

Assessing Integrated Quality Management Implementation in Early Childhood Education Institutions: A Quantitative Survey from Indonesia

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Abstract: This study aims to assess the level of implementation of Integrated Quality Management (IQM) in Early Childhood Education (ECE) institutions and to identify strengths and variations across different institutional dimensions. The study employed a descriptive quantitative survey design. Data were collected from 100 accredited ECE institutions in Semarang City, Indonesia, using a structured questionnaire consisting of 20 items covering seven IQM dimensions. Data analysis was conducted using descriptive statistics to examine mean scores, variation, performance categories, and rankings for each dimension. The results indicate that the overall level of IQM implementation falls within the “good” category ($M = 3.15$; $SD = 0.29$). The learning process dimension shows the highest level of implementation, while quality culture has the lowest mean score and the highest variation. Most institutions are categorized as “Good” and “Very Good,” indicating relatively homogeneous quality management practices among accredited institutions, although variations remain in organizational culture and support systems. These findings suggest that while pedagogical quality has been well managed, strengthening quality culture remains a key challenge. Enhancing leadership capacity, internal quality assurance systems, and continuous improvement mechanisms are essential to improving IQM implementation in ECE. This study provides comprehensive empirical evidence on IQM implementation in ECE within a developing country context and contributes to the global discourse on quality assurance and educational management.

Keywords: integrated quality management (IQM); early childhood education (ECE); quality culture; internal quality assurance

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Introduction

The quality of early childhood education (ECE) has become a central concern in global education policy and research, particularly as mounting evidence demonstrates that high-quality early learning environments play a critical role in children's cognitive, social, and emotional development (Verkuyten & Killen, 2021; von Suchodoletz et al., 2023). In recent years, international organizations and scholars have emphasized that improving access to ECE alone is insufficient without systematic efforts to ensure and sustain institutional quality (McDoniel et al., 2022; OCCD, 2022). Consequently, attention has increasingly shifted toward quality management approaches that enable early childhood education institutions to deliver consistent, accountable, and continuously improving educational services. The urgency of quality improvement has increased in the post-pandemic period, particularly as early childhood education institutions face challenges related to learning recovery, disparities in educational quality, and the integration of digital technologies into teaching and institutional management. These

challenges require educational institutions to adopt systematic quality management practices that support continuous improvement and long-term sustainability.

Within this discourse, Integrated Quality Management (IQM), which is rooted in Total Quality Management principles, has emerged as a comprehensive framework for institutional improvement. In early childhood education, IQM can be operationalized through key dimensions such as learning processes, curriculum management, leadership, human resources, facilities and infrastructure, quality culture, and accountability systems. IQM emphasizes leadership commitment, stakeholder involvement, continuous evaluation, and systematic improvement across these dimensions (Douglass, 2021; Hallinger & Kovačević, 2021). Therefore, quality management is viewed not merely as an administrative function but as a strategic mechanism for aligning educational processes and organizational resources toward shared quality goals (Urban et al., 2021).

In early childhood education settings, applying quality management frameworks presents both opportunities and challenges. Unlike primary or secondary education, ECE institutions operate within complex ecosystems that involve close interaction with families, diverse pedagogical approaches, and varying regulatory standards (Lazzari & Vandenbroeck, 2020; Raikes et al., 2020). As a result, quality in ECE is multidimensional, encompassing structural quality (such as facilities and teacher qualifications), process quality (including learning interactions and pedagogical practices), and organizational quality (leadership, culture, and accountability mechanisms) (Pianta et al., 2020). Integrated quality management offers a promising lens for examining these dimensions holistically rather than in isolation.

Globally, recent studies have highlighted the growing importance of quality assurance and continuous improvement systems in early childhood education institutions. Research in Europe and East Asia indicates that accredited ECE institutions with well-established internal quality management systems tend to demonstrate more consistent pedagogical practices and stronger institutional governance (Fujisawa et al., 2023; Karila & Alasuutari, 2021). However, scholars also caution that formal accreditation or regulatory compliance does not automatically translate into a deeply embedded quality culture (Urban et al., 2021). This distinction underscores the need to empirically assess how quality management principles are actually implemented at the institutional level.

In developing and middle-income countries, including Indonesia, the issue of quality management in early childhood education is particularly urgent. Although participation in early childhood education has increased, Indonesia's Gross Enrollment Rate (APK) in PAUD remains around 36%, indicating ongoing challenges in expanding access and ensuring service quality (BPS, 2024). Concerns therefore remain regarding disparities in institutional quality and the sustainability of quality-imvement efforts (OECD, 2020; Yoshikawa et al., 2020). While national accreditation systems have been introduced to standardize minimum quality benchmarks, empirical evidence suggests that many institutions continue to struggle with internal quality assurance, leadership capacity, and the development of a shared quality culture (Kaga et al., 2021).

Despite the growing relevance of quality management in ECE, empirical research on the implementation of integrated quality management frameworks at the institutional level remains limited, particularly in Southeast Asia. Existing studies often focus on specific quality dimensions—such as classroom interactions or teacher competence—without examining how these elements are integrated within a broader organizational quality management system (Cadima et al., 2022; Steed & Leech, 2021). As a result, there is a lack of comprehensive evidence on how early childhood education institutions operationalize integrated quality management principles in practice.

Several previous studies provide important insights but also reveal critical limitations. First (von Suchodoletz et al., 2020) conducted a meta-analysis examining the relationship between classroom quality and child outcomes, demonstrating that higher process quality is associated with positive developmental outcomes. While this study establishes the importance of quality, it does not

address how institutions systematically manage and sustain such quality through organizational mechanisms. Second, (Slot et al., 2020) explored quality profiles in ECE through multiple case studies, highlighting variations in structural and process quality across institutions. However, their qualitative approach limits generalizability and does not offer a standardized assessment of integrated quality management practices. Third, (Fujisawa et al., 2023) examined quality in accredited nursery centers in Japan and found that accreditation status alone does not guarantee uniformly high quality across all dimensions. Although this study underscores the need for internal quality management, it stops short of analyzing quality management as an integrated institutional system.

Collectively, these studies suggest that while quality in early childhood education has been widely investigated, the implementation of integrated quality management at the institutional level remains underexplored, particularly through quantitative, institution-wide assessments. Moreover, much of the existing literature originates from high-income countries, limiting its applicability to contexts such as Indonesia, where institutional capacity, governance structures, and resource availability may differ significantly (OECD, 2021).

This leads to a clear research gap. Although quality in early childhood education has been widely studied, limited empirical research has examined how Integrated Quality Management (IQM) is implemented across institutional dimensions in accredited early childhood education institutions within developing-country contexts..

This study extends previous research by examining Integrated Quality Management (IQM) across multiple institutional dimensions, including learning processes, curriculum management, leadership, infrastructure, human resources, quality culture, and accountability mechanisms. While earlier studies have generally focused on specific aspects of educational quality, this study provides a more comprehensive assessment of how quality management is implemented at the institutional level. The focus on accredited early childhood education institutions is intended to examine whether institutions that have met formal quality standards have also embedded quality management principles across their organizational practices. By providing empirical evidence from accredited ECE institutions in Indonesia, this study contributes to a better understanding of quality management implementation in developing-country contexts.

Accordingly, this study aims to assess the implementation of integrated quality management in early childhood education institutions in Indonesia. Specifically, it seeks to examine the extent to which integrated quality management principles are applied across key institutional dimensions and to provide an empirical baseline that can inform future quality improvement initiatives and policy development in early childhood education.

Method

This study employed a quantitative descriptive survey design to assess the extent of Integrated Quality Management (IQM) implementation in early childhood education (ECE) institutions. A descriptive approach was considered appropriate because the primary objective of the study was not to test causal relationships or interventions, but to provide a systematic and empirical overview of how integrated quality management principles are implemented across key institutional dimensions. Such a design is widely used in educational management research to map institutional practices and establish baseline evidence for quality improvement initiatives. The study was conducted from January to March 2024 in accredited early childhood education institutions located in Semarang City, Indonesia, an urban area with a relatively high concentration of ECE providers. The focus on this urban context was intended to capture institutional practices within a setting where policy implementation, accreditation processes, and quality assurance mechanisms are relatively well established.

The study population consisted of all registered early childhood education (ECE) institutions operating in Semarang City, totaling 310 institutions according to data from the Semarang City

Education Office. Given the study's focus on quality management practices in institutions that have met formal quality standards, the sample was restricted to ECE institutions holding an active accreditation status of at least "B" based on the most recent accreditation results issued by the National Accreditation Board for Early Childhood Education and Non-Formal Education (BAN-PDM) in 2024. A purposive sampling technique was applied using the following criteria: (1) the institution holds an active accreditation status of at least "B"; (2) the institution has been operating for at least three years; (3) the institution is formally registered with the local education authority; and (4) the principal or designated management representative was willing to participate as a respondent. Based on these criteria, 100 ECE institutions were selected as the study sample. One respondent from each institution, typically the principal or institutional leader, was chosen because they were considered the most knowledgeable about quality management policies, procedures, and practices. Although purposive sampling limits statistical generalization, it was considered appropriate because the objective of this study was specifically to assess IQM implementation among accredited institutions that have achieved formal quality standards, rather than to generalize findings to all ECE institutions.

Research Instrument

Data were collected using a structured questionnaire specifically developed to assess the implementation of Integrated Quality Management in early childhood education institutions. The instrument consisted of 20 closed-ended items distributed across seven dimensions of integrated quality management, adapted to the ECE institutional context. Respondents were asked to indicate their level of agreement with each statement using a four-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The absence of a neutral midpoint was intended to encourage respondents to make clear evaluative judgments regarding institutional practices.

Table 1. Dimensions and Indicators of Integrated Quality Management

Dimension	Focus of Measurement	Number of Items
Learning Process	Planning, implementation, and evaluation of learning activities	3
Curriculum Management	Curriculum alignment and implementation consistency	2
Leadership	Leadership commitment, decision-making, and quality orientation	3
Facilities and Infrastructure	Availability and adequacy of learning facilities	2
Teachers and Educational Staff	Professional competence and continuous development	4
Quality Culture	Shared values, collaboration, and continuous improvement	3
Accountability and Transparency	Documentation, reporting, and stakeholder accountability	3
Total		20 items

The selection of these dimensions reflects an integrative interpretation of quality management in early childhood education, combining organizational quality management principles with core educational quality components.

Validity and Reliability of the Instrument

Before data collection, the questionnaire underwent content validation through expert judgment involving specialists in early childhood education and educational management. Experts evaluated the clarity, relevance, and representativeness of each item in relation to the intended dimension. Revisions were made based on expert feedback to ensure conceptual alignment and contextual appropriateness. The instrument was also subjected to empirical validity and reliability

testing using pilot data. Item validity was assessed through item–total correlation analysis, and all items met the minimum acceptable criteria. Internal consistency reliability was evaluated using Cronbach's alpha, which indicated that the instrument demonstrated satisfactory reliability across both overall measurement and individual dimensions. These procedures ensured that the instrument was suitable for assessing integrated quality management implementation at the institutional level.

Data Collection Procedures

Data collection was conducted over a defined period with formal approval from relevant local education authorities. Questionnaires were distributed directly to respondents, either in printed form or via structured online formats, depending on institutional accessibility and respondents' preferences. To reduce potential response bias, respondents were informed that: Participation was voluntary. Responses would remain anonymous and confidential. Data would be used solely for research purposes. Respondents completed the questionnaire independently, without researcher intervention, to ensure the authenticity of responses.

Data Analysis Techniques

Data analysis was conducted using descriptive statistical techniques. For each item and dimension, mean scores, standard deviations, frequency distributions, and percentage values were calculated to describe the level and variability of Integrated Quality Management (IQM) implementation across institutions. In addition, dimension rankings were generated based on mean scores to identify relative strengths and weaknesses in IQM implementation.

To facilitate interpretation, mean scores were classified into four performance categories using equal interval ranges derived from the four-point Likert scale. The interval width was calculated using the formula $(\text{maximum score} - \text{minimum score}) \div \text{number of categories} = (4.00 - 1.00) \div 4 = 0.75$. Accordingly, mean scores were interpreted as follows: 3.25–4.00 = Very Good, 2.50–3.24 = Good, 1.75–2.49 = Fair, and 1.00–1.74 = Poor. In addition to aggregate scores, the distribution of institutions across these categories was examined for each dimension to identify patterns of strength and areas requiring improvement.

Table 2. Interpretation Criteria for Mean Scores

Mean Score Range	Interpretation
3.25 – 4.00	Very Good
2.50 – 3.24	Good
1.75 – 2.49	Fair
1.00 – 1.74	Poor

The use of descriptive analysis aligns with the study's objective of providing a comprehensive overview of IQM implementation rather than testing hypotheses or causal relationships.

Ethical Considerations

Ethical principles were observed throughout the research process. Respondents provided informed consent before participation, and institutional identities were anonymized during data analysis and reporting. The study did not involve vulnerable participants or sensitive personal data, and all procedures complied with general ethical standards for educational research.

Methodological Rigor and Limitations

To enhance methodological rigor, this study employed clearly defined sampling criteria, validated instruments, and transparent analytical procedures. However, several limitations should be

acknowledged. First, the reliance on a single respondent per institution may introduce perceptual bias. Second, the purposive sampling approach limits the generalizability of findings beyond accredited ECE institutions in Semarang City. Third, the descriptive design does not allow causal inferences regarding the impact of IQM on educational outcomes. Despite these limitations, the methodology provides a robust and contextually grounded assessment of integrated quality management implementation and offers a solid empirical foundation for future explanatory or intervention-based research.

Results and Discussion

Overall Level of Integrated Quality Management Implementation

The overall level of Integrated Quality Management implementation was calculated by averaging the scores across all seven dimensions. The results indicate that the overall mean IQM implementation score across the sampled institutions was 3.15, with a standard deviation of 0.29, corresponding to the “Good” category according to the established interpretation criteria. This finding suggests that accredited early childhood education institutions in Semarang City have implemented integrated quality management practices at a relatively high level, although variations exist across specific dimensions.

Table 3. Overall Level of Integrated Quality Management Implementation

Dimension	Mean	Standard Deviation	Interpretation
Learning Process	3.32	0.35	Very Good
Curriculum Management	3.12	0.38	Good
Leadership	3.18	0.36	Good
Facilities and Infrastructure	3.10	0.40	Good
Teachers and Educational Staff	3.20	0.34	Good
Quality Culture	3.03	0.42	Good
Accountability and Transparency	3.15	0.37	Good
Overall IQM	3.15	0.29	Good

Among the seven dimensions, the learning process recorded the highest mean score (3.32), while quality culture obtained the lowest mean score (3.03), although it remained within the “Good” category.

Results by Dimension of Integrated Quality Management

Learning Process

The learning process dimension achieved the highest performance among all dimensions. The mean score of 3.32 indicates that most institutions demonstrated strong practices in planning, implementing, and evaluating learning activities. The relatively moderate standard deviation (0.35) suggests a generally consistent perception across institutions. This result reflects a high level of attention to pedagogical processes within accredited early childhood education institutions.

Curriculum Management

Curriculum management received a mean score of 3.12, indicating “Good.” While most institutions reported effective curriculum alignment and implementation, the standard deviation (0.38) indicates moderate variability among institutions. This variability suggests that although curriculum standards are largely met, differences exist in how consistently curriculum policies are operationalized at the institutional level.

Leadership

The leadership dimension recorded a mean score of 3.18, placing it in the “Good” category. Respondents generally perceived institutional leaders as supportive of quality-oriented decision-making and organizational direction. However, the standard deviation (0.36) indicates some variation in leadership practices across institutions.

Facilities and Infrastructure

Facilities and infrastructure yielded a mean score of 3.10, with a standard deviation of 0.40. Although classified as “Good,” this dimension showed one of the highest levels of variability, suggesting disparities in the adequacy and maintenance of physical learning environments across institutions.

Teachers and Educational Staff

The dimension of teachers and educational staff achieved a mean score of 3.20, indicating a “Good” level of implementation. This dimension reflects respondents’ perceptions of teacher competence, professionalism, and engagement in continuous development activities. The relatively low standard deviation (0.34) suggests a fairly consistent pattern across institutions.

Quality Culture

Quality culture received the lowest mean score (3.03) among all dimensions, although it remained within the “Good” category. This dimension also exhibited the highest standard deviation (0.42), indicating substantial variability in the extent to which quality-oriented values, collaboration, and continuous improvement practices are embedded within institutions.

Accountability and Transparency

Accountability and transparency recorded a mean score of 3.15, categorized as “Good.” Respondents generally indicated that documentation, reporting mechanisms, and accountability practices were implemented adequately. However, the observed variability (SD = 0.37) suggests differences in the consistency and formality of accountability mechanisms across institutions.

Distribution of Institutions by Performance Category

To provide a more detailed picture of institutional performance, institutions were classified into four categories Very Good, Good, Fair, and Poor based on their mean scores for each dimension.

Table 4. Distribution of Institutions by Performance Category (%)

Dimension	Very Good (%)	Good (%)	Fair (%)	Poor (%)
Learning Process	42	58	0	0
Curriculum Management	28	69	3	0
Leadership	31	66	3	0
Facilities and Infrastructure	25	70	5	0
Teachers and Educational Staff	34	63	3	0
Quality Culture	22	74	3	1
Accountability and Transparency	29	68	3	0

The distribution shows that the majority of institutions were concentrated in the “Good” category across all dimensions. Notably, the learning process dimension had the highest proportion of institutions classified as “Very Good,” while quality culture had the smallest proportion in this category and was the only dimension in which a small percentage of institutions fell into the “Poor” category.

Ranking of Integrated Quality Management Dimensions

To further clarify the relative strengths and weaknesses of integrated quality management implementation, the seven dimensions were ranked based on their mean scores. This ranking provides a comparative overview of institutional performance across quality management areas.

Table 5. Ranking of Integrated Quality Management Dimensions Based on Mean Scores

Rank	Dimension	Mean Score	Interpretation
1	Learning Process	3.32	Very Good
2	Teachers and Educational Staff	3.20	Good
3	Leadership	3.18	Good
4	Accountability and Transparency	3.15	Good
5	Curriculum Management	3.12	Good
6	Facilities and Infrastructure	3.10	Good
7	Quality Culture	3.03	Good

The ranking indicates that learning process management represents the strongest dimension of integrated quality management implementation, whereas quality culture occupies the lowest position among the seven dimensions.

Variability of Integrated Quality Management Implementation Across Dimensions

In addition to mean scores, the variability of implementation was examined using standard deviation values. Dimensions related to quality culture ($SD = 0.42$) and facilities and infrastructure ($SD = 0.40$) showed the highest dispersion, suggesting greater differences in implementation levels across institutions. Conversely, dimensions such as teachers and educational staff ($SD = 0.34$) and learning process ($SD = 0.35$) demonstrated lower variability, indicating more consistent implementation patterns. This variability analysis highlights that while certain quality management practices are uniformly applied, others differ substantially among institutions.

Concentration of Institutional Performance Levels

An examination of the distribution of performance categories reveals a strong concentration of institutions within the “Good” and “Very Good” categories across all dimensions. Very few institutions were classified as “Fair,” and only one dimension quality culture included a small proportion of institutions in the “Poor” category. This distribution pattern reflects a generally high level of integrated quality management implementation among accredited institutions and indicates limited dispersion toward lower performance levels.

Summary of Enhanced Results

The additional analyses reinforce the main findings by demonstrating clear performance hierarchies among integrated quality management dimensions, identifying areas with high variability, and confirming the overall concentration of institutions at moderate-to-high implementation levels. These results provide a more nuanced empirical foundation for subsequent interpretation and discussion.

This study aimed to assess the implementation of Integrated Quality Management (IQM) in early childhood education institutions in an urban Indonesian context. The findings reveal that, overall, accredited early childhood education institutions in Semarang City have implemented integrated quality management practices at a **good level**, with notable variation across institutional dimensions. These results provide important insights into how quality management principles are operationalized in early childhood education settings, particularly in developing country contexts.

Overall Implementation of Integrated Quality Management

The overall mean IQM implementation score (3.15) suggests that accredited institutions have largely internalized basic quality management practices. This finding aligns with international research indicating that accreditation systems and regulatory frameworks often drive institutions toward meeting minimum quality standards ((Nusche & Miron, 2021; Torres & López, 2020) However, as highlighted in previous studies, achieving compliance with standards does not necessarily equate to the full institutionalization of integrated quality management principles ((Karila & Alasuutari, 2021; Urban et al., 2021)

The concentration of institutions in the “Good” and “Very Good” categories reflects a relatively homogeneous quality profile among accredited institutions. Similar patterns have been observed in other national contexts where formal accreditation acts as a filtering mechanism that reduces variability among institutions ((Cloney et al., 2020; E. García & Weiss, 2021). At the same time, this concentration may also indicate a potential ceiling effect, particularly when only accredited institutions are included, as noted in comparative education quality studies (OECD, 2020)

Strength of Learning Process Management

Among the seven dimensions, the learning process emerged as the strongest area of IQM implementation. This finding may be attributed to the fact that learning activities represent the core function of early childhood education institutions and receive substantial attention in curriculum implementation, teacher supervision, and accreditation processes. As a result, institutions tend to prioritize lesson planning, learning implementation, and evaluation practices more consistently than other organizational dimensions. This result is consistent with prior research, which emphasizes that pedagogical processes often receive the greatest attention in early childhood education reforms due to their direct relationship with child development outcomes (Anders et al., 2020; Melhuish et al., 2021). International studies have repeatedly demonstrated that educators are more likely to adopt structured planning, reflective teaching practices, and continuous evaluation than broader organizational quality mechanisms (Siraj et al., 2022).

In the Indonesian context, this strong performance may also be influenced by curriculum reforms and professional development initiatives that emphasize instructional quality and child-centered learning. However, previous research cautions that strong classroom practices may not be sustainable without equally strong institutional support systems (Montie et al., 2020); Li et al., 2022). This observation reinforces the importance of examining quality management as an integrated system rather than as isolated practices.

Moderate Performance in Leadership and Human Resources

Leadership and teacher-related dimensions demonstrated good but not outstanding levels of implementation. These findings align with studies suggesting that leadership in early childhood education often focuses on administrative compliance rather than strategic quality improvement (Douglass, 2021; Peralta et al., 2022) While institutional leaders were generally perceived as supportive, variability in leadership practices indicates differences in leaders’ capacity to translate quality management principles into coherent institutional strategies.

Similarly, the relatively consistent performance in the teachers and educational staff dimension suggests that professional competence and development activities are reasonably well established. This aligns with evidence showing that teacher qualifications and ongoing professional learning are among the most regulated and monitored aspects of early childhood education systems (Cadima et al., 2022; Rademacher et al., 2025). Nevertheless, previous research emphasizes that professional development initiatives are most effective when embedded within a broader quality culture that encourages collaboration and reflective practice (Steed & Leech, 2021).

Facilities, Infrastructure, and Accountability as Supporting Systems

Facilities and infrastructure, along with accountability and transparency, showed moderate implementation levels accompanied by relatively high variability. This finding reflects disparities in institutional resources and management capacity, even among accredited institutions. Similar patterns have been documented in cross-national studies, where funding structures and governance arrangements strongly influence the quality of infrastructure and accountability mechanisms ((Kaga et al., 2021; OECD, 2021a) Accountability and transparency mechanisms, while generally present, are implemented more as formal reporting requirements than as tools for continuous improvement. This observation resonates with previous critiques that quality assurance systems in education often prioritize documentation over reflective use of data for institutional learning ((Nusche & Miron, 2021; Torres & López, 2020)

Quality Culture as a Critical Bottleneck

The most notable finding of this study is the comparatively lower performance and higher variability observed in the quality culture dimension. Although still categorized as “Good,” quality culture ranked lowest among all dimensions and was the only area in which a small proportion of institutions fell into the “Poor” category. This pattern indicates that the implementation of quality management is still dominated by compliance-oriented practices rather than by the development of a strong organizational culture that supports continuous improvement. In many institutions, quality assurance appears to function primarily as a mechanism for fulfilling accreditation requirements, while collaborative learning, self-evaluation, and shared responsibility for quality remain less developed. This condition may weaken the sustainability of quality improvement efforts, as effective integrated quality management depends not only on formal procedures but also on the internalization of quality values throughout the organization (Hallinger & Kovačević, 2021; Urban et al., 2021).

Previous research suggests that developing a shared quality culture requires sustained collective engagement, trust, and leadership commitment, which are often more difficult to institutionalize than structural or procedural elements of quality management (Karila & Alasuutari, 2021; Lazzari & Vandenbroeck, 2020). In early childhood education settings, where collaboration among teachers, administrators, and families is essential, the absence of a strong quality culture may limit the long-term impact of quality management initiatives (Rogers et al., 2026). The findings of this study support the argument that quality culture represents a critical bottleneck in the implementation of integrated quality management. From a Total Quality Management (TQM) perspective, particularly Deming’s emphasis on continuous improvement and organizational commitment, quality improvement cannot be sustained through procedures and standards alone. Rather, it requires a shared culture that encourages participation, collaboration, and continuous learning. Therefore, the relatively low performance of the quality culture dimension suggests that quality management practices in some institutions have not yet been fully embedded in everyday organizational behavior. While institutions may comply with standards and implement quality-related procedures, the internalization of quality values and continuous improvement practices remains uneven.

Implications for Integrated Quality Management in ECE

Taken together, the results suggest that integrated quality management in early childhood education institutions is more advanced in areas directly linked to pedagogical practice than in dimensions related to organizational culture and systemic improvement. This pattern mirrors findings from international research indicating that quality management frameworks in education are often implemented in a fragmented manner, with stronger emphasis on technical aspects than on cultural transformation (Cloney et al., 2020; L. García et al., 2020). From a theoretical perspective, these findings reinforce the core principles of Total Quality Management (TQM), particularly the view that

sustainable quality improvement depends not only on operational processes but also on the development of a strong organizational culture. The study extends the application of IQM/TQM theory to the early childhood education context by demonstrating that compliance with quality standards and accreditation requirements does not automatically lead to the internalization of quality values across institutional practices. Therefore, quality culture should be considered a central component of IQM implementation rather than merely a supporting element.

For policymakers and practitioners, these findings highlight the need to move beyond compliance-based quality assurance toward approaches that actively foster a culture of continuous improvement. Policymakers may strengthen quality culture by incorporating internal quality evaluation, stakeholder feedback, and continuous improvement indicators into accreditation and supervision systems. At the institutional level, regular quality review meetings and professional learning communities can be used to support collaborative reflection and evidence-based improvement practices (Siraj et al., 2022; Yoshikawa et al., 2020).

Conclusion

This study assessed the implementation of Integrated Quality Management (IQM) in accredited early childhood education institutions in Semarang City, Indonesia. The findings indicate that IQM implementation is generally at a good level, with learning processes showing the strongest performance. In contrast, quality culture emerged as the weakest dimension and exhibited the highest variability across institutions. These results suggest that while accredited institutions have established quality-related systems and procedures, the internalization of quality values and continuous improvement practices remains uneven.

The study contributes to the literature on IQM in early childhood education by demonstrating that compliance with accreditation standards does not automatically lead to the development of a strong quality culture. Consistent with Total Quality Management principles, sustainable quality improvement requires not only effective procedures but also organizational commitment to continuous learning and improvement. Future research may employ longitudinal or mixed-methods approaches to further examine how quality culture influences the effectiveness of quality management practices and educational outcomes in early childhood education institutions.

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