

Special Educational Needs Assessment in Greece: Integrating Educational Governance and Business Process Improvement through a Structured Literature Review

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Abstract. The increasing emphasis on inclusive education and the protection of the rights of students with Special Educational Needs (SEN) has increased demand for transparent, fair, and efficient assessment systems. While international frameworks promote structured and coordinated approaches to SEN identification and support, national implementation often encounters governance fragmentation, procedural inefficiencies and uneven administrative capacity. In Greece, SEN assessment is conducted through multi-level administrative structures involving central authorities, regional directorates and specialized diagnostic bodies. This division often creates unclear responsibilities and slow procedures that delay timely support. This paper examines SEN assessment in Greece through an integrated analytical framework that combines governance theory and Business Process Improvement (BPI) methodologies.

Drawing on a structured literature review, the study analyzes how institutional arrangements, role allocation, digital infrastructure and performance monitoring mechanisms shape the effectiveness of assessment processes. Particular attention is given to the interaction between multi-level governance structures and operational process design, including the use of Key Performance Indicators (KPIs), digital information systems and process mapping techniques. The analysis identifies critical theoretical and methodological gaps in the literature, including limited integration between governance and process-oriented approaches, underdeveloped performance measurement frameworks in educational administration and insufficient empirical linkage between digital maturity and administrative efficiency. By conceptualizing SEN assessment as both a governance system and a service, the paper contributes to the debate on public sector business process improvement (BPI) and proposes the need for integrated governance–BPI frameworks capable of enhancing transparency, timeliness and equity in inclusive education systems.

Keywords: Special Educational Needs (SEN); Educational governance; Business Process Improvement (BPI); Public administration; Multi-level governance; Process mapping; Key Performance Indicators (KPIs); Digital governance; Inclusive education; Administrative efficiency.

Introduction

Inclusive education has become a central priority in international educational policy, grounded in the recognition of equal rights, non-discrimination and equitable access to learning opportunities for students with Special Educational Needs (SEN). Global frameworks such as the Salamanca Statement and the United Nations Convention on the Rights of Persons with Disabilities emphasize the obligation of national systems to ensure timely identification, appropriate assessment and individualized educational support. Within this context, SEN assessment is foundational because it determines eligibility for specialized services, individualized education programs, and targeted interventions.

By situating SEN assessment within the broader discussion of public sector governance and business process improvement (BPI), the paper contributes to ongoing debates on administrative modernization, digital transformation and performance-based management in

education systems. The integrated perspective adopted here supports the development of analytically grounded frameworks capable of enhancing transparency, timeliness and inclusiveness in SEN assessment processes.

Methodology

We conducted a systematic review and thematic synthesis to examine the intersection between governance arrangements and Business Process Improvement (BPI) methodologies in the assessment of Special Educational Needs (SEN). Given the conceptual objective of the paper—to identify theoretical, methodological and empirical gaps in existing research—the methodology is grounded in a systematic review and thematic synthesis of interdisciplinary academic and policy literature.

The analysis examined the relationship between institutional design and operational performance. Rather than examining governance and BPI as separate domains, the analysis explored how institutional arrangements condition the effectiveness of process improvement initiatives, and conversely, how process-level evidence informs governance reform. This integrative logic guided the identification of five major gaps in the literature, which form the core contribution of the paper.

Literature review

The literature relevant to the assessment of Special Educational Needs (SEN) spans multiple academic fields, including inclusive education, public administration, governance theory and Business Process Improvement (BPI). Although each of these domains has developed well-established theories and studies, their integration remains limited. Understanding SEN assessment as both a governance-driven institutional arrangement and a process-oriented public service requires bridging these bodies of knowledge.

SEN Assessment and Inclusive Education

The conceptualization of SEN has evolved from a medical-diagnostic model toward a broader inclusive education framework grounded in rights-based and socio-cultural approaches. International policy instruments emphasize early identification, individualized educational planning and multidisciplinary collaboration as core elements of effective SEN systems. Research highlights the importance of structured assessment processes involving psychologists, educators and health professionals, as well as active parental engagement.

Timely and clearly defined procedures are critical for effective assessment. Delayed referrals or reports may negatively affect students' academic progress and psychosocial development. Studies also underline the need for consistency and transparency in assessment documentation to ensure equitable access to support services across regions. However, while pedagogical and diagnostic dimensions are extensively discussed, fewer studies examine the administrative and governance structures shaping these processes.

Governance and Public Administration in Education

Governance theory examines how institutions, rules, accountability systems, and coordination structures shape public-service delivery. In education systems, governance typically operates within multi-level arrangements involving central ministries, regional authorities and local units.

Scholars emphasize the balance between centralized policy steering and decentralized implementation, as well as the importance of clearly defined roles and responsibilities.

Identifying Gaps in the literature

1. Theoretical Fragmentation Between Governance Theory and Business Process Improvement in SEN Assessment

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A major gap in the literature is the disconnect between governance theory and business-process improvement (BPI) approaches in SEN assessment systems. Although both domains address public service performance and organizational effectiveness, they have evolved largely in parallel, resulting in limited conceptual integration.

1.1 Governance Theory: Institutional Design Without Operational Depth

Governance theory focuses on institutional structures, accountability mechanisms, coordination models and multi-level decision-making arrangements (Pierre & Peters, 2000; Rhodes, 1997). In the educational sector, governance research emphasizes role allocation between central ministries and regional bodies, stakeholder participation and policy steering mechanisms (Hill & Hupe, 2009; Benz & Zimmer, 2011).

Within SEN assessment systems, governance scholarship typically examines:

- Legislative frameworks regulating assessment procedures
- Allocation of responsibilities among ministries, regional directorates and diagnostic bodies
- Accountability and transparency mechanisms
- Multi-level coordination between administrative actors

While these analyses provide valuable insight into institutional architecture, they rarely extend to detailed examination of workflow structures, time efficiency or process variability. Governance research tends to conceptualize effectiveness in terms of policy coherence and accountability rather than operational performance (Pierre & Peters, 2000).

As a result, governance studies often identify coordination problems or institutional ambiguity without systematically mapping how these translate into specific bottlenecks within assessment procedures.

1.2 BPI Literature: Operational Optimization Without Institutional Context

Conversely, Business Process Improvement literature centers on workflow efficiency, process mapping, root cause analysis and performance measurement (Davenport, 2013; Harmon, 2019). Lean and BPM frameworks emphasize elimination of waste, reduction of variation and establishment of measurable KPIs (Womack & Jones, 1996).

In public administration contexts, BPI applications focus on:

- As-is process mapping
- Identification of delays and redundant steps
- KPI dashboards
- Digital workflow automation
- Continuous improvement cycles

However, BPI research often treats governance arrangements as static background conditions rather than dynamic variables shaping process performance. Institutional constraints—such as

unclear legal mandates, overlapping competencies or fragmented accountability—are rarely integrated into process design models (Radnor & Osborne, 2013).

In SEN assessment contexts specifically, BPI studies are limited and often borrow methodologies from healthcare or administrative services without fully adapting them to the governance complexities of multi-level educational systems.

1.3 Parallel Development and Conceptual Silos

The separation between governance and BPI research creates conceptual silos:

- Governance theory analyzes **who is responsible and how authority is structured**
- BPI analyzes **how tasks are performed and how efficiently they flow**

Yet SEN assessment systems require understanding both dimensions simultaneously. Institutional design influences operational workflow, and workflow inefficiencies may reveal governance weaknesses.

Table 1 summarizes this fragmentation.

Table 1. Comparative Focus of Governance and BPI Literature

Dimension	Governance Theory	BPI Literature	Gap Identified
Analytical Level	Institutional / Macro	Operational / Micro	Lack of integrated multi-level analysis
Core Focus	Roles, accountability, coordination	Workflow efficiency, KPIs, bottlenecks	Missing linkage between institutional clarity and process performance
Evaluation Criteria	Policy coherence, legitimacy	Time reduction, error minimization	Absence of multidimensional assessment frameworks
Treatment of Governance Digital Systems	of Governance modernization tool	Process automation mechanism	Limited integration of digital governance and process redesign

Source: Author's synthesis based on (Pierre & Peters, 2000; Davenport, 2013; Harmon, 2019).

1.4 Consequences of Theoretical Fragmentation

The fragmentation produces several analytical limitations:

1. **Institutional reforms without process redesign**
Governance reforms may redefine responsibilities without addressing workflow inefficiencies.
2. **Process optimization without structural adjustment**
BPI initiatives may attempt to streamline procedures without clarifying authority or accountability structures.
3. **Underdeveloped performance linkages**
There is limited theoretical explanation of how governance variables (e.g., role clarity, coordination mechanisms, digital maturity) influence measurable process outcomes such as assessment duration or report quality.
4. **Weak feedback loops between policy and performance data**
Governance theory emphasizes accountability, while BPI emphasizes measurement. Yet literature rarely explores how KPI data inform policy adjustments (Field, 2013; Levin, 2001).

1.5 SEN Assessment as a Governance–Process Hybrid System

SEN assessment systems are inherently hybrid. They operate within:

- Multi-level governance environments
- Legally defined mandates
- Professionally specialized multidisciplinary teams
- Digital documentation systems
- Time-sensitive intervention contexts

This complexity requires analytical models capable of integrating institutional and operational dimensions.

Yet existing literature typically isolates:

- Governance studies focusing on legislation and institutional coordination
- Educational research emphasizing pedagogical assessment quality
- Process management research emphasizing efficiency

Few studies conceptualize SEN assessment as a **governance-conditioned workflow system**.

1.6 Digital Governance as an Under-Integrated Bridge

Digital transformation could theoretically bridge governance and BPI. Digital platforms:

- Enable KPI tracking
- Enhance accountability
- Facilitate inter-agency communication
- Standardize documentation

However, research often treats digital systems either as modernization reforms (European Commission, 2016) or as workflow tools (Harmon, 2019), without integrating both perspectives.

1.7 Implications for Future Research

Addressing this theoretical fragmentation requires:

- Multi-level analytical frameworks linking governance variables to process KPIs
- Mixed-method empirical research integrating institutional analysis with workflow mapping
- Performance models that incorporate both accountability structures and operational efficiency
- Explicit theorization of digital maturity as a governance–process interface

Without such integration, SEN assessment research risks remaining either normatively institutional or narrowly operational.

2. Overemphasis on Legal–Institutional Analysis and Underrepresentation of Performance Measurement Frameworks

A second major gap in the literature concerns the strong emphasis on legal and institutional analysis in SEN assessment research, accompanied by the relative underdevelopment of systematic performance measurement frameworks. While governance and educational policy studies provide detailed examinations of legislative provisions, role allocation and administrative hierarchies, fewer studies operationalize assessment performance through structured Key Performance Indicators (KPIs) or measurable process outcomes.

2.1 Dominance of Normative and Regulatory Perspectives

Much of the research on SEN assessment systems focuses on compliance with international conventions, inclusive education mandates and national legal frameworks (UNESCO, 1994; OECD, 2018). Scholars examine alignment with rights-based principles, procedural safeguards and formal allocation of competencies between administrative levels (European Agency, 2019). These analyses are essential for evaluating institutional legitimacy and equity.

However, this normative orientation often prioritizes regulatory coherence over operational effectiveness. Studies frequently assess whether legislation reflects inclusive principles but less often examine whether assessment procedures are timely, consistent and measurable across regions. Governance research typically conceptualizes accountability as formal responsibility rather than performance-based oversight (Pierre & Peters, 2000).

2.2 Limited Operationalization of Time and Quality Indicators

In public administration and BPI research, performance measurement is central to organizational improvement (Davenport, 2013; Harmon, 2019). KPIs such as processing time, error rates, rework frequency and stakeholder satisfaction enable evidence-based evaluation. Yet in SEN assessment research, measurable indicators remain inconsistently defined.

This creates a gap between descriptive identification of delays and rigorous performance benchmarking. Without measurable indicators, inefficiencies remain conceptually acknowledged but empirically under-specified.

2.3 Weak Integration of KPI Systems into Governance Analysis

Performance measurement literature emphasizes the importance of linking KPIs to governance structures (Field, 2013). Data-driven oversight enables adaptive governance and continuous policy refinement (Levin, 2001). However, SEN assessment research rarely explores how performance data feed into decision-making processes at central or regional levels.

Table 2 illustrates the imbalance between institutional analysis and performance measurement in the literature.

Table 2. Imbalance Between Legal–Institutional and Performance-Oriented Research

Analytical Focus	Dominant Literature	in Underdeveloped Area	Gap Identified
Legislative compliance	High	—	Strong normative focus
Role allocation analysis	High	—	Institutional emphasis
Time-based KPIs	Limited	High need	Lack of systematic benchmarking
Quality indicators	Moderate (qualitative)	Quantitative validation	Insufficient operationalization
Digital performance dashboards	Low–Moderate	High relevance	Weak integration with governance

Source: Author’s synthesis based on (OECD, 2018; European Agency, 2019; Davenport, 2013; Harmon, 2019).

2.4 Regional Variation Without Comparative Metrics

Research frequently acknowledges regional disparities in administrative capacity and assessment timelines (European Agency, 2019). However, without standardized performance indicators, such disparities are often described narratively rather than evaluated through comparative metrics.

The absence of harmonized KPIs limits cross-regional benchmarking and obscures structural patterns. For example, delays may stem from staffing shortages, digital fragmentation or unclear accountability. Yet without measurable correlation between governance variables and process indicators, causal inference remains limited.

2.5 Digital Maturity and Measurement Gaps

Digital governance literature emphasizes the importance of integrated information systems for tracking performance metrics (European Commission, 2016). In SEN assessment contexts, digital platforms could enable real-time monitoring of referral queues, assessment duration and documentation completeness.

2.6 Consequences of Measurement Underdevelopment

The underrepresentation of structured KPI frameworks has several implications:

1. **Limited evidence-based reform**
Policy discussions rely on qualitative assessments rather than performance data.
2. **Reduced transparency and accountability**
Without standardized indicators, monitoring remains procedural rather than outcome-oriented.
3. **Inconsistent service quality across regions**
Absence of benchmarking hinders identification of systemic disparities.
4. **Weak linkage between governance reform and measurable outcomes**
Institutional changes are rarely evaluated through before–after performance comparison.

2.7 Toward Integrated Performance Governance

Addressing this gap requires the development of multidimensional performance frameworks combining:

- Time efficiency indicators
- Quality and documentation measures
- Stakeholder satisfaction metrics
- Digital system utilization indicators
- Governance variables (role clarity, coordination mechanisms)

Such integration would align institutional oversight with operational measurement, strengthening adaptive governance capacities.

3. Methodological Limitations and Lack of Mixed-Method and Comparative Evidence

A third major gap in the literature concerns methodological imbalances in the study of SEN assessment systems. While governance and inclusive education research has generated valuable insights into institutional structures and policy orientations, empirical research designs often remain either predominantly qualitative or narrowly quantitative. The limited use of mixed-method approaches and systematic comparative analysis restricts explanatory depth and cross-contextual learning.

3.1 Predominance of Qualitative and Policy-Descriptive Studies

A substantial portion of SEN assessment literature is based on qualitative case studies, policy analyses and descriptive institutional reviews (European Agency, 2019; OECD, 2018). These studies provide important contextual insights into legislative frameworks, stakeholder experiences and coordination challenges. Qualitative methodologies are particularly suitable for examining sensitive domains such as SEN, where institutional practices intersect with social and ethical considerations (Patton, 2015).

3.2 Limited Use of Quantitative Process Data

Quantitative approaches in educational research frequently focus on student outcomes, inclusion rates or demographic distribution rather than administrative workflow performance. In contrast, BPI literature emphasizes measurable process indicators such as cycle time, variation and error frequency (Davenport, 2013; Harmon, 2019).

This underutilization of quantitative process metrics limits the empirical linkage between governance variables and operational performance.

3.3 Weak Integration of Mixed-Method Designs

Mixed-method research enables the integration of institutional analysis, stakeholder perspectives and measurable performance indicators (Creswell, 2014; Tashakkori & Teddlie, 2003). In complex administrative systems such as SEN assessment, combining qualitative governance insights with quantitative workflow data can provide comprehensive understanding.

Nevertheless, the literature reveals relatively few studies adopting fully integrated mixed-method designs in this field. Qualitative and quantitative findings often remain separate strands rather than analytically interconnected components.

3.4 Insufficient Comparative Cross-Regional Analysis

Another methodological limitation concerns the scarcity of systematic comparative studies across administrative regions or national systems. Research often focuses on single-country contexts without structured cross-regional benchmarking.

Without standardized indicators and cross-regional datasets, it becomes difficult to assess whether inefficiencies are context-specific or structurally embedded within governance models.

3.5 Short-Term and Cross-Sectional Bias

Many studies adopt cross-sectional designs, capturing administrative conditions at a single point in time. However, governance reforms, digital transformation and process redesign unfold dynamically. Longitudinal data would enable examination of:

- Pre- and post-reform performance changes
- Evolution of digital system maturity
- Institutional learning over time

The absence of longitudinal analysis limits understanding of sustainability and adaptive capacity in SEN assessment systems.

3.6 Overview of Methodological Imbalances

Table 3 summarizes the dominant methodological patterns and corresponding gaps.



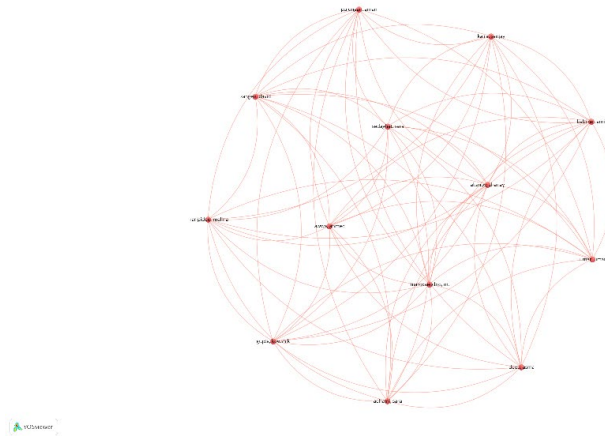


Figure 3

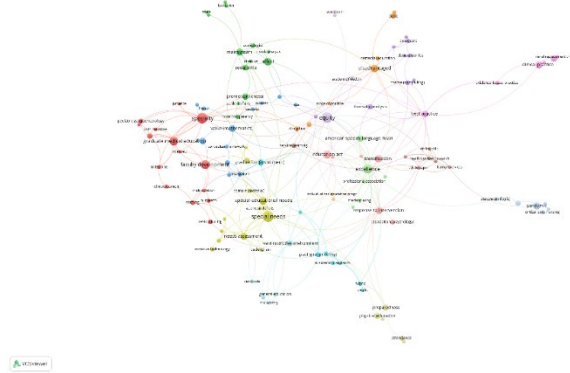


Figure 4

Bibliometric Network Analysis (Figures 1–4)

Figures 1–4 present VOSviewer visualizations of co-authorship and keyword co-occurrence networks related to governance and Business Process Improvement (BPI) in the assessment of Special Educational Needs (SEN), including the specific context of Greece. The diagrams provide insight into collaboration structures, thematic density, and conceptual fragmentation within the field.

Co-authorship Networks (Figures 1 and 3)

Figure 1 illustrates the broader co-authorship network for research combining governance, business processes, and SEN assessment. The diagram reveals two clearly distinguishable clusters connected by a limited number of bridging authors. Each cluster demonstrates tight internal connections, suggesting cohesive research teams or disciplinary groupings. However, the relatively small number of inter-cluster links indicates moderate fragmentation across research communities.

In contrast, **Figure 3**, which focuses more specifically on SEN assessment research within Greece, presents a more compact and internally dense author network. The structure is highly interconnected, with limited evidence of separate clusters. This suggests that national-level SEN

research is concentrated within a relatively small and cohesive academic community. While strong internal collaboration is evident, the absence of broader international clustering may indicate limited cross-national integration.

Keyword Co-occurrence Networks (Figures 2 and 4)

Figure 2 displays the keyword co-occurrence network for governance and business process improvement in SEN assessment. The visualization reveals several thematic clusters organized around central nodes such as “equity,” “special needs,” “best practice,” and “education act.” These terms occupy structurally central positions, indicating that normative and policy-oriented concepts dominate the intellectual landscape.

Figure 4, which reflects keyword mapping for the Greek SEN assessment context, is less dense. Core terms such as “special needs,” “structuring,” and “action research” appear central, while highly specific diagnostic categories (e.g., “multiple disabilities,” “visual impairment”) form peripheral nodes. The limited density of connections suggests thematic concentration rather than multidimensional diversification.

Comparative Interpretation

Taken together, **Figures 1–4** reveal three major structural patterns:

1. Moderate fragmentation between governance and process-oriented research communities.
2. Strong dominance of normative, inclusion-based terminology over operational performance language.
3. Limited international diversification within the Greek SEN research network.

The bibliometric evidence visually confirms the conceptual and methodological gaps identified in the literature review. Governance and inclusive education remain central themes, while Business Process Improvement and performance measurement frameworks are underrepresented. This imbalance shows the need for integrated governance–process models that link institutional analysis with operational-efficiency assessment in SEN systems.

3.7 Consequences for Evidence-Based Governance

Methodological fragmentation has several implications:

1. **Limited causal explanation**
Relationships between governance arrangements and process performance remain underexamined.
2. **Weak benchmarking capacity**
Absence of standardized indicators constrains cross-regional comparison.
3. **Reduced reform evaluation capacity**
Without longitudinal or mixed-method evidence, assessing impact of governance or digital reforms becomes difficult.
4. **Partial understanding of system complexity**
Single-method approaches capture only one dimension of institutional–operational interaction.

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