



Evaluation of Input and Process Components of Inclusive Education in Primary Schools in Lautem District, Timor-Leste: A CIPP Model Approach

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Abstract. Inclusive education is a fundamental right for all learners, yet its implementation in resource-constrained post-conflict developing countries remains underexplored empirically. This study aims to evaluate the implementation of inclusive education programs in primary schools (Ensino Básico) in Lautem District, Timor-Leste, focusing on the Input and Process components of the CIPP (Context, Input, Process, Product) evaluation model. A quantitative cross-sectional survey with a descriptive-analytical approach was employed. Thirty respondents, consisting of school principals, regular classroom teachers, and special assistant teachers, were selected through total sampling at Ensino Básico Central Centro Lospalos. Data were collected using a validated four-point Likert-scale questionnaire and analyzed using descriptive statistics. The findings show that the Process component achieved a higher mean score ($M = 34.40$; $SD = 5.021$) than the Input component ($M = 27.53$; $SD = 3.665$), contributing 55.5% and 44.5%, respectively. The findings indicate that classroom-level inclusive practices are supported by teacher initiative and resilience despite limitations in specialized facilities, budget allocation, and continuous professional development. These results highlight the need to strengthen participatory planning, teacher training, and disability-inclusive facilities.

Keywords: CIPP Model; Educational Resilience; Inclusive Education; Program Evaluation; Timor-Leste.

1. INTRODUCTION

Education constitutes a fundamental human right enshrined in a constellation of internationally binding legal instruments, including the Universal Declaration of Human Rights (United Nations, 2014), the Convention on the Rights of the Child (United Nations, 2019), and the United Nations Convention on the Rights of Persons with Disabilities (Implementing the United Nations Convention on the Rights of Persons with Disabilities [CRPD], n.d.). The formal operationalization of these commitments within national education systems finds its most concrete expression in the principle and practice of inclusive education, a pedagogical paradigm that fundamentally reconceptualizes the relationship between learner diversity and the mainstream schooling environment. Rather than accommodating difference at the institutional margins, inclusive education posits that children with physical, cognitive, sensory, or psychosocial special needs should be educated alongside their typically developing peers within ordinary school settings, supported by differentiated instructional strategies and enabling environmental conditions (Ainscow et al., 2006; Mitchell, 2015). This paradigm shift is underpinned by normative imperatives of equity, social justice, and the inherent dignity of every learner, explicitly rejecting the historical practice of segregating students on the basis of perceived ability or disability.

The global commitment to inclusive education has been further consolidated and operationalized through the UNESCO Salamanca Statement, whose 25-year legacy is

comprehensively reviewed by UNESCO (2020b), and subsequently through Sustainable Development Goal 4 (SDG 4), which enshrines the provision of inclusive, equitable, and quality education as a prerequisite for sustainable human development and social mobility (UNESCO, 2020a). Within this international policy architecture, Timor-Leste (a young sovereign nation that completed its formal restoration of independence in 2002 following decades of colonial rule and occupation) has undertaken a deliberate, if constrained, process of educational system reconstruction on inclusive principles. The right to inclusive education is constitutionally guaranteed under the Constitution of the Democratic Republic of Timor-Leste (Real de Araújo, 2023), a commitment materially reinforced by the state's ratification of the CRPD (United Nations, 2025). At the operational level, the Ministry of Education, Youth and Sports has established a dedicated national inclusive education policy framework mandating the development of inclusive curriculum guidelines, compulsory teacher professional development, and the provision of disability-accessible minimum infrastructure in designated hub schools, frequently in partnership with international development partners such as UNICEF (Ng & Kek, 2016).

Notwithstanding these substantial policy commitments, the translation of inclusive education mandates into consistent, equitable ground-level practice in Timor-Leste confronts severe and multi-layered structural constraints. Fresquet (2024) and Tosun et al. (2025) have documented a persistent cluster of implementation barriers in the region: a chronic shortage of educators with specialized competencies in disability-inclusive pedagogy; a pervasive absence of disability-friendly physical infrastructure (including ramp access, adapted sanitation facilities, braille and tactile learning materials, and augmentative communication devices); and a deeply uneven pattern of policy enactment that systematically disadvantages geographically remote and rural districts. This spatial inequality is most pronounced in areas such as Lautem District, where physical remoteness, limited administrative capacity, and resource scarcity compound pre-existing educational disparities (Agustin, 2022).

This structural reality surfaces a theoretically compelling anomaly that existing evaluation literature has inadequately addressed. Classical rational-linear evaluation frameworks, most notably the CIPP Model developed by Stufflebeam (2003), operate on the normative assumption that adequate structural inputs (financial resources, trained personnel, appropriate facilities, and coherent program planning) constitute an indispensable prerequisite for the emergence of high-quality educational processes. In this deterministic logic, process quality is fundamentally derivative of input quality. However, accumulating evidence from developing country contexts suggests that this linear relationship can be systematically

disrupted by the extraordinary individual agency, cultural solidarity, and adaptive resilience of classroom practitioners (Noguchi, 2026; Miles & Singal, 2009). In environments where systemic inputs are demonstrably deficient, teachers may sustain observable process quality through forms of pedagogical improvisation and personal commitment that are not institutionally mandated, resourced, or reproducible at scale.

Empirical research that quantitatively tests and documents this specific dynamic (rigorously measuring the relationship between structural input readiness and operational process quality in inclusive education within Timor-Leste's rural school context) remains markedly scarce. The existing literature is dominated by policy analyses, qualitative ethnographic accounts, and cross-national comparative reviews that, while valuable, do not generate the disaggregated, site-specific numerical evidence necessary to guide targeted resource allocation and policy calibration decisions by national authorities. This study addresses this critical empirical gap by applying the CIPP evaluation model to the inclusive education program at a designated hub primary school in Lautem District. Specifically, it aims to: (1) quantitatively measure staff perceptions of the program's Input component readiness; (2) quantitatively measure staff perceptions of the program's Process component execution quality; and (3) analyze the relationship and proportional contribution of these two components to the program's combined operational profile. The findings are intended to provide an evidence-based diagnostic baseline capable of challenging input-deterministic policy assumptions and informing sustainable, contextually appropriate reform strategies.

2. THEORETICAL REVIEW

Program Evaluation and the CIPP Model

Program evaluation is a rigorous, systematic discipline concerned with the collection, analysis, and interpretation of evidence pertaining to the design, implementation, and outcomes of deliberate programs, with the purpose of supporting informed decision-making and continuous program improvement (Smith & Young, 1987; Chung, 2008). Within the domain of educational policy research, evaluation serves a diagnostic function that extends beyond the summative measurement of success or failure to include the identification of systemic bottlenecks, resource misalignments, and implementation fidelities across complex bureaucratic and social systems (Masrurah & Fitriani, 2021; Tyler & Hlebowitsh, 2013). Among the diverse theoretical frameworks available for structured educational program evaluation, the CIPP (Context, Input, Process, Product) Model, originally developed by Stufflebeam (2003) and comprehensively reviewed by Datta (2007), occupies a position of pre-

eminence in international applied evaluation research due to its comprehensive, multi-phase architecture and its explicit orientation toward improvement-focused decision support. Warju (2016) similarly confirms the CIPP model's utility as a comprehensive framework for evaluating educational programs across diverse institutional contexts.

The CIPP Model conceptualizes program evaluation as a cyclical, formative ecosystem rather than a terminal summative judgment. The Context phase evaluates the environmental conditions, institutional needs, and strategic goals within which a program is situated. The Input phase conducts a systematic appraisal of the resources, organizational capacities, and structural readiness that a program mobilizes to achieve its stated objectives, including budgetary allocations, infrastructure provision, curriculum design, and the baseline professional competencies of implementing personnel. The Process phase observes and assesses the fidelity and quality of program implementation in its actual operating environment, how learning activities are actualized in classrooms, how instructors interact with learners of diverse needs, and how institutional stakeholders collaborate in real time. The Product phase then evaluates the tangible outcomes and impacts of the program against pre-defined objectives (Datta, 2007). The analytical isolation of the Input and Process components in the present study enables a precise diagnostic investigation of the program's internal operational logic (specifically, the degree to which structural capacity predicts or fails to predict operational quality).

Inclusive Education: Policy Frameworks and Global Commitments

The normative foundations of inclusive education are anchored in a robust multilateral policy architecture spanning several decades. UNESCO (2020b), in a comprehensive review marking the 25th anniversary of the Salamanca Statement, reaffirms the principle that schools must accommodate all children regardless of their physical, intellectual, social, emotional, linguistic, or other conditions, cataloguing the global shift from segregated special education toward integrated mainstream provision. Subsequently, commitments were entrenched through accountability mechanisms documented by GEM Report UNESCO (2017) and the Convention on the Rights of Persons with Disabilities, requiring not merely the physical co-location of students with and without disabilities, but the substantive transformation of school environments, curricula, and pedagogical practices to ensure genuine participation and learning for all (Ainscow, 2020; UNESCO, 2020b). SDG 4, adopted in 2015, further consolidated this agenda by framing inclusive, equitable, quality education as a universal development imperative, linking educational inclusion explicitly to poverty reduction, gender equality, and sustainable economic growth (UNESCO, 2020a).

Within this global policy constellation, Ainscow et al. (2006) provide a widely adopted framework for school development toward inclusion, offering structured indicators for evaluating inclusive cultures, policies, and practices. Mitchell (2015) further elaborates an evidence-based synthesis of effective inclusive education practices, emphasizing the centrality of collaborative teaching, differentiated curriculum design, and community engagement as critical mediating factors between policy aspiration and classroom reality. GEM Report UNESCO (2023b) additionally documents how technology can serve as an enabling tool in disability-inclusive education contexts, extending the reach of inclusive pedagogical frameworks to resource-constrained settings. These conceptual frameworks inform the indicator design of the present study's instrumentation.

Implementation Challenges in Developing Country Contexts

The empirical literature on inclusive education implementation in developing nations consistently documents a structural gap between the formal ambitions of national policy frameworks and the practical realities encountered at school level. Noguchi (2026) provides a comprehensive synthesis of inclusive education challenges across East Asian developing contexts, identifying limited teacher pre-service and in-service training, inadequate specialized support services, and attitudinal barriers among both educators and community members as the most persistent obstacles to genuine inclusion. Miles and Singal (2009) similarly argue that the international Education for All agenda has frequently been conceptualized in terms of access metrics (enrolment and retention rates) rather than the qualitative transformation of pedagogical practices necessary for meaningful inclusive participation, particularly for students with cognitive or multiple disabilities.

Applied CIPP-based evaluations of inclusive education programs in Indonesia (a geographically and culturally proximate context to Timor-Leste) have yielded convergent findings. Ernawati et al. (2025), in a multi-site evaluation of inclusive primary schools, identified limited educator competency in differentiated instruction for students with diverse cognitive profiles and the inadequacy of physical accessibility infrastructure as the dominant input-level constraints. Agustin (2022) similarly documented systemic problematic dimensions in inclusive education implementation and resource constraints in Indonesian primary schools, while Suwandayani (2019) highlighted the importance of contextual approaches in bridging policy and classroom practice in inclusive elementary settings. At the specific Timor-Leste level, Araújo and Soares (2025), in a Systematic Literature Review of national inclusive education policies, documented the acute challenges of translating national inclusive education

mandates into ground-level practice, findings that are likely to be more severe in remote rural districts such as Lautem.

Teacher Agency and Resilience as Compensatory Mechanisms

A theoretically significant and practically consequential theme emerging from the inclusive education literature in resource-constrained contexts concerns the capacity of individual teacher agency to function as a compensatory mechanism for systemic input deficiencies. When institutional inputs are structurally inadequate, the operational burden of sustaining inclusive learning processes frequently devolves upon individual classroom practitioners, who respond through pedagogical improvisation, peer-learning facilitation, and the mobilization of informal community support networks (Noguchi, 2026; Miles & Singal, 2009). Araújo and Soares (2025) observed this dynamic across contexts where inclusive education policies encountered severe resource constraints, documenting instances where observable process quality was maintained at levels that appeared disproportionate relative to the severity of input deficiencies, attributable to high levels of individual teacher motivation and localized adaptive problem-solving.

However, the sustainability implications of this compensatory dynamic are uniformly cautionary in the literature. As Ainscow (2020) notes, institutional inclusion that relies primarily on the exceptional personal commitment of individual practitioners, rather than on institutionally guaranteed and systematically resourced enabling conditions, constitutes a structurally fragile arrangement. It generates inequitable variability in student experience across classrooms and schools, and imposes unsustainable psychological and professional burdens on educators that predictably manifest in elevated rates of occupational burnout and staff attrition (Noguchi, 2026; Suwandayani, 2019). This theoretical framework (the tension between process-sustaining teacher agency and input-dependent institutional sustainability) constitutes the primary analytical lens of the present study.

3. RESEARCH METHODOLOGY

Research Design

This study employed a quantitative cross-sectional survey design utilizing a descriptive analytical approach. Cross-sectional surveys are well-established instruments for capturing objective, numerical measurements of participant perceptions regarding the current state of a phenomenon at a specific point in time, making them particularly appropriate for program evaluation research that seeks to generate a diagnostic snapshot of implementation realities as experienced by immediate program stakeholders (Ishtiaq, 2019; Hermawan & Hariyanto,

2022). Within the context of CIPP-based program evaluation, descriptive quantitative methods enable researchers to precisely quantify the magnitude and distribution of both strengths and weaknesses within specific program components, facilitating evidence-based prioritization of intervention targets (Masruroh & Fitriani, 2021; Stufflebeam, 2003).

Research Site and Participants

The study was conducted at *Ensino Básico Central Centro Lospalos* Primary School in Lautem District, Timor-Leste. This site was purposively selected on the basis of its formally designated status as an inclusive education hub school (*escola polo*) by the Local Education Authority, legally mandating it to accept students with disabilities from surrounding rural sub-districts. This designation makes it the most structurally informed and operationally active site for inclusive education evaluation within the district.

Given the highly specialized and numerically limited population of inclusive education practitioners within this geographically remote district, a total sampling technique was employed, ensuring that all members of the school's inclusive education operational ecosystem were included in the study (Subhaktiyasa, 2024). The final sample comprised 30 respondents: the school principal, regular classroom teachers assigned to grade levels with enrolled special needs students, and dedicated special assistant teachers (*professores assistentes especiais*). While this sample size is statistically modest by the standards of large-scale survey research, it represents the complete population of inclusive education implementing actors at this designated hub, positioning the study as an in-depth quantitative case study that prioritizes localized diagnostic validity and practical policy relevance over broad statistical generalizability.

Data Collection Procedure

Data collection followed receipt of formal ethical clearance from the institutional review board of Universitas Negeri Yogyakarta and written authorization from the Lautem District Education Authority. Structured self-report questionnaires were administered directly (in person) to respondents, an approach necessitated by the rural setting and limited digital infrastructure of the research site. Prior to questionnaire distribution, all participants received a comprehensive briefing on the evaluation's purpose, scope, and the strictly voluntary nature of their participation. Respondents were explicitly informed that the data would be used exclusively for program improvement purposes and that their individual responses would not be traceable by school management, thereby mitigating social desirability bias and encouraging candid, honest self-reporting of structural deficiencies (Ishtiaq, 2019).

Research Instrument

Data were collected using a closed-ended questionnaire employing a 4-point Likert response scale (1 = Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree). The deliberate elimination of a neutral midpoint option was designed to elicit directional responses that accurately reflect respondents' genuine evaluative positions, consistent with established best practices in program evaluation instrumentation (Subhaktiyasa, 2024). The instrument comprised two component scales, each developed and operationalized in alignment with the theoretical constructs of the CIPP Model:

The Input Component Scale (9 items) assessed systemic structural readiness across four indicator domains: (a) program planning clarity and comprehensiveness; (b) baseline professional competency and specialized training of human resources; (c) physical infrastructure availability and accessibility (including ramp access, adapted sanitation, specialized learning materials such as braille books and pictographic communication cards); and (d) administrative and budgetary support structures.

The Process Component Scale (11 items) assessed the operational quality of inclusive education implementation across four indicator domains: (a) lesson plan adaptation and individualized learning program development; (b) quality and frequency of teacher-student interaction with special needs learners; (c) deployment of differentiated instructional strategies and assistive pedagogical approaches; and (d) real-time inter-professional collaboration between regular classroom teachers and special assistant teachers.

The instrument's content validity was rigorously reviewed by a panel of three certified educational evaluation experts, whose systematic feedback was incorporated into the final instrument design. Internal consistency reliability was established through a pilot administration at a different primary school in an adjacent district. The resulting reliability coefficients were highly acceptable for both scales: Input Component Cronbach's $\alpha = 0.78$; Process Component Cronbach's $\alpha = 0.83$, meeting the conventional threshold of $\alpha \geq 0.70$ recommended for research instrumentation (Thorndike, 1995).

Data Analysis

Quantitative data were processed and analyzed using IBM SPSS Statistics (Version 26). The primary analytical strategy employed descriptive statistics to characterize the distributional properties of both component scales, generating minimum, maximum, sum, mean, median, mode, and standard deviation values for aggregate component scores and individual item scores. A percentage contribution analysis was subsequently conducted to calculate the proportional weight of each component's aggregate score relative to the combined Input-plus-

Process total, enabling a direct comparative assessment of the program's structural strengths and operational vulnerabilities. This analytical approach is consistent with the diagnostic goals of program evaluation research within the CIPP framework (Stufflebeam, 2003; Warju, 2016).

4. RESULTS AND DISCUSSION

Descriptive Statistical Findings

The descriptive statistical analysis of responses from the 30 respondents generated a comprehensive numerical diagnostic profile of the inclusive education program's structural and operational realities. Table 1 presents the aggregate descriptive statistics for both the Input and Process components, and Table 2 provides the corresponding central tendency measures and proportional score contributions.

Table 1. Descriptive Statistics for Input and Process Components (N = 30)

Component	N	Minimum	Maximum	Sum	Mean	SD
Input	30	20	36	826	27.53	3.665
Process	30	23	44	1032	34.40	5.021

Note. SD = Standard Deviation.

Table 2. Central Tendency Measures and Proportional Score Contributions

Component	Median	Mode	SE	Score Contribution (%)
Input	28.00	28	0.669	44.5%
Process	34.50	29 ^a	0.917	55.5%

Note. ^a Multiple modes exist; the smallest value is shown. SE = Standard Error.

The Input component yielded a mean score of 27.53 (SD = 3.665), contributing 44.5% to the combined component total. The close convergence of the mean (27.53), median (28.00), and mode (28) indicates a normally distributed, highly stable pattern of perceptions among respondents, suggesting low inter-individual variability in the assessment of the school's structural readiness. This statistical consistency reinforces the interpretation that the moderate-to-low input readiness profile reflects a genuinely shared, rather than individually variable, perception of the program's structural deficiencies.

The Process component achieved a notably higher mean score of 34.40 (SD = 5.021), contributing 55.5% to the combined total, a statistically meaningful inversion of the input-process relationship that is theoretically consequential. The markedly larger standard deviation in the Process component (5.021 versus 3.665 for Input) signals substantially greater inter-individual variance in respondents' assessments of process quality. This distributional pattern suggests that while the average perception of inclusive learning processes is more favorable than that of structural inputs, the quality of inclusive pedagogical implementation is considerably less uniform across the school's classrooms. This variance likely reflects

differences in individual teacher competency, confidence, and personal commitment, rather than a consistently institutionalized pedagogical standard.

Item-Level Analysis: Input Component

Table 3 presents the item-level mean scores and standard deviations for the nine Input component items, revealing a meaningful internal hierarchy of structural readiness across different input domains.

Table 3. Item-Level Mean Scores for the Input Component (Items 1–9)

Item	Indicator Domain	Mean	SD
1	Program planning clarity and documentation	3.43	0.63
2	Administrative support for inclusion	3.23	0.77
3	General human resource awareness of inclusion policy	3.00	0.79
4	School-level program coordination structure	3.40	0.77
5	Baseline teacher knowledge of special needs categories	3.27	0.69
6	Availability of general learning support materials	2.97	0.93
7	Specialized disability-specific learning aids (braille, visual aids)	2.70	1.02
8	Disability-accessible physical facilities	2.63	0.85
9	Targeted budgetary allocation for inclusive programs	2.90	1.09

Items related to general administrative and planning functions consistently registered the highest mean scores within the Input component (Item 1: $M = 3.43$; Item 4: $M = 3.40$), indicating that the school has achieved a baseline level of organizational awareness and bureaucratic compliance with inclusive education policy mandates. However, items assessing the physical and material dimensions of structural readiness, specifically, the availability of disability-accessible facilities (Item 8: $M = 2.63$) and specialized disability-specific learning aids (Item 7: $M = 2.70$), registered the lowest scores in the entire instrument. The elevated standard deviations associated with Items 7 ($SD = 1.02$) and 9 ($SD = 1.09$) further indicate significant disagreement among respondents regarding the adequacy of material resources and budgetary allocations, suggesting that resource availability may be inconsistently perceived or unevenly distributed across different staff roles or classroom assignments.

Item-Level Analysis: Process Component

Table 4 presents the item-level mean scores and standard deviations for the eleven Process component items.

Table 4. Item-Level Mean Scores for the Process Component (Items 10–20)

Item	Indicator Domain	Mean	SD
10	Implementation of adapted lesson plans	3.20	0.71
11	Use of differentiated instructional strategies	3.13	1.11
12	Integration of assistive learning approaches	3.00	0.91
13	Teacher responsiveness to individual learning needs	3.17	0.79
14	Structured parental and community involvement during process	2.73	0.98
15	Quality of teacher–special needs student interaction	3.37	0.81
16	Real-time collaboration between regular and assistant teachers	3.27	0.87
17	Active teacher engagement and pedagogical adaptation in class	3.43	0.77
18	Use of varied assessment approaches for inclusive students	3.17	0.91
19	Monitoring and documentation of student progress	3.03	0.72
20	Administrative coordination of inclusive process activities	2.90	0.88

Within the Process component, items reflecting direct teacher-student pedagogical engagement in the immediate classroom environment registered the highest scores: active teacher engagement and in-class pedagogical adaptation (Item 17: $M = 3.43$), quality of teacher interaction with special needs students (Item 15: $M = 3.37$), and real-time inter-professional collaboration between regular and assistant teachers (Item 16: $M = 3.27$). These high scores indicate that the interpersonal dimensions of inclusive practice (the relational and immediate pedagogical dimensions of teaching) are the most robust elements of process execution. Conversely, the lowest-scoring items within the Process component were structured parental and community involvement (Item 14: $M = 2.73$) and broader administrative coordination of inclusive process activities (Item 20: $M = 2.90$), signalling that the systemic and structural dimensions of process management (those requiring inter-institutional coordination and formal stakeholder engagement mechanisms) are comparatively underdeveloped.

The Process–Input Paradox and Policy Implications

The central finding of this study (that the Process component significantly outperformed the Input component in mean score and proportional contribution) constitutes an empirically documented manifestation of what may be termed the “process-input paradox” in inclusive education implementation within resource-constrained developing country contexts. This paradox directly challenges the deterministic input-output logic embedded in classical program evaluation frameworks, including the linear dimension of the CIPP Model as conventionally applied. Datta (2007), in a comprehensive review of Stufflebeam’s evaluation theory, posits that the quality of program processes is fundamentally contingent upon the quality and adequacy of program inputs. The present data from Lautem District demonstrate that this theoretical determinism does not hold under conditions of severe structural scarcity when teacher agency functions as a powerful compensatory variable.

This finding resonates strongly with Araújo and Soares’ (2025) observations on inclusive education policy implementation, where classroom-level inclusive learning processes were found to function at levels disproportionately favorable relative to the severity of documented input deficiencies, a pattern attributable to high individual teacher motivation and localized adaptive problem-solving. The data from the present study illuminate the specific mechanisms through which this compensation operates: teachers at the hub school are demonstrably investing personal effort and informal creativity to maintain interaction quality and pedagogical adaptation despite the documented absence of specialized braille learning materials, accessible physical facilities, and institutionalized continuous professional development. This is consistent with what Noguchi (2026) identifies as the phenomenon of extraordinary

practitioner commitment in inclusive education in Asia, a dynamic that simultaneously acknowledges the personal contribution of practitioners and foregrounds the structural unsustainability of relying on that contribution as a substitute for institutional provision.

The item-level data further clarifies the internal architecture of this dynamic. The Input component reveals a distinctive bimodal profile: relatively robust scores on administrative-bureaucratic planning indicators (Items 1 and 4) alongside critically low scores on material and physical resource indicators (Items 7 and 8). This pattern suggests that the school has achieved a form of procedural compliance with inclusive education policy (documenting plans, holding coordination meetings, maintaining formal awareness) but has not translated this procedural compliance into the substantive resource provision that meaningful inclusive practice requires. This distinction between procedural and substantive compliance in inclusive education implementation has been similarly documented in Indonesian studies by Ernawati et al. (2025) and Agustin (2022), suggesting a regionally consistent pattern in developing country implementation contexts.

The Process component's item-level profile is equally revealing. The high scores on interpersonal teacher-student interaction and in-class pedagogical adaptation (Items 15 and 17) confirm that the relational dimension of inclusive teaching is functioning well, driven by the commitment and adaptive capacity of individual practitioners. However, the comparatively low scores on structured parental involvement (Item 14) and administrative process coordination (Item 20) indicate that process quality is concentrated at the individual classroom level and has not been successfully embedded within broader institutional and community engagement structures. This localization of process quality is theoretically consistent with the structural fragility thesis: when process quality depends on the informal agency of individual practitioners rather than on institutionalized multi-stakeholder systems, it is inherently non-transferable and non-scalable.

The wider standard deviation of the Process scores (5.021) relative to the Input scores (3.665) is diagnostically significant from a policy perspective. It indicates that while the average process quality is comparatively favorable, the distribution of that quality is highly variable across the school's classrooms. A student's experience of inclusion is therefore substantially determined by chance factors related to which specific teacher they are assigned to, rather than by a guaranteed institutional standard of inclusive practice. Ainscow (2020) argues that this kind of intra-institutional variability is one of the defining characteristics of transitional inclusive systems, systems that have begun to develop pockets of good practice but have not yet achieved the systemic institutionalization necessary for consistent, equitable

implementation. The present findings suggest that Lautem's inclusive education program occupies precisely this transitional status.

From a longitudinal sustainability perspective, the current configuration presents a high-risk trajectory. Process quality that is disproportionately dependent on the personal resilience and extra-role effort of individual educators, rather than on predictable institutional inputs and formalized professional development, is susceptible to rapid deterioration through staff attrition, reassignment, or burnout (Noguchi, 2026; Miles & Singal, 2009). As the number of enrolled students with complex or multiple disabilities increases (a likely trajectory given the school's hub status) the compensatory capacity of individual teachers will be progressively overwhelmed. Without systematic investment in the Input component, the current process quality observed in the data is unlikely to be maintained over the medium to long term.

These findings have direct implications for inclusive education policy in Timor-Leste. The data suggest that the most strategically impactful reform intervention is not the further elaboration of policy frameworks or planning documentation (already the strongest elements of the Input profile) but rather the targeted provision of physical accessibility infrastructure, specialized learning materials, and institutionalized in-service professional development programs designed around the specific disability profiles represented in the student population. Additionally, the low scores on structured parental and community involvement (Process Item 14) highlight an underutilized resource: the meaningful engagement of families and community advocates in the monitoring and support of inclusive education processes could both enhance process quality and distribute the implementation burden beyond the individual classroom teacher. GEM Report UNESCO (2023b) further underscores the potential of technology-enabled tools to bridge resource gaps in disability-inclusive education, a direction that Timor-Leste's education authorities may fruitfully explore.

5. CONCLUSION AND RECOMMENDATIONS

This study provides an empirically grounded quantitative evaluation of the Input and Process components of inclusive education implementation at a designated hub primary school in Lautem District, Timor-Leste. The central finding, that the Process component ($M = 34.40$; 55.5% proportional contribution) substantially outperforms the Input component ($M = 27.53$; 44.5% proportional contribution), constitutes a statistically documented manifestation of the process-input paradox frequently theorized but rarely empirically measured in the inclusive education literature of developing nations. The findings confirm that classroom-level inclusive learning processes are being sustained by the extraordinary personal agency, pedagogical

improvisation, and individual resilience of field educators, rather than by institutionally guaranteed and systemically resourced enabling conditions. This dynamic, while reflecting the commendable dedication of the school's practitioners, represents a structurally precarious foundation for long-term program sustainability.

The item-level analyses further reveal that the Input component's deficiencies are most severe in the domains of physical accessibility infrastructure, specialized disability-specific learning materials, and targeted budgetary allocation, precisely the dimensions of structural readiness that most directly enable teachers to move from compensatory improvisation to evidence-based inclusive pedagogy. Within the Process component, the relative weakness in structured parental involvement and institutional coordination mechanisms underscores the need to extend inclusive education governance beyond the individual classroom to encompass broader community and multi-stakeholder engagement systems.

On the basis of these findings, several specific policy recommendations are advanced. First, the Timor-Leste Ministry of Education, Youth and Sports, in collaboration with local education authorities and international development partners, should establish targeted, ring-fenced budgetary allocations specifically for the provision of disability-accessible physical infrastructure (ramp access, adapted sanitation, designated resource rooms) and specialized learning materials (braille books, pictographic communication systems, tactile learning aids) at designated inclusive hub schools. Second, a localized, continuous professional development program, distinct from one-off centralized workshops, should be institutionalized, adopting a peer-mentoring and teacher learning community model that enables regular and special assistant teachers to collaboratively develop and refine differentiated instructional strategies within their specific operational contexts. Third, a structured participatory planning mechanism involving school leadership, parents of students with disabilities, and local disability advocacy organizations should be formalized to ensure that program planning responds to the actual needs of the enrolled student population rather than to generic national policy mandates.

This study acknowledges several limitations that circumscribe the scope of its conclusions. The total sample of 30 respondents, while representing the complete population of inclusive education practitioners at the research site, is statistically modest and limits the generalizability of findings to other districts or institutional contexts within Timor-Leste. The exclusive use of self-report questionnaire data precludes triangulation with observational or document analysis methods that could independently verify the perceptions reported by respondents. Furthermore, the study's cross-sectional design captures a single temporal snapshot of program implementation, preventing the assessment of longitudinal change or

causal directionality in the process-input relationship. Future research should address these limitations by incorporating qualitative observational components and document reviews, expanding the evaluation to encompass the Context and Product components of the full CIPP framework, and replicating the study across multiple districts to enable comparative analysis and the identification of nationally transferable effective practices.

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