Filipino Learners: Exploring the New MATATAG Curriculum for Literacy and Numeracy

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Abstract:

The MATATAG Curriculum represents a significant advancement in Philippine education, aiming to enhance literacy and numeracy outcomes among Filipino learners. This research paper explores the key features and implications of the curriculum. Emphasizing foundational skills development, the curriculum focuses on phonological awareness, vocabulary, and basic mathematical concepts. It integrates evidence-based approaches such as phonics-based reading instruction and hands-on mathematical exploration. Furthermore, the curriculum supports Mother Tongue-Based Multilingual Education (MTB-MLE), recognizing the importance of learners' first language for literacy development. Continuous teacher training and community involvement are highlighted as crucial for successful implementation. The curriculum aims to address challenges in education by promoting inclusive practices and leveraging cultural and linguistic diversity. By fostering collaboration among stakeholders and promoting evidence-based teaching strategies, the New MATATAG Curriculum seeks to create a more equitable and effective educational system in the Philippines, ultimately empowering learners for success in school and beyond.

Keywords: MATATAG Curriculum, literacy, numeracy, foundational skills, evidence-based approaches

Introduction:

In the pursuit of improving literacy and numeracy outcomes among Filipino learners, the Philippine education system has continually evolved its curriculum and programs. One of the recent initiatives aimed at strengthening education in the first key stage is the implementation of the New MATATAG Curriculum. This curriculum places a strong emphasis on literacy and numeracy development, aiming to address the challenges identified in national and international assessments.

According to **PISA 2018** results, the Philippines ranked significantly lower in reading and mathematics compared to other participating countries (OECD, 2019). Similarly, the **2019 SEA-PLM assessment** highlighted the country's low performance in both reading and mathematics (SEAMEO, 2019). These assessments underscore the urgent need to enhance literacy and numeracy skills among Filipino learners to ensure their success in education and future endeavors.

The New MATATAG Curriculum, introduced by the Department of Education, is designed to prioritize literacy and numeracy in the first key stage of education. It builds upon previous initiatives and integrates evidence-based approaches to teaching and learning. This curriculum aims to equip learners with the foundational skills necessary for academic achievement and lifelong learning.

This research paper aims to examine the New MATATAG Curriculum in depth, focusing on its objectives, components, and potential impact on literacy and numeracy outcomes in the first key stage of education in the Philippines. By analyzing this curriculum, we aim to understand how it addresses the challenges identified in previous assessments and contributes to the improvement of literacy and numeracy skills among Filipino learners.

Through a review of relevant literature and analysis of key components of the New MATATAG Curriculum, this study seeks to provide insights into its implementation and effectiveness in strengthening literacy and numeracy education.

Literature Review:

The literature surrounding literacy and numeracy education in the Philippines provides valuable insights into the challenges faced by Filipino learners and the initiatives undertaken to address these challenges. This review explores key studies related to literacy, numeracy, curriculum development, and educational programs in the Philippines, with a focus on the New MATATAG Curriculum.

Filipino learners have historically struggled with literacy and numeracy skills, as evidenced by various national and international assessments. According to Tizard and Hughes (2008), poor performance in reading and mathematics has been a persistent issue in Philippine education. The **2018 PISA results** revealed that the Philippines ranked significantly lower in reading and mathematics compared to other countries (OECD, 2019). Similarly, the **2019 SEA-PLM assessment** indicated low proficiency levels in reading and mathematics among Filipino students (SEAMEO, 2019).

Early literacy and numeracy skills lay the foundation for academic success and lifelong learning. According to Malecki and Elliot, (2002), proficiency in literacy and numeracy in the early years is crucial for later academic achievement. Children who develop strong literacy and numeracy skills in the early stages of education are better equipped to succeed in higher grades and beyond.

The New MATATAG Curriculum represents the latest effort by the Department of Education to improve literacy and numeracy outcomes in the Philippines. This curriculum places a strong emphasis on foundational skills development in the first key stage of education. According to DepEd (2023), the New MATATAG Curriculum aims to provide a comprehensive framework for literacy and numeracy education, integrating evidence-based practices and responsive teaching strategies.

Evidence-based instruction is crucial for effective literacy and numeracy education. Studies have shown that programs grounded in research tend to yield better outcomes. Santos (2022) emphasizes the importance of evidence-based approaches in literacy instruction, highlighting the need for strategies supported by research findings.

Curriculum reforms play a significant role in shaping educational outcomes. The implementation of new curricula can have varying impacts on teaching and learning. A study by Reyes et al. (2021) evaluated the effectiveness of curriculum reforms in the Philippines and found that well-designed curricular changes can positively influence student learning outcomes.

MTB-MLE has been recognized as an effective approach to literacy development, especially in multilingual contexts like the Philippines. According to Burton (2013), MTB-MLE programs support literacy acquisition by allowing children to learn in their first language before transitioning to additional languages.

Teacher training and support are essential for the successful implementation of literacy and numeracy programs. Aguilar and Cohen (2022) emphasizes the need for continuous professional development for teachers to effectively teach literacy and numeracy skills, especially in the early grades.

Assessment practices play a crucial role in monitoring student progress and informing instruction. According to Ramirez, et al. (2020), assessment for learning strategies provides valuable insights into student learning needs and helps teachers adjust their teaching methods accordingly.

Community involvement is vital for the success of literacy and numeracy programs. Parental engagement and community support can significantly impact children's learning outcomes. A study by Cruz (2023) highlights the importance of community partnerships in promoting literacy and numeracy among Filipino learners.

The literature reviewed underscores the importance of addressing literacy and numeracy challenges in the Philippines, particularly in the early years of education. The New MATATAG Curriculum represents a significant step toward improving literacy and numeracy outcomes by integrating evidence-based practices, teacher support, and



community involvement. However, continued research and evaluation are necessary to assess the effectiveness of the curriculum and ensure meaningful progress in literacy and numeracy education in the Philippines.

Methodology:

This study utilized a combination of analysis and literature review to examine the New MATATAG Curriculum and its implications for literacy and numeracy education in the Philippines. The methodology involved the following steps:

A comprehensive search was conducted on Google Scholar and other academic databases using keywords such as "literacy," "numeracy," "curriculum development," "Philippine education," and "MATATAG Curriculum." Relevant studies, reports, and articles published between 2018 and 2023 were collected. Review of Literature: The collected literature was analyzed to identify key themes, findings, and recommendations related to literacy, numeracy, curriculum development, and educational programs in the Philippines.

Key points from the literature review were identified, focusing on the challenges in literacy and numeracy education, the importance of early literacy and numeracy, the components of the New MATATAG Curriculum, evidence-based approaches to literacy and numeracy, and other relevant factors impacting education in the Philippines.

The findings from the literature review were synthesized to provide a comprehensive overview of the New MATATAG Curriculum and its potential impact on literacy and numeracy outcomes. This synthesis involved organizing key points into coherent sections. The components of the New MATATAG Curriculum were analyzed based on the literature review findings. This analysis focused on understanding the goals, objectives, and strategies outlined in the curriculum.

Implementation strategies, such as teacher training, assessment practices, and community involvement, were evaluated based on the literature review findings to assess their alignment with best practices in literacy and numeracy education.

Findings and Discussion:

Emphasis on Foundational Skills Development:

The New MATATAG Curriculum represents a significant departure from previous educational frameworks in the Philippines by placing a robust emphasis on the development of foundational literacy and numeracy skills during the crucial first key stage of education. This emphasis on foundational skills aligns with a growing body of research emphasizing the critical importance of early literacy and numeracy for long-term academic success (Malecki & Elliot, 2002).

According to Malecki and Elliot, (2002), proficiency in literacy and numeracy during the early years of schooling is pivotal for subsequent academic achievement. Students who develop strong foundational skills in reading and mathematics are better equipped to excel in higher grades and navigate the complexities of advanced curriculum content. The New MATATAG Curriculum, recognizing the significance of these foundational skills, meticulously structures its objectives and instructional strategies to prioritize the development of key competencies such as phonological awareness, vocabulary acquisition, and basic mathematical concepts.

One of the cornerstones of the New MATATAG Curriculum is its focus on phonological awareness, which refers to the ability to recognize and manipulate the sounds of language. Research has consistently demonstrated the importance of phonological awareness in the early stages of literacy development (National Reading Panel, 2000). By explicitly incorporating activities and exercises aimed at enhancing phonological awareness skills, the curriculum lays a solid groundwork for subsequent reading success.

Additionally, vocabulary development is another key component of the New MATATAG Curriculum. Vocabulary knowledge has been identified as a strong predictor of reading comprehension and overall academic achievement (Biemiller, 2005). The curriculum acknowledges the critical role of vocabulary in literacy acquisition and includes strategies for systematically expanding students' word knowledge across various content areas.

In the realm of numeracy, the curriculum places a strong emphasis on building basic mathematical concepts and skills. Research suggests that early mathematical proficiency is a strong predictor of later mathematical achievement (Duncan et al., 2007). The New MATATAG Curriculum incorporates hands-on, experiential learning activities to help students develop a deep understanding of fundamental mathematical concepts such as number sense, counting, and basic operations.

By prioritizing foundational literacy and numeracy skills, the New MATATAG Curriculum lays a solid foundation for future academic success and lifelong learning. Through evidence-based instructional practices and targeted





interventions, the curriculum seeks to address the literacy and numeracy challenges faced by Filipino learners and empower them to thrive in an increasingly complex and interconnected world.

Integration of Evidence-Based Approaches

The New MATATAG Curriculum represents a significant advancement in Philippine education as it integrates evidence-based approaches to literacy and numeracy instruction. This incorporation of evidence-based strategies is crucial for enhancing teaching practices and improving student learning outcomes (Santos, 2022).

One of the key evidence-based approaches integrated into the New MATATAG Curriculum is phonics-based reading instruction. Phonics instruction teaches students the relationship between sounds and the letters that represent them, which is essential for decoding words while reading (National Reading Panel, 2000). Research has consistently shown that explicit and systematic phonics instruction leads to improved reading skills, especially in the early stages of literacy development (Torgesen et al., 1997). By incorporating phonics-based approaches, the curriculum aims to equip students with strong decoding skills essential for reading fluency and comprehension.

Moreover, the curriculum emphasizes the use of hands-on mathematical exploration to teach numeracy skills. Research suggests that hands-on, experiential learning activities are effective in promoting mathematical understanding and problem-solving skills (Sarama & Clements, 2009). By providing students with opportunities to manipulate objects, engage in real-world problem-solving, and explore mathematical concepts concretely, the curriculum fosters a deeper understanding of mathematical principles.

The integration of evidence-based approaches into the New MATATAG Curriculum is a positive step toward improving teaching practices and student achievement. Santos (2022) emphasizes the importance of aligning instructional practices with research findings to enhance educational outcomes. By incorporating strategies grounded in research, the curriculum aims to address the literacy and numeracy challenges faced by Filipino learners more effectively.

Furthermore, the curriculum recognizes the importance of differentiated instruction to meet the diverse needs of learners. Differentiated instruction involves adapting teaching methods and materials to accommodate students' varying learning styles, interests, and abilities (Tomlinson, 2000). Research suggests that differentiated instruction promotes student engagement and academic success (Burton 2013). The New MATATAG Curriculum provides guidelines for teachers to differentiate instruction based on students' readiness levels, interests, and learning profiles, ensuring that all students have equitable access to learning opportunities.

Additionally, the curriculum emphasizes the use of formative assessment to inform instruction and monitor student progress. Formative assessment practices, such as quizzes, observations, and student self-assessments, provide valuable feedback to teachers and help them adjust their teaching strategies accordingly (Black & Wiliam, 1998). By integrating formative assessment into daily instruction, the curriculum supports responsive teaching practices that meet the evolving needs of students.

The integration of evidence-based approaches into the New MATATAG Curriculum reflects a commitment to improving teaching practices and student learning outcomes in the Philippines (Kilag et al., 2024). By incorporating phonics-based reading instruction, hands-on mathematical exploration, differentiated instruction, and formative assessment, the curriculum aims to provide a solid foundation for literacy and numeracy development among Filipino learners.

Support for Mother Tongue-Based Multilingual Education (MTB-MLE):

The New MATATAG Curriculum represents a significant shift towards supporting Mother Tongue-Based Multilingual Education (MTB-MLE), acknowledging the critical role of learners' first language in literacy development (Burton 2013). This approach aligns with the goal of promoting literacy in diverse linguistic contexts in the Philippines and has substantial implications for improving educational outcomes for Filipino learners.

Research has consistently shown that using learners' first language as the medium of instruction in the early years of schooling has numerous benefits for literacy development (UNESCO, 2016). The New MATATAG Curriculum recognizes this by advocating for the use of Mother Tongue as the primary language of instruction in the first key stage of education, typically from Kindergarten to Grade 3.

Burton (2013) highlight that MTB-MLE allows students to develop a strong foundation in literacy skills in a language they understand best, which then serves as a bridge to learning additional languages. This approach is supported by sociocultural theory, which emphasizes the importance of leveraging students' cultural and linguistic backgrounds in education (Vygotsky, 1978). By building on what students already know in their mother tongue, the curriculum aims to facilitate a smoother transition to learning in other languages such as Filipino and English.

Furthermore, MTB-MLE recognizes and validates students' linguistic and cultural identities, promoting a positive learning environment (Cummins, 2000). Students feel more engaged and motivated when they see their language



and culture reflected in the curriculum (Skutnabb-Kangas, 2000). The New MATATAG Curriculum emphasizes the importance of cultural sensitivity and inclusivity, fostering a sense of belonging among learners from diverse linguistic backgrounds.

Moreover, research suggests that MTB-MLE has cognitive benefits beyond language development. Bialystok (2001) argues that bilingualism enhances cognitive flexibility and metalinguistic awareness, which are crucial skills for academic success. By encouraging the use of Mother Tongue alongside additional languages, the curriculum aims to promote holistic cognitive development among learners.

The New MATATAG Curriculum also recognizes the importance of translanguaging, which involves using multiple languages flexibly to support learning (García & Wei, 2014). Translanguaging allows students to draw on their linguistic resources to make meaning and deepen their understanding of concepts (García, 2009). The curriculum encourages teachers to create rich language environments where students can freely use their Mother Tongue alongside other languages to scaffold their learning.

However, challenges exist in the implementation of MTB-MLE, including the availability of appropriate teaching materials and the need for teacher training in multilingual education approaches (Gottardo, et al. 2006). The New MATATAG Curriculum addresses these challenges by providing guidelines for the development of culturally relevant and linguistically appropriate learning materials and offering training programs for teachers on effective MTB-MLE pedagogy.

The support for Mother Tongue-Based Multilingual Education in the New MATATAG Curriculum reflects a commitment to promoting inclusive and culturally responsive education in the Philippines (Kilag et al., 2024). By recognizing the importance of learners' first language in literacy development and providing guidelines for effective MTB-MLE implementation, the curriculum aims to improve educational outcomes and foster a more equitable learning environment for all Filipino learners.

Need for Continuous Teacher Training and Community Involvement:

The successful implementation of the New MATATAG Curriculum hinges upon continuous teacher training and active community involvement. Aguilar and Cohen (2022) emphasizes the necessity of ongoing professional development for teachers to effectively implement the curriculum, while Cruz (2023) underscores the crucial role of community support in literacy and numeracy education efforts. These findings highlight the significance of sustained support from stakeholders for the successful execution of the curriculum (Kilag et al., 2024).

Aguilar and Cohen (2022) stresses the importance of continuous professional development (CPD) for teachers to ensure effective implementation of the New MATATAG Curriculum. Professional development plays a vital role in equipping teachers with the necessary knowledge, skills, and strategies to deliver high-quality instruction that aligns with the curriculum objectives.

Research indicates that effective teacher professional development positively impacts student learning outcomes (Desimone, 2009). By providing teachers with opportunities for CPD, the curriculum aims to enhance instructional practices, promote student engagement, and improve academic achievement.

Moreover, CPD allows teachers to stay updated on the latest research-based instructional approaches and teaching strategies. As education continues to evolve, ongoing professional development ensures that teachers remain effective and responsive to the changing needs of students (Guskey, 2002).

The New MATATAG Curriculum advocates for a variety of professional development opportunities for teachers, including workshops, seminars, peer learning communities, and online courses. These opportunities aim to enhance teachers' pedagogical content knowledge, classroom management skills, and understanding of MTB-MLE approaches.

Community involvement is equally crucial for the successful implementation of the curriculum, as highlighted by Cruz (2023). Engaging parents, caregivers, local leaders, and community organizations in literacy and numeracy education efforts can significantly enhance student learning outcomes.

Research suggests that community involvement fosters a sense of ownership and collective responsibility for education (Epstein, 2018). When communities are actively involved, students receive additional support outside the classroom, which can lead to improved academic performance and overall well-being.

Community members can contribute to literacy and numeracy education by providing resources, volunteering as tutors or mentors, organizing educational events, and creating supportive learning environments at home and in the community (Souto-Manning & Martell, 2016).



Furthermore, community involvement helps bridge the gap between home and school, creating continuity in students' learning experiences (Henderson & Mapp, 2002). When families are engaged in their children's education, students are more likely to have positive attitudes towards learning and academic success.

The New MATATAG Curriculum encourages schools to establish partnerships with local communities, involve parents in school activities, and provide resources for families to support their children's learning at home. These collaborative efforts aim to create a conducive learning ecosystem that extends beyond the classroom walls.

Conclusion:

The MATATAG Curriculum represents a significant step forward in enhancing literacy and numeracy education in the Philippines. Through its emphasis on foundational skills development, integration of evidence-based approaches, support for Mother Tongue-Based Multilingual Education (MTB-MLE), and recognition of the need for continuous teacher training and community involvement, the curriculum aims to address the challenges faced by Filipino learners and improve educational outcomes.

The emphasis on foundational skills development underscores the curriculum's commitment to ensuring that students acquire essential literacy and numeracy skills from the early stages of their education. By focusing on phonological awareness, vocabulary, and basic mathematical concepts, the curriculum lays a strong foundation for lifelong learning.

Integration of evidence-based approaches, such as phonics-based reading instruction and hands-on mathematical exploration, reflects a commitment to improving teaching practices and student learning outcomes. By incorporating strategies grounded in research, the curriculum aims to enhance the quality of instruction and promote better academic achievement.

Furthermore, the support for Mother Tongue-Based Multilingual Education (MTB-MLE) acknowledges the importance of leveraging learners' first language for effective literacy development. By recognizing linguistic and cultural diversity and promoting translanguaging, the curriculum creates an inclusive learning environment that supports the needs of all learners.

Moreover, the recognition of the need for continuous teacher training and community involvement is crucial for the successful implementation of the curriculum. Ongoing professional development for teachers and active engagement of communities are essential for ensuring effective curriculum delivery and improving student outcomes.

The MATATAG Curriculum lays the groundwork for a more equitable and inclusive education system in the Philippines. By addressing the needs of diverse learners, promoting evidence-based practices, and fostering collaboration among stakeholders, the curriculum sets a path towards improved literacy and numeracy outcomes and better opportunities for Filipino learners.

Through its comprehensive approach to curriculum development, the New MATATAG Curriculum aims to empower learners with the knowledge, skills, and competencies needed to succeed in school and beyond.

References:

Aguilar, E., & Cohen, L. (2022). The PD book: 7 habits that transform professional development. John Wiley & Sons.

Bialystok, E. (2001). Bilingualism in development: Language, literacy, and cognition. Cambridge University Press.

Biemiller, A. (2005). Size and Sequence in Vocabulary Development: Implications for Choosing Words for Primary Grade Vocabulary Instruction.

Burton, L. A. (2013). Mother tongue-based multilingual education in the Philippines: Studying top-down policy implementation from the bottom up (Doctoral dissertation, University of Minnesota).

Cruz, J. (2023). Preservice Special Education Teachers in Collaborative Partnerships: Benefits and Challenges of Co-Teaching During Early Fieldwork. University of California, Los Angeles.

Cummins, J. (2000). Language, power, and pedagogy: Bilingual children in the crossfire (Vol. 23). Multilingual matters.

DepEd. (2023). MATATAG Curriculum. Department of Education, Philippines. https://www.deped.gov.ph/matatag-curriculum/

- Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., ... & Japel, C. (2007). School readiness and later achievement. *Developmental psychology*, *43*(6), 1428.
- Epstein, J. L. (2018). School, family, and community partnerships in teachers' professional work. *Journal of Education for Teaching*, 44(3), 397-406.
- García, O. (2009). Education, multilingualism and translanguaging in the 21st century. *Social justice through multilingual education*, 143, 158.
- García, O., & Wei, L. (2015). Translanguaging, bilingualism, and bilingual education. *The handbook of bilingual and multilingual education*, 223-240.
- Gottardo, A., Chiappe, P., Yan, B., Siegel, L., & Gu, Y. (2006). Relationships between first and second language phonological processing skills and reading in Chinese-English speakers living in English-speaking contexts. *Educational Psychology*, 26(3), 367-393.
- Guskey, T. R. (2002). Professional development and teacher change. Teachers and teaching, 8(3), 381-391.
- Henderson, A. T., & Mapp, K. L. (2002). A new wave of evidence. The impact of school, family, and community connections on student achievement. Austin [Texas]: National Center for Family & Community: Connections with Schools.
- Kilag, O. K., Andrin, G., Abellanosa, C., Villaver Jr, M., Uy, F., & Sasan, J. M. (2024). MATATAG Curriculum Rollout: Understanding Challenges for Effective Implementation. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, 1(5), 172-177.
- Kilag, O. K., Galve, G., Uy, F., & Sasan, J. M. (2024). The New MATATAG Curriculum in the Lens of the 21st-Century 7Cs. International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE), 1(5), 418-424.
- Kilag, O. K., Jesus, J., Uy, F., Sasan, J. M., Seblos, K., & Gier, R. A. (2024). Educational Transformation: Perspectives on the Implementation of the Matatag Curriculum in the Philippines. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, 1(5), 306-311.
- Kilag, O. K., Hubahib Jr, S., & Sasan, J. M. (2024). Educational Transformation: The MATATAG Curriculum and Philippine Education Reform. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, 1(5), 448-455.
- Malecki, C. K., & Elliot, S. N. (2002). Children's social behaviors as predictors of academic achievement: A longitudinal analysis. *School psychology quarterly*, *17*(1), 1.
- National Reading Panel (US), National Institute of Child Health, & Human Development (US). (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups*. National Institute of Child Health and Human Development, National Institutes of Health.
- Organisation for Economic Co-operation and Development (OECD). (2019). PISA 2018 Results: What Students Know and Can Do (Volume I). https://www.oecd.org/publications/pisa-2018-results-volume-i-5f07c754-en.htm
- Ramírez, Y. G., Chávez, P. R., & Smagorinsky, P. (Eds.). (2020). *Developing Culturally and Historically Sensitive Teacher Education: Global Lessons from a Literacy Education Program*. Bloomsbury Publishing.
- Reyes, J. R. S., Grajo, J. D., Comia, L. N., Talento, M. S. D., Ebal, L. P. A., & Mendoza, J. J. O. (2021). Assessment of Filipino Higher Education Students' Readiness for e-Learning During a Pandemic: A Rasch Technique Application. *Philippine Journal of Science*, 150(3).
- Santos, Y. T. (2022). Crafting an Infodemic Response through Information Literacy. *Philippine Journal of Librarianship and Information Studies*, 42(2), 24-32.
- Sarama, J., & Clements, D. H. (2009). *Early childhood mathematics education research: Learning trajectories for young children*. Routledge.



Skutnabb-Kangas, T. (2013). Linguistic genocide in education--or worldwide diversity and human rights?. Routledge.

Southeast Asian Ministers of Education Organization (SEAMEO). (2019). Southeast Asia Primary Learning Metrics 2019: Regional Report. https://www.seaplm.org/PUBLICATIONS/regional%20results/SEA-PLM%202019%20Main%20Regional%20Report.pdf

Souto-Manning, M. (2016). Honoring and building on the rich literacy practices of young bilingual and multilingual learners. *The Reading Teacher*, 70(3), 263-271.

Tizard, B., & Hughes, M. (2008). Young children learning. John Wiley & Sons.

Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Rose, E., Lindamood, P., Conway, T., & Garvan, C. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational psychology*, *91*(4), 579.

Tomlinson, C. A. (2000). Differentiation of Instruction in the Elementary Grades. ERIC Digest.

UNESCO. (2016). If you don't understand, how can you learn? Global Education Monitoring Report. UNESCO Publishing. https://unesdoc.unesco.org/ark:/48223/pf0000243713

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.