



Assessing Primary School Teachers' Knowledge and Awareness of Dyslexia: A Comprehensive Evaluation of Identification Skills, Intervention Strategies, and Classroom Support Practices

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ABSTRACT

This article presents a framework for assessing primary school teachers' knowledge and awareness of dyslexia across three key domains: identification skills, intervention strategies, and classroom support. Drawing on theories of professional knowledge, reading science, and inclusive education, it addresses the gap between dyslexia research and classroom practice. The framework integrates Shulman's teacher knowledge domains with current insights into neurodevelopmental learning differences. Effective dyslexia support requires understanding phonological deficits, applying developmental reading theory for early identification, and using structured literacy for intervention. The proposed framework includes declarative, procedural, and conditional knowledge, highlighting the need for adaptive expertise in diverse classrooms. A three-domain competence model outlines teacher progression from basic awareness to expert implementation, while also identifying contextual factors affecting knowledge application and defining indicators for effective practice. The study highlights gap in teacher training and stresses the importance of ongoing, collaborative professional development that links theory with practice. Implications include recommendations for pre-service curricula, in-service training, and policy reforms to promote evidence-based approaches. This framework supports the creation of valid assessment tools and targeted learning initiatives, aiming to enhance outcomes for students with dyslexia and advance understanding of professional competence in specialized support

Keywords: Dyslexia Awareness, Teacher Knowledge Assessment, Primary Education, Professional Competence, Evidence-Based Practice, Reading Difficulties, Structured Literacy, Early Identification, Inclusive Education, Professional Development

1. Introduction

Dyslexia represents one of the most prevalent neurodevelopmental learning differences, with recent meta-analyses indicating a global prevalence of approximately 7.10% among primary school children (Yang et al., 2022), though reported rates vary from 4% to 20% depending on diagnostic criteria and assessment methods employed (Butterworth & Kovas, 2013; Shaywitz, 2005), positioning primary school teachers as critical gatekeepers in the identification and early intervention process for students exhibiting dyslexic characteristics. Despite substantial evidence indicating that teacher knowledge and awareness directly influence student outcomes, significant deficiencies persist in educator preparedness across multiple educational systems, with studies showing that almost half of primary school teachers have only basic knowledge about dyslexia (Balasaki, 2015). This investigation operates within the framework of professional knowledge theory, specifically examining the intersection of content knowledge, pedagogical knowledge, and pedagogical content knowledge as they relate to dyslexia support, drawing upon Shulman's (1986) conceptualization of teacher knowledge domains while incorporating contemporary understanding of evidence-based practice implementation in

educational settings. Despite decades of scientific research establishing dyslexia as a neurobiologically-based learning difference with identifiable characteristics and effective interventions, persistent gaps exist between research knowledge and classroom practice, manifesting in delayed identification, inappropriate instructional approaches, and missed opportunities for early intervention during critical developmental periods. The theoretical significance lies in understanding how teacher knowledge systems function in relation to specialized learning differences and how these systems can be enhanced to improve educational outcomes for students with dyslexia. This theoretical analysis examines the multifaceted nature of teacher knowledge regarding dyslexia, encompassing three primary domains: identification skills, intervention strategies, and classroom support practices, with the purpose extending beyond mere knowledge assessment to explore the theoretical underpinnings of professional competence development and the translation of specialized knowledge into effective educational practice within contemporary primary school contexts.

2. Literature Review

2.1 Defining Dyslexia: Theoretical Perspectives

Contemporary theoretical understanding positions dyslexia within a neurobiological framework, characterized by persistent difficulties in accurate and fluent word recognition, poor spelling abilities, and deficient decoding skills (Shaywitz & Shaywitz, 2020). The phonological processing deficit theory, supported by extensive neuroimaging research, identifies weaknesses in phonological awareness as the primary underlying mechanism (Ramus et al., 2013; Snowling, 2019). Alternative theoretical models, including the magnocellular-dorsal theory (Stein, 2019) and cerebellar theory (Nicolson & Fawcett, 2019), propose additional contributing factors while maintaining the core emphasis on reading-specific difficulties.

The definitional complexity creates theoretical challenges for educators, as different theoretical frameworks emphasize varying aspects of the condition. The International Dyslexia Association's definition emphasizes the neurobiological origins and unexpected nature of difficulties relative to other cognitive abilities (IDA, 2020), while educational definitions often focus on response-to-intervention criteria and exclusionary factors (Fletcher et al., 2019).

2.2 Teacher Knowledge Theory and Professional Competence

Shulman's (1987) theoretical framework of teacher knowledge provides the foundational structure for understanding educator competence in specialized areas. The intersection of content knowledge (understanding dyslexia characteristics), pedagogical knowledge (general teaching strategies), and pedagogical content knowledge (dyslexia-specific instructional approaches) creates a complex knowledge system requiring specialized development (Hill et al., 2008).

Professional competence theory suggests that effective practice requires not only declarative knowledge (knowing that) but also procedural knowledge (knowing how) and conditional knowledge (knowing when and why) (Anderson & Krathwohl, 2001). In the context of dyslexia support, this translates to understanding characteristics, implementing appropriate strategies, and making informed decisions about intervention timing and intensity (Washburn et al., 2011).

2.3 Knowledge Translation Theory

The gap between research evidence and educational practice represents a fundamental challenge in dyslexia support. Knowledge translation theory provides a framework for understanding how specialized knowledge moves from research contexts to practical application (Graham et al., 2006). Barriers to knowledge translation include individual factors (teacher beliefs and self-efficacy), organizational factors (school support systems and resources), and systemic factors (policy frameworks and professional development structures) (Fixsen et al., 2005; Nutley et al., 2007).

2.4 Early Identification Theory and Critical Periods

Theoretical models of reading development emphasize the importance of early identification and intervention during critical developmental windows (Stanovich, 1986). The Simple View of Reading provides a theoretical framework for understanding how decoding difficulties interact with language comprehension to affect overall reading performance (Gough & Tunmer, 1986; Hoover & Gough, 1990). Early identification theory suggests that intervention effectiveness decreases as students progress through elementary grades, making teacher awareness and identification skills critically important during primary school years (Torgesen, 2004; Wanzek & Vaughn, 2007).

2.5 Evidence-Based Practice Theory

The theoretical foundation of evidence-based practice emphasizes the integration of research evidence, professional expertise, and student characteristics in educational decision-making (Sackett et al., 1996). For dyslexia intervention, this requires teachers to understand not only what works generally but also how to adapt evidence-based practices to individual student needs and contexts (Cook & Cook, 2013; Hornby & Greaves, 2022).

2.6 Self-Efficacy Theory and Professional Confidence

Bandura's (1997) self-efficacy theory provides insight into how teacher confidence affects the implementation of dyslexia support strategies. Teachers with higher self-efficacy are more likely to persist with challenging students, implement innovative strategies, and seek additional resources when needed (Tschannen-Moran & Hoy, 2001). The relationship between knowledge, confidence, and practice creates a complex dynamic that influences student outcomes (Klassen & Tze, 2014).

2.7 Inclusive Education Theory

Theoretical frameworks of inclusive education emphasize the importance of adapting instruction to meet diverse learning needs within general education classrooms (Ainscow, 2020). For dyslexia support, this requires teachers to understand both universal design principles and specific accommodations that support students with reading difficulties while maintaining high academic expectations (Rose & Meyer, 2002; Tomlinson, 2017).

3. Conceptual Framework

3.1 Knowledge Domains in Dyslexia Awareness

The conceptual framework for assessing teacher knowledge encompasses three interconnected domains that collectively determine the quality of support provided to students with dyslexia (Washburn et al., 2011; Spear-Swerling, 2015).

Domain 1: Foundational Knowledge This domain encompasses theoretical understanding of dyslexia as a neurodevelopmental condition, including knowledge of prevalence rates, comorbidity patterns, and developmental trajectories (Snowling & Hulme, 2012). Teachers require understanding of the phonological processing deficit theory and its implications for reading development (Ramus et al., 2013), as well as awareness of genetic and environmental factors that contribute to dyslexia manifestation (Peterson & Pennington, 2015).

Domain 2: Identification and Assessment Knowledge The second domain focuses on practical knowledge required for early identification and ongoing assessment of dyslexic characteristics (Catts et al., 2015). This includes understanding of developmental reading milestones, recognition of early warning signs (Scarborough, 1990), familiarity with screening tools and assessment procedures (Jenkins & O'Connor, 2002), and knowledge of referral processes and collaborative assessment approaches (Fuchs & Fuchs, 2017).

Domain 3: Intervention and Support Knowledge The third domain encompasses knowledge of evidence-based intervention strategies, classroom accommodations, and support practices (Brady, 2011). This includes understanding of structured literacy approaches (Spear-Swerling & Cheesman, 2012), multisensory instruction methods (Birsh, 2018), assistive technology applications (Flanagan et al., 2013), and differentiation strategies that support diverse learning needs (Tomlinson & Imbeau, 2010).

3.2 Competence Development Model

Professional competence in dyslexia support develops through a dynamic interaction between formal knowledge acquisition, practical experience, and reflective practice (Dreyfus & Dreyfus, 1986; Berliner, 2004). The model recognizes that competence extends beyond knowledge to include skills, attitudes, and professional judgment in complex educational situations.

Novice Level: Basic awareness of dyslexia as a learning difference with limited understanding of characteristics and intervention approaches (Benner, 1984).

Developing Level: Growing knowledge of dyslexic characteristics and basic intervention strategies with increasing confidence in identification and support roles (King & Kitchener, 1994).

Proficient Level: Comprehensive understanding of dyslexia theory and practice with ability to implement evidence-based strategies and adapt approaches to individual student needs (Ericsson, 2006).

Expert Level: Advanced knowledge and skills with capacity for leadership, mentoring, and innovation in dyslexia support practices (Hatano & Inagaki, 1986).

3.3 Contextual Factors Influencing Knowledge Application

The framework acknowledges that knowledge application occurs within complex educational contexts that influence practice effectiveness (Bronfenbrenner, 1979). Contextual factors include school culture and support systems, administrative leadership, resource availability, professional development opportunities, and collaboration structures with specialized personnel (Fullan, 2007; Hargreaves & Fullan, 2012).

3.4 Outcome Indicators

The framework identifies multiple indicators of effective dyslexia knowledge application, including early identification rates, appropriate referral practices, implementation of evidence-based interventions, student progress monitoring, and positive academic and social outcomes for students with dyslexia (Fletcher et al., 2019; Torgesen, 2004).

4. Theoretical Components for Assessment

4.1 Identification Skills: Theoretical Foundations

Effective identification requires understanding of developmental reading processes and the ability to distinguish between typical reading difficulties and dyslexic characteristics (Catts et al., 2015). Theoretical models of reading development provide the foundation for recognizing when student progress deviates from expected patterns (Chall, 1996).

Phonological Awareness Theory: Teachers must understand how phonological processing difficulties manifest in early reading behaviors, including problems with rhyming, sound segmentation, and letter-sound correspondence (Wagner & Torgesen, 1987; Anthony & Francis, 2005). The theoretical connection between phonological awareness and reading development enables teachers to identify students at risk for dyslexia before formal reading instruction begins (Scarborough, 1990; Lonigan et al., 2009).

Reading Development Stages: Ehri's (2005) phases of reading development provide a theoretical framework for understanding how dyslexic students may struggle with the alphabetic principle and sight word development. Teachers need theoretical knowledge of how typical readers progress through pre-alphabetic, partial alphabetic, full alphabetic, and consolidated alphabetic phases (Ehri, 2014; Share, 1995).

Response to Intervention Theory: Understanding of RTI models requires teachers to recognize when standard classroom instruction is insufficient and when additional support may be needed (Fuchs & Fuchs, 2006). This includes knowledge of how to interpret student response patterns and make data-based decisions about intervention intensity (Burns & VanDerHeyden, 2006).

4.2 Intervention Strategies: Evidence-Based Theoretical Models

Effective intervention requires understanding of theoretical models that explain why certain approaches are effective for students with dyslexia (Brady, 2011).

Structured Literacy Theory: The theoretical foundation of structured literacy emphasizes explicit, systematic instruction in phonology, sound-symbol associations, syllables, morphology, syntax, and semantics (Moats, 2020). Teachers must understand why students with dyslexia require more explicit instruction than typical readers (National Reading Panel, 2000; Rayner et al., 2001).

Multisensory Learning Theory: Theoretical understanding of how visual, auditory, and kinesthetic-tactile pathways can be integrated to strengthen learning for students with dyslexia (Birsh, 2018). The Orton-Gillingham approach and its derivatives are based on multisensory learning theory (Henry, 2010; Wilson, 2018).

Cognitive Load Theory: Understanding how working memory limitations affect learning for students with dyslexia and how instruction can be designed to optimize cognitive resources (Sweller et al., 2011). This includes knowledge of how to scaffold instruction and reduce extraneous cognitive load (Gathercole & Alloway, 2008; Smith-Spark & Fisk, 2007).

4.3 Classroom Support Practices: Theoretical Frameworks

Effective classroom support requires understanding of theoretical models that guide accommodation and modification decisions (Rose & Meyer, 2002).

Universal Design for Learning Theory: UDL principles provide a theoretical framework for creating learning environments that are accessible to all students, including those with dyslexia (Meyer et al., 2014). This includes multiple means of representation, engagement, and expression (CAST, 2018).

Differentiation Theory: Theoretical understanding of how to adapt instruction based on student readiness, interests, and learning profiles (Tomlinson, 2017). For students with dyslexia, this includes understanding of how to maintain grade-level content expectations while providing appropriate support (Berkeley et al., 2009).

Self-Determination Theory: Understanding of how to promote student autonomy, competence, and relatedness while providing necessary support (Deci & Ryan, 2000). This includes knowledge of how to build student self-advocacy skills and positive academic identity (Reis et al., 2000; Klassen, 2010).

4.4 Assessment Theory and Data-Based Decision Making

Teachers require theoretical understanding of how to collect, interpret, and use assessment data to guide instruction for students with dyslexia (Fuchs et al., 2007). This includes understanding of formative assessment principles (Black & Wiliam, 1998), progress monitoring theory (Deno, 2003), and curriculum-based measurement approaches (Shinn, 1989; Hosp et al., 2007).

5. Implications and Applications

5.1 Professional Development Implications

The theoretical framework has significant implications for the design and implementation of professional development programs focused on dyslexia awareness and support. Traditional one-time workshop models are insufficient for developing the complex knowledge systems required for effective dyslexia support (Guskey, 2002; Desimone, 2009).

Sustained Professional Learning: Theoretical understanding requires extended engagement with content, opportunities for practice and reflection, and ongoing support for implementation (Darling-Hammond et al., 2017). Professional development should incorporate adult learning theory principles, including relevance, experience, and problem-solving orientation (Knowles et al., 2015; Mezirow, 1997).

Communities of Practice: Theoretical models of professional learning communities suggest that sustained collaboration among educators can enhance knowledge development and implementation (Wenger, 1998; DuFour et al., 2016). Dyslexia-focused professional learning communities can provide ongoing support for knowledge application and problem-solving (Vescio et al., 2008).

Coaching and Mentoring Models: Research on professional development effectiveness suggests that coaching and mentoring approaches can enhance knowledge translation from formal learning to classroom practice (Joyce & Showers, 2002; Knight, 2007). Dyslexia specialists can serve as coaches to support general education teachers in implementing evidence-based practices (Sailors & Price, 2015).

5.2 Teacher Preparation Implications

The theoretical framework suggests significant implications for pre-service teacher preparation programs. Current preparation programs often provide limited coverage of reading difficulties and specialized learning needs (Washburn et al., 2011; Binks-Cantrell et al., 2012).

Integrated Curriculum Design: Teacher preparation programs should integrate dyslexia knowledge across multiple courses rather than treating it as a specialized topic (Moats & Foorman, 2003). This includes incorporation of reading science, assessment theory, and intervention strategies throughout the curriculum (Brady et al., 2009; Spear-Swerling, 2009).

Clinical Experience Requirements: Theoretical understanding must be combined with practical experience working with students with reading difficulties (Al Otaiba et al., 2008). Teacher preparation programs should provide structured opportunities for pre-service teachers to observe and practice dyslexia support strategies (Brownell et al., 2010).

5.3 Policy and System Implications

The theoretical framework has implications for educational policy and system-level change to support improved dyslexia awareness and intervention (Mather et al., 2001).

Standards and Accountability: Educational standards and accountability systems should recognize the importance of early identification and intervention for students with reading difficulties (Fletcher et al., 2019). This includes development of appropriate metrics for measuring progress and outcomes (Torgesen, 2004).

Resource Allocation: Understanding of the theoretical foundations of dyslexia support can inform decisions about resource allocation, including personnel, materials, and professional development investments (Hanushek et al., 2019; Cook & Cook, 2016).

5.4 Research Implications

The theoretical framework identifies several areas for future research to advance understanding of effective dyslexia support in educational settings (Snowling & Hulme, 2011).

Knowledge Translation Research: Investigation of how theoretical knowledge translates into effective classroom practice and identification of barriers and facilitators to implementation (Graham et al., 2006; Fixsen et al., 2005).

Intervention Effectiveness Research: Continued research on evidence-based practices for students with dyslexia, including investigation of how interventions can be adapted for diverse student populations and educational contexts (Wanzek et al., 2013; McMaster et al., 2005).

Professional Development Research: Research on effective approaches to professional development for dyslexia awareness and support, including investigation of different delivery models and their impact on teacher knowledge and student outcomes (Kennedy, 2016; Yoon et al., 2007).

6. Conclusion

This theoretical analysis reveals that effective dyslexia support in primary education requires a sophisticated, multi-dimensional knowledge system that transcends traditional boundaries between content knowledge, pedagogical expertise, and specialized intervention understanding. The framework demonstrates that teacher competence in dyslexia support emerges from the dynamic integration of foundational theoretical knowledge, practical identification and assessment skills, evidence-based intervention strategies, and contextual understanding of how these elements function within complex educational environments. The theoretical foundations establish that effective dyslexia support necessitates understanding of neurodevelopmental processes, phonological processing theory, reading development stages, and evidence-based practice principles, while simultaneously requiring the professional judgment to translate this knowledge into responsive, individualized educational practices that meet diverse student needs within inclusive classroom settings. The implications of this theoretical framework extend far beyond individual teacher preparation to encompass systematic changes in professional development approaches, teacher preparation programs, educational policy frameworks, and research priorities. Rather than viewing dyslexia knowledge as a specialized add-on to general teaching competence, the analysis demonstrates the need for integrated

approaches that embed understanding of reading difficulties and evidence-based interventions throughout teacher preparation and ongoing professional development. The framework highlights critical gaps between research evidence and classroom practice, suggesting that knowledge translation requires sustained, collaborative professional learning opportunities that support teachers in developing both theoretical understanding and practical implementation skills within supportive organizational contexts. Future research directions emerging from this theoretical analysis should focus on investigating the complex relationships between teacher knowledge, implementation fidelity, and student outcomes, while simultaneously examining how contextual factors influence the translation of theoretical knowledge into effective practice. Additionally, research should explore innovative approaches to professional development that enhance knowledge integration and sustainable practice change, develop valid and reliable measures of teacher competence in dyslexia support, and investigate how different delivery models and support structures impact both teacher learning and student achievement. This theoretical framework ultimately provides a foundation for advancing both research and practice in dyslexia awareness and support, emphasizing that effective intervention requires not merely knowledge acquisition but the development of adaptive expertise that enables teachers to make informed, contextually appropriate decisions that optimize learning outcomes for students with dyslexia throughout their primary school experience.

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