

# Breaking Barriers: Strategies for Early Dyslexia Identification in the Greek Educational System

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## ABSTRACT

This study critically examines the identification of dyslexia in Greek primary schools and proposes strategies to address the issue. Dyslexia, a neurological learning disability affecting reading skills, is estimated to impact 5-10% of children in Greece. However, timely diagnosis is often hindered by the lack of culturally appropriate assessment tools, inadequate teacher training, societal stigma, and systemic barriers within the Greek educational framework. It highlights the importance of early identification and intervention, as prompt support can significantly enhance academic and emotional outcomes for dyslexic students. Comprehensive teacher training programs on recognising dyslexia indicators, assessment referrals, and evidence-based intervention strategies are advocated. Additionally, the development and validation of dyslexia assessment tools tailored to the Greek linguistic context are emphasised as crucial for accurate diagnosis. The need for public awareness campaigns to destigmatise dyslexia and promote a supportive societal understanding is stressed. Collaborative frameworks involving educators, specialists, and parents

are recommended to optimise support structures. Furthermore, the implementation of Response to Intervention (RTI) frameworks and universal screening procedures is proposed to facilitate early identification and data-driven, tiered interventions. Ultimately, a concerted effort from all stakeholders, including educational reforms, teacher training, culturally sensitive assessments, and ongoing research, is called for to enable the timely identification and equitable support of dyslexic students in the Greek educational landscape.

**Keywords:** Early Dyslexia; Response to Intervention; Primary School; Educational Psychology; Greece

## DYSLEXIA IN GREECE

Dyslexia, a common learning difficulty with neurological roots, predominantly impairs reading skills. Globally, it affects 5-12% of children, and in Greece, the prevalence is estimated at 5-10% (Dimitriadou, 2023; Schumacher et al., 2007). Children with dyslexia in Greece often struggle not only with reading and writing but also with speaking, listening, and comprehension. Recognising dyslexia early is crucial, as prompt interventions can significantly

enhance reading abilities and lead to better academic and emotional well-being (Byrne et al., 2014; Snowling, 2013). Despite this, diagnosis in Greece tends to occur late, often only in the 3rd grade or later (8 years old), which can deepen learning challenges and result in a cycle of failure for the students affected (Anastasiou & Polychronopoulou, 2009). A complete diagnosis is costly and requires multifaceted assessment strategies, including intellectual, phonological, and text comprehension evaluations (Andresen & Monsrud, 2021). Usually, long waiting times for assessments are needed, discouraging parents. Additionally, the absence of screening tools that are culturally and linguistically adapted for the Greek context poses another obstacle to early identification (Katsarou, 2018). Teachers play an essential role in early identification, yet systemic barriers within the Greek educational framework hinder the prompt identification and support that these students need. To address this, reforms are advocated to facilitate better early detection and to cater to the unique needs of dyslexic students (Katsarou, 2018).

The process of assessing dyslexia in Greece faces significant hurdles due to the lack of standardized and culturally appropriate diagnostic tools. The common practice of transliterating existing assessments from other languages often results in inaccurate measurement of dyslexic tendencies in Greek students. As Constantinides (2016) emphasized, assessment tools must be sufficiently adapted to the unique phonetic and orthographic qualities of the Greek language in order to be valid and reliable. The misalignment between current tools and the linguistic landscape leads to improper identification of dyslexia, either missing cases or over-diagnosing, as Anastasiou and Polychronopoulou (2009) highlighted. There is an urgent need to develop and validate assessment tools tailored to the Greek educational context to enable more precise identification of dyslexia.

A key obstacle to early identification of dyslexia in Greek schools stems from the

clear letter-sound relationships in Greek, which can mask reading difficulties characteristic of dyslexia. Greek children may accurately decode words despite underlying phonological processing deficits and other hallmark dyslexic traits. This pseudo-reading hides the true extent of their reading issues compared to English, where irregular orthography reveals problems sooner (Diamanti et al., 2018). The relative delay in the emergence of clear symptoms may hinder early identification and intervention. Furthermore, the need for early screening tools adapted for Greek impedes early detection (Georgiou et al., 2013). Translated English assessments fail to identify at-risk children given linguistic and orthographic differences. Systematic testing of phonological awareness, rapid naming, and letter knowledge is vital for spotting early signs of dyslexia risk (Papadimitriou & Vlachos, 2014). Over-reliance on teacher observations without such standardized testing further hampers identification of subtle cases, leading to late or missed diagnose.

Response-to-Intervention (RTI) is an educational strategy that provides early, systematic assistance to children who are struggling to learn. In places where RTI is well-implemented, it serves as a valuable tool for monitoring student progress and adjusting instruction before difficulties become entrenched. Greek schools face significant barriers in deploying such frameworks, as identified by Koutrouba et al. (2008), leading to heightened challenges in spotting students at risk for dyslexia. RTI operates by frequent screening of reading abilities and adapting educational support in increasing intensities based on each student's assessed needs—this tiered approach is essential for identifying and addressing dyslexia effectively. However, the current lack of specialized training in dyslexia intervention methods for Greek educators results in reliance on generalized, less targeted teaching strategies. This not only hinders dyslexic students' progress but also underscores the ineffectiveness of

assistance provided without an RTI framework. The scarcity and high costs of individualized help outside of school further complicate these issues. Recognizing these challenges is crucial, as is the need for Greek educational policy to embrace RTI principles fully. Such adoption would ensure that students with dyslexia receive appropriate, effective instruction and support tailored to their unique learning profiles to navigate their academic journeys successfully.

The critical role of formal training in dyslexia for educators cannot be overstated in its impact on the timely and effective identification and intervention of students with learning difficulties. Research reveals a persistent deficiency in this aspect within Greek education. Anastasiou and Polychronopoulou's (2009) study points to a widespread gap in primary school teachers' familiarity with dyslexia, seen in a reliance on informal methods over standardized assessment tools. This lack of formal dyslexia education causes major delays in diagnosing and addressing this learning disorder.

Similarly, Chourmouziadou (2016) found shortfalls in the Greek teacher preparation curriculum regarding dyslexia, extending to in-service training as well. The lack of comprehensive pre-service and in-service training specific to dyslexia leaves teachers unprepared, negatively impacting their ability to assist dyslexic students. In contrast, systematic dyslexia training - including identification, understanding, and effective instructional methods - could equip educators with skills to implement evidence-based strategies and interventions. The absence of such critical training highlights the need for educational reform. Integrating dyslexia-specific training into initial teacher education and providing ongoing professional development can significantly enhance teachers' competence in managing dyslexia. This progression will not only close the current knowledge gap but also enable more proficient support systems in schools, thereby improving

outcomes for dyslexic students. Policymakers must urgently address this issue, as the benefits extend beyond individual teachers to the entire student body struggling with dyslexia.

The societal perception of dyslexia in Greece often leans towards misunderstanding and stigma, which can significantly impact the self-esteem and academic self-efficacy of dyslexic students. Elyachar (1995) and Livingston et al. (2018) elucidate the emotional toll dyslexia can exert on the affected individuals and their families, exacerbated by societal misconceptions. The stigma surrounding learning disabilities can deter parents and teachers from seeking early identification and intervention for fear of labelling and its associated negative connotations. Efforts to de-stigmatize dyslexia through public awareness campaigns and educational initiatives are imperative to foster a more conducive environment for addressing dyslexic challenges.

The complexity of dyslexia requires a multidisciplinary approach for effective identification and intervention (Berninger, 2001). Engaging a collaborative framework encompassing educators, psychologists, speech-language pathologists, and parents can optimize the support structure for dyslexic students. Morfidi and Bridglall (2022) emphasize the importance of parental involvement in literacy instruction, which can be significantly enhanced through collaborative platforms that foster shared knowledge and coordinated intervention strategies.

In summary, culturally valid assessments, teacher training, destigmatisation efforts, multidisciplinary coordination and systemic supports are vital to enable the timely and equitable identification of dyslexia among Greek students. A concerted effort is needed to diagnose and assist dyslexic children early to provide an inclusive educational environment.

## **ADDRESSING CHALLENGES IN EARLY DYSLEXIA**

Teacher training and awareness form the foundation of early dyslexia identification and intervention. Teachers are often the first to spot signs of dyslexia, but they need proper knowledge of the specific indicators. Common red flags include phonological processing deficits (struggling to sound out words), slow reading speed, inaccurate reading comprehension, and spelling difficulties that do not match the student's intelligence (Peterson & Pennington, 2012). With training on recognizing these literacy challenges along with associated behavioural signs like avoidance of reading aloud, teachers can make appropriate referrals for dyslexia assessment.

The strategy of enhancing teacher training is based on the psychological theory of early intervention, which posits that early identification and support can significantly mitigate dyslexia's impacts on academic performance and self-esteem (Smith, 2004). Studies have shown reading intervention programs delivered in 1st and 2nd grade can improve dyslexic students' literacy outcomes (Alexander & Slinger-Constant, 2004). Equipping teachers to recognize and intervene early is key. Training should incorporate diverse exercises like simulating dyslexic difficulties to build empathy. Role-play and perspective-taking can encourage more positive attributions for students' struggles (Weiner, 1976). To reach all primary school teachers, Greece should implement mandatory Universal Design for Learning (UDL) modules covering dyslexia indicators, assessment referrals, and evidence-based reading intervention strategies in teacher credentialing programs. Such comprehensive training will enable teachers to identify students at risk for dyslexia early and provide the support needed to help them thrive.

While teachers play an essential role in initial dyslexia identification, specialists like psychologists and speech therapists are key for conducting in-depth diagnostic evaluations once students are flagged as

potentially at-risk. Developing Greek practice standards and qualifications for dyslexia assessment will reduce variability in methods and improve diagnostic precision. University training programs tailored to dyslexia evaluation in the linguistic context of Greek can strengthen specialists' expertise in assessing phonological processing. Incentives like tuition aid for dyslexia specialization will increase the pool of qualified evaluators to meet growing needs. Ongoing professional development webinars on the latest Greek dyslexia research can also help refine specialists' understanding of best practices. Building networked teams of teachers and specialists at each school will facilitate seamless referrals, coordinated assessments, and targeted interventions to support students with dyslexia.

Tailoring assessment tools to Greek's linguistic and cultural nuances is indispensable for accurate dyslexia identification. This strategy is informed by the phonological processing theory, which elucidates the pivotal role of phonological skills in reading acquisition (Vellutino et al., 2004). Culturally and linguistically relevant assessments can better gauge phonological and orthographic skills, thereby improving dyslexia identification. For instance, measures of phonological awareness, including phoneme blending, segmentation, and manipulation tasks, should incorporate complex consonant clusters, vowels, diphthongs, and syllabic structures particular to the Greek language (Pittas & Nunes, 2014). Furthermore, drawing from Vygotsky's sociocultural theory emphasising social and cultural tools' role in cognitive development, assessments should evaluate students' mastery of critical Greek literacy skills and concepts (Vygotsky, 1962). To enable proper standardisation and norming, efforts to develop culturally fair dyslexia assessments should be undertaken collaboratively by Hellenic academics, psychologists, speech therapists, and educators. Implementation of Universal Screening Procedures: Universal screening

holds the promise of early identification of dyslexia. This strategy aligns with psychological theories accentuating the significance of early intervention and timely identification to ensure appropriate support and intervention (Fuchs & Fuchs, 2006). In Greek primary schools, dyslexia screening can be administered upon school entry to establish baseline literacy levels through instruments evaluating letter knowledge, phonological awareness, rapid automatized naming (RAN), and family history of dyslexia. According to Cattell-Horn-Carroll (CHC) cognitive theory, these areas tap into pivotal constructs, including phonological processing, processing speed, crystallised knowledge, short-term memory, and long-term storage and retrieval that are frequently impaired in dyslexia (McGrew & Wendling, 2010). Students flagged through initial screening would undergo deeper diagnostic testing and progress monitoring. This data-driven approach aligns with Fuchs and Fuchs' responsiveness-to-intervention model, enabling targeted, tiered instruction and remedial supports based on individual needs (Fuchs & Fuchs, 2007). From an assessment standpoint, incorporating universal screening procedures into the national curriculum can systematically identify at-risk students early when neurocognitive plasticity is high, consistent with a critical period hypothesis in language acquisition (Lenneberg, 1967). Though logistically challenging, large-scale implementation of dyslexia screening programs has succeeded in countries like the Netherlands and some U.S. states, confirming the viability of this strategy (van der Leij & Maassen, 2013; Snowling, 2013). Progress monitoring and RTI frameworks are instrumental in timely dyslexia identification and intervention. Grounded in psychological theories advocating for a data-driven, tiered approach to support, these frameworks facilitate early identification based on individual student needs (Fuchs et al., 2004). Curriculum-based measures of oral reading fluency and maze passage reading can quantify Greek

students' incremental reading gains, gauging whether additional intervention is warranted (Tzivinikou et al., 2020). From a cognitive assessment standpoint, routine progress monitoring aligns with Feuerstein's theory of structural cognitive modifiability, allowing the identification of students failing to respond sufficiently to intervention (Feuerstein et al., 2015). For such students, RTI principles suggest more intensive, targeted instruction or referral for dyslexia assessment. Specifically, Tier 1 supports all students through quality classroom instruction in foundational literacy skills grounded in cognitive and neuroscience research. Students still struggling may receive supplemental small group intervention in Tier 2, informed by student difficulties and cultural and linguistic background. Persistent struggles despite research-based intervention signify the need for intensive intervention or comprehensive dyslexia evaluation in Tier 3. This cascading tier system provides data-driven pathways to dyslexia identification and specialised support. Implementation will require extensive teacher and staff training in utilising screening data, providing evidence-based dyslexia intervention, and making appropriate referrals.

Public awareness campaigns can play an important role in replacing myths and stigma surrounding dyslexia with factual understanding, aligning with psychological theories on stigma reduction and mental health literacy promotion (Corrigan et al., 2012). Multi-modal dyslexia awareness initiatives across diverse media channels and grassroots community events can reach broad Greek audiences with resonant messaging. According to McGuire's (1989) communication-persuasion matrix model, repeated exposure through engaging formats enhances attitude change and message retention. Central campaign messaging should utilise neuroscience research insights to underscore dyslexia's biological origins, countering misconceptions linking it to intelligence or effort. Spotting relatable

stories of famous Greeks who succeeded with support can help tackle the problematic "lazy dyslexic" stereotype and motivate families to seek early screening rather than hide concerns. Transformative first-person narratives that increase understanding align with the Elaboration Likelihood Model from social psychology (Cacioppo et al., 1986). Regional campaigns spearheaded through community-university partnerships and policy efforts advocating national programming can work in tandem to replace stigma with more affirmative societal attitudes, spurring action on early identification. Sustained collaborative action across sectors is critical, with localisation of materials to maximise relevance across Greece's diverse cultural landscape. With concerted outreach utilising strategic messaging, impactful delivery channels, and collective mobilisation, campaigns can ignite a movement where dyslexia is demystified, destigmatised, and identified early through assessment.

Educating parents about dyslexia and promoting their involvement is pivotal for early identification. This strategy aligns with psychological theories stressing familial support's role in mitigating the negative impacts of dyslexia (Hoover & Sandler, 1997). Schools can offer dyslexia awareness workshops and resources to help parents spot early signs of reading/writing difficulty and understand effective intervention approaches. Equipping parents with knowledge about dyslexia demystifies the condition, decreasing the shame that prompts denial or avoidance. Through increased understanding, parents can provide informed consent for dyslexia screening and be prepared to advocate for needed support services. According to Moos' conceptual framework of family environments, informed and empowered parents can foster home climates that bolster dyslexic children's resilience and self-efficacy (Moos, 2002). Dyslexia support groups led by schools or Greek advocacy organisations provide community and allow parents to share experiences. Policy-wise,

schools should be mandated to continually update parents on screening results and intervention plans. Deepening home-school partnerships in the Greek context is critical for facilitating data sharing and joint decision-making regarding the necessity of formal dyslexia assessment, as recent research has indicated (Morfidi & Bridglall, 2022).

Leveraging technology can enhance dyslexia identification and intervention. For identification, Hecker et al. (2019) demonstrated machine learning algorithms analysing eye-movement data during reading to predict dyslexia accurately. Games assessing phonological skills on tablets provide engaging screening (Rauschenberger et al., 2018). Intervention-wise, well-designed reading apps allow personalised learning (Vanden Bempt et al., 2021). While promising, considerations like student privacy, equitable access, and balance with traditional teaching are vital. Implementing technology initiatives requires device access, connectivity, technical support, and teacher training. Further research should also evaluate efficacy compared to conventional approaches. Judiciously blending technology-based assessments and interventions can boost flexibility and optimise student gains.

## **RECOMMENDATIONS**

In Greek schools, identifying dyslexia early is crucial for students' successful educational journeys. The responsibility for recognising the signs of dyslexia often falls on classroom teachers, who are on the front lines of observing students' literacy development. To effectively identify students who may be at risk, teachers must engage in regular, quick assessments of each student's reading abilities. Torgesen (2002) underscores the necessity of such consistent monitoring for early detection, which is the first step in providing timely support. In addition to consistent assessment, adopting varied teaching styles is vital. Moats (2014) champions

multisensory learning, where lessons involve seeing, hearing, and doing. This approach can be particularly beneficial for dyslexic learners who may struggle with traditional learning methods. It allows teachers to observe how students interact with different types of content, offering insights into potential learning difficulties.

Another essential aspect of dyslexia identification is the focus on phonological awareness. Phonological awareness refers to the ability to detect and manipulate the sounds in spoken language. Daily classroom exercises that enhance phonological skills, such as identifying individual sounds in words, can be significant indicators of dyslexia. Kilpatrick (2015) highlights the importance of these phonological activities in developing foundational literacy skills, which are often difficult for students with dyslexia. Structured literacy programs can build on these phonological skills by offering a scaffolded approach to reading and writing instruction that is beneficial for all students, particularly those who might need additional support. Scaffolding involves separating complex tasks into smaller, more manageable steps to support student learning. Birsh & Carreker (2019) suggest that such structured literacy programs can help teachers systematically identify students who display signs of dyslexia by providing a clear benchmark of expected literacy development. Additionally, incorporating technology into daily learning can aid the identification process by complementing these phonological and structured literacy approaches. Educational software that targets reading skills can offer teachers additional data points and insights into each student's literacy capabilities. The research by Hecker et al. (2002) indicates that technology can be a significant ally in diagnosing dyslexia, providing alternative ways to evaluate reading difficulties. While technology can help identify potential signs of dyslexia, confirmation of a diagnosis requires input from specialists. When teachers suspect a student might have

dyslexia based on assessments and observations, it's essential to involve specialists like school psychologists and speech therapists. These experts can conduct comprehensive diagnostic assessments to confirm a dyslexia diagnosis, ensuring that students are provided with the appropriate interventions and support, as discussed by Adoniou (2014).

Looking ahead, future research is vital to enhance dyslexia identification further. Longitudinal studies could be designed to measure the long-term effects of early intervention strategies, a suggestion that is supported by the work of Torgesen et al. (2001), who emphasize the importance of early identification and intervention in reading development. Comparative studies that evaluate various instructional methods are equally important. Research of this nature could be informed by the findings of Berninger and Wolf (2009), who explore different instructional approaches for dyslexic students. Such studies would be invaluable in the Greek educational landscape, where language-specific challenges require tailored teaching strategies. Additionally, the development and validation of culturally sensitive assessment tools are necessary for accurate dyslexia diagnosis within the Greek language context. This aligns with the recommendations from Reid et al. (2007), who highlight the need for assessments that are adapted to specific linguistic and cultural environments. Furthermore, investigating teacher training programs is another area ripe for research. Washburn et al. (2011) offer insights into the components of effective dyslexia teacher training, suggesting that comprehensive educator preparation can significantly improve student outcomes. Understanding which aspects of these programs most effectively prepare teachers to recognize and support dyslexia could have a profound impact on early identification and intervention.

## CONCLUSION

In conclusion, the early identification of dyslexia requires a concerted effort from all stakeholders. By utilizing varied assessments and teaching methods, collaborating with specialists, and committing to ongoing research, the Greek educational system can enhance its ability to support dyslexic learners. This will ensure every student has the opportunity to thrive academically.

### Declaration by Authors

**Conflict of Interest:** The authors declare no conflict of interest.

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