



The Influence Of Multisensory Language Instruction On Reading Proficiency Among Struggling Learners In Educational Contexts

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Abstract

This research investigates the impact of multisensory instructional techniques on improving literacy skills among non-readers in educational environments. Acknowledging the critical importance of literacy for academic achievement and the differing levels of learner preparedness, this study seeks to fill the gaps in current reading instruction practices. The research was carried out at Erridouane Secondary School, with students and educators chosen through targeted sampling methods. Interviews were conducted to collect data, which was then subjected to thematic analysis, revealing the complex and expansive nature of literacy that goes beyond conventional notions of reading and writing. Learners highlighted the necessity for personalized, multimodal teaching strategies, emphasizing the significant influence of reading on cognitive, emotional, and learning preferences. These findings were corroborated by educators, who stressed the importance of using varied materials, incorporating multisensory storytelling, and acknowledging diverse perspectives in the approach to reading instruction. A significant strength of this research lies in its emphasis on individualized strategies for non-readers, promoting inclusive practices within education. Nevertheless, the study recognizes its limitations in terms of scope and the breadth of perspectives included, indicating the importance of future research that encompasses a broader range of viewpoints and contexts. Ultimately, the research highlights the critical need for customized multisensory instructional approaches to effectively tackle the literacy challenges encountered by non-readers, advocating for a deeper and more comprehensive understanding of literacy in educational environments.

Keywords: Multisensory approach, Literacy development, Reading proficiency, Educational inclusion, Instructional strategies.

1. Introduction

Literacy serves as a foundational element for sustained learning and academic success. However, learners display diverse levels of readiness and proficiency in acquiring reading skills, influenced by varying educational contexts. Research consistently demonstrates that multisensory teaching methods, especially when integrated with co-teaching strategies, substantially enhance student engagement, learning outcomes, and reading comprehension. This is particularly evident in the domains of English language and grammar within inclusive educational environments.

In the realm of primary education, the current application of multisensory approaches to support non-readers encompasses a wide array of strategies and interventions. Adapon and

Mangila (2020) found that the 'Care for the Non-Readers Program,' which integrates multisensory techniques, significantly improved reading performance. Further research by Siti Zairin and Mohd Norazmi Nordin (2023) also confirmed the effectiveness of multisensory methods in enhancing reading skills, especially among learners with special educational needs. Bernardo et al. (2021) highlighted the importance of addressing non-cognitive factors such as home environment and classroom experiences in combating low reading proficiency. Similarly, Pocaan et al. (2022) emphasized the value of strategic reading interventions, including those that incorporate multisensory components, to support struggling readers. Despite the encouraging results from existing studies, there remains a pressing need for further research and development in this field.

Current literature on the use of multisensory approaches for non-readers within the Algerian education system reveals a substantial knowledge gap. Although evidence supports the effectiveness of these methods for learners with special educational needs and struggling readers (Zairin, 2023; Pocaan et al., 2022), specific research on non-readers is notably lacking. Furthermore, the investigation of these approaches, particularly within the context of online teaching, is limited, underscoring the need for more focused research on the application of multisensory methods, as highlighted by Adinanda Siswoyo et al. (2022) and Presquito & Madrigal (2022).

This study seeks to explore the efficacy of multisensory approaches specifically designed to assist non-readers in developing fundamental literacy skills. It aims to assess the effectiveness of visual, auditory, and kinesthetic methods in enhancing comprehension among learners who face challenges with traditional reading instruction. Additionally, the study endeavors to identify and develop tailored teaching strategies suitable for various types of non-readers. By examining the obstacles that impede the development of reading skills, this research intends to propose specific strategies to overcome these challenges, thus promoting a more inclusive educational environment. Ultimately, this study aspires to fill the existing gap in understanding by offering practical insights and recommendations for effective instructional techniques for non-readers in educational settings.

2. Background to the Study

2.1. Multisensory Language Teaching (MSLT)

Multisensory Language Teaching (MSLT) is an instructional approach that involves engaging the full spectrum of a learner's senses—visual, auditory, olfactory, gustatory, kinesthetic, tactile, cognitive, intuitive, and emotional—within varied educational contexts (Baines, 2008). Baines argues that while abstract instructional methods may be simpler to implement, they are often less effective in fostering deep learning. In contrast, methods that incorporate sensory stimulation enhance learners' ability to master abstract language skills by creating a dual connection between sensory input and cognitive processing. This approach allows learners to interact more profoundly with the material, improving long-term retention. Moreover, such techniques promote intellectual and social development by delivering content in a playful, real-world context. Baines also highlights that educators can address challenges related to student engagement and academic achievement by incorporating tactile, visual, auditory, and olfactory stimuli into their teaching, thereby aligning activities with key educational objectives.

Incorporating various sensory inputs not only benefits learners by enhancing their potential for learning but also enriches educators' teaching practices. This approach provides teachers with professional satisfaction through the opportunity to deliver diverse and comprehensive

learning experiences via a range of instructional techniques and multisensory resources (Read, 2007; Nilson, 2010; van Lier, 2011).

2.2. Developing Reading Skills of Young Learners

Ahuja & Ahuja (2007) describe reading as a cognitive process that involves both visual perception, such as symbol recognition, and mental interpretation to extract meaning. Reading is thus a complex activity where individuals draw upon their knowledge to decode text, grasp both literal and figurative meanings, and critically evaluate the message conveyed (Dakowska, 2016; Linse, 2005). For young learners, the reading journey begins with understanding the relationship between sounds and written words. They gradually learn that individual words form sentences, which in turn compose more extensive texts. As texts grow in complexity, comprehending them requires increasingly sophisticated cognitive skills. Over time, children must integrate sounds, written symbols, and various textual components by leveraging their pre-existing knowledge structures. This cognitive process can be challenging and necessitates teacher guidance. Educators play a crucial role in supporting this development by helping children comprehend texts, relate them to other texts, and connect them to their own experiences and the broader world (Pardo, 2004). Furthermore, children are expected to engage in reflective thinking and discussions about the text's message, which includes posing and answering questions, debating meanings with peers, and recognizing multiple interpretations. These cognitive activities ultimately contribute to the development of personal comprehension (Ahuja & Ahuja, 2007; Coşgun Ögeyik, 2012).

Reading comprehension relies on two fundamental processes: bottom-up and top-down approaches. The bottom-up approach involves decoding and understanding text through the application of linguistic elements such as phonology, grammar, punctuation, coherence, and spelling. In contrast, the top-down approach, based on schema theory, posits that meaning is not exclusively derived from the text itself. Instead, readers construct meaning by integrating their background knowledge, contextual understanding, awareness of authorship and genre, as well as their emotional responses, personal experiences, and cultural perspectives (Anderson, 2014; Brown, 1994; Johnson, 2016; Kirsch, 2008; Linse, 2005; Murray & Christison, 2011; Nunan, 2011).

To ensure comprehensive learning, educators must incorporate both bottom-up and top-down processes. Bottom-up skills include letter recognition, phonemic awareness, word identification, word-level comprehension, and the ability to segment words for meaning extraction from written texts. On the other hand, top-down skills involve connecting the text to prior knowledge, predicting outcomes based on contextual cues, and synthesizing information gathered from word combinations to comprehend the content (Anderson, 2014; Johnson, 2016; Kirsch, 2008).

To effectively support both teaching and learning processes, educators should implement age-appropriate reading methodologies, such as phonics-based instruction, wordplay activities, holistic sentence comprehension, language immersion techniques, and guided storybook reading, as recommended in relevant educational resources. Additionally, a variety of reading strategies can be employed by readers, including using prior knowledge, matching information while reading, sequencing comprehension, predicting content based on titles, deducing unfamiliar word meanings from context, using textual cues to anticipate content, skimming for the main idea, scanning for specific details, and practicing both oral and silent reading (Cameron, 2001; Johnson, 2016; Linse, 2005; Moon, 2000; Nunan, 2011; Read, 2007; Sharma, 2004; Ur, 1996).

Similarly, when teaching English, educators should integrate reading instruction into their strategies after ensuring that learners have had sufficient exposure to spoken English. Additionally, instructors should support the learning process during reading activities by employing a variety of multisensory educational tools (Brown, 1994; Burkhardt, 2009; Cameron, 2001; Coşgun Ögeyik, 2012; Hennen, 2009; Murray & Christison, 2011; Pardo, 2004).

2.3. Multisensory Studies with Regard to Reading

Recent years have seen a growing body of research investigating the effectiveness of using multisensory resources to teach reading skills in both native and foreign language contexts. For instance, Buelow (2015) developed a method called Visual to Print Transfer (VPT) while teaching sixth-grade students in a culturally diverse elementary school. This approach integrates various textual formats, including print, visual, oral, and digital forms. Following a collective discussion of the narrative elements, students independently wrote about their understanding. The study revealed that applying Visual Pedagogy Theory (VPT), particularly through media depictions of Hollywood figures, inspired students and enhanced their ability to transfer knowledge from visual to written texts. This method also supported students in analyzing and identifying textual evidence, as well as in applying a critical perspective across different literary forms.

Branscombe (2015) conducted a study with 21 third-grade students to explore the impact of using tableaux, also known as 'still images' or 'frozen pictures,' as a dramatic activity to improve reading comprehension in their native language. The study focused on helping students understand key concepts from informational texts about the Earth and the solar system. The findings indicated that the use of tableaux significantly enhanced comprehension for most learners, which was attributed to the visual and interactive nature of this approach.

Martens, Martens, Doyle, Loomis, & Aghalarov (2012) carried out a yearlong study with first-grade students in a multilingual setting. The research explored how children could improve their reading comprehension, communication skills, and critical thinking abilities through brainstorming and discussions about the artistic and textual meanings in five picture books. These books were multimodal, incorporating linguistic (written text), visual (illustrations), spatial (design, layout, composition), and gestural (positions and movements in illustrations) modes. The students responded positively to each book, and their comprehension was deepened through a variety of approaches. The study also highlighted that when readers focused exclusively or primarily on written language, their understanding was limited. A significant outcome of this initiative was that the children developed critical thinking and literacy skills through engaging with multiple modes of communication.

In mixed-language settings, various studies have examined the effectiveness of multisensory methods. For example, Brown (2013) investigated the impact of integrating graphic novels into the language and literacy development of 18 elementary school students from diverse backgrounds. Among these students, seven were English learners with Spanish as their first language, and thirteen were struggling English readers. The study involved guided reading sessions where students engaged with different printed graphic novels. They then created their own graphic narratives, which were digitally published using Microsoft Photo Story. The findings revealed that scaffolding techniques, including teacher-led questioning and focusing on visual elements, significantly improved students' comprehension of the narratives.

In a distinct bilingual context, Proctor, Dalton, and Grisham (2007) developed a multimedia digital reading platform that incorporated two primary databases: Work Log and My Glossary. This initiative was designed to enhance the reading comprehension skills of 30 fourth-grade

ESL learners whose primary language was Spanish, alongside 14 native English speakers who were experiencing reading difficulties. The project emphasized scaffolding various reading comprehension strategies, including questioning, clarifying, predicting, summarizing, visualizing, and expressing emotions. The results demonstrated that the scaffolding provided during the intervention significantly improved the learners' vocabulary acquisition and overall reading comprehension.

Salkhord, Gorjian, and Pazhakh (2013) conducted a study examining the effects of digital stories on reading comprehension among 60 young Iranian learners in a second language environment. The participants were divided into three groups: two experimental groups and one control group. The study aimed to test the hypothesis that digital stories—comprising animation, images, sound, music, rhyme, and narration—enhance comprehension more effectively. One experimental group received online instruction, engaging with 10 digital stories supplemented by pre- and post-reading tasks. The second experimental group received paper-based instruction, including printed versions of the same digital stories, activity worksheets, and pre- and post-reading activities. The control group received traditional instruction focused on reading and translation, using printed versions of the same 10 digital stories without additional pre- or post-reading assignments. After the instructional phase, all groups participated in immediate and delayed post-tests based on these 10 digital stories. The findings revealed that online instruction with digital stories significantly improved reading comprehension skills compared to conventional or paper-based methods. Additionally, the study suggested that integrating pre- and post-reading tasks could further enhance learners' comprehension abilities.

Wang (2013) conducted a study comparing how multimodal texts, which combine words and images, create meaning differently from monomodal texts, which rely solely on words. The research analyzed two multimodal texts that integrated words and images alongside one monomodal text that used only words. The findings suggested that multimodal texts facilitated easier reader interaction by merging visual and textual elements, thereby creating a cohesive experience in which the reader and writer collaboratively engage in understanding the subject matter. In contrast, monomodal texts guided readers more explicitly toward extracting information and knowledge solely from the written content.

In another study, Walsh (2006) investigated the differences between print-based texts and multimodal texts by examining how readers interpret each format. The study compared a unimodal text, the novel 'Milo's Wolves,' with multimodal texts, including the picture book 'The Wolf' and the website for The International Wolf Center. The findings indicated that readers rely exclusively on words to interpret print-based texts. In contrast, multimodal texts enabled readers to derive meaning through multiple senses, facilitated by the combined use of text, images, movement, colors, gestures, 3D objects, music, and sound on a digital screen. Understanding written material involves using strategies such as predicting, guessing, imagining, and questioning. Readers draw upon various types of knowledge, including background, topical, and genre knowledge, when engaging with different texts, and the contribution of these modes to meaning-making varies significantly.

3. Methodology

3.1. Research Design

This study employed a qualitative research design to explore the influence of multisensory instructional techniques on the reading proficiency of non-readers in an educational setting.

The qualitative approach was chosen for its ability to provide in-depth insights into participants' experiences, perceptions, and the contextual factors affecting literacy development.

3.2. Participants

The study was conducted at Erridouane Secondary School, with participants selected through purposeful sampling. This method was chosen to ensure that the selected learners and teachers were directly involved in the educational processes relevant to the study's objectives. The learners included in the study were those identified as non-readers or those who faced significant challenges in acquiring basic literacy skills. Teachers were selected based on their experience and expertise in teaching at this grade level, as well as their familiarity with multisensory instructional methods.

3.3. Ethical Considerations

Ethical considerations were paramount in this research. Informed consent was obtained from the school administration, teachers, and the learners' guardians before the commencement of the study. Participants were informed about the purpose of the research, the voluntary nature of their participation, and their right to withdraw from the study at any time without any negative consequences. Confidentiality and anonymity were strictly maintained throughout the study to protect participants' identities. The data collected were used solely for research purposes and were stored securely to prevent unauthorized access.

3.4. Data Collection

Data were collected using semi-structured interviews, which provided flexibility in exploring participants' perspectives while ensuring that the discussions remained focused on the research objectives. The interview questions were developed based on the 'Kidwatching' methodology by Owocki & Goodman (2002), which emphasizes observing and understanding children's literacy development in naturalistic settings. The questions were adapted to suit the specific context of Erridouane School and were designed to elicit detailed responses about the effectiveness of multisensory instructional techniques.

3.5. Data Analysis

Thematic Analysis was employed to analyze the interview data. This method involves systematically identifying, organizing, and offering insights into patterns (themes) within the data. The analysis process followed several key steps:

- **Data Familiarization:** Transcripts of the interviews were read and re-read to become thoroughly familiar with the content.
- **Generating Initial Codes:** The data were coded to identify significant features related to literacy development and the use of multisensory instructional methods.
- **Searching for Themes:** The codes were grouped into potential themes that captured important aspects of the data in relation to the research questions.
- **Reviewing Themes:** The themes were reviewed and refined to ensure they accurately represented the data and were relevant to the research objectives.
- **Defining and Naming Themes:** Each theme was clearly defined and named to reflect its content and significance.
- **Writing the Report:** A detailed report was prepared, integrating the themes and supporting them with relevant data excerpts.

This analytical approach enabled a comprehensive understanding of the patterns and meanings within the qualitative data, offering rich insights into the effectiveness of multisensory instructional methods in enhancing literacy among non-readers.

4. Results

4.1. Learners Interview

The interviews with learners revealed a diverse range of perspectives on literacy, which extended beyond the traditional notions of reading and writing. Several key themes emerged from the analysis:

4.1.1 Multifaceted Nature of Literacy:

Learners highlighted that literacy is not merely about reading and writing; it also encompasses cognitive, emotional, and social dimensions. Many learners expressed that their reading abilities were influenced by factors such as family practices, personalized teaching methods, and the roles of schools and communities. For instance, some learners mentioned that their engagement with reading was shaped by the literacy activities they experienced at home, which were often culturally influenced and varied significantly across different households.

4.1.2. Importance of Personalized Teaching

The need for personalized, multisensory teaching strategies was a recurrent theme. Learners indicated that traditional reading instruction methods were often insufficient to meet their needs. They emphasized the effectiveness of teaching approaches that incorporated visual, auditory, and kinesthetic elements, which made learning more engaging and accessible. For example, learners reported that activities involving storytelling with visual aids or hands-on materials helped them better understand and retain information.

4.1.3. Challenges in Literacy Development

Several learners identified specific challenges they faced in developing reading skills, including difficulties with concentration, comprehension, and motivation. These challenges were often exacerbated by a lack of tailored support in the classroom. Learners also noted that the materials used in instruction were sometimes not aligned with their interests or cognitive levels, further hindering their progress.

4.1.4. Impact of Literacy on Personal Development

Learners discussed the broader impact of literacy on their cognitive and emotional development. They recognized that literacy was not only a skill but also a tool for personal growth, influencing their ability to express themselves, understand others, and navigate social situations. This holistic view of literacy underscored the importance of developing reading skills in a way that supports overall personal development.

4.2. Teacher Interviews

The interviews with teachers provided additional insights into the effectiveness of multisensory instructional methods and the challenges faced in implementing them:

4.2.1. Effectiveness of Multisensory Methods

Teachers overwhelmingly supported the use of multisensory instructional methods, noting that these approaches were particularly beneficial for non-readers and struggling learners. They

reported that engaging multiple senses—through the use of visual aids, auditory materials, and physical activities—enhanced learners' comprehension and retention of reading material. Teachers also observed that multisensory methods helped to create a more inclusive classroom environment, where learners with different abilities and learning styles could participate more fully.

4.2.2. Barriers to Implementation

Despite the recognized benefits, teachers also identified several barriers to the effective implementation of multisensory methods. These included limited resources, such as a lack of appropriate materials and technology, as well as time constraints within the curriculum. Teachers expressed a need for more professional development opportunities to learn how to effectively integrate multisensory techniques into their teaching practices.

4.2.3. The Role of Inclusive Practices

Teachers emphasized the importance of inclusive practices in literacy instruction. They highlighted the need to address the diverse needs of learners by providing differentiated instruction and using a variety of materials that cater to different learning styles. Teachers also stressed the value of creating a supportive classroom environment where all learners feel valued and are encouraged to contribute.

Teachers suggested several areas for future improvement, including the development of more tailored multisensory resources and the incorporation of technology to enhance literacy instruction. They also advocated for greater collaboration between educators, parents, and the broader community to support literacy development both inside and outside the classroom.

The findings from the interviews with both learners and teachers indicate that multisensory instructional methods have a significant positive impact on literacy development among non-readers. These methods are particularly effective in engaging learners and addressing the diverse challenges they face in reading. However, the successful implementation of these methods requires overcoming barriers related to resources, training, and curriculum constraints. The study underscores the need for a more inclusive approach to literacy instruction, one that is tailored to the needs of individual learners and supported by the necessary resources and professional development for educators.

5. Discussion

The findings of this study underscore the significant role that multisensory instructional methods can play in enhancing literacy skills among non-readers. This discussion will explore the implications of these findings in the context of existing literature, the challenges identified during the study, and the potential directions for future research and educational practice.

5.1. The Effectiveness of Multisensory Instruction

The study's results align with a growing body of research that advocates for the use of multisensory approaches in literacy instruction, particularly for learners who struggle with traditional methods (Adapon & Mangila, 2020; Siti Zairin & Mohd Norazmi Nordin, 2023). By engaging multiple senses—such as visual, auditory, and kinesthetic—learners are provided with varied avenues to process and retain information, which can lead to improved comprehension and retention of reading material.

In this study, both learners and teachers identified the benefits of these methods in making literacy instruction more accessible and engaging. For learners, particularly non-readers, the

inclusion of multisensory elements such as storytelling with visual aids or interactive activities provided alternative ways to understand and engage with text. This not only improved their reading skills but also positively impacted their motivation and attitude toward learning.

5.2. Personalized and Inclusive Learning

A key theme that emerged from the data was the importance of personalized instruction. The study found that learners responded positively to teaching methods that were tailored to their individual needs and learning styles. This finding is consistent with previous research that highlights the value of differentiated instruction in fostering academic success (Bernardo et al., 2021; Pocaan et al., 2022).

The emphasis on inclusive practices was also strongly supported by the teacher interviews. Teachers recognized the necessity of creating a classroom environment that accommodates the diverse needs of learners, including those with special educational needs. The integration of multisensory methods was seen as a critical component of this inclusive approach, allowing all students to participate actively and benefit from the instruction.

5.3. Challenges in Implementation

Despite the clear benefits of multisensory instruction, the study also identified significant challenges to its implementation. Limited resources, such as the availability of appropriate materials and technology, were cited as major barriers. Additionally, teachers pointed to time constraints within the curriculum that made it difficult to fully integrate these methods into their teaching practices.

These challenges highlight the need for systemic changes in educational policy and practice. Providing teachers with adequate resources and professional development opportunities is essential to overcoming these barriers. Furthermore, curriculum design should allow for the flexibility needed to incorporate multisensory approaches, ensuring that all learners have access to effective literacy instruction.

5.4. The Broader Impact of Literacy

The findings of this study also suggest that literacy extends beyond the mere ability to read and write. Learners and teachers alike noted the broader cognitive, emotional, and social benefits of literacy development. For learners, particularly those who struggled with reading, literacy was linked to personal growth and self-expression. This holistic view of literacy is supported by research that emphasizes the role of reading in social-emotional learning and cognitive development (Batini et al., 2020; Aerila, 2021).

This broader perspective on literacy underscores the importance of developing reading instruction that not only improves technical skills but also supports the overall well-being of learners. Multisensory approaches, by engaging learners in a more comprehensive way, have the potential to address these wider aspects of literacy development.

The findings of this study indicate several avenues for future research. First, there is a need for more studies that explore the long-term effects of multisensory instruction on literacy development, particularly in different educational contexts and with diverse learner populations. Additionally, research could focus on the development and evaluation of specific multisensory resources and strategies that are tailored to the needs of non-readers.

From a practical standpoint, educators and policymakers should consider the benefits of integrating multisensory approaches into literacy instruction on a broader scale. This would

involve not only providing the necessary resources and training for teachers but also rethinking curriculum design to accommodate these methods. By doing so, educational systems can better support the diverse needs of learners and promote a more inclusive approach to literacy education.

6. Conclusion

This study set out to explore the efficacy of multisensory instructional approaches in enhancing literacy skills among non-readers in educational settings. Through qualitative analysis of interviews with both learners and teachers at Erridouane School, the research revealed that multisensory methods are highly effective in addressing the diverse needs of learners who struggle with traditional reading instruction. These approaches, which engage multiple senses, not only improve reading comprehension but also foster greater engagement, motivation, and personal development among learners.

The study underscores the importance of personalized and inclusive teaching strategies that are tailored to the individual needs of non-readers. By incorporating visual, auditory, and kinesthetic elements into literacy instruction, educators can create more engaging and accessible learning environments that support all students, particularly those with special educational needs.

However, the research also highlighted several challenges to the effective implementation of multisensory methods, including limited resources, time constraints, and the need for professional development. Addressing these barriers is crucial for the broader adoption of multisensory instructional techniques in literacy education. This will require systemic changes in educational policy and practice, including greater investment in resources and training for teachers and more flexible curriculum designs.

In light of these findings, the study advocates for a more inclusive approach to literacy education, one that recognizes the multifaceted nature of literacy and the diverse challenges faced by learners. Future research should continue to explore the long-term impacts of multisensory instruction and develop strategies that can be widely implemented in various educational contexts. By doing so, educators can better support the literacy development of all learners, promoting a more equitable and effective educational system.

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