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Cracking the Code: Early Dyslexia Screening through the SCORE Lens

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Abstract

Early identification of dyslexia is crucial for implementing effective interventions that support affected students' academic and emotional development. The discussion is needed to explore the potential to community. However, there is very little published research on the discussion of the early dyslexia screening with the specific model of strategy-based assessment. This study explores the application of the SCORE Model, an innovative framework encompassing Strengths, Challenges, Options, Responses, and Effectiveness as a strategic approach to early dyslexia screening. The methodology used for this concept paper is a holistic assessment, the SCORE Model that not only identifies potential reading difficulties but also highlights each child's unique strengths, fostering tailored interventions that cater to individual needs. The major findings show that adopting the SCORE Model can bridge these gaps by providing actionable insights for educators and promoting a collaborative approach to intervention planning. The effectiveness of early screening is linked to ongoing progress monitoring and stakeholder engagement, ensuring that interventions remain responsive to students' evolving needs. The SCORE Model also presents a viable framework for enhancing early dyslexia screening practices, offering significant potential for improving student outcomes. The limitation on this paper can be improving by using any other model to get variety of perspectives such as SWOT, TOWS, NOISE, and SOAR. This finding has important implications for improving early identification and ensuring timely intervention, which is critical to enhancing students' learning outcomes. Future research should focus on comparative studies between the SCORE Model and other screening methods, assess the long-term impacts of early identification, and explore the role of technology in facilitating screening processes. By addressing these areas, educational stakeholders can develop more robust strategies to support students with dyslexia, ultimately leading to a more equitable educational landscape.

Keywords: Dyslexia, Learning Disability, SCORE Model, Early Screening

Introduction

Dyslexia, one of the most prevalent learning disabilities, affects a significant proportion of students worldwide, impairing their ability to read, write, and spell despite having average or above-average intelligence (Philip Kirby & Snowling, 2022). It is a neurological condition that interferes with the brain's language processing centres, causing challenges in phonological awareness, word recognition, and decoding skills. Meanwhile, dyslexia defines as a specific learning disability that is neurobiological in origin, characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities (International Dyslexia Association, 2002). These challenges, if left unaddressed, can lead to persistent academic struggles and emotional distress, often limiting a child's potential.

Given the far-reaching consequences of dyslexia on academic achievement and self-esteem, the importance of early screening cannot be overstated. Detecting dyslexia at an early stage allows for timely interventions that can dramatically improve educational outcomes and mitigate the long-term impact on a child's life. Research consistently shows that early identification, followed by appropriate interventions, can rewire a child's brain to process language more effectively, thus laying the foundation for more successful learning (Al-Dawsari & Hendley, 2022; Sanfilippo et al., 2020). This makes early screening an invaluable tool in preventing learning disabilities from escalating into more serious academic and psychological issues.

In Malaysia, where the education system places strong emphasis on literacy and academic performance, research revealed that 10% to 15% of primary school children in Malaysia show signs of dyslexia (Pillai, 2021), which may affect later in their academic careers. The lack of awareness among educators and parents (Scientist et al., 2018), combined with limited access to specialized assessments, has hindered the early detection of dyslexia. This delay not only affects the child's academic journey but also perpetuates a cycle of frustration and disengagement from learning. Hence, implementing a robust and efficient early screening process is critical to bridging this gap.

The objective of this concept paper is to:

- explore the application of the SCORE Model as a comprehensive framework for early dyslexia screening.
- evaluate the potential of the SCORE Model to provide more comprehensive and effective approach compared to traditional models.
- analyse the five elements of the SCORE Model (Strengths, Challenges, Options, Responses, and Effectiveness) in the context of early dyslexia identification and intervention.
- assess how the SCORE Model can enhance early dyslexia screening and intervention, particularly in diverse educational settings.

The current landscape of early dyslexia screening reveals a significant gap in the methodologies employed, which often focus predominantly on identifying challenges while neglecting the strengths and individual contexts of affected students. Traditional screening tools tend to offer a one-dimensional view, failing to provide a comprehensive understanding of each child's unique profile and the potential avenues for effective intervention. This limitation is particularly pronounced in Malaysia, where the need for timely and effective dyslexia identification is critical, yet many students continue to fall through the cracks due to

inadequate assessment strategies. By introducing the SCORE Model, this study aims to address these shortcomings by providing a more balanced and holistic framework that not only identifies challenges but also leverages individual strengths, offers a variety of intervention options, and measures the effectiveness of these strategies. In doing so, the SCORE Model seeks to fill the existing gap in early dyslexia screening practices, promoting better educational outcomes, and empowering students to thrive.

SCORE Model

The SCORE Model is a strategic planning tool designed to assist firms in assessing and developing their strategy. It is intended to assist organizations in reviewing their present strategy and making educated decisions about future planning. The SCORE analysis is a viable alternative to SWOT analysis and an important tool that provides a favourable outlook for businesses seeking to make informed decisions. Its effectiveness comes from its all-encompassing and thorough approach, which enables decision-makers to maximize on strengths and opportunities while overcoming obstacles (Neal, 2023).

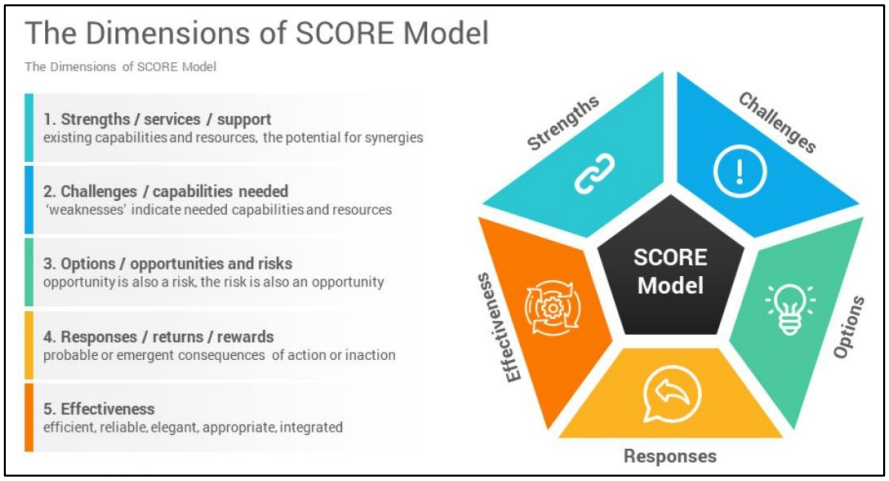

Figure 1 SCORE Model as Strategy Evaluation Beyond SWOT

Figure 1 illustrates the SCORE Model as a strategic assessment tool that extends beyond traditional SWOT analysis. The SCORE model comprises five key elements: Strengths (S), Challenges (C), Options (O), Responses (R), and Effectiveness (E). Strengths (S) refer to what is being done well or the potential for success; Challenges (C) highlight areas requiring additional resources or capabilities for achievement; Options (O) encompass the opportunities and risks faced; Responses (R) capture stakeholder feedback and the anticipated returns or rewards; and Effectiveness (E) addresses how to ensure that initiatives operate efficiently and reliably (Neal, 2023).

The SCORE model is particularly valuable when aiming to foster a people-first company culture. This strategy encourages teams to assess the institution's strengths, challenges, opportunities, partnerships, and activities. While like SWOT analysis, the SCORE model also tracks the progress of interactions among colleagues and stakeholders, as well as the efforts made by employees. This paper advocates for the use of the SCORE model over SWOT due to the tendency of the SWOT matrix to oversimplify environmental factors, which can sometimes lead to results that deviate from reality.

Although the SCORE model is frequently applied in corporate and business settings, several studies have utilized the SCORE Model in educational research, highlighting its potential as an effective framework for assessing various factors in learning environments (Ishak et al., 2024; Segar & Mohd Matore, 2023; Sharul Akimi et al., 2024). The SCORE analysis serves as a crucial tool for organizations by providing a comprehensive and systematic approach to assessment. It aids decision-makers in making informed choices by focusing on both internal and external factors, offering a thorough understanding of the organization's status along with the opportunities and challenges ahead. Consequently, the SCORE analysis empowers organizations to capitalize on their strengths, address challenges, seize opportunities, and formulate effective actions to achieve their mission.

Strength

Early dyslexia screening offers numerous strengths that significantly enhance educational outcomes for affected students. Firstly, it allows for the timely identification of students at risk, facilitating immediate intervention strategies tailored to individual needs. Research has shown that when dyslexia is detected early, targeted support can mitigate its impact on academic achievement and emotional well-being. By addressing learning challenges promptly, educators can implement appropriate instructional methods and resources, thereby fostering a more supportive learning environment. Early detection serves as a preventive measure, reducing the likelihood of long-term academic struggles and associated self-esteem issues (Wilmot et al., 2023).

Moreover, early screening promotes a proactive approach to education by encouraging collaboration among educators, parents, and specialists. The screening process often involves sharing information and insights about a child's strengths and challenges, which fosters a collaborative mindset. This teamwork is essential in developing effective intervention plans that incorporate various perspectives and expertise (Hassani & Schwab, 2021). Additionally, early screening helps to raise awareness among teachers and parents about the signs of dyslexia, empowering them to seek support and resources sooner rather than later. Such collaboration not only enhances the quality of education provided to dyslexic students but also strengthens the overall school community.

Finally, the implementation of early dyslexia screening programs can lead to a more inclusive educational environment. By identifying students with dyslexia early on, schools can ensure that appropriate accommodations and modifications are made to support diverse learning needs. This inclusive approach fosters a culture of acceptance and understanding, where differences are acknowledged and celebrated rather than stigmatized. Furthermore, early intervention can promote resilience in dyslexic students, equipping them with strategies to overcome challenges and succeed academically. As a result, early dyslexia screening not only benefits individual students but also contributes to a more equitable education system overall (Snowling et al., 2020).

Challenges

Early dyslexia screening faces three significant challenges that can hinder its effectiveness and accessibility. One major issue is the lack of standardized assessment tools that are culturally and contextually appropriate for diverse populations (Nkomo et al., 2021). Many screening instruments are developed in specific contexts and may not account for the linguistic and

educational backgrounds of students in different regions. For instance, in multilingual societies like Malaysia, where students may be exposed to multiple languages, existing tools may overlook language proficiency factors that impact reading skills. This lack of culturally responsive assessments can lead to inaccurate identification, either by failing to recognize dyslexia in some students or misclassifying others, resulting in inadequate support (Balakrishnan et al., 2016).

Another challenge lies in the training and awareness of educators and practitioners involved in the screening process. Many teachers may not receive adequate training in recognizing the signs of dyslexia or administering screening tools effectively (Harding et al., 2023). As a result, there may be a lack of confidence in identifying at-risk students, leading to delays in intervention. Furthermore, some educators may hold misconceptions about dyslexia, viewing it merely as a behavioural issue rather than a specific learning disability, which can further complicate the screening process. Without proper training and ongoing professional development, the effectiveness of early screening initiatives is significantly compromised.

Lastly, resource constraints present a formidable barrier to implementing comprehensive early dyslexia screening programs. Schools, particularly in underserved areas, may lack the financial resources to invest in appropriate screening tools, staff training, and follow-up interventions (Clark et al., 2019). This inequity means that many students do not receive the timely support they need, exacerbating the challenges associated with dyslexia. Additionally, limited access to specialist services, such as educational psychologists or speech therapists, can further delay the identification and intervention process, leaving vulnerable students without the necessary resources to succeed.

Options

Implementing effective early dyslexia screening involves exploring various options that enhance identification and intervention strategies. One promising approach is the use of multi-tiered screening systems, which integrate different methods of assessment at various stages of education. For instance, initial universal screenings can be conducted for all students, followed by more targeted assessments for those who show signs of difficulty. This tiered system allows educators to identify at-risk students early and provides opportunities for additional support without overwhelming resources. Multi-tiered systems also facilitate continuous monitoring of students' progress, allowing for timely adjustments to interventions as needed (Fuchs & Fuchs, 2006).

Another valuable option is the incorporation of technology-based assessments that leverage digital tools for efficient screening. Various software and applications designed for literacy assessment can deliver quick, interactive evaluations that engage students and provide immediate feedback. These tools can analyse a student's reading skills, phonological awareness, and other relevant indicators, offering educators detailed insights into each child's strengths and challenges. Additionally, technology can enhance accessibility for diverse learners by providing customized experiences tailored to individual needs, thereby increasing the accuracy of dyslexia identification (Walshe, 2022).

Finally, fostering collaborative partnerships between schools, parents, and community resources can enhance the effectiveness of early dyslexia screening. Engaging parents in the

screening process is crucial, as they can provide valuable insights into their child's behaviour and learning patterns outside of the classroom (Wells, 2018). Schools can also collaborate with local organizations, such as speech and language clinics, to access specialized expertise and resources. By creating a network of support that extends beyond the classroom, educators can ensure that students receive comprehensive evaluations and interventions, addressing the multifaceted nature of dyslexia.

Responses

The responses elicited from early dyslexia screening are crucial for developing effective intervention strategies and supporting student success. One primary response involves tailoring instructional practices to meet the identified needs of students. Once a student is screened and identified as at risk for dyslexia, educators can implement targeted interventions that focus on specific skill deficits, such as phonemic awareness, decoding, and reading fluency. By adapting teaching methods to address these areas, educators can foster a more supportive learning environment that enhances student engagement and learning outcomes. Research indicates that individualized instruction based on screening results significantly improves reading skills among dyslexic students (Lee et al., 2020).

Another essential response is the promotion of collaborative efforts among stakeholders involved in a child's education. Early dyslexia screening encourages communication between teachers, parents, and special education professionals, ensuring a unified approach to support the student. Parents play a vital role by reinforcing strategies at home and providing insights into their child's behaviours and learning patterns outside of school (Carawan et al., 2016). This collaboration not only strengthens the intervention plan but also fosters a sense of community and shared responsibility for the child's success. Regular meetings and progress updates can help all stakeholders stay informed and adjust strategies as necessary.

Lastly, the responses to early dyslexia screening should also include ongoing assessment and feedback mechanisms to monitor student progress over time. Continuous evaluation allows educators to measure the effectiveness of the interventions being implemented and make data-driven adjustments to improve outcomes (Theodoridou et al., 2021). For instance, regular progress monitoring can help identify whether a student is responding positively to interventions or if alternative strategies are required. This responsive approach ensures that each student receives the support needed to thrive academically and emotionally, fostering resilience and a positive attitude toward learning.

Effectiveness

The effectiveness of early dyslexia screening is pivotal in determining the overall success of intervention strategies and long-term educational outcomes for students. One of the key indicators of effectiveness is the early identification of at-risk students, which significantly enhances the likelihood of timely and appropriate intervention. Studies have shown that early screening allows for interventions to be implemented when the brain is still highly adaptable to new learning strategies (Shaywitz & Shaywitz, 2020). This proactive approach is associated with better reading skills and academic success in the long run.

Moreover, effective early screening programs are characterized by their ability to provide actionable data that informs instructional practices. The data generated from screenings can

help educators pinpoint specific areas of difficulty, enabling them to tailor their teaching methods and materials to meet the unique needs of each student. For instance, if screening results indicate that a child struggles with phonological processing, educators can implement targeted phonics instruction and other related interventions. This data-driven approach not only enhances the quality of instruction but also empowers educators to monitor progress effectively, adjusting interventions as needed to ensure that students are making gains (Fuchs & Fuchs, 2006).

Finally, the effectiveness of early dyslexia screening is further enhanced by ongoing support and collaboration among educators, parents, and specialists. When all parties are engaged in the screening process, there is a greater chance of ensuring that the identified interventions are implemented consistently and effectively. Ongoing communication helps to maintain alignment on the goals for the child, while regular progress assessments allow for modifications to strategies based on the student's response to interventions. Such collaboration fosters a more inclusive educational environment, ultimately leading to improved outcomes not only for students with dyslexia but for all learners as educational practices evolve to be more responsive and supportive (Balakrishnan et al., 2016).

Figure 2 represents the SCORE Model in early Dyslexia screening, indicating areas that can be reinforced through comprehensive actions. The SCORE Model is useful for monitoring the evolution of adaptive systems. In the future, early Dyslexia screening assessments will be conducted, particularly in educational context.

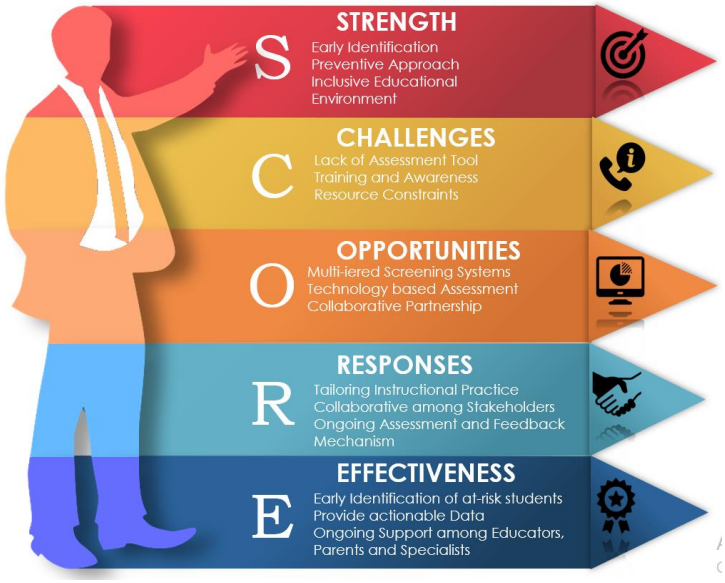

Figure 2: SCORE Framework Model on Early Dyslexia Screening

Summary

This study emphasizes the importance of early dyslexia screening, using the SCORE Model as a strategic framework to identify and support students at risk for dyslexia. The findings suggest that early identification, combined with targeted interventions, enhances academic outcomes, and promotes a collaborative approach between educators, parents, and specialists. Among these, the Responses and Effectiveness elements in the SCORE Model are particularly useful for the community, as they focus on stakeholder feedback and the long-

term impact of interventions. These elements ensure that the needs of students, educators, and parents are met while helping to create sustainable, evidence-based strategies for dyslexia support. However, limitations such as the focus on the SCORE Model and the variability of practices across educational contexts suggest the need for further exploration. SOAR may offer more potential for exploration beyond the SCORE model because it differs from traditional models like SWOT by focusing on a more positive, future-oriented perspective. While SCORE and other models address both strengths and challenges, SOAR emphasizes aspirations and results, making it highly adaptable for exploring growth, innovation, and long-term vision in education, organizational development, and community engagement. Future research should expand the examination of different screening models, evaluating their effectiveness across diverse populations and assessing the long-term impacts of early interventions. This is crucial because various models may have strengths and limitations in different educational and cultural contexts, making it essential to determine which are most suitable for diverse groups. Additionally, understanding how these models work across populations ensures that screening processes are equitable and accurate. Finally, examining the long-term effects of early interventions helps evaluate their lasting benefits, ensuring that students receive effective, sustainable support for their dyslexia challenges. Studies that investigate the role of technology in enhancing screening accuracy and accessibility, particularly in under-resourced settings, could further optimize early dyslexia detection and support.

This study makes significant contributions both theoretically and contextually to the field of dyslexia screening and early intervention. Theoretically, it advances the existing body of knowledge by incorporating the SCORE Model into the educational context, traditionally used in business settings. By applying this model, the study introduces a novel framework for assessing strengths, challenges, opportunities, responses, and effectiveness in dyslexia screening, offering a more comprehensive and strategic approach compared to conventional models like SWOT. Contextually, the study is highly relevant as it addresses the urgent need for early dyslexia identification, especially in diverse educational systems in Malaysia. It highlights the value of early screening in multicultural settings, where varied linguistic and socio-economic factors may influence both the detection of dyslexia and the effectiveness of interventions. This research, therefore, plays a critical role in shaping policies and practices by providing an adaptable, strategic framework that enhances both the theoretical understanding and practical implementation of early dyslexia screening in diverse contexts.

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