	-0.031
The school manages the cafeteria in a clean and hygienic manner. There is a dining area and food preparation facilities or a kitchen (os_9)	0.023	0.654	0.066
Schools should have a library or a research center (os_10)	0.121	0.484	0.335
The school has enough computers connected to the internet for the students (os_5)	-0.063	0.068	0.803
Schools should have safe sports fields (os_6)	0.234	-0.409	0.411

A second iteration of PCA on the remaining five items produced a "miserable" KMO test value of 0.55 but revealed a clearer three-component structure (Table 5.4).

Table 5.4. Eigenvalues of the Leading Principal Components – Exploratory Stage 2

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	1.634	0.566	0.327	0.327
PC2	1.068	0.033	0.214	0.540
PC3	1.035	0.352	0.207	0.747
PC4	0.683	0.103	0.137	0.884
PC5	0.581	.	0.116	1.000

Note: Only the first 5 principal components are shown

Further application of our loading criteria led to the removal of one additional variable: classroom teacher equipment (os_4).

Table 5.5. Loadings for the Leading Principal Components after Varimax Rotation – Exploratory Stage 2

Variable	PC1	PC2	PC3
1) The tables and chairs for students in the classroom are sufficient in number and are safe to use, and 2) The tables and chairs for students in other areas of the school are sufficient in number and are safe to use (os_3)	0.703	-0.331	0.212
The classroom is equipped for the teacher, with features such as a blackboard, a teacher's desk, and storage space for the teacher's belongings (os_4)	0.515	0.338	-0.068
The school should have a safe playground for children to play (os_7)	0.483	0.238	-0.312
The school manages the cafeteria in a clean and hygienic manner. There is a dining area and food preparation facilities or a kitchen (os_9)	-0.072	0.845	0.111
The school has enough computers connected to the internet for the students (os_5)	0.048	0.080	0.917

The final iteration, focusing on the remaining four items, produced a concerning KMO value of 0.41, falling below the typically acceptable threshold of 0.5. While three components emerged with eigenvalues above unity, together explaining 83.6 percent of the total variance, the Cronbach's alpha value for the first principal component was notably low (0.34), indicating poor internal consistency.

Table 5.6. Eigenvalues of the Leading Principal Components – Final Model

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	1.247	0.183	0.312	0.312
PC2	1.064	0.029	0.266	0.578
PC3	1.035	0.380	0.259	0.836
PC4	0.655	.	0.164	1.000

The final rotated solution (Table 5.7) suggested three potential dimensions of learning space adequacy: Basic Learning Facilities (classroom furniture and playground), Food Service Facilities (cafeteria management), and Technology Access (computer and internet availability)

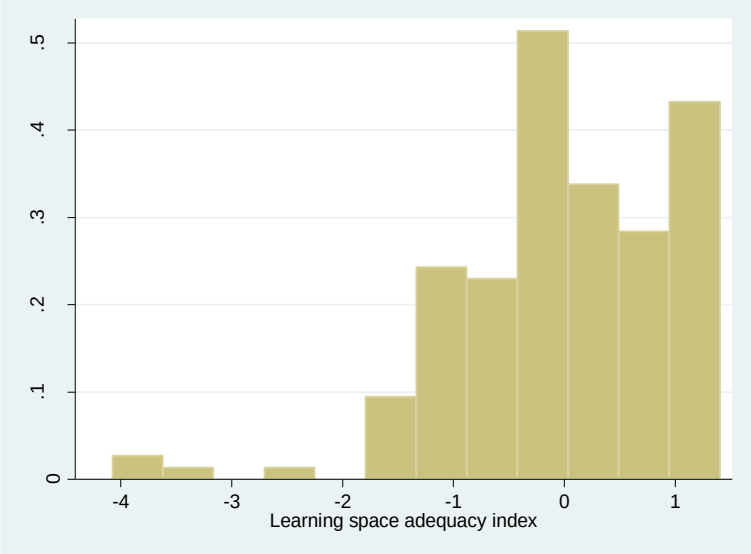
Table 5.7. Loadings for the Leading Principal Components after Varimax Rotation – Final Model

Variable	PC1	PC2	PC2
1) The tables and chairs for students in the classroom are sufficient in number and are safe to use, and 2) The tables and chairs for students in other areas of the school are sufficient in number and are safe to use (os_3)	0.792	-0.222	0.200
The school should have a safe playground for children to play (os_7)	0.603	0.395	-0.335
The school manages the cafeteria in a clean and hygienic manner. There is a dining area and food preparation facilities or a kitchen (os_9)	-0.076	0.887	0.107
The school has enough computers connected to the internet for the students (os_5)	0.056	0.089	0.914

The statistical evidence, however, raises significant concerns about combining these measures into a composite index. The final KMO value of 0.41 falls well below the acceptable threshold for sampling adequacy. While the dimensional structure explains 83.6 percent of total variance through three components, the Cronbach's alpha of 0.34 for the first component indicates poor internal consistency. These statistical indicators, particularly the weak sampling adequacy and low reliability of the primary component, suggest these facilities represent fundamentally distinct aspects of school infrastructure that may not be meaningfully combined.

Nevertheless, for the purpose of data reduction, we constructed a composite Learning Space Adequacy Index by simply averaging the four remaining variables. The resulting scores were standardized to have zero mean and unit variance. While this aggregation necessarily sacrifices some of the distinct variations in different facility measures, it provides a simplified measure for broader comparisons. However, given the low reliability coefficients and poor KMO value, we recommend complementing any analysis using this composite measure with examination of the individual variables when more detailed insights are needed. This compromise between analytical simplicity and information retention acknowledges both practical needs and statistical limitations. The distribution of this index is shown in Figure 5.1.

Figure 5.1. Learning Space Adequacy Index



Safety and health facilities

The analysis of safety and health facilities began with an extensive set of 22 variables covering multiple aspects of school safety and health infrastructure. Table 6.1 presents the descriptive statistics for these items, revealing considerable variation across different safety and health measures.

Table 6.1. Descriptive Statistics of Safely and Health Variables

Variable	Obs	Mean	Std. Dev.
Schools should regularly inspect the condition of buildings and other areas within the school (sh_1)	162	3.568	0.747
The school should have regular maintenance and repair of buildings, as well as other areas within the school (sh_2)	162	3.031	1.385
The school has a nurse's room equipped with common medications and sufficient first aid equipment, and they are of good quality (sh_3)	162	3.951	0.443
Is the school prepared to deal with fire incidents, with fire alarm equipment and firefighting equipment? (sh_4)	162	3.667	0.804
The school should have an adequate number of restrooms, divided into male and female facilities, as well as restrooms specifically designed for individuals with disabilities (sh_5)	162	2.099	2.004
Schools should have clean water wells or water sources (for domestic use) (sh_6)	162	3.765	0.683
Schools should have clean water wells or water sources for drinking purposes (sh_7)	162	3.790	0.691
The school has fences and entrance/exit gates, which are still in a safe and usable condition (sh_8)	162	3.105	1.386
Schools should prepare areas to facilitate convenience for students with physical disabilities or those needing special assistance, enabling them to navigate safely and conveniently within the school premises (sh_9)	162	1.111	1.351
Schools should have waste disposal processes that meet the standards (sh_10)	162	3.568	0.755
Schools should always have electricity available (sh_11)	162	1.599	1.349
The school buildings have an automatic power cut-off system to prevent power surges and electrical leaks (sh_12)	162	2.611	1.133
The school buildings and roofs, overall, appear to be in good condition from the outside. There are no visible cracks or separations on the exterior walls. There is no rainwater leakage from the roof down to the ceilings (sh_13)	162	1.488	0.724
The school buildings have sturdy and robust structural columns capable of bearing various loads and forces (sh_14)	162	3.821	0.556
The school building has a sturdy frame structure capable of withstanding various loads and forces (sh_15)	162	3.679	0.988
The school building has staircases that are sturdy and strong enough to support various loads and forces (sh_16)	162	3.204	1.462
The classroom floor is in good condition, stable, and safe to use. There is no significant wear or damage (sh_17)	162	3.735	0.786
The walls of the classroom are in good condition, sturdy, safe to use, and have not deteriorated significantly (sh_18)	162	3.691	0.829
The ceiling of the classroom is in good condition, stable, and safe to use, with no significant deterioration (sh_19)	162	3.710	0.745
The classroom has doors and windows that are still in a stable and strong condition and can be safely used (sh_20)	162	3.796	0.661
The classroom has good ventilation (sh_21)	162	1.802	1.797
The classrooms have sufficient lighting for teaching and learning (sh_22)	162	3.765	0.909

Initial examination of the standardized variables through the KMO test yielded a value of 0.66, indicating "mediocre" but acceptable sampling adequacy. Following the same iterative approach used in previous sections, we systematically eliminated variables showing low loadings (< 0.3) or insufficient loading differences between components (< 0.2). This process resulted in the removal of 9 items, leaving 13 variables for the final analysis. The KMO value for this reduced set remained stable at 0.62.

The final principal component analysis revealed six distinct components with eigenvalues exceeding unity (Table 6.2). Together, these components explain approximately 77 percent of the total variance in the remaining variables, with the first component accounting for 22.3 percent of the variance.

Table 6.2. Eigenvalues of the Leading Principal Components – Final Model

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	2.905	0.939	0.223	0.223
PC2	1.965	0.413	0.151	0.375
PC3	1.552	0.266	0.119	0.494
PC4	1.286	0.128	0.099	0.593
PC5	1.158	0.044	0.089	0.682
PC6	1.113	0.234	0.086	0.768
PC7	0.880	0.171	0.068	0.835

Note: Only the first 7 principal components are shown

Application of Varimax rotation to these components unveiled a clear six-dimensional structure (Table 6.3). However, the sixth component, which included classroom ventilation and lighting variables, showed problematic negative loading and extremely low reliability (Cronbach's alpha = 0.16). After discarding this component, five distinct dimensions of school safety and health infrastructure emerged:

1. Classroom Interior Condition (Cronbach's alpha = 0.96)
    - Classroom floor condition (sh_17)
    - Classroom wall condition (sh_18)
    - Classroom ceiling condition (sh_19)
2. Water Supply Systems (Cronbach's alpha = 0.89)
    - Domestic water sources (sh_6)
    - Drinking water sources (sh_7)
3. Building Maintenance (Cronbach's alpha = 0.63)
    - Regular maintenance and repair (sh_2)
    - Regular building inspection (sh_1)
4. Structural Integrity (Cronbach's alpha = 0.59)

- Door and window condition (sh_20)
- Building frame structure (sh_15)

5. Basic Facilities (Cronbach's alpha = 0.31)
    - Building exterior condition (sh_13)
    - Restroom facilities (sh_5)

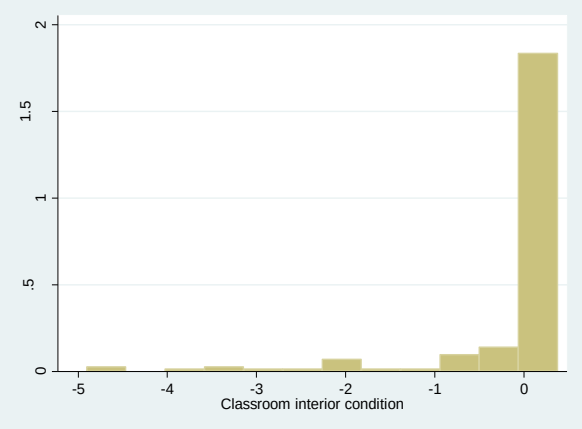
Table 6.3. Loadings for the Leading Principal Components after Varimax Rotation – Final Model

Variable	PC1	PC2	PC3	PC4	PC5	PC6
The classroom floor is in good condition, stable, and safe to use. There is no significant wear or damage (sh_17)	0.578	0.008	0.013	-0.001	0.008	0.019
The walls of the classroom are in good condition, sturdy, safe to use, and have not deteriorated significantly (sh_18)	0.572	-0.012	0.017	0.016	0.020	0.002
The ceiling of the classroom is in good condition, stable, and safe to use, with no significant deterioration (sh_19)	0.557	-0.021	-0.033	-0.010	0.001	0.026
Schools should have clean water wells or water sources (for domestic use) (sh_6)	-0.039	0.700	-0.012	-0.039	0.045	0.060
Schools should have clean water wells or water sources for drinking purposes (sh_7)	0.026	0.690	0.012	0.050	-0.026	-0.028
The school should have regular maintenance and repair of buildings, as well as other areas within the school (sh_2)	0.013	-0.052	0.689	0.083	-0.038	0.085
Schools should regularly inspect the condition of buildings and other areas within the school (sh_1)	-0.015	0.059	0.664	-0.069	-0.028	-0.030
The classroom has doors and windows that are still in a stable and strong condition and can be safely used (sh_20)	0.006	-0.022	-0.020	0.707	-0.052	0.041
The school building has a sturdy frame structure capable of withstanding various loads and forces (sh_15)	-0.004	0.033	0.039	0.688	0.069	-0.070
The school buildings and roofs, overall, appear to be in good condition from the outside. There are no visible cracks or separations on the exterior walls. There is no rainwater leakage from the roof down to the ceilings (sh_13)	0.086	0.089	-0.049	-0.011	0.728	-0.095
The school should have an adequate number of restrooms, divided into male and female facilities, as well as restrooms specifically designed for individuals with disabilities (sh_5)	-0.134	-0.129	-0.016	0.048	0.599	0.251
The classroom has good ventilation (sh_21)	-0.025	-0.019	-0.142	0.055	-0.125	-0.753
The classrooms have sufficient lighting for teaching and learning (sh_22)	-0.004	0.024	-0.241	0.073	-0.289	0.584

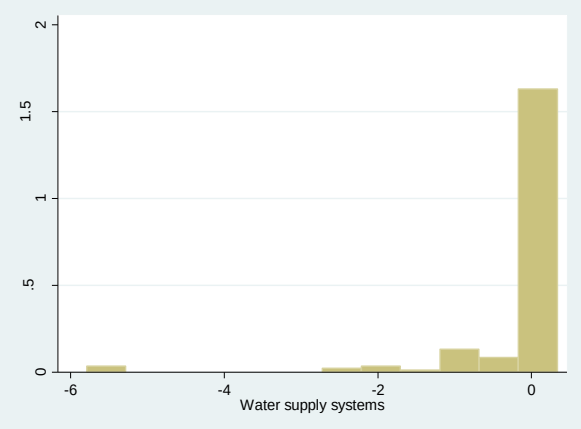
While the Basic Facilities dimension shows notably low internal consistency, we retain all five sub-indices for analytical consistency and practical utility. However, when interpreting results related to the Basic Facilities dimension, it is important to acknowledge its lower reliability and consider this limitation in any conclusions drawn from this particular sub-index. The distributions of these five sub-indices are presented in Figure 6.1.

Figure 6.1. Distribution of Safety and Health Sub-indices

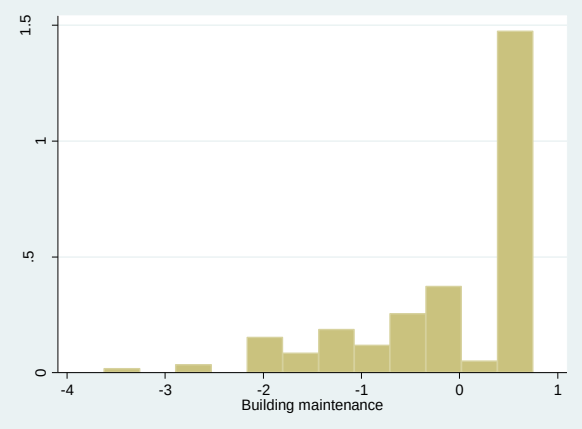
Classroom Interior Condition



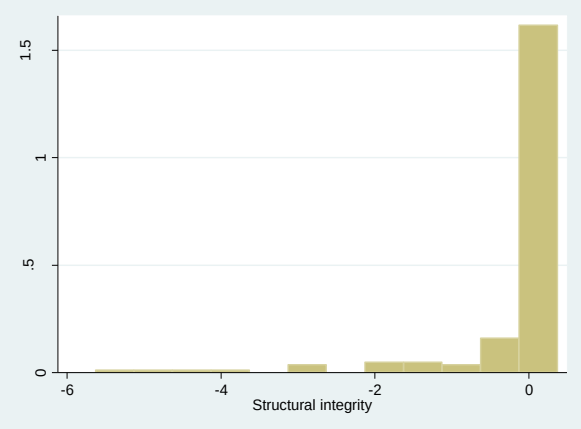
Water Supply Systems



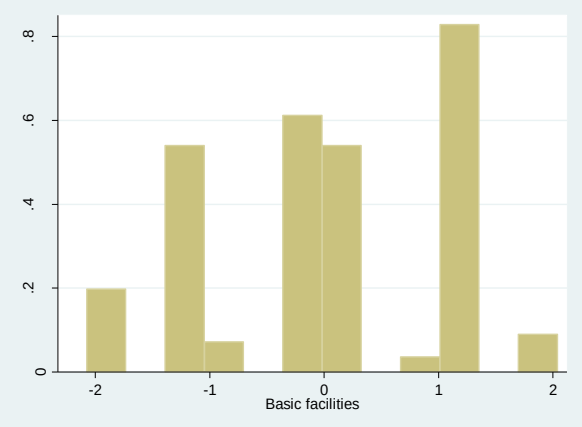
Building Maintenance



Structural Integrity



Basic Facilities



Teaching and learning materials

The assessment of teaching and learning materials encompassed five variables measuring various aspects of educational resource availability. Table 7.1 presents the descriptive statistics for these items, showing generally moderate to high mean scores across all measures.

Table 7.1. Descriptive Statistics of Teaching and Learning Materials Variables

Variable	Obs	Mean	Std. Dev.
The school has at least one set of teaching aids and instructional materials per grade per subject (textbooks, teaching guides, and teacher manuals) (lm_1)	162	3.488	0.603
The school has suitable reading materials or books for at least 1 set per year (lm_2)	162	3.086	0.634
In every subject area, teachers should have suitable materials and equipment that are adequate and appropriate for teaching, such as rulers, scissors, chalk, paper, pens, and others (lm_3)	162	3.111	0.650
Each student has textbooks for all core subjects (lm_4)	162	3.870	0.388
Each student has a minimum learning materials and equipment, such as notebooks and pens (lm_5)	162	3.204	0.602

Initial examination of the standardized variables through the KMO test yielded a value of 0.73, indicating "middling" sampling adequacy. A principal component analysis revealed only one component with an eigenvalue exceeding unity (Table 7.2), explaining 46 percent of the total variance. This suggests a moderate but meaningful degree of common variance among the teaching and learning material measures.

Table 7.2. Eigenvalues of the Leading Principal Components – Final Model

Component	Eigenvalue	Difference	Proportion	Cumulative
PC1	2.309	1.312	0.462	0.462
PC2	0.997	0.267	0.199	0.661
PC3	0.730	0.193	0.146	0.807
PC4	0.537	0.110	0.107	0.915
PC5	0.427	.	0.085	1.000

Note: Only the first 5 principal components are shown

The component loadings, presented in Table 7.3, display an interesting pattern. Four variables show relatively strong contributions to the primary component, with loadings ranging from 0.441 to 0.517. These include measures of teaching aids, reading materials, general teaching equipment, and student learning materials. However, the measure of textbook availability (lm_4) shows a notably weaker loading (0.179), suggesting it might capture a somewhat distinct aspect of learning material provision.[8]

[8] Textbook availability might be determined by different factors (e.g., central provision vs. school-level management).

Internal consistency analysis yielded a Cronbach's alpha of 0.68, indicating acceptable though modest reliability for this set of measures.

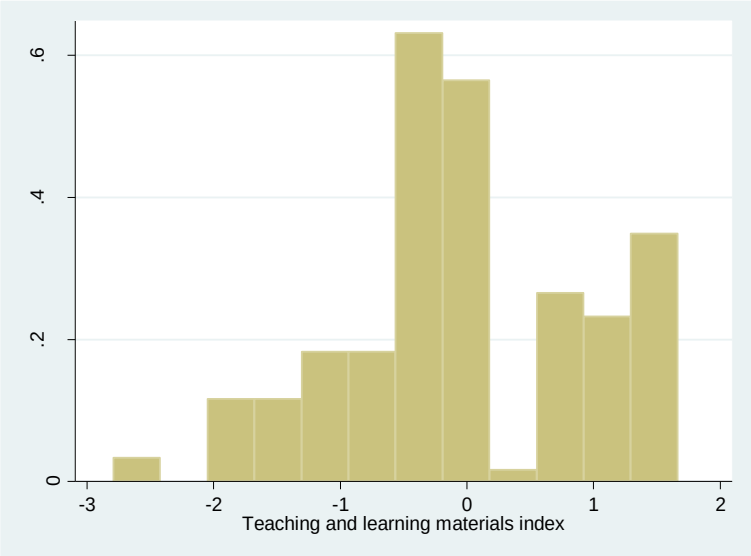
Table 7.3. Loadings for the First Principal Component – Final Model

Variable	PC1
The school has at least one set of teaching aids and instructional materials per grade per subject (textbooks, teaching guides, and teacher manuals) (lm_1)	0.441
The school has suitable reading materials or books for at least 1 set per year (lm_2)	0.517
In every subject area, teachers should have suitable materials and equipment that are adequate and appropriate for teaching, such as rulers, scissors, chalk, paper, pens, and others (lm_3)	0.499
Each student has textbooks for all core subjects (lm_4)	0.179
Each student has a minimum learning materials and equipment, such as notebooks and pens (lm_5)	0.507

Despite the relatively weak loading of the textbook availability measure, we retained all five variables in constructing the Teaching and Learning Materials Index, using the first principal component loadings as weights. This decision acknowledges that while textbook availability may operate somewhat independently, it remains an important aspect of learning material adequacy. The resulting index was standardized to have zero mean and unit variance across our sample of 162 schools.

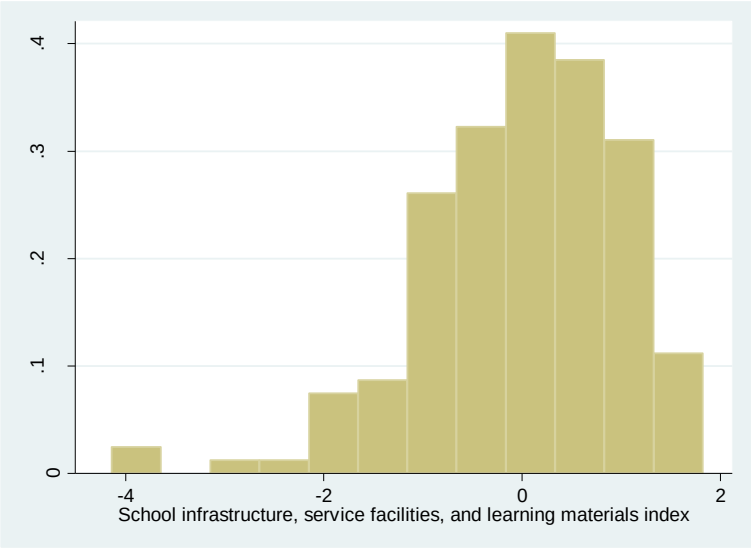
The distribution of this composite index, presented in Figure 7.1, reveals considerable variation in teaching and learning material adequacy across schools. While the modest internal consistency (Cronbach's alpha = 0.68) suggests some caution in interpretation, the index provides a useful summary measure of schools' educational resource availability. The unidimensional structure, combined with acceptable reliability, supports its use as a composite measure, though analyses might benefit from also considering textbook availability separately when more detailed insights are needed.

Figure 7.1. Distribution of Teaching and Learning Materials Index



To facilitate broader comparisons, we constructed a composite "School Infrastructure, Service Facilities, and Learning Materials Index" by averaging the eight sub-indices developed in this section and standardizing the result to have zero mean and unit variance. These sub-indices include School Accessibility, Learning Space Adequacy, the five Safety and Health dimensions (Classroom Interior Condition, Water Supply Systems, Building Maintenance, Structural Integrity, and Basic Facilities), and Teaching and Learning Materials. While this aggregation necessarily sacrifices some of the distinct variations captured in the separate indices, it provides a simplified measure for general comparisons. However, as with the Teaching Quality Index discussed earlier, we acknowledge that this composite measure primarily serves descriptive purposes, with the individual sub-indices retained for more detailed analytical applications. The distribution of this composite index is presented in Figure 7.2.

Figure 7.2. School Infrastructure, Service Facilities, and Learning Materials Index



Validating the Discriminatory and Predictive Power of FSQL-Derived School Quality Indices

The preceding chapter established two fundamental aspects of validity for the FSQL instrument. Content validity was demonstrated through the systematic examination of whether the instrument's items comprehensively and appropriately measure the intended school quality concepts. Construct validity was established by confirming that items purporting to measure the same underlying construct actually correlate with each other in expected ways, as evidenced through our Principal Component Analysis (PCA) approach.

Through our iterative validation process, we refined the original 75 items to 60 items, which include:

1. 55 items measuring school inputs, from which we constructed three main composite indices:
    - School Infrastructure, Service Facilities, and Learning Materials Index (derived from eight sub-indices)
    - Teaching Quality Index (derived from two sub-indices)
    - School Leadership Index
2. 5 items measuring learning outcomes, which were used to construct the Student Learning Outcome Index

This chapter extends our validation exercise by examining the practical utility of the three composite school input quality indices. Specifically, we assess:

1. Their ability to discriminate between schools of varying quality levels
2. Their predictive power in relation to student learning outcomes

This additional layer of validation is crucial for establishing the FSQL instrument's effectiveness. If these relatively parsimonious composite measures can successfully predict student learning outcomes, it would validate both the instrument's design and our focus on these particular aspects of school quality. Such findings would confirm that we have identified and are measuring the key determinants of educational quality.

School Cluster Analysis

To assess the discriminatory power of our composite indices, we employed k-means clustering algorithm to classify schools into three distinct groups based solely on the three main composite school input quality indices: School Infrastructure, Service Facilities, and Learning Materials Index; Teaching Quality Index; and School Leadership Index. Table 8.1 presents the means, standard deviations, and ranges of these indices for each resulting cluster. The pattern of average scores across clusters clearly suggests the labels "Advantaged," "Average," and "Disadvantaged" for these groups.

The results reveal substantial differences across the three school clusters. Disadvantaged schools consistently show negative mean values across all three input quality indices, ranging from -1.318 to -

1.633 standard deviations below the overall sample mean. In contrast, Advantaged schools demonstrate consistently positive means, ranging from 0.578 to 0.701 standard deviations above the mean. Average schools cluster near the mean, with values ranging from -0.072 to -0.166 standard deviations from the mean.

A more detailed examination of the sub-indices (Table 8.2) reveals that these disparities persist across nearly all dimensions of school quality. Particularly notable is the large gap in school leadership and management quality (-1.633 SD for Disadvantaged vs 0.701 SD for Advantaged).

Crucially, the Student Learning Outcome Index - which was not used in the clustering algorithm - shows a clear pattern across the three groups. Disadvantaged schools score 1.219 standard deviations below the mean, while Advantaged schools score 0.534 standard deviations above the mean. This strong alignment between input quality clusters and learning outcomes provides compelling evidence that our three main indices effectively predict school performance.

The cluster analysis also reveals important structural characteristics of educational inequality. Disadvantaged schools tend to be significantly smaller, with average enrollments of 110 students compared to 354 in Advantaged schools. Moreover, they serve a higher proportion of very poor students (16.4 vs 13.2 percent in Advantaged schools), suggesting a concerning pattern of educational disadvantage.

This clustering exercise thus provides strong validation of our composite indices' ability to meaningfully differentiate between schools of varying quality levels, while also highlighting important patterns of educational inequality in the system.

Table 8.1. Summary Statistics of Composite Indices and School Characteristics by School Cluster

	Disadvantaged				Average				Advantaged			
	Mean	*SD*	*Min*	*Max*	Mean	*SD*	*Min*	*Max*	Mean	*SD*	*Min*	*Max*
School leadership and management quality index	-1.633	*1.091*	*-3.837*	*0.835*	-0.133	*0.766*	*-2.132*	*0.835*	0.701	*0.250*	*-0.252*	*0.835*
Teaching quality index	-1.503	*1.198*	*-4.568*	*0.033*	-0.166	*0.642*	*-1.869*	*0.955*	0.633	*0.572*	*-0.498*	*1.817*
School infrastructure, service facilities, and learning materials index	-1.318	*1.184*	*-4.139*	*0.259*	-0.072	*0.751*	*-1.906*	*1.674*	0.578	*0.657*	*-1.139*	*1.827*
Student learning outcome index	-1.219	*1.120*	*-3.198*	*0.962*	-0.113	*0.927*	*-3.067*	*0.962*	0.534	*0.613*	*-1.797*	*0.962*
Total student enrolment	110	*105*	*20*	*509*	171	*201*	*12*	*1,160*	354	*555*	*46*	*3,084*
Share of very poor students	0.164	*0.115*	*0.000*	*0.429*	0.163	*0.118*	*0.000*	*0.681*	0.132	*0.093*	*0.000*	*0.491*
Total number of schools	20				63				64			

Table 8.2. Breakdown of School Quality Indices: Comparison Across School Clusters

	Disadvantaged				Average				Advantaged			
	Mean	*SD*	*Min*	*Max*	Mean	*SD*	*Min*	*Max*	Mean	*SD*	*Min*	*Max*
School leadership and management quality index	-1.633	*1.091*	*-3.837*	*0.835*	-0.133	*0.766*	*-2.132*	*0.835*	0.701	*0.250*	*-0.252*	*0.835*
Classroom teaching effectiveness index	-0.512	*1.281*	*-3.591*	*1.656*	-0.260	*0.936*	*-2.961*	*1.500*	0.416	*0.796*	*-1.289*	*2.234*
Teacher professional capacity index	-1.543	*1.805*	*-5.762*	*0.608*	0.034	*0.550*	*-1.838*	*0.608*	0.449	*0.274*	*-0.756*	*0.608*
School infrastructure, service facilities, and learning materials:												
School accessibility	-1.271	*1.392*	*-4.080*	*0.758*	0.012	*0.885*	*-3.663*	*0.758*	0.467	*0.509*	*-1.828*	*0.758*
Learning space adequacy	-0.624	*1.280*	*-4.076*	*1.405*	-0.140	*0.963*	*-3.633*	*1.405*	0.338	*0.844*	*-2.354*	*1.405*
Classroom interior condition	-0.477	*1.463*	*-3.995*	*0.380*	-0.004	*1.074*	*-4.904*	*0.380*	0.201	*0.691*	*-3.583*	*0.380*
Water supply systems	-0.731	*1.638*	*-5.792*	*0.341*	-0.013	*0.912*	*-5.792*	*0.341*	0.197	*0.819*	*-5.792*	*0.341*
Building maintenance	-0.302	*0.740*	*-1.743*	*0.750*	-0.079	*1.153*	*-3.622*	*0.750*	0.255	*0.837*	*-2.082*	*0.750*
Structural integrity	-0.796	*1.964*	*-5.629*	*0.375*	0.092	*0.832*	*-3.811*	*0.375*	0.258	*0.415*	*-1.992*	*0.375*
Basic facilities	-0.253	*0.847*	*-2.075*	*1.059*	-0.096	*0.932*	*-2.075*	*1.059*	0.207	*1.050*	*-2.075*	*2.042*
Teaching and learning materials	-0.849	*0.888*	*-2.793*	*1.162*	-0.061	*0.950*	*-2.489*	*1.667*	0.401	*0.938*	*-1.983*	*1.667*
Student learning outcome index	-1.219	*1.120*	*-3.198*	*0.962*	-0.113	*0.927*	*-3.067*	*0.962*	0.534	*0.613*	*-1.797*	*0.962*
Total student enrolment	110	*105*	*20*	*509*	171	*201*	*12*	*1160*	354	*555*	*46*	*3084*
Share of very poor students	0.164	*0.115*	*0.000*	*0.429*	0.163	*0.118*	*0.000*	*0.681*	0.132	*0.093*	*0.000*	*0.491*
Total number of schools	20				63				64			

Regression Analysis

To formally test the predictive power of our composite indices, we conducted Ordinary Least Squares (OLS) regression analyses with the Student Learning Outcome Index as the dependent variable. Table 9.1 presents the results of two regression specifications, progressively incorporating different school quality measures and controls.

Model 1 examines the relationship between student learning outcomes and two primary input measures: Teaching Quality Index and School Infrastructure, Service Facilities, and Learning Materials Index. Both indices show statistically significant associations with learning outcomes. A one standard deviation increase in the Teaching Quality Index is associated with a 0.37 standard deviation improvement in learning outcomes ($p < 0.01$), while a similar increase in the Infrastructure Index corresponds to a 0.20 standard deviation improvement ($p < 0.05$). As expected, teaching quality demonstrates a stronger relationship with learning outcomes compared to infrastructure and facilities.

Model 2 introduces the School Leadership and Management Quality Index, revealing a striking pattern. The inclusion of this variable substantially changes the results: the coefficient on school leadership is large (0.740) and highly significant ($p < 0.01$), while the previously significant effects of teaching quality and infrastructure become much less statistically significant and their magnitudes diminish considerably. This pattern aligns with extensive research on school leadership effects (Hallinger & Heck, 2010; Day et al., 2016), which demonstrates how effective leadership influences student achievement both directly and indirectly through its impact on teaching quality and school organization. Our findings provide empirical validation in the Thai context that school leadership may be a fundamental driver of both teaching quality and infrastructure quality, operating as a key underlying determinant of overall school effectiveness.

Table 9.1. OLS Regression Results

	Model 1	Model 2	Model 3	Model 4
School leadership and management quality index		0.740***		0.704***
		(0.076)		(0.076)
Teaching quality index	0.368***	0.042	0.340***	0.041
	(0.088)	(0.077)	(0.086)	(0.075)
School infrastructure, service facilities, and learning materials index	0.202**	0.127*	0.130	0.088
	(0.096)	(0.075)	(0.095)	(0.076)
Share of very poor students			-2.269***	-1.320**
			(0.662)	(0.535)
Intercept	0.027	0.001	0.295***	0.158*
	(0.080)	(0.063)	(0.110)	(0.089)
Observations	147	147	147	147
R-squared	0.170	0.501	0.233	0.521

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Student learning outcome index

These findings align with the broader school effectiveness literature, which consistently identifies strong leadership as a fundamental driver of school performance. Our results provide empirical validation that the factors emphasized in international research - including leadership quality, teaching effectiveness, and supportive infrastructure - are indeed crucial in the Thai context. The

particularly strong relationship between leadership quality and student outcomes (increasing model fit from $R^2 = 0.170$ to 0.501) mirrors findings from school effectiveness studies showing how leadership influences student achievement both directly and through its impact on teaching quality and school climate.

Models 3 and 4 test the robustness of these relationships by controlling for student socioeconomic background, measured by the share of very poor students in each school. While the inclusion of this control variable does not materially alter the coefficient on teaching quality, it reduces both the magnitude and statistical significance of the infrastructure index coefficient. Notably, the share of very poor students shows a significant negative association with learning outcomes ($p < 0.01$ in Model 3; $p < 0.05$ in Model 4), while the pattern of relationships among the school quality indices remains stable.

The explanatory power of the models increases substantially with the inclusion of the leadership index, with R-squared rising from 0.170 in Model 1 to 0.501 in Model 2. This dramatic improvement in model fit suggests that school leadership and management quality plays a crucial role in explaining variations in student learning outcomes. The addition of socioeconomic background further improves the model's explanatory power, with R-squared reaching 0.521 in the full specification (Model 4).

These regression results provide strong validation for our FSQL instrument in two ways. First, they confirm that our composite indices significantly predict student learning outcomes. Second, they reveal the central importance of school leadership, suggesting that the FSQL's comprehensive measurement of leadership and management practices captures a crucial dimension of school quality. Furthermore, the stability of these relationships after controlling for student socioeconomic background strengthens confidence in the robustness of these findings.

Conclusion

This report presents a comprehensive validation analysis of the revised Fundamental School Quality Level (FSQL) instrument for Thailand. The findings provide strong evidence for both the technical validity and practical utility of the instrument in measuring and monitoring school quality.

Our validation exercise yielded several key findings that support the instrument's effectiveness:

First, the dimensional analysis of the FSQL items demonstrated clear and interpretable structures. Through Principal Component Analysis, we successfully constructed three main composite indices measuring distinct aspects of school quality:

- The School Leadership Index showed exceptional internal consistency (Cronbach's alpha = 0.96), emerging as a unidimensional construct that explains 60 percent of the variance in leadership quality measures
- The Teaching Quality Index, comprising classroom teaching effectiveness and teacher professional capacity dimensions, captured both observed classroom practices and teacher qualifications
- The School Infrastructure Index, though more complex in structure, effectively synthesized eight distinct sub-indices covering various aspects of school facilities and learning materials

Second, the cluster analysis provided compelling evidence of the indices' discriminatory power. The k-means clustering algorithm, using only the three main input quality indices, successfully identified meaningful groups of schools that differ not only in their input measures but also in student learning outcomes. Importantly, these clusters revealed systematic patterns of educational inequality: disadvantaged schools, characterized by consistently lower scores across all quality measures, tend to be much smaller and serve higher proportions of very poor students.

Third, the regression analysis demonstrated the predictive validity of our composite indices, particularly highlighting the fundamental role of school leadership. While teaching quality and infrastructure showed significant associations with student learning outcomes when considered alone, the inclusion of the leadership index dramatically improved model fit (R-squared increasing from 0.170 to 0.501). After controlling for student socioeconomic background, the model's explanatory power further improved to 0.521, while the pattern of relationships remained stable. These findings suggest that effective school leadership may be a key underlying driver of both teaching quality and infrastructure management, even after accounting for students' economic circumstances.

Several limitations of the current study should be noted. The response rate in Ratchaburi province, while providing adequate coverage for analysis, fell short of our initial target of 90 percent. Additionally, some composite measures, particularly in the infrastructure domain, showed relatively modest internal consistency, suggesting potential areas for further refinement.

Despite these limitations, the validation results support several important conclusions about the FSQL instrument:

1. **Measurement Validity**: The instrument effectively captures meaningful variations in school quality through its composite indices. The clear dimensional structure and strong

internal consistency of most measures suggest that the FSQL items are measuring their intended constructs reliably.

2. **Discriminatory Power**: The indices successfully differentiate between schools of varying quality levels, providing a useful tool for identifying schools that may need additional support or resources.

3. **Predictive Utility**: The significant relationships between our measured indices and learning outcomes validate the instrument's focus on measuring these key aspects of school quality. The model's substantial explanatory power supports the FSQL's effectiveness in capturing meaningful determinants of educational quality.

4. **Leadership Focus**: The emergence of school leadership as a crucial predictor of learning outcomes (increasing model fit from $R^2 = 0.170$ to 0.501) suggests that the instrument's comprehensive coverage of leadership practices is particularly valuable.

Looking forward, these findings have important implications for educational policy and practice in Thailand:

1. The FSQL instrument can serve as an effective tool for monitoring school quality and identifying schools in need of support, particularly in terms of leadership development, teaching quality improvement, and infrastructure enhancement.

2. The strong predictive power of the leadership index suggests that investing in school leadership development might be a particularly effective strategy for improving overall school quality.

3. The systematic patterns of disadvantage revealed by the cluster analysis highlight the need for targeted interventions to support smaller schools serving disadvantaged populations.

4. The more objective approach to measuring teaching quality through classroom observations, rather than self-reporting, provides a more reliable basis for identifying professional development needs.

Future considerations for the FSQL instrument warrant careful attention. While our validation results demonstrate that the instrument can be effectively operationalized nationwide, several key implementation challenges and considerations must be addressed.

The comprehensiveness of the current FSQL instrument reflects careful consideration of trade-offs between thoroughness and practicality. A lighter-touch screening tool might identify struggling schools more quickly, but our validation analysis demonstrates that the detailed assessment across multiple domains provides crucial insights for effective intervention. The relationship between school leadership, teaching quality, and student outcomes, for instance, might not be captured by a simpler instrument.

Nevertheless, the implementation strategy could incorporate a tiered approach:

- Initial screening using key indicators to identify schools needing urgent attention
- Prioritization of full FSQL assessment for these identified schools
- Phased implementation across regions to manage resource requirements

- Integration with existing school inspection cycles where possible

This approach would help balance the need for comprehensive assessment with practical resource constraints while maintaining the validated effectiveness of the FSQL instrument.

The key implementation challenges that need to be addressed include:

1. Implementation Costs and Complexity

- The revised instrument, while more comprehensive than the 2022 pilot version, requires greater investment of time, effort, and resources
- The infrastructure and service facilities assessment items are particularly demanding for schools to evaluate thoroughly
- Classroom teaching practice assessment requires significant time investment and specialized training for enumerators by expert observers

2. Operational Refinements

- Achieving higher response rates through enhanced training and support
- Further refinement of infrastructure measures to improve their internal consistency
- Development of a more comprehensive verification process for school-reported data
- Integration with existing school quality monitoring systems

3. Governance Considerations

- Clear delineation of which quality indicators fall under school-level versus district/central-level control
- Recognition that school leaders' autonomy levels will affect implementation effectiveness
- Need for coordination between school-level and higher administrative decisions
- Alignment of FSQL assessment with existing resource allocation mechanisms

4. Institutional Support

- Successful nationwide implementation will require strong and sustained support from the Ministry of Education
- Long-term commitment to resource allocation for training, monitoring, and data verification
- Integration of FSQL monitoring into existing educational quality assurance frameworks

In conclusion, the revised FSQL instrument demonstrates strong potential as a tool for monitoring and improving school quality in Thailand. Its ability to identify meaningful patterns of school quality and predict student learning outcomes makes it a valuable resource for policymakers seeking to address educational inequities through evidence-based resource allocation decisions. However, realizing this potential at a national scale will require careful consideration of implementation challenges and sustained institutional commitment to support the more comprehensive assessment approach.

References

Attfield, I. and Vu, B.T., 2012. A rising tide of primary school standards—The role of data systems in improving equitable access for all to quality education in Vietnam. International Journal of Educational Development. doi:10.1016/j.ijedudev.2012.02.003.

Chapman, C. and Sammons, P., 2013. School self-evaluation for school improvement: What works and why? Reading: CfBT Education Trust.

Day, C., Gu, Q. and Sammons, P., 2016. The impact of leadership on student outcomes: How successful school leaders use transformational and instructional strategies to make a difference. Educational Administration Quarterly, 52(2), pp.221-258.

Education Scotland, 2015. How good is our school? 4th ed. Livingston: Education Scotland.

European Commission, 2018. Quality assurance for school development: Guiding principles for policy development on quality assurance in school education. Brussels: Directorate-General for Education, Youth, Sport and Culture.

Hallinger, P. and Heck, R.H., 2010. Collaborative leadership and school improvement: Understanding the impact on school capacity and student learning. School Leadership & Management, 30(2), pp.95-110.

Leithwood, K., Harris, A. and Hopkins, D., 2020. Seven strong claims about successful school leadership revisited. School Leadership & Management, 40(1), pp.5-22.

Office of the National Education Commission, 2002. National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002)). Bangkok: Office of the Prime Minister, Kingdom of Thailand.

Reynolds, D., Sammons, P., De Fraine, B., Van Damme, J., Townsend, T., Teddlie, C. and Stringfield, S., 2014. Educational effectiveness research (EER): A state-of-the-art review. School Effectiveness and School Improvement, 25(2), pp.197-230.

Tangkitvanich, S. and Sasiwuttiwat, S., 2012. Revamping the Thai education system: Quality for all. TDRI Quarterly, 27(2), pp.1-20.

World Bank, 2020. Thailand: Advice on narrowing the learning gaps between schools. Washington DC: World Bank.

World Bank, 2011. Vietnam: High quality education for all by 2020. Washington DC: World Bank. Available at: http://hdl.handle.net/10986/27450 [Accessed 7 January 2025].

Annex: Framework of Fundamental School Quality Level in Managing Quality Education

The revised FSQL standard consists of four dimensions including Standard 1: School Leadership; Standard 2: Learning Outcomes; Standard 3: Teaching Quality; and Standard 4: School Infrastructure Service Facilities, and Learning Materials. Each standard encompasses the following sub-topics:

- Standard 1: School Leadership
    - Topic 1: Leadership and management
    - Topic 2: Education Quality Monitoring and Evaluation Mechanisms
    - Topic 3: Resource (Human, Financial, and Technical) Management and Development
    - Topic 4: Supporting school members and students for developing student quality and student welfare

- Standard 2: Learning Outcomes
    - Topic 1: Student's Learning Outcomes

- Standard 3: Teaching Quality
    - Topic 1: Teacher Quality, Qualification and Professional Development
    - Topic 2: Learning Management

- Standard 4: School Infrastructure Service Facilities, and Learning Materials
    - Topic 1: School Accessibility
    - Topic 2: Adequate Learning Space
    - Topic 3: Safety and Health, including Equal Access to Services
    - Topic 4: Learning Materials and Learning Tools

Standard 1: School Leadership

This standard refers to the leadership of school administrators and the management within the school. It encompasses the monitoring of educational quality, the mechanisms for evaluation, and the management and development of resources (including human resources, financial resources, and academic resources). Additionally, it covers the support and care provided to students.

Topic 1.1: Leadership and Management

Description: This consideration addresses the establishment of the organizational structure, vision, mission, goals, and student identity. It involves the annual operational plan and management processes in formulating the school's operational plan, implementing the plan, and monitoring and evaluating the school's performance with stakeholders (teachers, parents, legal representatives, and community stakeholders) by the school administrators.

Indicator 1: The administrator defines the vision, mission, goals, and annual operational plan.

Type of Indicator Process

Supporting Evidence of Implementation:

1. School development plan/strategic plan outlining the vision, mission, goals, and student identity.
2. Official directives assigning tasks according to the organizational structure, the annual operational plan, and designated responsible individuals clearly aligned with the mission.
3. Annual performance report.

Scoring Criteria

1	2	3	4	5
- The school does not have an official organizational structure, nor does it have written guidelines and manuals. - The school has not developed or does not use a vision, mission, and goals to guide its direction. - The school lacks a clear operational plan.	- The school lacks an official organizational structure and does not have formal guidelines and manuals. - While the school has a vision, mission, and goals to guide its direction, it does not prioritize the development of competencies among teachers, staff, and students. - The school has an annual operational plan, but it lacks	- The school has a formal organizational structure with documented guidelines and manuals. However, communication with teachers, staff, and stakeholders is lacking or not effectively carried out in a visible and clear manner. - The school has a vision, mission, and goals aimed at developing the competencies of teachers, staff,	- The school has a formal organizational structure with documented guidelines and manuals. However, communication with teachers, staff, and stakeholders is not effectively carried out in a visible and clear manner. - The school has a clear vision, mission, and goals aimed at developing the competencies of teachers, staff,	- The school has an official organizational structure with documented manuals and guidelines for teachers and staff, promoting mutual understanding and effective communication among all stakeholders. These documents are prominently displayed in public areas for clarity and accessibility. - The school's vision, mission, and goals focus on developing the competencies of teachers, staff, and

1	2	3	4	5
	detailed operational procedures. - Teachers and staff are aware of their roles and responsibilities, but there may be overlaps in their duties due to unclear operational plans or ineffective communication.	and students as a primary focus. - There is a clear operational plan in place with defined timelines and budget allocations. - Teachers and staff are well-informed about their roles and responsibilities, ensuring successful execution of their duties.	and students as a primary focus. - There is a well-defined operational plan that includes timelines, budget allocations, and clearly specifies responsible parties. - Teachers and staff are well-informed about their roles and responsibilities, ensuring successful execution of their duties. - The school's vision, mission, and goals are clearly defined and align with the direction mandated and/or approved by the government and/or relevant authorities.	students as the core priority. - There is a clear operational plan in place with defined timelines and budget allocations, including both allocated and additional fundraising budgets. - Teachers and staff are well-informed about their roles and responsibilities, ensuring successful execution of their duties. - The school's vision, mission, and goals are inspiring and adaptable to changing circumstances, aligning with the local community's objectives and those mandated by relevant authorities. - The school's vision, mission, and goals aim to enhance academic capabilities of students, teachers, and staff, fostering overall growth of the school and

1	2	3	4	5
				community, with measurable outcomes.

Indicator 2: School administrators use participatory management processes in developing operational plans, school development plans, and monitoring and evaluating school performance with stakeholders (teachers, parents/guardians, representatives, and community members).

Type of Indicator Process

Supporting Evidence for Consideration:

1. Reports from meetings with parent associations, teachers, students, and community leaders.
2. Annual operational performance reports / Self-Assessment Reports (SAR).
3. Other relevant documents demonstrating evidence.

Scoring Criteria

1	2	3	4	5
The administrators have not yet organized joint meetings involving stakeholders both internally and externally to plan the development of operational plans, school development plans, and annual operational plans. Currently, planning discussions occur on an individual basis	The administrators schedule and conduct joint meetings with teachers, school personnel, and parents/guardians at least once a year.	The administrators schedule and conduct joint meetings with all relevant internal and external parties involved in school development, ensuring compliance with regulations set forth by the overseeing authority, at least once a year.	The school administrators schedule and conduct joint meetings with all relevant internal and external stakeholders involved in school development to plan the preparation of operational plans, development plans, and annual operational plans in accordance with the established plans.	- The school administrators schedule and conduct joint meetings with all relevant internal and external stakeholders involved in school development to plan the preparation of operational plans, development plans, and annual operational plans. - They establish meeting agendas, operational plans, and meeting reports to be used for tracking progress according

1	2	3	4	5
through conversations.				to the established plans.

Topic 1.2: Education Quality Monitoring and Evaluation Mechanisms

Description: This refers to the issue of monitoring and evaluating the quality of schools, including improving school management. It involves the use of educational data and information to enhance school quality and management.

Indicator 3: School Management Builds Relationships with Stakeholders through Community Engagement Activities to Enhance Student Development and School Improvement

Type of Indicator: Process

Evidence for Consideration:

1. School Development Plan and Action Plan for School Improvement with Community, Parents, and Students' Involvement (Internal Self-Assessment Report (SAR) Parts 1 and 3)
2. Records of Activities or Project Plans
3. Budgetary Evidence Supported or Documentation of Expenditures

Scoring Criteria

1	2	3	4	5
- The school administrators prioritize activities within the school and involvement of stakeholders within the school only. - School administrators do not participate in activities with the community. - There are no significant joint activities between the school and the	- School administrators have relationships or participate in activities with the community or stakeholders within the community to some extent. - School administrators visit the community in informal capacities and engage in occasional	- School administrators have good relationships with the community and relevant stakeholders by regularly organizing/participating in activities that generate mutual benefits, at least once per academic term. - School administrators regularly visit the community	- School administrators have a strong relationship with the community and relevant stakeholders by regularly collaborating to create and organize activities that generate mutual benefits and/or support academic activities, at least twice per academic term.	- School administrators have a strong relationship with the community and relevant stakeholders by jointly creating and organizing activities that generate mutual benefits and/or support both academic and non-academic activities, at least twice per academic term. - School administrators

1	2	3	4	5
community or external stakeholders.	activities with the community. - The school and the community or stakeholders within the community have occasional joint activities together.	in both formal and informal capacities. - The school and the community or stakeholders within the community have joint activities that benefit the short-term development of students or school improvement (e.g., forest conservation activities, student dance performances).	- School administrators regularly visit the community in both formal and informal capacities and engage in activities with the community. - The school and the community or stakeholders within the community have joint activities that contribute to the long-term development of students or school improvement.	visit the community in both formal and informal capacities and engage in activities with community members, regularly scheduling meetings with community leaders. - School administrators facilitate community access and convenience, even outside of regular working hours. - The school and the community or stakeholders within the community have ongoing joint activities that contribute to the sustainable long-term development and improvement of students and the school.

Indicator 4: School Management Processes for Monitoring and Continuous Improvement of School Quality

Type of Indicator: Process

Supporting Evidence for Consideration:

1. School development plan - monitoring and evaluation section.
2. Annual operational plan of the school / Self-Assessment Report (SAR) findings.

3. Other supporting documents (relevant sections only).

Scoring Criteria

1	2	3	4	5
The school administrators do not establish a committee or team to monitor the school's performance. or The school administrators do not have systematic performance monitoring and evaluation in place.	A committee has been appointed to monitor and evaluate the school's operations. and The school administrators regularly monitor and evaluate the academic service and other work of the school. However, the evaluation criteria used do not adequately reflect the level of development.	A committee has been appointed to monitor and evaluate the school's operations. and The school administrators regularly monitor and evaluate the academic service and other work of the school. They use evaluation criteria that reflect the level of development in the quality of work.	A committee has been appointed to monitor and evaluate the school's operations. and The school administrators monitor and evaluate the academic service and other work of the school. They integrate these evaluations to align with the learning standards and use evaluation criteria that reflect the level of development in the quality of work.	A committee has been appointed to monitor and evaluate the school's operations.and The school administrators monitor and evaluate the academic service and other work of the school. They integrate these evaluations to align with the learning standards and use evaluation criteria that reflect the level of development in the quality of work.

Indicator 5: School Management Utilizes Educational Information and Data for the Development of Educational Quality

Type of Indicator: Process

Evidence for Consideration:

1. Reports linking operational activities with school information systems such as EMIS, MIS, and DMC.
2. Evidence of using data from information systems for the development of school quality.

Scoring Criteria

1	2	3	4	5
The school management utilizes information technology systems but has not updated them to current standards.	- The school management utilizes information technology systems. - The data in the system is regularly updated to current standards, but it has not yet been used for monitoring job performance or for developing operational plans.	- The school management utilizes information technology systems. - The data in the system is regularly updated to current standards and is used for monitoring job performance or for developing operational plans.	- The school management utilizes information technology systems. - The data in the system is regularly updated to current standards and is used for monitoring job performance or for developing operational plans that specify action plans and expected outcomes.	- The school management utilizes information technology systems. - The data in the system is regularly updated to current standards and is used for monitoring job performance or for developing operational plans that specify action plans and expected outcomes. - The outcomes obtained are used as input data for planning operations to improve or amend performance outcomes for the next academic year.

Topic 1.3: Resource (Human, Financial, and Technical) Management and Development

Description: This refers to promoting and supporting the development of capacities among teachers by using annual operational performance results to enhance the school's resource quality. It encourages teachers to build learning management networks both within and outside the school, efficiently mobilize resources, manage budgets and finances effectively, and support teachers in utilizing internal and external learning resources efficiently.

Indicator 6: School administrators utilize operational performance assessment results from annual operational plans to improve or develop the school's resource quality.

Type of Indicator: Process

Supporting Evidence for Consideration:

1. Operational performance report according to the annual operational plan.
2. Evidence of using internal and external evaluation results to enhance the school's resource quality. (Specifically related sections)

Scoring Criteria

1	2	3	4	5
The administrators have not yet utilized the benefits from internal or external quality assessments to develop quality.	The administrators use the results from internal (SAR) and external assessments to develop quality in at least one aspect of resources.	The administrators utilize the results from both internal (SAR) and external assessments comprehensively to develop all aspects of resources.	The administrators utilize the results from both internal (SAR) and external assessments comprehensively to develop all aspects of resources. They also use the assessment outcomes to adjust the school's operational plans or action plans, as well as to modify budgets accordingly in relevant areas.	- The administrators utilize the results from both internal (SAR) and external assessments comprehensively to develop all aspects of resources. - They use the assessment outcomes to adjust the school's operational plans or action plans, as well as to modify budgets accordingly in relevant areas. - The administrators implement lessons learned from the improvements seen and translate them into best practices. - There is dissemination of SAR results to the public.

Indicator 7: School administrators have personal development plans. Teachers have development plans in learning management (teaching, use of media and learning resources, assessment, and classroom management).

Type of Indicator: Process

Evidence for Consideration:

1. School development plans include administrators' and teachers' quality development plans.
2. Quality cycle PDCA operation system and mechanism.
3. Teaching consultation schedule, consultation criteria, or documents specifying criteria for measurement.
4. Records/evidence of participation in PLC activities.
5. Evidence of participation in training and self-development in learning management.

Scoring Criteria

1	2	3	4	5
- There are plans and implementations according to the plan for developing administrators. - There are plans and implementations according to the plan for developing teachers in learning management. - There are methods to promote learning management, such as external mentoring and participation in seminars/networking/self-learning.	- There are plans and implementations according to the plan for developing administrators. - There are plans and implementations according to the plan for developing teachers in learning management. - There are methods to promote learning management, including both internal and external mentoring	- There are plans and implementations according to the plan for developing administrators. - There are plans and implementations according to the plan for developing teachers in learning management. - There are methods to promote learning management, including both internal and external mentoring	- There are plans and implementations according to the plan for developing administrators. - There are plans and implementations according to the plan for developing teachers in learning management. - There are methods to promote learning management, including both internal and external mentoring	- There are plans and implementations according to the plan for developing administrators. - There are plans and implementations according to the plan for developing teachers in learning management. - There are methods to promote learning management, including both internal and external mentoring

1	2	3	4	5
	systems, as well as participation in seminars, networking activities, or self-learning.	systems, as well as participation in seminars, networking activities, or self-learning, with at least two methods implemented.	systems, as well as participation in seminars, networking activities, or self-learning, with at least 3 methods implemented.	systems, as well as participation in seminars, networking activities, and self-learning, covering all methods.

Indicator 8: School administrators promote and support teachers to use their learning skills to foster collaboration both within and between schools, aiming to enhance the value of teaching outcomes and promote teaching and learning for the development of school performance and student learning outcomes.

Type of Indicator: Process

Evidence for Consideration:

1. School development plan on collaboration projects and budget plans.
2. Project reports and post-project reports.
3. Student learning outcomes reports (SAR Part 2) and academic performance progress reports and non-academic progress reports.

Scoring Criteria

1	2	3	4	5
- School administrators allow teachers freedom to implement teaching guidelines in the classroom. - The administrators do not yet have plans or collaborative	- School administrators provide guidelines and verbal advice on teaching methods collectively to teachers. - Administrators develop collaborative teaching plans in key subjects	- School administrators provide support and encouragement to teachers in working collaboratively with other teachers in the same subject area to enhance student learning outcomes and teaching quality.	- School administrators establish systems and support teachers to collaborate within the same grade level and across different levels in both academic and non-academic activities. - Administrators develop joint work plans for	- School administrators establish work systems and support teachers to foster collaboration within the school and across network schools to enhance student learning outcomes and create a professional

1	2	3	4	5
teaching projects. - The administrators do not yet have a network of external communities or partnerships that can work together.	such as Mathematics, Science, and English to enhance specific academic scores. - Administrators initiate an academic sharing project within the school and establish at least one external partner to collaborate with.	- Administrators develop collaborative teaching plans in key subjects such as Mathematics, Science, and English, as well as extracurricular activities that contribute to the development of students' personalities and skills. - Administrators initiate an academic sharing project within the school and among network schools, and establish at least two external partners to collaborate on projects.	interdisciplinary teaching and extracurricular activities that contribute to the development of students' personalities and skills on a regular basis. - They initiate projects for academic sharing and resource sharing with network schools to foster local development, and collaborate with at least three types of external partners such as other schools, institutes, local communities, and private sectors.	learning community. - Administrators develop joint work plans for interdisciplinary teaching among subjects, curricula, and schools, incorporating supplementary activities that aid in the development of students' personalities and skills on a regular basis. - They initiate projects for academic sharing and resource sharing with network schools to foster local and national development, and collaborate with at least four types of external partners such as other schools, institutes, local communities, and private sectors to work together with schools.

Indicator 9: School administrators support teachers in designing and implementing quality learning management that focuses on student-centered approaches.

Type of Indicator: Outputs

Evidence for Consideration:

1. School academic development plan emphasizing quality and student-centered learning management approaches.
2. Learning management plan approved by administrators (with samples attached).
3. Teaching guidance records (with samples attached).

Scoring Criteria

1	2	3	4	5
Less than 25% of teachers receive support and utilize learner-centered teaching and management guidelines.	Between 25% and 50% of teachers receive support and utilize learner-centered teaching and management guidelines.	Between 50% and less than 75% of all teachers receive support and use learner-centered teaching and management guidelines in their own classrooms.	At least 75% but less than 100% of all teachers receive support and use learner-centered teaching and management guidelines in their own classrooms.	All teachers receive support and use learner-centered teaching and management guidelines in their own classrooms,

Indicator 10: School administrators promote and support teachers in utilizing learning resources effectively both internally and externally.

Type of Indicator: Evidence for Consideration

1. Learning Resource Registry
2. School Development Plan
3. Learning Management Plan with evidence of resource utilization and reports on learning resource usage (sample attached)
4. Student Learning Outcomes (sample attached)

Scoring Criteria

1	2	3	4	5
More than 50% of teachers do not use learning resources in their teaching practices.	More than 50% of teachers predominantly use internal learning resources in their teaching practices.	- All teachers use internal learning resources in their teaching practices. - More than 50% of teachers use external learning	- All teachers use internal learning resources in their teaching practices. - More than 75% of teachers use external learning	All teachers in the school use both internal and external learning resources in their teaching practices.

1	2	3	4	5
		resources in their teaching practices.	resources in their teaching practices.	

Indicator 11: School administrators seek funding and mobilize resources to enhance the quality of learning and improve school operational outcomes.

Type of Indicator: Process

Evidence for Consideration:

1. School development plan with budget/financial allocation for the past 3 years.
2. Budget expenditure report (SAR Part 1 and/or Part 3).
3. Minutes of meetings on budget allocation and expenditure.

Scoring Criteria

1	2	3	4	5
Administrators prepare budget plans according to the previous fiscal years' budget.	School administrators use information from EMIS or other information systems to develop budget plans, including budgets for personnel recruitment and acquiring technology for use in the school.	School administrators utilize data from EMIS or other information systems to develop budget plans, including budgets for personnel recruitment and acquiring technology for use in the school. They also provide opportunities for teachers to participate in budget planning.	- School administrators use data from EMIS or other information systems to develop budget plans, including budgets for personnel recruitment and acquiring technology for use in the school. They also provide opportunities for teachers to participate in budget planning. - Administrators utilize analysis from the school's information	- School administrators utilize data from EMIS or other information systems to develop budget plans, including budgets for personnel recruitment and acquiring technology for use in the school. They also involve teachers in the budget planning process. - Administrators use the results of data analysis from the school's information system to allocate resources

1	2	3	4	5
			system to allocate resources relevant to the budget.	relevant to the budget.
Administrators manage the budget strictly according to the allocated funds they receive.	Administrators manage the budget strictly in accordance with the allocated funds they receive.	Administrators can raise additional funds from external stakeholders using traditional methods (without specific plans, responsible parties, activities, or sustainable fundraising initiatives in place).	Administrators can raise additional funds from external stakeholders using traditional methods, although currently lacking specific plans, responsible parties, activities, or sustainable fundraising initiatives to ensure effective fundraising.	- School administrators have a clear plan to procure external funding. - There are appointed individuals responsible for fundraising or seeking external funding, including tasks related to cultivating relationships with external funding sources. - They can acquire additional funding from external stakeholders through sustainable methods, such as organizing projects or activities that have a positive impact on the community.

Topic 1.4: Supporting school members and students to enhance student quality and welfare.

Description: This indicator addresses how school administrators develop the quality and welfare of students using internal and external quality assessment results and school information system data (such as EMIS, School MIS, DMC). Administrators promote and support the participation of stakeholders (teachers, parents/guardians, community representatives) in enhancing student quality, providing guidance on further education and career paths, establishing support systems for all students (regular, at-risk, and those with difficulties), and creating a friendly school environment to prevent conflicts, sexual harassment, and bullying.

Indicator 12: School administrators utilize internal and external quality assessment results and school information system data to promote students' skills and welfare.

Type of Indicator: Process

Evidence for Consideration:

1. School records spanning 3 to 5 years.
2. Annual operational reports aligned with SAR.
3. Internal and external quality assessment results, specifically relevant documents (pertaining sections).
4. Projects aligned with the annual operational or development plan as per SAR.
5. Analysis of data from school information systems such as EMIS, School MIS, DMC.

Scoring Criteria

1	2	3	4	5
School administrators have not yet integrated data and have not utilized it to develop student competencies and welfare.	- Administrators use only partial data from a single source, such as internal or external quality assessments, or the school's information system. - The results of data analysis have not yet been utilized to formulate	- Administrators integrate and analyze data from multiple sources, including both internal and external quality assessments, as well as the school's information systems. - The results of data analysis are used to	- Administrators integrate and analyze data from multiple sources, including both internal and external quality assessments, as well as the school's information systems. - The results of data analysis are used to formulate policies, operational plans,	- Administrators integrate and analyze data from multiple sources, including both internal and external quality assessments, as well as the school's information systems. - The results of data analysis are used to formulate

1	2	3	4	5
	policies, operational plans, or projects aimed at improving students' competencies and school efficiency.	formulate policies, operational plans, or projects aimed at improving students' competencies and school efficiency. However, these efforts have not yet directly impacted the students' overall efficiency or competencies.	or projects aimed at improving students' competencies and school efficiency. These efforts have shown direct impacts on students' overall efficiency and competencies.	policies, operational plans, or projects aimed at improving students' competencies and school efficiency. These efforts have directly impacted students' overall efficiency and competencies. - Administrators have seen tangible results from the policies, operational plans, or projects implemented. They use these outcomes as input for planning and developing projects in the next academic year, aiming for even higher-quality outcomes.

Indicator 13: School administrators support teachers in developing content and teaching materials for students' further education and future careers.

Type of Indicator: Process

Supporting Evidence for Consideration:

1. School development plan and student development plan.
2. Consultation schedules or teaching plans of advisory teachers or specialists.
3. Student progress reports.

Scoring Criteria

1	2	3	4	5
- School administrators emphasize the importance of career guidance for students' future, but it remains mostly verbal without concrete actions. - The school lacks dedicated career counselors who can provide educational guidance and/or career advice to students. - There are no activities in place at the school to promote or provide counseling to students regarding their careers.	- School administrators have a policy for teachers to develop content and materials as part of the guidance curriculum for students. - The school has teachers assigned to career counseling duties; however, these teachers do not yet possess specialized expertise in this area. - The school organizes career guidance activities for students based on the requirements of external networks or authorized agencies.	- School administrators have policies and guidelines for teachers to develop content and learning materials that expose students to opportunities for higher education or career pathways (for schools expanding opportunities). - The school has teachers assigned to career counseling duties; however, these teachers do not yet possess specialized expertise in this area. - The school organizes career guidance activities for students at least once per year, beyond the requirements of external networks or authorized agencies.	- School administrators have policies and guidelines for teachers to develop content and learning materials suitable for providing individualized counseling to students, thereby showcasing opportunities for higher education or career paths (for schools expanding opportunities). - The school has teachers assigned to career counseling duties; however, these teachers do not yet possess specialized expertise in this area. - The school has scheduled activities and assigns teachers to conduct career guidance sessions for students regularly (at least once per semester), with clear objectives	- School administrators have policies and guidelines for teachers to develop content and learning materials that are suitable for providing individualized counseling to students, thereby highlighting opportunities for higher education or career paths (for schools expanding opportunities). - The school has teachers assigned to career counseling duties who specialize in this area. - The school has scheduled activities and assigns teachers to conduct regular career guidance sessions for students, with clearly defined outcomes for these activities. - The school employs various methods for

1	2	3	4	5
			defined for the outcomes of these activities.	career guidance, such as organizing activities where external networks and experts play a role in counseling students. - The school actively promotes or supports students in gaining external experiences for further education and/or career development.

Indicator 14: School administrators establish a system to care for and support students, including both high-achieving students and those in vulnerable groups.

Type of Indicator: Process and Outputs

Supporting Evidence for Consideration:

1. Processes or operations demonstrating the student support system.
2. Student reports.

Scoring Criteria

1	2	3	4	5
It's unfair that good students receive no support.	Students in good study groups receive less than 50% support.	Students who excel academically, ranging from at least 50% to less than 75%, receive support	Students who excel academically, ranging from at least 75% to less than 100%, receive support.	All students in the good study group receive support.
The students in vulnerable	Students in vulnerable	Students in vulnerable	Students in vulnerable	Students in vulnerable groups

1	2	3	4	5
groups receive less than 50% support.	groups receive support ranging from at least 50% to less than 100%.	groups receive full 100% support.	groups receive full 100% support.	receive full 100% support.
- Administrators provide assistance to students in vulnerable groups only within the allocated budget. - Administrators provide support to students in a manner where responsibilities are not clearly defined and there is no involvement with fair representation or relevant stakeholders such as families or impartial representatives.	- Administrators provide assistance to students in vulnerable groups only within the allocated budget. - Administrators operate by assisting students in a manner where teachers are designated as responsible parties, but there is no involvement with families, impartial representatives, or relevant stakeholders.	- Administrators provide assistance to students of all groups within the allocated budget. - Administrators involve families, fair representatives, and relevant stakeholders periodically in supporting students as needed, depending on issues and circumstances.	- Administrators provide assistance to students of all groups within the allocated budget and additional funds secured through fundraising. - Administrators involve families, fair representatives, and relevant stakeholders, as well as teachers, in addressing student issues and providing support to the extent resources allow.	- Administrators analyze student data, identify needs, and seek and raise funds to support individual students. - Administrators provide assistance to students of all groups within the allocated budget and additional funds secured through fundraising. - Administrators establish a system of care and support for students that involves families, fair representatives, relevant stakeholders, and experts to support each student individually.

Indicator 15: The school administration has a policy to protect students from physical, emotional, and psychological harm, such as verbal and physical abuse, inappropriate behavior, and other dangers within the school.

Type of Indicator: Process

Evidence for Consideration:

1. School development plan and student development plan

2. Records of mechanisms to support student learning and well-being
3. Memorandum of Understanding (MOU) or cooperation agreements with external stakeholders

Scoring Criteria

1	2	3	4	5
- There is a systematized plan for supporting and assisting students. - There are appointed individuals responsible for overseeing this plan. - There are measures or methods in place to create a respectful atmosphere within the school, prevent conflicts, and address issues of sexual harassment and bullying.	- Implemented actions according to point 1. - Conduct individual home visits for students. - Have methods for monitoring to prevent conflicts, sexual harassment, and bullying within the school.	- Implemented actions according to points 1 and 2. - Conduct screening and categorization of student groups. - Identify and categorize issues, specifying groups of students experiencing problems.	- Implemented actions according to points 1-3. - Organized activities to promote or develop normal children and implemented activities or methods to address issues for at-risk and problematic groups of children, with referrals made when issues cannot be resolved internally.	- Implemented actions according to points 1-4. - Monitored outcomes, reported on operational results, and identified best practices.

Indicator 16: Providing opportunities for students to explore and develop their potential both academically and non-academically.

Type of Indicator: Process

Evidence for Consideration:

1. School development plan focusing on student development.
2. List of special activities/clubs/projects.
3. Records of student participation in activities.

Scoring Criteria

1	2	3	4	5
- No special activities for students. - The school focuses solely on academic performance in the classroom.	- There are both academic and non-academic extracurricular activities available for students. - The school organizes special activities based on the expertise and abilities of the teachers.	- There are both academic and non-academic extracurricular activities available for students when resources permit. - The school organizes special activities based on student data and interests. - The school has activities aimed at developing students' non-academic learning outcomes, such as personality and life skills.	- The school regularly offers both academic and non-academic extracurricular activities for students. - Special activities are organized based on student data and interests. - The school maintains ongoing activities aimed at developing students' non-academic learning outcomes, such as personality and life skills.	- The school consistently offers both academic and non-academic extracurricular activities based on student feedback. - The school diversifies the types of activities to meet students' needs and engagement. - There is a continuous effort to develop students' non-academic learning outcomes, such as personality development and life skills. - The school actively seeks additional resources and information to enhance life skills and develop non-academic activities, enabling students to achieve their goals.

Indicator 17: School administrators support teachers to design and manage learning effectively, focusing on "student-centered learning."

Type of Indicator: Output

Evidence for Consideration:

1. School development plan - Quality of learning management and methods.
2. Teacher development plan.
3. Learning management plan.
4. Instructional management plan.

Scoring Criteria

1	2	3	4	5
Less than 25% of teachers receive support to promote practices such as receiving budget allocations related to learning management development or training, and less than 25% of teachers use student-centered learning management approaches.	At least 25% but less than 50% of teachers receive support to promote practices such as receiving budget allocations for learning management development or training, and at least 25% but less than 50% of teachers use student-centered learning management approaches.	Between 50% and less than 75% of teachers receive support for initiatives such as budget allocations for educational development or training. Additionally, between 50% and less than 75% of teachers utilize student-centered learning management approaches.	Between 75% and less than 100% of teachers receive support for initiatives such as budget allocations for educational development or training. Additionally, between 75% and less than 100% of teachers utilize student-centered learning management approaches.	ll teachers receive support to promote and utilize student-centered learning management approaches.

Standard 2: Learning Outcomes

Standard 2 refers to the development of students' learning outcomes based on national exam scores and students' competencies as defined by the curriculum, including essential life skills.

Topic 2.1: Student's Learning Outcomes

Description: This criterion focuses on the development of student learning outcomes, including academic performance and results from local assessment systems (LAS) at the primary education level, or national tests (NT). It also encompasses students' competencies as specified in the curriculum (communication, critical thinking, problem-solving, life skills application, technology use, or reading and analysis).

Indicator 18: Student Academic Achievement

Type of Indicator: Outcome

Evidence for Consideration:

1. Average grades from the previous academic year and current academic year of students who have academic performance below the class average for each grade level.

Scoring Criteria

1	2	3	4	5
Academic development of students with low academic performance				
There is less than 20% improvement in academic performance among students who had below-average grades compared to their class level in the previous academic year.	- There is at least a 20% but less than 40% improvement in academic performance among students who had below-average grades compared to their class level in the previous academic year.	- There is at least a 40% but less than 60% improvement in academic performance among students who had below-average grades compared to their class level in the previous academic year.	- There is at least a 60% but less than 80% improvement in academic performance among students who had below-average grades compared to their class level in the previous academic year.	- There is an improvement of 80% or more in academic performance among students who had below-average grades compared to their class level in the previous academic year.

Indicator 19: Development of Desired Characteristics in Students

Type of Indicator: Outcome

Evidence for Consideration:

1. Clear outcomes in the development of desired characteristics in students (e.g., certificates, diplomas, awards of honor, recognitions, or achievements).

2. Number of students demonstrating the desired characteristics as outlined in the school's development plan.

Scoring Criteria

1	2	3	4	5
Fewer than 25% of students exhibit the desired characteristics as outlined in the school's development plan.	Between 25% and 50% of students exhibit the desired characteristics as outlined in the school's development plan.	Between 50% and less than 75% of students exhibit the desired characteristics as outlined in the school's development plan.	Between 75% and less than 100% of students exhibit the desired characteristics as outlined in the school's development plan.	Every student exhibits the desired characteristics as outlined in the school's development plan.

Indicator 20: Student Competencies Alignment with Curriculum Requirements (Communication, Thinking, Problem Solving, Life Skills, Technology Use)

Type of Indicator: Outcome

Evidence for Consideration:

Individual Student Quality Development Report (Form P6) (Sample attached)

Scoring Criteria

1	2	3	4	5
Fewer than 20% of students demonstrate key competencies as outlined in the curriculum.	Between 20% and less than 40% of students demonstrate key competencies as outlined in the curriculum.	Between 40% and less than 60% of students demonstrate key competencies as outlined in the curriculum.	Between 60% and less than 80% of students demonstrate key competencies as outlined in the curriculum.	80% or more of students demonstrate key competencies as outlined in the curriculum.

Indicator 21: Student Attendance and Completion of Schooling

Type of Indicator: Process and Outcome

Evidence for Consideration:

1. Number of enrolled students and number of students remaining in the system.

2. School development plan, including student welfare and supervision plans.

3. Student support and assistance system plan.

Scoring Criteria

1	2	3	4	5
The dropout rate among students exceeds 10%.	The dropout rate ranges between 5% and 10%.	The dropout rate is between 3% and less than 5%.	The dropout rate is less than 3%.	There is no dropout occurrence.
The school administrators comply with regulations and legal requirements from the government to track and record student absenteeism systematically and provide necessary support as appropriate.	The school administrators adhere to regulations and legal requirements set by the government to guide the tracking of students who are absent and record their attendance systematically as opportunities permit.	- School administrators adhere to regulations and legal requirements set by the government for tracking students who are absent and recording them in the system as per individual cases. - School administrators establish a monitoring system for academic outcomes for dropout students and those at risk.	- School administrators consistently follow regulations and legal requirements from the government to track students who are absent and record them systematically in all cases. - Administrators utilize recorded data and statistical information each year to develop preventive plans aimed at reducing dropout rates among students. They also establish monitoring systems tailored for both dropout students and	- School administrators consistently adhere to regulations and legal requirements from the government to track students who are absent and record them systematically in all cases. They also outline a follow-up plan for ongoing monitoring. - Administrators implement the monitoring plan and utilize recorded data and annual statistics to develop preventive measures aimed at reducing the dropout rates among students. They establish systems for monitoring the progress of both

1	2	3	4	5
			those identified as at-risk.	dropout students and those identified as at-risk. - Administrators collaborate with stakeholders involved to track students and their families, providing support and assistance. They secure various resources to ensure that students continue to receive education and can study in classrooms. In cases where there are no dropouts, administrators have contingency plans prepared for this scenario.

Indicator 22: Students' Development in National Testing (NT) and/or Local Assessment System (LAS) at the District Level in Primary Education

Type of Indicator: Output

Evidence for Consideration:

- Excel files containing individual student scores for NT and LAS in each main subject or domain for the past 3 years.

Scoring Criteria

1	2	3	4	5
LAS scores of the school compared to the district average				
The average scores of all four subjects are not higher than the district average.	The average score is higher than the district average in 1 subject.	The average score is higher than the district average in 2 subjects.	The average score is higher than the district average in 3 subjects.	The average score is higher than the district average in all 4 subjects.
The trend shows an increase in LAS scores over time.				
The average scores for the 4 subjects over the past 3 years have shown no upward trend.	The average score has shown an upward trend in 1 subject over the past 3 years.	The average scores have shown an upward trend in 2 subjects over the past 3 years.	The average scores have shown an upward trend in 3 subjects over the past 3 years.	The average scores have shown an upward trend across all 4 subjects over the past 3 years.
NT scores of the school compared to the national average.				
The average of all three aspects is not higher than the national average.		The average is higher than the national average in 1-2 aspects.		The average is higher than the national average in all three aspects.
Trend of increasing NT scores				
The average scores of the three aspects over the past 3 years have not shown an increasing trend.		The average scores have shown an increasing trend in 1-2 subjects over the past 3 years.		The average scores have shown an increasing trend across all three areas over the past 3 years.

Standard 3: **Teaching Quality**

This standard addresses the quality of teachers, their qualifications, professional development, and their ability to manage learning.

Topic 3.1: **Teacher Quality, Qualification, and Professional Development**

Description: This consideration addresses the knowledge and expertise of teachers, their educational and professional qualifications as required by law and aligned with the assigned

curriculum. It also includes the potential development, enhancement of knowledge, ability to manage learning, research, and the creation of networks and collaborations.

Indicator 23: Teachers have educational and professional qualifications as required by law and aligned with the subjects they are assigned to teach.

Type of Indicator: Output

Supporting Evidence for Consideration:

The school attaches the following sample documents for teachers

1. Teaching Professional License (license number)

2. Official appointment order

3. Teaching schedule

Scoring Criteria (Administrators score based on the overall performance of all teachers in the school)

1	2	3	4	5
Less than 20% of teachers have educational qualifications and professional credentials as required by law and in line with the subjects assigned.	At least 20% but less than 40% of teachers have educational qualifications and professional credentials as required by law and in line with the subjects assigned.	At least 40% but less than 60% of teachers have educational qualifications and professional credentials as required by law and in line with the subjects assigned.	At least 60% but less than 80% of teachers have educational qualifications and professional credentials as required by law and in line with the subjects assigned.	80% or more of teachers have educational qualifications and professional credentials as required by law and in line with the subjects assigned.

Indicator 24: Teachers continuously develop their teaching skills to effectively manage the classroom and enhance student competencies.

Type of Indicator: Output

Supporting Evidence:

The school attaches sample documents from teachers as follows:

1. Student performance data
2. Lesson plans
3. Classroom observation reports

4. Examples of homework or activities
5. Teacher self-assessment reports
6. Annual professional development plans

Scoring Criteria (The administrator scores based on the overall performance of teachers in the entire school):

1	2	3	4	5
Less than 20% of teachers have developed learning management skills.	At least 20% but less than 40% of teachers have developed learning management skills.	At least 40% but less than 60% of teachers have developed learning management skills.	At least 60% but less than 80% of teachers have developed learning management skills.	80% or more of teachers have developed learning management skills.

Indicator 25: Teachers create Professional Learning Communities (PLC) to enhance instructional practices and student learning outcomes.

Type of Indicator: Output

Supporting Evidence:

The school attaches the following teacher documents:

1. Plan for establishing the Professional Learning Community (PLC)
2. Learning management plan
3. PLC operational plan
4. Meeting records - involving students, families, and/or other relevant stakeholders
5. Annual professional development plan

Scoring Criteria: (Administrators score based on the overall performance of all teachers in the school)

1	2	3	4	5
- Almost all teachers have not planned or established professional learning	Less than 50% of teachers have established professional learning communities to collaboratively	At least 50% but less than 75% of teachers have established professional learning communities to	At least 75% but less than 100% of teachers have established professional learning communities to	All teachers are part of professional learning communities established to collaboratively

1	2	3	4	5
communities. - Teachers occasionally organize school activities that are not related to academics.	improve teaching practices and learning outcomes.	collaboratively improve teaching practices and learning outcomes.	collaboratively improve teaching practices and learning outcomes.	improve teaching practices and learning outcomes.

Indicator 26: Teachers are assigned to teach subjects that match their expertise.

Type of indicator: Output

Supporting evidence for consideration:

The school attaches sample documents of teachers as follows:

1. Educational background
2. Professional qualifications record
3. Teaching schedule

Scoring Criteria (Administrators evaluate based on the overall performance of all teachers in the school)

1	2	3	4	5
No teachers have qualifications/expertise matching the subjects they are responsible for.	Less than 50% of teachers have qualifications/expertise matching the subjects they are responsible for.	At least 50% but less than 75% of teachers have qualifications/expertise matching the subjects they are responsible for.	At least 75% but less than 100% of teachers have qualifications/expertise matching the subjects they are responsible for.	All teachers have qualifications/expertise matching the subjects they are responsible for.

Indicator 27: Teachers are responsible for teaching subjects other than those directly related to their expertise.

Type of indicator: Output

Supporting evidence for consideration:

The school should provide the following documents as evidence:

1. Educational background
2. Professional qualification records
3. Teaching schedule

Scoring criteria (Score given by the administrator based on the overall performance of the teacher in the school)

1	2	3	4	5
All teachers are responsible for teaching subjects other than those directly related to their qualifications/expertise.	More than 75% but less than 100% of teachers are responsible for teaching subjects other than those directly related to their qualifications/expertise.	More than 50% but not more than 75% of teachers are responsible for teaching subjects other than those directly related to their qualifications/expertise.	More than 25% but not more than 50% of teachers are responsible for teaching subjects other than those directly related to their qualifications/expertise.	Less than 25% of teachers are responsible for teaching subjects other than those directly related to their qualifications/expertise.

Indicator 28: Teachers participate in continuous training and seek new knowledge.

Type of indicator: Output

Evidence for consideration:

1. Professional development records
2. Certificates or training certificate

Scoring criteria (scored by administrators based on overall performance of teachers in the school)

1	2	3	4	5
Less than 25% of teachers receive training.	At least 25%, but less than 50%, of teachers receive training.	At least 50%, but less than 75%, of teachers receive training.	At least 75%, but less than 100%, of teachers receive training.	All teachers receive training.
Less than 25% of teachers desire or express a	At least 25% but less than 50% of teachers desire or express a	At least 50% but less than 75% of teachers desire or express a	At least 75% but less than 100% of teachers desire or express a	All teachers desire or express a need

1	2	3	4	5
need to improve teaching skills.	need to improve teaching skills.	need to improve teaching skills.	need to improve teaching skills.	to improve teaching skills.

Topic 3.2 Learning Management

This criterion refers to the organization of both physical and psychological environments to promote learning, the development of quality learning management plans, the organization of quality learning activities, the use of quality media and learning resources, and the quality measurement and evaluation based on classroom research outcomes.

Indicator 29: Teachers effectively manage learning

Type of Indicator: Process-oriented

Supporting Evidence for Consideration

1. Subject-specific slide decks, one clip per teacher, not exceeding 60 minutes in length
2. Lesson management plans that align with the slide decks

Criteria for scoring (Teacher level)

- Evaluators assess from the PowerPoint file through the FSQL information technology system.
- Indicators (29.1-29.8) are checklists for enumerators.
- Evaluate whether the teacher has demonstrated the behavior. When the instructor can perform the behavior indicated, they will receive 1 point each, totaling 40 points.

Criteria for scoring (School level)

Average score = The total score of all teachers who submitted PowerPoint files for evaluation.

The number of teachers who submitted PowerPoint files for evaluation.

Score = Average score x 5

40

Indicators and Behaviors

A. Planning for Learning Management

Indicator 29.1: The instructor plans learning management to enable learners to access and understand the lessons.

Additional Description:

- Emphasizes evaluating the instructor's ability to design and develop comprehensive learning management plans.

- Helps the teaching observer understand the concept of instructional design and the nature of learning activities before evaluating the recorded teaching video files.

Behaviors:

1) The instructor identifies content and perspectives provided for learners to learn or practice correctly and in accordance with the curriculum.

2) The instructor develops systematic learning management plans and uses appropriate time, specifying clear objectives and activities that allow everyone to participate.

3) The instructor specifies clear and comprehensive learning objectives covering knowledge, skills, and characteristics, as well as assessment that aligns with learning objectives.

4) The instructor designs learning activities that allow all students to participate.

5) The instructor uses learning media appropriately and helps students achieve the lesson objectives.

B. Learning Management

Indicator 29.2: The instructor helps learners link previous knowledge or experiences with new learning.

Additional Description:

- Focuses on assessing or observing the instructor's ability to introduce lessons.

- Observable behaviors are seen in the early stages of the teaching video recording.

- Evaluate based on the instructor's behavior of performing or not performing indicators, without focusing on quantity or frequency.

Behaviors:

1) The instructor checks previous knowledge, skills, or experiences of learners who are not ready to learn new things, such as questioning or pre-testing.

2) The instructor introduces the lesson by linking learners' knowledge, skills, or previous experiences to new learning, such as using questions, exercises, or activities.

3) The instructor helps learners who are not yet ready to learn new things by reviewing their knowledge, skills, or previous experiences, such as explaining, providing examples, using questions, games, or activities.

4) The instructor clearly explains the objectives of the lesson.

5) The instructor informs learners of the activities and tasks to be performed.

Indicator 29.3: The instructor helps learners create knowledge on their own or create new experiences from learning.

Additional Description:

- Focuses on observing the instructor's ability to conduct learning activities.

- Emphasizes activities that require a variety of knowledge or skills, such as observation or experimentation.

- Assignments or works applied from learning may be new situations to allow students to demonstrate high-level thinking skills or problem-solving skills, not necessarily works all the time.

Behaviors:

1) The instructor explains and assigns tasks or activities that allow everyone to participate in creating knowledge or new experiences appropriate to age, situation, and context.

2) The instructor allows learners to engage in activities that require knowledge or skills according to the learning objectives.

3) The instructor acts as a facilitator while learners are working or engaged in assigned activities.

4) The instructor allows learners to summarize knowledge or experiences using various techniques, such as summarizing knowledge through speaking or writing, presenting work, diagrams, charts, etc.

5) The instructor provides opportunities for learners to create works/products from applying knowledge and skills learned.

Indicator 29.4: Teachers stimulate students to be motivated in learning

Additional description:

- Focus on the teacher's role in creating motivation for learning in students

Indicator behaviors:

1) Teachers organize learning that connects content or activities that are relevant to daily life, community context, or the real-life situations of students.

2) Teachers use teaching methods or techniques that are challenging and appropriate to the age, condition, and development of students.

3) Teachers guide and monitor the behavior of students during individual or group activities and provide guidance to stimulate students' motivation to learn.

4) Teachers provide opportunities for students to reflect and explain strengths or errors that occur during learning.

5) Teachers summarize what students reflect on and expand knowledge from the learning topics to apply in daily life.

Indicator 29.5: Teachers promote students' learning development

Additional description:

- Focus on the role of students in using various skills in group activities

- Additional learning materials and resources should be media that help expand students' knowledge, skills, and new experiences, not just media that teachers use for general teaching management.

Indicator behaviors:

1) Teachers ensure that students practice various skills completely according to the learning objectives.

2) Teachers organize activities for students to integrate various skills through teamwork.

3) Teachers promote students to use teamwork skills, such as interacting, helping each other, and sharing responsibilities.

4) Teachers promote thinking skills by using open-ended questions or assigning tasks for students to apply learned skills or solve new problems.

5) Teachers recommend additional media and learning resources for students to apply skills or solve new problems to achieve results.

Indicator 29.6: Teachers provide feedback to students for learning improvement

Additional description:

- Focus on providing teacher feedback to student development

- Not focusing on assessment or observation to find student errors, but using assessment results during learning to check understanding and correct misunderstandings of students.

Indicator behaviors:

1) Teachers observe or check mistakes in performance or misunderstandings of students during learning.

2) Teachers assess learning outcomes using appropriate methods, such as using questions, tests, practical activities, etc.

3) Teachers reflect the observation results or assessment results during learning back to students.

4) Teachers adjust student behavior to match expectations during learning.

5) Teachers help correct misunderstandings of students in content.

Indicator 29.7: Teachers create a classroom atmosphere that is suitable and conducive to student learning

Additional description:

- Focus on creating an atmosphere that promotes learning and a safe learning environment for all students.

Indicator behaviors:

1) Teachers treat all students with respect and respect, without showing gender bias and accepting differences among students.

2) Teachers behave as a good example in using language, behaviors, and positive attitudes.

3) Teachers provide students with freedom to think, experiment, or work in the classroom.

4) Teachers provide opportunities for students to participate in classroom activities to stimulate motivation and proactive learning.

5) Teachers manage the classroom without causing problems related to unwanted behaviors or bullying.

Indicator 29.8: Teachers support students to pursue lifelong learning

Additional description:

- Focus on promoting lifelong learning in students

Indicator behaviors:

1) Teachers provide opportunities for students to ask questions about what they want to know, both related to the lesson and beyond.

2) Teachers encourage students to express their opinions without judging the correctness of what they propose.

3) Teachers encourage students to be persistent in completing tasks or activities successfully without feeling forced.

4) Teachers provide opportunities for students to self-assess or peer-assess during learning.

5) Teachers stimulate or assign tasks for students to research, practice, or learn more after the lesson based on their interests.

Indicator 30: Teachers conducting research in the classroom to develop student learning outcomes

Type of indicator: Qualitative and output-oriented

Supporting evidence:

The school provides a sample of the teachers' work reports related to the research process in the classroom, with evidence based on the criteria for scoring regular course teachers and samples of documents, including:

1. Analysis of learning outcomes and various problems
2. Classroom research (summary of results)
3. Learning management plan or activities using classroom research to solve problems
4. Learning management outcomes from point 3
5. Evidence of publication/dissemination of each group of teachers' learning management plans

Scoring criteria (Administrators score based on an overall view of teachers throughout the school)

1	2	3	4	5
Less than 25% of teachers conduct research in the classroom and use it to improve teaching and learning.	At least 25% but less than 50% of teachers conduct research in the classroom and use it to improve teaching and learning.	At least 50% but less than 75% of teachers conduct research in the classroom and use it to improve teaching and learning.	At least 75% but less than 100% of teachers conduct research in the classroom and use it to improve teaching and learning.	All teachers conduct research in the classroom and use it to improve teaching and learning.

Standard 4:

School Infrastructure, Service Facilities, and Learning Materials

FSQL Standard 4 consists of four topics with a total of 43 indicators as shown in the Table below.

Topic	Number of indicators
1. School Accessibility	4
2. Adequate Learning Space	11
3. Safety and Health including Design for Equity	22
4. Learning Materials and Aids for Students	6
Number of indicators	**43**

Topic 4.1. School Accessibility

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
SA-1	The interior atmosphere of the school is clean, pleasant, convenient, aesthetically pleasing, and conducive to learning.	(1) Inside the classrooms, cleanliness is well maintained, orderly, aesthetically pleasing, and conducive to learning. (2) Throughout the school premises, cleanliness is consistently upheld, and there is no litter or debris. (3) Trees are planted within the school premises to provide shade and create a pleasant atmosphere. (4) The school premises have		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		well-proportioned roads and walkways with smooth surfaces, ensuring safety. (5) Within the school premises, there are recreational areas and spaces for students to rest. (6) Pollution sources and waste management are effectively controlled and managed.						
SA-2	There are security systems in place to prevent threats from both internal and external individuals. The school has security measures in place to ensure safety within its premises.	(1) There are entrance and exit doors with specified opening and closing times for security purposes. (2) Clear and secure points for student drop-off and pick-up are designated. (3) Supervising teachers are stationed at designated points before and after school hours to ensure safety. (4) Closed-circuit television (CCTV) cameras are installed at entry and exit points of the school. (5) Warning signs and traffic signs are present to		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		regulate vehicular movement within the school premises. (6) Proportional fencing or boundary demarcations are in place. (7) There is a security prevention and monitoring plan in effect.						
SA-3	The school has a communication management system in place.	(1) There are newsletters and documents. (2) Bulletin boards are displayed. (3) There are sound amplification systems for communication purposes. (4) Radio communication or telecommunication devices are available. (5) Communication with the community is established. (6) Communication is conducted through social media platforms, websites, and Facebook.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
SA-4	The roads and pathways within the school premises are in good condition, allowing students to walk and traffic to flow safely.	Type of road/pathway, Length of road/pathway, Type of road surface, Width of road surface (1) Total length of all roads/pathways (in meters) (2) Length of completed roads/pathways, including those with rubberized or concrete surfaces, smooth surfaces, and intact conditions (Percentage of safe roads/pathways)		The roads within the school premises that have a smooth surface and are safe for traffic constitute less than 50% of the total roads.	The roads within the school premises that have a smooth surface and are safe for traffic constitute between 50-60% of the total roads.	The roads within the school premises that have a smooth surface and are safe for traffic constitute between 60-70% of the total roads.	The roads within the school premises that have a smooth surface and are safe for traffic constitute between 70-80% of the total roads.	The roads within the school premises that have a smooth surface and are safe for traffic constitute more than 80% of the total roads.

Topic 2 Adequate Learning Space

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
OS-1	In schools, all spaces and classrooms should not be overcrowded, and classrooms should not be cramped.	- Number of students - Classroom space **criteria** The proportion of classroom space per student should be at least 2 square meters per person.		The number of classrooms does not exceed 20 percent, with the proportion of space meeting the standard	The number of classrooms is more than 20 percent but not exceeding 30 percent, with the proportion of space meeting the standard.	The number of classrooms is more than 30 percent but not exceeding 40 percent, with the proportion of space meeting the standard.	The number of classrooms is more than 50 percent but not exceeding 80 percent, with the proportion of space meeting the standard.	The number of classrooms is more than 80 percent, with the proportion of space meeting the standard.
OS-2		- Number of students			The number	The number	The number	The number

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
	Student: Classroom Ratio	**criteria** The student-to-classroom ratio for primary and secondary levels is 40 students per classroom, while for kindergarten, it is 30 students per classroom.		More than 80 percent of classrooms have student-to-classroom ratios that do not meet the standard.	of classrooms, more than 65% but not exceeding 80%, has a student-to-classroom ratio that does not meet the standard.	of classrooms more than 50% but not exceeding 65% has a student-to-classroom ratio that does not meet the specified standard.	of classrooms, more than 25% but not exceeding 50%, has a student-to-classroom ratio that does not meet the standard.	of classrooms does not exceed 25%, with the student-to-classroom ratio not meeting the specified standard.
OS-3	1) The tables and chairs for students in the classroom are sufficient in number and are safe to use. 2) The tables and chairs for students in other areas of the school are sufficient in number and are safe to use.	1) The number of students. 2) The number of tables and chairs. 3) The number of damaged or unsafe tables and chairs.		classroom with fewer than 50 students have desks and chairs that are sturdy and safe, enough for all students in the room.	The number of classrooms between 50-70, each equipped with sturdy and safe desks and chairs, sufficient for all students in the room.	70-80% of the classrooms have sturdy and safe desks and chairs that are sufficient for all students in the room.	80-99 percent of classrooms have sufficient sturdy and safe desks and chairs for all students in the room.	Every classroom, or 100%, has sturdy and safe desks and chairs for all students in the room.
OS-4	The classroom is equipped for the teacher, with features such as a blackboard, a teacher's desk, and storage space for the teacher's belongings.	**Necessary equipment for primary school includes:** 1. Blackboard 2. Teacher's desk and chair 3. Storage box or cabinet for teaching aids and teaching materials 4. Television screen or projector **Necessary equipment for kindergarten includes:**		Every classroom, or 100%, has the necessary equipment and is in good condition for teachers.	The number of classrooms less than 30% has the necessary equipment and is in good condition for all teachers.	0-50 percent of the classrooms are equipped with necessary equipment and are in good condition, with all items complete for the teachers.	Between 50-75 percent of classrooms have necessary equipment and are in good condition for teachers, with all items complete.	More than 25 percent of classrooms have necessary equipment and are in good condition for all teachers.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		1. Skill corner / experience corner, including media, materials, and equipment in various corners. 2. Teacher's desk and chair 3. Storage box or cabinet for teaching aids and teaching materials 4. Storage cabinet for students' nap mats						
OS-5	The school has a sufficient number of computers connected to the internet for the students.	(1) Total number of students in the school (2) Number of usable computers (3) Number of computers connected to the internet and usable		The school does not yet have computers connected to the internet for students to use.	The school has computers connected to the internet for students, with a ratio of 1 computer to 50 students.	The school has computers connected to the internet for students, with a ratio of 1 computer to 40 students.	The school has computers connected to the internet for students, with a ratio of 1 computer to 30 students.	The school has computers connected to the internet for students, with a ratio of 1 computer to 20 students.
OS-6	Schools should have safe sports fields.	**Sports fields** (1) Types of sports fields (2) Condition of the sports field surface, which should be smooth, ready for use, and safe (3) Adequate sports equipment in good working condition		The school does not have a sports field.	The school has a football field.	The school has a football field and at least one other type of sports field, as well as sufficient sports equipment in good condition.	The school has a football field with a smooth and safe playing surface. There is at least one other type of sports field available, equipped and ready for use.	The school has a football field with a smooth and safe playing surface. There are at least 2 other types of sports fields, and there is sufficient sports equipment available for use.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
OS-7	The school should have a safe playground for children to play.	**Playground (Primary - Kindergarten)** (1) Play equipment is not damaged, broken, sharp, or unstable. (2) All play equipment is securely anchored to the ground and cannot be lifted, moved, or overturned. (3) The playground surface is sand or synthetic rubber of high quality that can reduce impact force without peeling off, not a hard surface such as concrete, asphalt, or hard soil. (4) Play equipment is installed at least 180 centimeters apart around for safe play. (5) The play area for children is fenced off from traffic to prevent children from running into the road.		The school does not have a playground or program ranked 1-2 and is in need of improvement.	The school has a playground, and program number 1 is at a good level.	The school has a playground, and programs ranked 1-2 are at a good level.	The school has a playground, and programs ranked 1-3 are at a good level.	The school has a playground, and every program is at a good level.
OS-8	conference hall/multi-purpose building.	(1) There is a multi-purpose building/conference hall. (2) The building is in good condition, ready for use, not dilapidated, and the roof does not leak.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		(3) The floor area is sufficient for use. (4) There is a stage. (5) There is a storage room. (6) There is audio equipment.						
OS-9	The school manages the cafeteria in a clean and hygienic manner. There is a dining area and food preparation facilities or a kitchen.	(1) There are enough seats and tables in the cafeteria for the number of students. (2) The dining area is clean and hygienic. (3) There is sufficient equipment and utensils in the cafeteria. (4) The food preparation area or kitchen is restricted from student access. (5) There is proper sorting and disposal of waste, ensuring no food scraps emit foul odors. (6) There are insect-proofing measures for prepared food. (7) There are refrigerators or systems for storing fresh food. (8) There is a designated area for washing and draining containers.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
OS-10	Schools should have a library or a research center.	(1) There is a library or a research room. (2) There are books of various types. (3) There is a space for exchanging learning. (4) There is adequate lighting (not less than 300 lux). (5) There is good ventilation. (6) There are separate reading corners. (7) There are educational games. (8) There are computers for research.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00
OS-11	Schools should have laboratories and equipment to support experimental operations. **Note:** Only schools that are at the lower secondary level according to the regulations of the Ministry of Education should have laboratories for physics, chemistry, and biology.	(1) There is a laboratory for science experiments and equipment for experiments in physics, chemistry, and biology in good condition and ready for use. (2) The laboratory has convenient ventilation. (3) The laboratory has adequate lighting. (4) There are enough tables and chairs for experimental work.		There is no item number 1	Item number 1	Item 1 and another item, 1 more item.	There is item number 1 and 2 other items.	All 4 items are available

Topic 4.3. Safety and health, including designing for equity

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
S&H-1	"Schools should regularly inspect the condition of buildings and other areas within the school.	(1) There is an inspection plan. (2) There is a handbook for inspection. (3) There is building inspection. (4) There is an appointed person responsible in writing.		No, there isn't any.	There is 1 item.	There are 2 items.	There are 3 items.	All 4 items are complete, with building inspection conducted in accordance with items 1 and 2.
S&H-2	The school should have regular maintenance and repair of buildings, as well as other areas within the school.	(1) There is a maintenance plan for buildings. (2) There is a sufficient budget for repairs and maintenance of buildings.		No, there isn't any.	One of the items is present.	There is item 1, and there is a budget for repairs less than 50% according to the plan.	There is item 1, and there is a budget for repairs of 50-80% according to the plan.	There is item 1, and there is a budget for repairs exceeding 80% according to the plan.
S&H-3	The school has a nurse's room equipped with common medications and sufficient first aid equipment, and they are of good quality.	(1) There is a nurse's room. (2) There are equipment and furniture. (3) There are common medications and basic medical supplies that can be dispensed within the scope of		There is no item 1.	There is item 1.	There is item 1 and another item, totaling 1 item.	There is 1 item and 2 other items.	There are a total of 4 items.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		the nurse's duties. (4) There are basic first aid kits (in case of emergencies).						
S&H-4	Is the school prepared to deal with fire incidents, with fire alarm equipment and firefighting equipment?"	(1) Are there sufficient fire alarm equipment or firefighting equipment? (2) Is there someone responsible? (3) Is there regular fire drills every year? (4) Is there regular inspection of equipment mentioned in (1) in every academic term		There is no item 1.	There is item 1.	There is item 1 and another item, totaling 1 item.	There is 1 item and 2 other items.	There are a total of 4 items.
S&H-5	The school should have an adequate number of restrooms, divided into male and female facilities, as well as restrooms specifically designed for individuals with disabilities.	(1) Sufficient number of restrooms and equipment in accordance with the standards set by the Ministry of Public Health. (2) Division into male and female restrooms. (3) Restrooms for		There is no item 1.	There is item 1.	There is item 1 and another item, totaling 1 item.	There is 1 item and 2 other items.	There are a total of 4 items.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		individuals with disabilities. (4) There is someone responsible for maintaining cleanliness.						
S&H-6	Schools should have clean water wells or water sources (for domestic use).	(1) There are water wells, water sources, and/or tap water. (2) There is an adequate supply. (3) It is clean. (4) There is a water management system in place. (5) There is someone responsible for maintenance. (6) Water quality is checked at least every academic term.		There is no item 1.	There is item 1.	There is item 1 and another item, totaling 2 items.	There is 1 item and 3 other items.	There are a total of 6 items.
S&H-7	Schools should have clean water wells or water sources for drinking purposes.	(1) There are water wells, water sources, and/or tap water. (2) There is an adequate supply. (3) It is clean. (4) There is someone		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
S&H-8	The school has fences and entrance/exit gates, which are still in a safe and usable condition.	responsible for maintenance. (5) Water quality is checked at least every academic term. (1) There is a fence around the school. (2) The fence is constructed using durable materials, such as reinforced concrete structure with steel bars. (3) The fence is still in a stable and robust condition. (4) There are gates to the fence constructed using durable materials, such as steel or other metals. (5) The gates to the fence are still in a stable and robust condition, ensuring safe usability.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00
S&H-9	Schools should prepare areas to facilitate	(1) There are pathways or		Between	Between	Between	Between	Between

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
	convenience for students with physical disabilities or those needing special assistance, enabling them to navigate safely and conveniently within the school premises.	connections for individuals with physical disabilities that are convenient and safe for pedestrian traffic. (2) There are ramps for ascending and descending for individuals with physical disabilities that are convenient and safe to use. (3) There are restrooms for individuals with physical disabilities that are convenient and safe to use. (4) Individuals with physical disabilities can conveniently and safely use the entry/exit doors of buildings.		0 and 0.40	0.41 and 0.80	0.81 and 1.20	1.21 and 1.60	1.61 and 2.00
S&H-10	Schools should have waste disposal processes that	(1) There is an adequate number of waste bins.		Between	Between	Between	Between	Between

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
	meet the standards.	(2) There are systems, plans, and responsible personnel for waste disposal. (3) There are suitable locations for waste collection. (4) There is proper waste sorting and disposal.		0 and 0.40	0.41 and 0.80	0.81 and 1.20	1.21 and 1.60	1.61 and 2.00
S&H-11	Schools should always have electricity available.	(1) There is a backup electricity system, such as generators or solar power. (2) There is lightning protection system or safe zones within the school premises according to the standards set by the Department of Public Works.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00
S&H-12	The school buildings have an automatic power cut-off system to prevent power surges and electrical leaks.	Automatic power cut-off system to prevent power surges and electrical leaks.		There is no automatic power cut-off system in each building.	There is an automatic power cut-off system in some buildings only.	There is an automatic power cut-off system at least 1 point in every building.	There is an automatic power cut-off system in every building, and some buildings have more than 1 point.	There is an automatic power cut-off system in every building, and 50% of the classrooms in each building have an

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
								automatic power cut-off system.
S&H-13	The school buildings and roofs, overall, appear to be in good condition from the outside. There are no visible cracks or separations on the exterior walls. There is no rainwater leakage from the roof down to the ceilings.	S&H-13.1 Age of the buildings.		School building is at least 50 years old	School building is between 40 and 50 years old	School building is between 30 and 40 years old	school building is between 20 and 30 years old	School building is less than 20 years old
		S&H-13.2 (1) There are uneven walkways on the building, or there are areas where the surface has sagged. (2) There are cracks or separations in the walls, such as cracks in the walls or separations between columns and walls, at several points.		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00
		S&H-13.3 (1) The condition of the rain gutter is not ready for further use and requires repair. (2) Roof tiles are loose or visibly cracked. (3) Rainwater leaks from the roof down to the ceiling. (4) The roof is so		Between 0 and 0.40	Between 0.41 and 0.80	Between 0.81 and 1.20	Between 1.21 and 1.60	Between 1.61 and 2.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		sagged that it is noticeable to the naked eye.						
S&H-14	The school buildings have sturdy and robust structural columns capable of bearing various loads and forces.	S&H-14.1 The characteristics of structural deterioration of columns: - Reinforced concrete columns: Cracks in the columns due to rusting of the reinforcement steel. - Wooden columns: Size of cracks in the columns and loss of cross-sectional area.		The number of columns with structural deterioration is more than 40%.	The number of columns with structural deterioration is more than 30% but not exceeding 40%.	The number of columns with structural deterioration is more than 20% but not exceeding 30%.	The number of columns with structural deterioration is more than 10% but not exceeding 20%.	The number of columns with structural deterioration does not exceed 10%.
		S&H-14.1 tilt of the pole		The number of poles with noticeable tilting is more than 40 percent.	The number of poles that are tilted noticeably is more than 30 percent but not exceeding 40 percent.	The number of poles with visible tilting is more than 20 percent but not exceeding 30 percent.	The number of poles with noticeable tilting is more than 10 percent but does not exceed 20 percent.	The number of poles with visible tilting is not more than 10 percent.
S&H-15	The school building has a sturdy frame structure capable of withstanding	S&H-15.1 Characteristics of beam structure deterioration:		The number of beams with deterioration exceeds	The number of beams with deterioration is more than	The number of beams with deterioration is more than	The number of beams with deterioration is more than	The number of beams with deterioration does not

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
	various loads and forces.	- Steel beam: Cracks in the beam due to corrosion of the reinforcement steel. - Wooden beam: Size of cracks in the beam and loss of cross-sectional area."		40 percent.	30 percent but not exceeding 40 percent.	20 percent but not exceeding 30 percent.	10 percent but not exceeding 20 percent.	exceed 10 percent.
		S&H-15.2 Beam deflection.		The number of beams with visible deflection is more than 40 percent.	The number of beams with visible deflection is more than 30 percent but not exceeding 40 percent.	The number of beams with visible deflection is more than 20 percent but not exceeding 30 percent.	The number of beams with visible deflection is more than 10 percent but not exceeding 20 percent.	The number of beams with visible deflection is not more than 10 percent.
S&H-16	The school building has staircases that are sturdy and strong enough to support various loads and forces.	S&H-16.1 Characteristics of staircase structure deterioration: - Steel staircase: Cracks in the staircase due to corrosion of the reinforcement steel. - Wooden staircase: Size of cracks in the staircase and loss of cross-		The number of staircases with deterioration is more than 40 percent.	The number of staircases with deterioration is more than 30 percent but not exceeding 40 percent.	The number of staircases with deterioration is more than 20 percent but not exceeding 30 percent.	The number of staircases with deterioration is more than 10 percent but not exceeding 20 percent.	The number of staircases with deterioration does not exceed 10 percent.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		sectional area.						
		S&H-16.2 Staircase deflection.		The number of staircases with visible deflection is more than 40 percent.	The number of staircases with visible deflection is more than 30 percent but not exceeding 40 percent.	The number of staircases with visible deflection is more than 20 percent but not exceeding 30 percent.	The number of staircases with visible deflection is more than 10 percent but not exceeding 20 percent	The number of staircases with visible deflection is not more than 10 percent.
S&H-17	**The classroom floor is in good** condition, stable, and safe to use. There is no significant wear or damage.	(1) The classroom floor materials are sturdy and stable, such as wooden floors, concrete floors, or tiled floors. (2) The condition of the classroom floor shows no significant wear or damage that would compromise safety during use.		The floor of the room has deteriorated more than 80%.	The floor of the room has deteriorated more than 60% but not more than 80%.	The floor of the room has deteriorated more than 40% but not more than 60%.	The floor of the room has deteriorated more than 20% but not more than 40%.	The floor of the room has deteriorated no more than 20%.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
S&H-18	**The walls of the classroom are in good** condition, sturdy, safe to use, and have not deteriorated significantly.	(1) The classroom walls are made of sturdy materials such as wood, brick walls with plaster, or lightweight walls with a frame covered by smooth panels. (2) The walls of the classroom are in good condition, without significant deterioration, ensuring they are safe to use.		The walls of the room have deteriorated by more than 80%	The walls of the room have deteriorated more than 60% but not more than 80%.	The walls of the room have deteriorated more than 40% but not more than 60%.	The walls of the room have deteriorated more than 20% but not more than 40%.	The walls of the room have deteriorated no more than 20%.
S&H-19	**The ceiling of the classroom is in good** condition, stable, and safe to use, with no significant deterioration.	(1) The ceiling material or ceiling of the classroom is stable and strong, such as wooden ceilings, concrete ceilings, smooth panel ceilings, or bar ceilings. (2) The condition of the ceiling or ceiling of the classroom		Ceilings in the room have deteriorated more than 80%.	Ceilings in the room have deteriorated more than 60% but not more than 80%.	Ceilings in the room have deteriorated more than 40% but not more than 60%.	Ceilings in the room have deteriorated more than 20% but not more than 40%.	Ceilings in the room have deteriorated not more than 20%.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		does not show significant deterioration or damage, ensuring safety for use.						
S&H-20	The classroom has doors and windows that are still in a stable and strong condition and can be safely used.	S&H-20.1 (1) The materials used are durable and strong, such as wood, steel, aluminum, and glass. (2) The proportion of the number of doors that are unsafe for use: number of doors and windows throughout the building.		Doors show deterioration of more than 80%	Doors show deterioration of more than 60% but not more than 80%	Doors show deterioration of more than 40% but not more than 60%	Doors show deterioration of more than 20% but not more than 40%	Doors show deterioration of not more than 20%
		S&H-20.2 (1) The materials used are durable and strong, such as wood, steel, aluminum, and glass. (2) The proportion of the number of		Windows deteriorated more than 80%.	Windows deteriorated more than 60% but not exceeding 80%.	Windows deteriorated more than 40% but not exceeding 60%.	Windows deteriorated more than 20% but not exceeding 40%.	Windows deteriorated not exceeding 20%.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		damaged windows that are unsafe to use: the number of doors and windows throughout the building.						
S&H-21	The classroom has good ventilation.	The total area of doors and windows opening to the outside of the building: The area of the room in plan view is not less than 10 percent according to the criteria of the Department of Public Works and Town & Country Planning.		The number of classrooms that meet the standard is not more than 20%.	The number of classrooms that meet the standard is more than 20% but not more than 40%.	The number of classrooms that meet the standard is more than 40% but not more than 60%.	The number of classrooms that meet the standard is more than 60% but not more than 80%.	The number of classrooms that meet the standard is more than 80%.
S&H-22	The classrooms have sufficient lighting for teaching and learning.	The intensity of the lighting measured on students' desks at any position in the classroom is not less than 300 lux, according to the standards of the		The number of classrooms that meet the standard is not more than 20%.	The number of classrooms that meet the standard is more than 20% but not more than 40%.	The number of classrooms that meet the standard is more than 40% but not more than 60%.	The number of classrooms that meet the standard is more than 60% but not more than 80%.	The number of classrooms that meet the standard is more than 80%.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		Department of Public Works and Town & Country Planning.						

Topic 4.4. Learning materials and aids for students

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
LM&A-1	The school has at least one set of teaching aids and instructional materials per grade per subject (textbooks, teaching guides, and teacher manuals).	"Teachers should have at least one set of teaching aids and instructional materials per grade per subject, including: (1) Teaching aids or instructional equipment (2) Textbooks (3) Teaching guides, teacher manuals, or lesson plans"		Teachers have teaching aids and teaching materials that support learning in the classroom, 1 set: For 1 year/subject taught with an average value between 0 - 0.50	Teachers have teaching aids and teaching materials that support learning in the classroom, 1 set: For 1 year/subject taught with an average value between 0.51 - 1.50	Teachers have teaching aids and teaching materials that support learning in the classroom, 1 set: For 1 year/subject taught with an average value between 1.51 - 2.50	Teachers have teaching aids and teaching materials that support learning in the classroom, 1 set: For 1 year/subject taught with an average value between 2.51 - 3.50	Teachers have teaching aids and teaching materials that support learning in the classroom, 1 set: For 1 year/subject taught with an average value between 3.51 - 4.00

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
LM&A-2	The school has suitable reading materials or books for at least 1 set per year.	The school should provide suitable reading materials or books of at least 1 set per year, beyond those used for teaching in each subject, to enhance knowledge and learning skills.		The school has provided materials or books for reading per grade level. With an average value ranging from 0 - 0.50.	The school has provided suitable materials or books for reading per grade level. With an average value ranging from 0.51 - 1.50.	The school has provided suitable materials or books for reading per grade level. With an average value ranging from 1.51 - 2.50.	The school has provided suitable materials or books for reading per grade level. With an average value ranging from 2.51 - 3.50.	The school has provided suitable materials or books for reading per grade level. With an average value ranging from 3.51 - 4.00.
LM&A-3	In every subject area, teachers should have suitable materials and equipment that are adequate and appropriate for teaching, such as rulers, scissors, chalk, paper, pens, and others.	Every subject area should have suitable and adequate materials and equipment for teachers, including: 1. Rulers 2. Scissors 3. Chalk or whiteboard markers. 4. Paper, pens, or markers 5. Other necessary items		Teachers have appropriate materials and equipment with an average score ranging from 0 - 0.50.	Teachers have appropriate materials and equipment with an average score ranging from 0.51 - 1.50.	Teachers have appropriate materials and equipment with an average score ranging from 1.51 - 2.50.	Teachers have appropriate materials and equipment with an average score ranging from 2.51 - 3.50.	Teachers have appropriate materials and equipment with an average score ranging from 3.51 - 4.00.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		These items should be provided by the school.						
LM&A-4	Each student has textbooks for all core subjects.	Each student has textbooks for all core subjects. Details include: (1) Details of core subjects according to the learning area groups for each grade level. (2) Survey of the number of students with textbooks for core subjects that are in good condition. (3) Textbooks are privately owned by the students.		Students have textbooks for all core subjects less than 25%.	Students have textbooks for all core subjects at least 25% but not more than 50%.	Students have textbooks for all core subjects at least 50% but not more than 65%.	Students have textbooks for all core subjects at least 65% but not more than 80%.	Students have textbooks for all core subjects more than 80%.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
LM&A-5	Each student has a minimum learning materials and equipment, such as notebooks and pens.	Each student has a minimum learning materials and equipment, including: (1) Notebooks that align with the subjects (2) Pens or pencils and erasers (3) Drawing tools such as colored pencils and paper for art classes		Students have a minimum learning material and equipment average score ranging from 0 - 0.50.	Students have a minimum learning material and equipment average score ranging from 0.51 - 1.50.	Students have a minimum learning material and equipment average score ranging from 1.51 - 2.50.	Students have a minimum learning material and equipment average score ranging from 2.51 - 3.50.	Students have a minimum learning material and equipment average score ranging from 3.51 - 4.00.
LM&A-6	All students in the small group have received teaching materials that enhance learning of Thai as a second language, secondary to their mother tongue.	Every student in the minority group has received instructional media that enhances learning Thai as a second language, complementing their mother tongue. Details include: 1. The number of students in the minority group.		Students in the minority group have developed their Thai language skills in items 2 and 3 by less than 25%.	Students in the minority group have developed their Thai language skills in items 2 and 3 by at least 25% but not more than 50%.	Students in the minority group have developed their Thai language skills in items 2 and 3 by at least 50% but not more than 65%.	Students in the minority group have developed their Thai language skills in items 2 and 3 by at least 65% but not more than 80%.	Students in the minority group have developed their Thai language skills in items 2 and 3 by more than 80%.

No.	Survey Items/Indicators	Criteria for Evaluation	Score Level/Scoring Criteria					
			N/A	0	1	2	3	4
		2. The instructional media for learning Thai. 3. Monitoring the language development of students in the minority group or scheduling time for teaching and developing Thai language skills for students in the minority group.						