

Original Article

Undiagnosed Learning Disabilities in Inclusive Classrooms: Challenges and Case-Based Insights

Beverly Ann A. Paradero, Ria Christine P. Ramillete, Cherryl Mae C. Rullin, Steve I. Embang 

Author Information:

Northwestern Mindanao State College of
Science and Technology, Tangub City,
Misamis Occidental, Philippines

Corresponding Author:

steve.embang@nmsc.edu.ph

Article History:

Date received: March 22, 2026

Date revised: June 14, 2026

Date accepted: June 24, 2026

Recommended citation:

Paradero, B.A., Ramillete, R.C., Rullin, C.M.,
& Embang, S. (2026). Undiagnosed learning
disabilities in inclusive classrooms:
Challenges and case-based insights. *Journal
of Interdisciplinary Perspectives*, 4(7), 286-296.
<https://doi.org/10.69569/jip.2026.144>

Abstract. Learners with undiagnosed learning disabilities often face significant challenges in inclusive classrooms despite being educated alongside their peers. This study found that learners with dysgraphia, dyslexia, and dyscalculia experienced persistent difficulties in writing, reading, and mathematical tasks, which affected their academic performance, classroom participation, and self-confidence. The absence of a formal diagnosis frequently resulted in delayed support and unmet learning needs. To explore these experiences, a qualitative multiple case study was conducted among elementary learners in inclusive classrooms using Robert Yin's case study methodology. Data were gathered through semi-structured interviews and approximately 20 hours of classroom observations and were analyzed using thematic analysis. Findings revealed that learners relied heavily on support from family members, peers, and teachers while developing personal coping strategies to manage academic demands. However, many continued to experience barriers that limited their full participation in learning. The study highlights the importance of early identification, teacher awareness, and responsive inclusive practices to better support learners with hidden learning difficulties.

Keywords: *Dyscalculia; Dysgraphia; Dyslexia; Inclusive education; Undiagnosed learning disabilities.*

Inclusive education has evolved from efforts to address the historical exclusion of learners with disabilities from mainstream schooling. Earlier educational systems were heavily influenced by medical and deficit-oriented views of disability, resulting in segregation, institutionalization, and limited educational opportunities for many learners (Oliver & Barnes, 1998; Gabel & Danforth, 2008). In response, international frameworks such as the Salamanca Statement, the United Nations Convention on the Rights of Persons with Disabilities, and the Incheon Declaration have advanced inclusive education as a fundamental right, emphasizing equitable participation, access, and achievement for all learners (UNESCO, 1994; UNESCO, 2015; UNCRPD, 2006). These frameworks recognize that inclusion extends beyond physical placement in classrooms and requires meaningful adaptations in teaching, learning, and support systems.

Despite growing policy commitments, research consistently highlights challenges in translating inclusive education into effective classroom practice. Across diverse educational contexts, studies report persistent barriers including inadequate teacher preparation, limited access to specialized services, insufficient learning resources, and difficulties in identifying and supporting learners with disabilities (Ainscow & Miles, 2009; Sharma et al., 2017; Ravet & Mtika, 2021). These challenges are particularly evident among learners with hidden or less visible

disabilities, whose academic difficulties often remain unrecognized due to limited screening mechanisms and low awareness among educators. As a result, many learners experience academic struggles without receiving appropriate interventions, increasing their vulnerability to exclusion despite being enrolled in inclusive settings.

Learning disabilities such as dyslexia, dysgraphia, and dyscalculia are among the most common neurodevelopmental conditions affecting school-aged children. These conditions influence reading, writing, and mathematical performance and may persist throughout an individual's educational journey if left unrecognized and unsupported (APA, 2013; Shaywitz et al., 2008; Butterworth et al., 2011). Existing literature indicates that undiagnosed learning disabilities are associated with lower academic achievement, emotional distress, reduced self-esteem, and social difficulties (Ashraf & Najam, 2020; Sofologi et al., 2022). Furthermore, learners are frequently mischaracterized as inattentive, unmotivated, or disruptive when their learning difficulties are not properly identified (Forlin, 2011; Ribeiro et al., 2017).

Within the Philippine context, the implementation of inclusive education has been strengthened through policies such as Republic Act No. 11650 and related educational reforms. However, significant challenges remain regarding teacher preparedness, access to assessment services, referral mechanisms, and parental awareness, particularly in underserved communities (Mirador & Lluz, 2021; Raguindin et al., 2021; Casungcad, 2024). These challenges contribute to the continued invisibility of learners with undiagnosed learning disabilities. While previous studies have examined diagnosed disabilities and inclusive education practices, limited attention has been given to learners who remain unidentified despite experiencing substantial academic, social, and emotional difficulties. Addressing this gap, the present study explores the experiences of learners with undiagnosed dyslexia, dysgraphia, and dyscalculia in inclusive classrooms in a selected province in the southern Philippines.

Theoretical basis

This study was anchored in the Input-Process-Emergent Patterns (IPEP) model, drawing from Vygotsky's Social Constructivism (1978) and Bronfenbrenner's Ecological Systems Theory (1979). It explored the experiences of learners with undiagnosed dysgraphia, dyslexia, and dyscalculia in inclusive classrooms. The Input referred to learner profiles shaped by unrecognized cognitive difficulties, often missed due to gaps in diagnosis, teacher training, and support systems in the Philippines (Raguindin et al., 2021; Ajdhia-Andrews, 2021). These were contextualized within ecological systems—home, school, and sociocultural environments. The Process focused on socially mediated learning, framed by Vygotsky's Zone of Proximal Development, and examined through interviews and observations (Hoose, 2020; Reig, 2020).

The Emergent Patterns revealed adaptive strategies, systemic barriers, and implications for inclusive teaching and responsive policy, offering insights into the lived realities of undiagnosed neurodivergent learners.

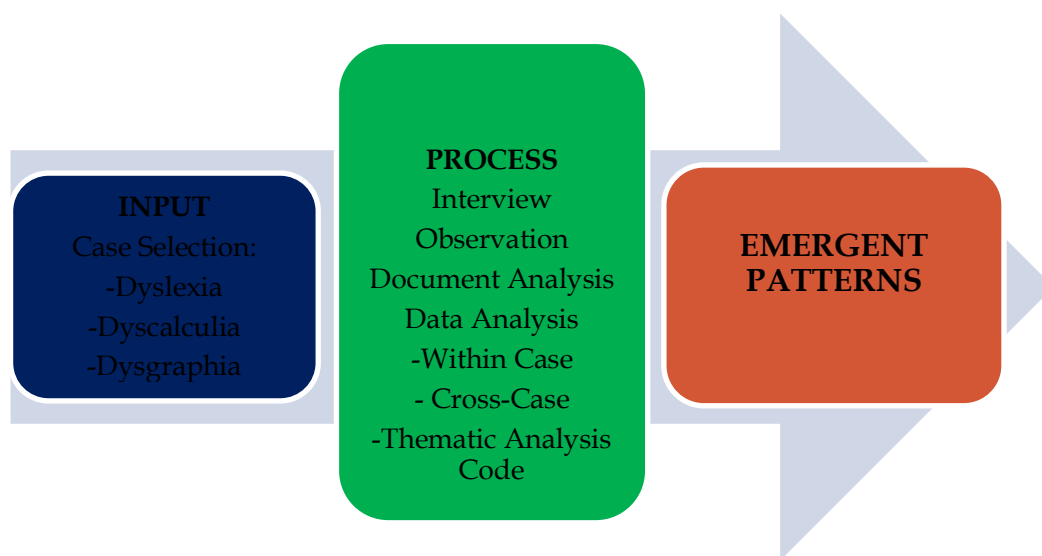


Figure 1. Schematic Diagram of the Study

Thus, the IPEP framework provides a coherent structure for examining how ecological inputs and mediated educational processes contribute to the formation of unique experiential patterns among learners with undiagnosed learning disabilities in inclusive settings.

Statement of the Problem

Learners with dyslexia, dysgraphia, and dyscalculia often struggle in inclusive classrooms, facing academic and behavioral challenges that could negatively impact their learning and social development. This multiple case study approach aimed to provide a comprehensive insight into the experiences of learners with undiagnosed dyslexia, dysgraphia, and dyscalculia in inclusive classrooms.

Specifically, this study intended to answer the following questions:

1. What are the experiences faced by the undiagnosed learners with Dysgraphia, Dyslexia, and Dyscalculia in inclusive classrooms?
2. How do these experiences compare across cases, and what unique patterns or differences emerged?

Methodology

Research Design

This study employed a qualitative multiple case study design, guided by Yin (2013), to examine the experiences of learners with undiagnosed learning disabilities—specifically dyslexia, dyscalculia, and dysgraphia—in inclusive classroom settings. This design enabled an in-depth analysis of each case while allowing comparison across cases to identify common patterns and key differences. The use of multiple cases strengthened the study's analytic rigor through replication logic, in which findings were examined for consistency or variation across participants. This approach was appropriate for exploring complex, context-bound educational experiences and provided a systematic framework for understanding how undiagnosed learning difficulties shape learners' participation and engagement in inclusive classrooms.

Research Locale

The study was conducted in a public elementary school situated in a semi-urban locality in Northern Mindanao, selected for its well-established special education (SPED) programs and a notable concentration of learners exhibiting signs of undiagnosed dyslexia, dyscalculia, and dysgraphia. The school provided a rich context for examining inclusive practices and institutional responses to hidden learning needs within mainstream classrooms. The familiarity of the setting offered practical benefits for data collection, including enhanced accessibility and the potential for building deeper rapport with participants. As Hockey (2006) noted, conducting research in a known environment can foster trust and openness, especially in qualitative inquiries involving sensitive topics.

Participants and Sampling Procedure

Participants were selected through purposive sampling based on their enrollment in inclusive classrooms and the presence of characteristics associated with undiagnosed dyslexia, dysgraphia, or dyscalculia. The study involved five elementary learners from a public school in Northern Mindanao, including one learner with dysgraphia, two with dyslexia, and two with dyscalculia. Inclusion criteria required participants to exhibit indicators of these learning disabilities without a formal diagnosis and to be willing to share their experiences. Purposive sampling was employed to recruit information-rich cases relevant to the study objectives (Bisht, 2024). The final sample size was determined by data saturation, emphasizing depth and richness of information rather than numerical representation (Burmeister & Aitken, 2012; Patton, 2015).

Research Instrument

The primary data collection instrument was a semi-structured interview guide designed to explore the experiences of learners with undiagnosed dyslexia, dysgraphia, and dyscalculia in inclusive classrooms. The instrument was developed using the MEASURE framework (Kalkbrenner, 2021), which guided the identification of key constructs and alignment with the study's objectives. Open-ended questions allowed participants to describe their experiences in depth while enabling the researcher to probe emerging issues. To enhance content validity, the interview guide underwent expert review and pilot testing, resulting in refinements to question wording and sequencing. Consistent with qualitative research principles, the interviews facilitated a participant-centered exploration of learners' experiences (Finlay, 2002).

Data Collection Procedure

Data were gathered through face-to-face, one-on-one semi-structured interviews, conducted with learners exhibiting characteristics of undiagnosed learning disabilities—specifically dyslexia, dyscalculia, and dysgraphia. Prior to each session, assent forms were obtained to ensure ethical compliance, and all interviews were audio-recorded with participant consent. Recordings were transcribed promptly to preserve the accuracy and integrity of participant narratives. Access to the research site was formally granted following approval from the relevant education authority. Participants were selected through a demographic screening survey aligned with the study's inclusion criteria. Consistent with Yin's (2013) multiple case study design, the evolving nature of the inquiry allowed for adaptive questioning during subsequent rounds of interviews, particularly to probe emerging patterns and address conceptual gaps (Birks & Mills, 2011; Charmaz, 2006; Urquhart, 2013). To ensure credibility, member checking was implemented by returning transcripts to participants for a one-time review. While participants retained the right to withdraw consent or clarify their responses, they were not involved in the cross-case analysis or the final write-up beyond reviewing their own data. Memo-writing was employed systematically throughout the research process, supporting analytic rigor and reflexivity (Glaser & Strauss, 1967; Birks & Mills, 2011). Data collection continued until thematic saturation was achieved, signaling a refined and coherent understanding of the phenomenon under investigation (Thornberg & Charmaz, 2014).

Data Analysis

Data analysis followed Yin's (2017) multiple case study framework through (1) within-case analysis and (2) cross-case synthesis. Within-case analysis employed Braun and Clarke's (2006) thematic analysis to identify patterns and themes from interview transcripts and classroom observations. Coding was conducted manually and supported by computer-assisted analysis, with memo-writing used to document emerging insights. Data collection and analysis continued until thematic saturation was achieved. For cross-case synthesis, findings were systematically compared across cases using replication logic (Yin, 2017). A matrix developed in Microsoft Excel facilitated the identification of thematic similarities, differences, and emergent patterns across learners with dyslexia, dysgraphia, and dyscalculia.

Ethical Considerations

Researchers in social science need to follow ethical considerations to promote qualitative research when collecting and analyzing data (Mack et al., 2005: 8). The emphasis was on the researchers' responsibilities towards the rights and interests of the participants, the audience, the academic community, and the Society, (Cameron et al., 1994; Judd et al., 1991; British Educational Research Association BERA, 2004, 2018). Assent forms were obtained from the participants, allowing them the opportunity to evaluate whether their participation in the study was unsafe. During data collection, face-to-face (one-on-one) interviews were conducted, lasting 1-2 hours to minimize inconvenience and discomfort for participants. Privacy rights were upheld by ensuring the protection of participants' confidentiality. Any contact information collected was used exclusively for follow-up interviews or sharing the results of the study. Maintaining the confidentiality of participant responses was a top priority in this study. All data was reported in aggregate, ensuring that individual responses remained anonymous. Additionally, all collected data, such as video recordings and questionnaire responses, were surely stored during the study and promptly deleted once the study concluded.

Trustworthiness and Credibility

This study upheld the principles of trustworthiness and credibility as conceptualized by Lincoln and Guba (1985) to ensure the rigor of its qualitative inquiry. Credibility was established through purposive sampling of participants with direct experience of undiagnosed learning disabilities in inclusive settings (Patton, 2015), followed by member checking, where participants reviewed and confirmed their interview transcripts (Stahl & King, 2020). To minimize interpretive bias, peer debriefing with qualitative experts and triangulation of data sources—interviews, observation notes, and reflexive memos—were conducted, reinforcing internal validity (Flick, 2014; Creswell & Poth, 2018). Trustworthiness was further strengthened by prolonged engagement and the use of a detailed audit trail, ensuring transparency in data handling and analytical decisions (Nowell et al., 2017). The researchers maintained reflexivity throughout the process, critically reflecting on their assumptions and positionality to reduce bias (Finlay, 2002). These strategies ensured that the study findings were grounded, ethically sound, and transferable to similar educational contexts.

Results and Discussions

Challenges Experienced by Learners with Undiagnosed Learning Disabilities

Learning disabilities like dysgraphia, dyslexia, and dyscalculia present significant challenges for students and affect their ability to succeed in educational settings (Smith, 2020). These conditions interfere with fundamental skills such as writing, reading, and mathematical reasoning (Johnson & Clark, 2019), requiring tailored support and accommodations to help students thrive (Brown, 2021).

Case 1: Undiagnosed Learner with Dysgraphia

Dependence on External Support for Writing Tasks

A prominent challenge experienced by the learner with dysgraphia was dependence on external support during writing activities. Classroom observations showed that writing performance improved when a teacher or peer provided assistance. As one participant explained, “When I write, I always need my teacher to guide my hand. If they don’t help, my letters are all over the place, and I don’t know where to start.” Another participant shared, “I can trace the letters well when there’s a pattern to follow, but without it, I get confused and stop.” These experiences suggest that the learner struggled with both motor execution and cognitive organization during writing tasks, limiting independent performance. Similar findings have been reported in previous studies, which identified handwriting difficulties, fine motor deficits, and challenges in written expression as core characteristics of dysgraphia (Berninger et al., 2006; Berninger & Wolf, 2009; Brown, 2020; Smith, 2021; Taylor, 2019; Taylor & Kim, 2021).

Limited Transferability of Structured Interventions

The learner demonstrated difficulty applying learned writing strategies independently despite receiving structured support. One participant stated, “Even if I use tracing or lines, I find it hard to write neatly by myself. I just forget how to do it the right way.” Another explained, “It’s easier when someone helps me, but on my own, I can’t make my hand do what I want it to do.” These responses indicate that guided interventions were not easily transferred into independent performance, suggesting challenges in memory retrieval, spatial planning, and task execution. This finding aligns with previous research showing that learners with dysgraphia often experience deficits in cognitive processing and spatial awareness that hinder the independent application of writing skills (Sumner et al., 2013; James & Engelhardt, 2012; Feder & Majnemer, 2007; Davis, 2021).

Difficulties Beyond Writing Tasks

The effects of dysgraphia extended beyond writing activities and were evident in tasks requiring fine motor coordination. One participant shared, “I love drawing, but I can’t color inside the lines like my classmates. My hand shakes a lot, and it gets messy.” Another stated, “I know the answer in my head, but I can’t write it down fast enough. My hand doesn’t move the way I need it to.” These experiences suggest that difficulties in coordinating motor planning and execution affected both academic and recreational activities. Similar patterns have been documented in the literature, which describes dysgraphia as a condition affecting fine motor control, coordination, and the integration of cognitive and motor processes necessary for task completion (Smits-Engelsman & Van Galen, 1997; Alloway & Alloway, 2010; Chang & Yu, 2018; Feder & Majnemer, 2007).

Case 2: Undiagnosed Learners with Dyslexia

Dependence on Guided Reading Support

A recurring challenge among learners with dyslexia was dependence on guided reading support. Observations revealed that participants frequently relied on teachers, parents, or peers to assist them in reading tasks. One participant remarked, “I read better when someone helps me with the words I don’t know.” This finding suggests that independent reading remained difficult because of challenges in decoding and word recognition. Consistent with previous studies, structured reading support and scaffolded instruction are often necessary to help learners with dyslexia navigate reading tasks successfully (Snowling & Hulme, 2012; Torgesen et al., 2006; Vellutino et al., 2004; Wood, 2009; Gillet & Temple, 2010).

Auditory Preference in Learning

Participants demonstrated a clear preference for auditory learning over text-based learning. As one learner explained, “When the teacher reads it out loud, I understand faster.” This response indicates that spoken language served as a more accessible pathway for comprehension than written text. The finding suggests that auditory processing may compensate for difficulties associated with reading and decoding. Similar observations have been reported in studies showing that learners with dyslexia often benefit from auditory supports and multisensory

learning approaches (Ramus, 2003; Shaywitz & Shaywitz, 2008; Snowling, 2013; Hasselbring & Glaser, 2000; Miller & Ziegler, 2009).

Overwhelmed by Length and Complexity of Texts

Learners with dyslexia reported difficulty managing lengthy and complex reading materials. One participant shared, “It’s too hard to finish a long story; I forget what I read before.” This finding reflects the cognitive demands associated with processing and retaining information from extended texts. Difficulties in working memory and information retention appeared to contribute to frustration and disengagement during reading activities. Previous studies similarly found that learners with dyslexia often experience cognitive overload when confronted with lengthy texts, resulting in reduced comprehension and reading persistence (Snowling & Hulme, 2012; Swanson, 2006; Vukovic et al., 2010; Rose, 2009).

Case 3: Undiagnosed Learners with Dyscalculia

Dependence on Concrete Manipulatives for Numerical Understanding

Learners with dyscalculia exhibited a strong dependence on concrete materials when performing mathematical tasks. One participant stated, “I always forgot the answers to even easy problems, so I had to count again.” Another shared, “I needed to see and touch the blocks to know how to add them.” These experiences suggest that abstract numerical concepts remained difficult to understand without tangible representations. Participants relied on counting blocks, fingers, and other manipulatives to support numerical reasoning and problem solving. Similar findings have been reported in the literature, which emphasizes the role of concrete manipulatives in supporting learners with dyscalculia while also cautioning against long-term overreliance that may limit the development of abstract mathematical thinking (Geary, 2004; Butterworth, 2005; Gersten et al., 2005; Jordan et al., 2003; Baroody, 2003; Wilson & Dehaene, 2007; Butterworth & Yeo, 2004; Ashcraft & Kirk, 2001; Shin & Bryant, 2015; Beilock & Maloney, 2015; Hembree, 1990; Kaufmann & Nuerk, 2006; Mazzocco & Thompson, 2005).

Difficulty Retaining and Retrieving Math Facts

Another challenge involved retaining and retrieving basic mathematical facts. One participant explained, “I couldn’t tell if my answer was close to the real one or not.” This response reflects uncertainty in numerical reasoning and difficulty recalling previously learned information. The findings suggest weaknesses in working memory and mathematical fluency, which limited efficient problem-solving. Similar difficulties have been documented among learners with dyscalculia, particularly in relation to memory retrieval, automaticity, and mathematical confidence (Wilson & Dehaene, 2007; Butterworth & Yeo, 2004; Mazzocco & Thompson, 2005; Geary, 2004; Ashcraft & Kirk, 2001; Shin & Bryant, 2015; Baroody, 2003; Beilock & Maloney, 2015; Kaufmann & Nuerk, 2006; Butterworth, 2005).

Inability to Estimate Quantities

A further challenge involved estimating quantities and understanding numerical magnitude. As one participant noted, “I got confused where the numbers went in problems like 123 minus 45.” This finding suggests difficulties in understanding numerical relationships and making reasonable approximations. Rather than estimating, learners tended to rely on exact calculations, which slowed mathematical problem-solving. Similar findings have been reported among learners with dyscalculia, whose deficits in number sense and numerical magnitude often interfere with estimation and approximation skills (Mazzocco & Thompson, 2005; Geary, 2004; Wilson & Dehaene, 2007; Butterworth & Yeo, 2004; Shin & Bryant, 2015).

Comparison Across Cases

Within-Case Analysis

A within-case analysis provided an in-depth examination of each individual challenge, focusing on the unique characteristics of Dyslexia, Dysgraphia, and Dyscalculia.

Case 1. Undiagnosed Dysgraphia

This case highlights the compounded effect of undiagnosed dysgraphia on a learner's academic and psychosocial functioning within an inclusive classroom setting. Central to this case is the learner’s persistent difficulty in written output despite verbal comprehension and idea generation being developmentally appropriate. The observed reliance on guided writing strategies, particularly physical tracing and one-on-one support, suggested a disruption in the neuro-motor coordination necessary for handwriting fluency. These patterns align with extant literature, which emphasizes the interplay between fine motor deficits and cognitive-motor integration as core

features of dysgraphia (Berninger & Wolf, 2009; Feder & Majnemer, 2007).

The learner demonstrated minimal transfer of learned strategies from guided sessions to independent tasks, indicating limitations in procedural memory and spatial planning. This difficulty was not restricted to academic writing but extended to broader tasks requiring fine motor precision. The inability to generalize structured interventions points to deficits not just in motor execution but in the cognitive scaffolding that supports self-regulation and task internalization (Sumner et al., 2013). Furthermore, the learner's participation in classroom activities was hindered by a growing dependency on external cues, reflecting both academic and emotional disengagement rooted in persistent task failure. Overall, the case exemplifies the invisibility and cumulative disadvantage of undiagnosed dysgraphia, necessitating early identification and personalized interventions that go beyond remedial handwriting support.

Case 2. Undiagnosed Dyslexia

In this case, the learner's profile was characterized by specific deficits in decoding and reading fluency, manifesting in an overreliance on guided reading and a preference for auditory input. Despite being verbally expressive and responsive to oral tasks, the learner struggled with processing and comprehending written texts independently, particularly when dealing with longer or complex passages. The need for scaffolded reading support pointed to phonological processing deficits and limited working memory, both hallmarks of dyslexia as documented by Snowling and Hulme (2012) and Shaywitz and Shaywitz (2008).

The case further revealed that the learner consistently performed better in auditory or multimodal learning environments, suggesting a cognitive compensatory strategy grounded in auditory preference. This modality strength underscores the necessity of differentiated instruction in inclusive classrooms to meet the needs of learners with reading-based disabilities. The learner's difficulty in sustaining attention and comprehension when confronted with extended written content is indicative of cognitive overload, further compounded by an undiagnosed condition that was often misconstrued as inattentiveness or lack of motivation. This misalignment between actual cognitive capacity and academic expectation exacerbated the learner's marginalization and limited opportunities for academic success. The case reiterates the importance of early phonological awareness screening and the integration of multimodal literacy strategies in inclusive pedagogies.

Case 3: Undiagnosed Dyscalculia

The third case involves a learner whose challenges were primarily situated in mathematical cognition, revealing significant reliance on concrete manipulatives and difficulty with numerical abstraction. The learner exhibited deficits in number sense, estimation, and retention of basic arithmetic facts, which are consistent with the cognitive markers of dyscalculia described by Geary (2004) and Mazzocco and Thompson (2005). Unlike procedural or conceptual errors that could be addressed through instructional strategies, the learner's difficulties stemmed from an underlying inability to internalize numerical relationships and manipulate quantities mentally.

This overdependence on physical tools during problem-solving activities impeded the development of automaticity and hindered the transition from concrete to abstract reasoning—both critical for mathematical proficiency in later grades. The learner also demonstrated heightened task anxiety in mathematics, often associated with repeated failures and the absence of conceptual anchoring. The combination of memory retrieval difficulties and low estimation accuracy indicated deeper deficits in visual-spatial working memory and magnitude processing (Wilson & Dehaene, 2007). Without formal recognition of the disability, instructional responses remained generic and ineffective, failing to address the learner's foundational needs. The case reinforces the necessity of implementing targeted numeracy assessments and intervention programs that are attuned to the unique neurocognitive profiles of learners with mathematical learning disabilities. It also highlights how undiagnosed dyscalculia can remain obscured within the classroom due to surface-level performance that masks deeper conceptual challenges.

Across all three cases, the within-case analysis reveals distinct patterns of struggle rooted in undiagnosed learning disabilities. While each case demonstrates a unique manifestation—motor-disruptive in dysgraphia, decoding-deficient in dyslexia, and number-processing impaired in dyscalculia—they collectively underscore a common educational gap: the absence of diagnostic sensitivity and tailored instructional support within inclusive learning environments. The narratives offer critical insights into how undetected cognitive impairments manifest behaviorally, often misinterpreted as lack of effort or disinterest, thereby perpetuating educational inequities.

Guided by Yin’s analytic framework, this analysis affirms the value of disaggregated, contextual examination of individual cases to understand the multifaceted experiences of learners with invisible learning needs.

Cross-Case Analysis

To extend the within-case findings, a cross-case analysis was conducted to identify recurring patterns, key differences, and shared experiences among learners with undiagnosed learning disabilities. Guided by Yin’s (2013) cross-case synthesis approach, this analysis compares the experiences of learners with dysgraphia, dyslexia, and dyscalculia across common thematic dimensions. While each case reflects distinct cognitive challenges, the findings reveal overlapping patterns related to academic engagement, emotional responses, and reliance on external support within inclusive classroom settings. These patterns highlight systemic issues, including limited recognition of learning needs and insufficient instructional adaptation. Table 1 presents a summary of the cross-case themes identified in the study.

Table 1. *Cross-Case Summary of Experiences of Learners with Undiagnosed Learning Disabilities*

Theme	Dysgraphia	Dyslexia	Dyscalculia	Cross-Case Pattern
External Support	Relied on peers and teachers for writing tasks	Depended on others for reading and instructions	Needed assistance in computations and problem-solving	High reliance on external support
Academic Engagement	Avoided writing activities	Avoided reading aloud and reading-based tasks	Avoided mathematics-related tasks	Reduced engagement in areas of difficulty
Emotional Responses	Frustration, embarrassment	Discouragement, feelings of inadequacy	Anxiety, fear of mistakes	Negative emotional experiences
Self-Confidence	Low confidence in written work	Low confidence in reading ability	Low confidence in mathematical ability	Reduced self-efficacy
Classroom Experiences	Difficulty keeping pace with writing demands	Difficulty following reading instructions	Difficulty understanding mathematical explanations	Limited individualized support
Coping Strategies	Copying, repeated practice, peer assistance	Re-reading, audio support, seeking help	Finger counting, drawing, peer verification	Use of self-developed coping mechanisms

Shared Patterns of Dependence and Disengagement

A salient pattern that emerged across all three cases is overdependence on external support – whether in writing, reading, or numeracy. Learners with dysgraphia required continuous motor scaffolding; those with dyslexia relied on guided oral reading; and those with dyscalculia depended on manipulatives for computation. This pattern illustrates a consistent gap in internalized strategy transfer, in which students were unable to apply skills independently without structured guidance. The failure of intervention generalization suggests deeper cognitive impairment not addressed by generic classroom accommodations. Such dependence, while adaptive, also gave rise to educational disengagement. Across cases, students displayed avoidance behaviors when confronted with tasks they could not independently navigate. These behaviors—pausing, hesitating, giving up—were not reflections of disinterest but rather manifestations of persistent task failure. This aligns with the learned helplessness model (Seligman, 1972), in which repeated failures in skill acquisition led to motivational withdrawal and reduced academic persistence.

Cognitive-Specific Challenges and Modality Preferences

While the theme of dependence was universal, cognitive-specific challenges differentiated the cases. The dysgraphic learner struggled with fine motor execution and spatial planning, consistent with motor planning deficits. The dyslexic learner showed impairments in phonological processing and working memory, manifesting as difficulty with decoding and text retention. The dyscalculic learner exhibited poor number sense, estimation, and arithmetic fact retrieval, reflecting deficits in numerical cognition. These distinctions reflect the domain-specific nature of learning disabilities (Fletcher et al., 2007), underscoring the need for differentiated identification tools rather than a one-size-fits-all label under general learning difficulty. In contrast, a shared strength across cases was the presence of modality-based preferences. Learners with dyslexia benefited from auditory input; those with dysgraphia from visual-motor prompts; and those with dyscalculia from tactile-manipulative experiences. These observations confirm the importance of multimodal instruction in inclusive education (Tomlinson, 2014), where leveraging sensory strengths can help offset cognitive deficits.

The Role of Misdiagnosis and Invisible Struggles

All cases demonstrated how undiagnosed learning disabilities become invisible disabilities within classrooms—often mistaken for laziness, inattention, or immaturity. Despite clear indicators of cognitive impairment, none of the learners received a formal assessment, delaying appropriate support. This invisibility reinforces the systemic issue of under-identification in inclusive settings, particularly in developing contexts where formal psychological evaluation is scarce (World Bank, 2020). The consequences of non-identification were evident in all cases. Students encountered repeated academic failure, reduced self-confidence, and growing disengagement—outcomes supported by international literature on the psychosocial effects of undiagnosed learning disabilities (Snowling & Hulme, 2012; Gersten et al., 2005). Furthermore, their needs remained unmet due to the absence of teacher training in specific learning disabilities, limiting the potential for early intervention.

Educational Implications and Theoretical Replication

The cross-case analysis confirms theoretical replications from the literature on inclusive education and cognitive diversity. First, it echoes Vygotsky's concept of the Zone of Proximal Development, where learners require mediated assistance to bridge what they cannot yet do alone. However, in these cases, the scaffolding remained permanent, with learners never transitioning to autonomy—a misalignment with the intended trajectory of scaffolded learning (Vygotsky, 1978).

Second, the cases demonstrate the inadequacy of universal accommodations in addressing the granular, individualized needs of learners with specific cognitive impairments. While the inclusive framework promotes access, it fails to ensure equity when learners' needs are misunderstood or ignored (Florian & Black-Hawkins, 2011). As such, the cross-case findings advocate for the integration of disability-specific pedagogical training, diagnostic protocols, and individualized instructional planning in inclusive school systems.

Conclusions & Recommendations

This study demonstrates that learners with undiagnosed learning disabilities—dysgraphia, dyslexia, and dyscalculia—face persistent academic and emotional challenges within inclusive classrooms. Despite the intent of inclusion, the absence of formal diagnosis often limits appropriate instructional support, resulting in unmet learning needs and reduced learner autonomy. Patterns of dependence, difficulty in skill transfer, and emotional distress reflect underlying cognitive challenges insufficiently addressed by conventional teaching practices.

These findings underscore the need for early identification mechanisms and responsive, differentiated instruction that can support learners even without formal diagnostic labels. Strengthening teacher capacity, school-family collaboration, and evidence-based support systems is essential to ensure meaningful inclusion. At the policy level, the integration of screening practices and inclusive intervention frameworks is critical.

Future research should examine the long-term outcomes of undiagnosed learners and evaluate targeted interventions across contexts. Ultimately, inclusive education must move beyond physical placement and respond to the diverse cognitive needs of all learners to achieve genuine equity.

Contributions of Authors

Not indicated

Funding

Not indicated

Conflict of Interests

Not indicated

Acknowledgement

Not indicated

References

- Ainscow, M. (2020). Promoting inclusion and equity in education: Lessons from international experiences. *Nordic Journal of Studies in Educational Policy*, 6(1), 7–16.
<https://doi.org/10.1080/20020317.2020.1729587>
- Ajdhia-Andrews, A. (2021). Inclusion and equity in Philippine education: Examining systemic and cultural barriers. *Philippine Journal of Education*, 96(2), 45–58.
- Alloway, T.P., & Alloway, R.G. (2010). Working memory and clinical developmental disorders: Theories, debates and interventions. Psychology Press.
- Ashcraft, M.H., & Kirk, E.P. (2001). The relationships among working memory, math anxiety, and performance. *Journal of Experimental Psychology: General*, 130(2), 224–237.
<https://doi.org/10.1037/0096-3445.130.2.224>
- Ashraf, M., & Najam, N. (2020). An epidemiological study of prevalence and comorbidity of non-clinical dyslexia, dysgraphia and dyscalculia symptoms in public and private schools of

- Pakistan. *Heliyon*, 6(11), e05442. <https://doi.org/10.1016/j.heliyon.2020.e05442>
- Baroody, A.J. (2003). The development of adaptive expertise and flexibility: The integration of conceptual and procedural knowledge. *Mathematical Thinking and Learning*, 5(2-3), 115-137. <https://doi.org/10.1080/10986065.2003.9679999>
- Beilock, S., & Maloney, E. (2015). Math anxiety: A factor in math achievement not to be ignored. *Policy Insights from the Behavioral and Brain Sciences*, 2(1), 4-12. <https://doi.org/10.1177/2372732215601438>
- Berninger, V.W., & Wolf, B.J. (2009). Teaching students with dyslexia and dysgraphia: Lessons from teaching and science. Brookes Publishing.
- Berninger, V.W., Vaughan, K.B., Abbott, R.D., Abbott, S.P., Rogan, L.W., Brooks, A., & Graham, S. (2006). Treatment of handwriting problems in beginning writers: Transfer from handwriting to composition. *Journal of Educational Psychology*, 98(2), 267-283.
- Birks, M., & Mills, J. (2011). Grounded theory: A practical guide. Sage Publications.
- Bisht, R. (2024). Purposive sampling in educational research: A methodological guide. *International Journal of Qualitative Studies in Education*, 37(2), 125-139.
- British Educational Research Association [BERA]. (2018). Ethical guidelines for educational research, fourth edition.
- Brown, A. (2020). Fine motor skills and academic success: A study of early elementary learners. *Educational Psychology Review*, 32(4), 617-634.
- Brown, T. (2021). Tailored support for students with learning difficulties: A guide for inclusive classrooms. *International Journal of Inclusive Education*, 25(3), 341-358. <https://doi.org/10.1080/13603116.2019.1602365>
- Buenrostro-Jocson, J. (2024). Special education and shadow teaching: Practices and experiences in the Philippines. *The Southeast Asian Conference on Education 2024: Official Conference Proceedings*, (pp. 453-457). <https://doi.org/10.22492/issn.2435-5240.2024.40>
- Burmeister, E., & Aitken, L. (2012). Sample size: How many is enough? *Australian Critical Care*, 25(4), 271-274. <https://doi.org/10.1016/j.aucc.2012.07.002>
- Butterworth, B. (2005). Developmental dyscalculia. In J.L.D. Campbell (Ed.), *Handbook of Mathematical Cognition* (pp. 455-467). Psychology Press.
- Butterworth, B., & Yeo, D. (2004). Dyscalculia guidance: Helping pupils with specific learning difficulties in math. NFER-Nelson.
- Cameron, D., Frazer, E., Harvey, P., Rampton, B., & Richardson, K. (1994). *Researching language: Issues of power and method*. Routledge.
- Chang, S., & Yu, P. (2018). Fine motor development and its link to academic performance in early childhood. *Early Child Development and Care*, 188(9), 1253-1266. <https://doi.org/10.1080/03004430.2017.1289190>
- Chao, R., Jr. (2021). Higher education in the Philippines. In *Springer International Handbooks of Education* (pp. 1-28). https://doi.org/10.1007/978-981-16-8136-3_7-1
- Chao, S. (2021). Barriers to identification and support of learners with disabilities in developing education systems. *Journal of Inclusive Education Studies*, 5(2), 112-126.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage Publications.
- Creswell, J.W., & Poth, C.N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Thousand Oaks, United States: Sage Publications.
- Davis, R. (2021). Supporting students with dysgraphia: Effective strategies and accommodations in the classroom. *Learning Disabilities Journal*, 29(1), 34-46. <https://tinyurl.com/dysgraphia-support>
- Duncan, A. (2015). Forty years of the Individuals with Disabilities Education Act (IDEA). Washington, DC: U.S. Department of Education.
- Eisenhardt, K., & Graebner, M. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1), 25-32. <https://doi.org/10.5465/amj.2007.24160888>
- Embang, S. (2024). What's holding back? An examination of parental denial in special education. *International Journal of Learning, Teaching and Educational Research*, 23(12), 448-462. <https://www.ijlter.net/index.php/ijlter/article/view/2164>
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813-828. <https://doi.org/10.1080/01411926.2010.501096>
- Feder, K.P., & Majnemer, A. (2007). Handwriting development, competency, and intervention. *Developmental Medicine & Child Neurology*, 49(4), 312-317.
- Finlay, L. (2002). Negotiating the swamp: The opportunity and challenge of reflexivity in research practice. *Qualitative Research*, 2(2):209-230. <https://doi.org/10.1177/146879410200200205>
- Fletcher, J.M., Lyon, G.R., Fuchs, L.S., & Barnes, M.A. (2007). *Learning disabilities: From identification to intervention*. Guilford Press.
- Flick, U. (1998). *An Introduction to Qualitative Research*. London: SAGE
- Forlin, C. (2011). *Teacher education for inclusion: Changing paradigms and innovative approaches*. Routledge.
- Gabel, S.L., & Danforth, S. (2008). Disability & the politics of education: An international reader. Peter Lang Publishing.
- Geary, D. (2004). Mathematics and learning disabilities. *Journal of Learning Disabilities*, 37(1), 4-15. <https://doi.org/10.1177/00222194040370010201>
- Gersten, R., Jordan, N., & Flojo, J. (2005). Early identification and interventions for students with mathematics difficulties. *Journal of Learning Disabilities*, 38(4), 293-304. <https://doi.org/10.1177/00222194050380040301>
- Gillet, J.W., & Temple, C. (2010). *Understanding reading problems: Assessment and instruction* (9th ed.). Pearson.
- Grigorenko, E.L., Compton, D.L., Fuchs, L.S., Wagner, R.K., Willcutt, E.G., & Fletcher, J.M. (2019). Understanding, educating, and supporting children with specific learning disabilities: 50 years of science and practice. *American Psychologist*, 75(1), 37-51. <https://doi.org/10.1037/amp0000452>
- Grimes, P. (2021). Mapping of disability-inclusive education practices in South Asia. United Nations Children's Fund Regional Office for South Asia, Kathmandu.
- Harris, S., & Smith, L. (2020). Decoding difficulties and fluency issues in students with dyslexia: Findings from a participant-based study. *Dyslexia Studies Quarterly*, 27(3), 90-103.
- Hasselbring, T., & Glaser, C. (2000). Use of computer technology to help students with special needs. *The Future of Children*, 10(2), 102-122. <https://doi.org/10.2307/1602691>
- Hembree, R. (1990). The nature, effects, and relief of mathematics anxiety. *Journal for Research in Mathematics Education*, 21(1), 33-46. <https://doi.org/10.2307/749455>
- Hockey, J. (2006). Researching peers and familiar settings: A reflexive approach. In M. Williams & W. van den Hoonaard (Eds.), *The Ethics of Research with Human Subjects* (pp. 103-122). Emerald Group Publishing.
- Hoose, K. (2020). Vygotsky's theory and the inclusive classroom: A ZPD approach to supporting students with learning disabilities. *European Journal of Psychology and Education*, 35(4), 723-735.
- James, K., & Engelhardt, L. (2012). The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education*, 1(1), 32-42. <https://doi.org/10.1016/j.tine.2012.08.001>
- Jardinez, T.C., & Natividad, J.A. (2024). Barriers to inclusive education in rural Philippine schools: A policy and practice perspective. *Philippine Journal of Inclusive Education*, 3(1), 15-30.
- Johnson, R.B., & Clark, L.M. (2019). Learning disabilities and academic achievement: Foundations and intervention strategies. Pearson.
- Jordan, N.C., Hanich, L.B., & Kaplan, D. (2003). Arithmetic fact mastery in young children: A longitudinal investigation. *Journal of Educational Psychology*, 95(3), 588-597.
- Judd, C.M., Smith, E.R., & Kidder, L.H. (1991). *Research methods in social relations* (6th ed.). Harcourt Brace Jovanovich.
- Kalkbrenner, M. (2021). A practical guide to instrument development and score validation in the social sciences: The MEASURE approach. *Practical Assessment, Research & Evaluation*. <https://tinyurl.com/y7aeh72p>
- Kaufmann, L., & Nuerk, H.C. (2006). Basic number processing deficits in ADHD: A broad examination of elementary and complex number processing skills in 9-to 12-year-old children with ADHD-C. *Developmental Science*, 9(5), 527-545.
- Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Mack, N., Woodson, C., MacQueen, K.M., Guest, G., & Namey, E. (2005). *Qualitative research methods: A data collector's field guide*. Family Health International.
- Mazzocco, M., & Thompson, R. (2005). Kindergarten predictors of math learning disability. *Learning Disabilities Research & Practice*, 20(3), 142-155. <https://doi.org/10.1111/j.1540-5826.2005.00129.x>
- Miller, J., & Ziegler, M. (2009). Storytelling as a pedagogical tool for students with reading challenges. *Reading & Writing Quarterly*, 25(1), 25-41.
- Mills, A., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of case study research*. SAGE Publications.
- Mirador, M.G., & Lluz, L.P. (2021). Through the walls of inclusion: The higher education institution perspective in Philippines. *Asian Journal of Education and Social Studies*, 28-34. <https://doi.org/10.9734/ajess/2021/v15i230377>
- Norwich, B. (2013). Addressing tensions and dilemmas in inclusive education: Living with uncertainty. Routledge. <https://doi.org/10.4324/9780203118436>
- Nowell, L., Norris, J., White, D., & Moules, N. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1-13. <https://doi.org/10.1177/1609406917733847>
- Oliver, M., & Barnes, C. (1998). *Disabled people and social policy: From exclusion to inclusion*. London: Longman.
- Patton, M.Q. (2015). *Qualitative research & evaluation: Essentials*. Sage Publications.
- Raguindin, P.Z., Custodio, Z., & Bulusan, F. (2021). Engaging, affirming, nurturing inclusive environment: A grounded theory study in the Philippine context. *IAFOR Journal of Education*, 9(1), 113-131. <https://doi.org/10.22492/ije.9.1.07>
- Ramus, F. (2003). Developmental dyslexia: Specific phonological deficit or general sensorimotor dysfunction? *Current Opinion in Neurobiology*, 13(2), 212-218.
- Ravet, J., & Mitka, P. (2021). Educational inclusion in resource-constrained contexts: A study of rural primary schools in Cambodia. *International Journal of Inclusive Education*. <https://doi.org/10.1080/13603116.2021.1916104>
- Reig, A. (2020). Applying Vygotskian principles in inclusive education. *Journal of Educational Research and Practice*, 10(1), 1-10.
- Ribeiro, F.S., Tonoli, M.C., Ribeiro, D.P.d.S.A., & Santos, F.H.D. (2017). Numeracy deficits scrutinized: Evidences of primary developmental dyscalculia. *Psychology & Neuroscience*, 10(2), 189-200.
- Rose, D.H. (2009). *The universally designed classroom: Accessible curriculum and digital technologies*. Harvard Education Press.
- Seligman, M.E.P. (1972). Learned helplessness: On depression, development, and death. W.H. Freeman.
- Shaywitz, S.E., & Shaywitz, B.A. (2008). Paying attention to reading: The neurobiology of reading and dyslexia. *Development and Psychopathology*, 20(4), 1329-1349.
- Shin, M., & Bryant, D.P. (2015). A synthesis of mathematical interventions for secondary students with learning disabilities. *Learning Disabilities Research & Practice*, 30(4), 182-195. <https://doi.org/10.1111/ldrp.12089>
- Smith, J. (2020). Learning disabilities and inclusive education: A global perspective. *International Review of Education*, 66(2), 267-285.
- Smith, R., & Jones, T. (2018). Handwriting difficulties and the implications for literacy acquisition. *British Journal of Special Education*, 45(3), 221-233.

- Snowling, M.J. (2013). Early identification and interventions for dyslexia: A contemporary view. *Journal of Research in Special Educational Needs*, 13(1), 7–14.
- Snowling, M.J., & Hulme, C. (2012). *The science of reading: A handbook*. Wiley-Blackwell.
- Sofologi, M., Kougioumtzis, G., Efstratopoulou, M., Skoura, E., Sagia, S., Karvela, S., Salli, P.M., Makri, E., & Bonti, E. (2022). Specific learning disabilities and psychosocial difficulties in children. In K. Cassidy & B. Sande (Eds.), *Advising Preservice Teachers Through Narratives from Students with Disabilities*, (pp. 31–54). IGI Global Scientific Publishing. <https://doi.org/10.4018/978-1-7998-7359-4.ch002>
- Stahl, S.A., & King, J.R. (2020). *Conducting and evaluating qualitative research in education* (2nd ed.). Teachers College Press.
- Stake, R.E. (2010). *Qualitative research: Studying how things work*. Guilford Press.
- Sumner, E., Connelly, V., & Barnett, A.L. (2013). Children with dyslexia are slow writers because they pause more often and not because they are slow at handwriting execution. *Reading and Writing*, 26(6), 991–1008.
- Swanson, H.L. (2006). Cross-sectional and longitudinal analyses of working memory and academic achievement in children with learning disabilities. *Journal of Learning Disabilities*, 39(4), 376–391.
- Taylor, R. (2019). Cognitive correlates of dysgraphia in school-aged children. *Journal of Learning Disabilities*, 52(2), 157–169.
- Taylor, R., & Kim, Y. (2021). The motor–cognitive interface in dysgraphia: New insights from classroom observations. *Journal of Educational Psychology*, 113(3), 519–532. <https://doi.org/10.1037/edu0000470>
- Thornberg, R., & Charmaz, K. (2014). Grounded theory and theoretical coding. In U. Flick (Ed.), *The SAGE Handbook of Qualitative Data Analysis* (pp. 153–169). Sage Publications.
- Tomlinson, C.A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.
- UNESCO MGIEP. (n.d.). *Living with dysgraphia*.
- United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). (n.d.). Australian Human Rights Commission. <https://tinyurl.com/2p9n6a9y>
- Urquhart, C. (2013). *Grounded theory for qualitative research: A practical guide*. Sage Publications.
- Vellutino, F., Fletcher, J., Snowling, M., & Scanlon, D. (2004). Specific reading disability (dyslexia): What have we learned in the past four decades? *Journal of Child Psychology and Psychiatry*, 45(1), 2–40. <https://doi.org/10.1046/j.0021-9630.2003.00305.x>
- Vukovic, R.K., et al. (2010). Cognitive and behavioral predictors of reading comprehension in children with dyslexia. *Journal of Learning Disabilities*, 43(3), 258–268.
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Walker, Z., & Musti-Rao, S. (2016). Inclusion in high achieving Singapore: Challenges of building an inclusive society in policy and practice. *Global Education Review*, 3(3), 28–42.
- Wilson, A.J., & Dehaene, S. (2007). Number sense and developmental dyscalculia. *Current Directions in Psychological Science*, 16(1), 16–20.
- Wood, D. (2009). *How children think and learn: The social contexts of cognitive development*. Wiley-Blackwell.
- World Bank. (2020). *Pivoting to inclusion: Leveraging lessons from the COVID-19 crisis for learners with disabilities*. World Bank Group.
- Yin, R.K. (1994; 2003; 2009). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.
- Yin, R.K. (2013). *Case study research: Design and methods*. Sage Publication.
- Yin, R.K. (2017). *Case study research and applications: Design and methods* (6th ed.). Sage Publications, Inc.