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Research Article

Effectiveness of Phonics-Based Blending Instruction for Primary Students with Specific Learning Disabilities

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ABSTRACT

Students with Specific Learning Disabilities (SLD), especially those with reading difficulties such as dyslexia, often experience significant challenges in acquiring basic literacy skills. One of the primary reasons for these difficulties is the inability to connect letters with their corresponding sounds and blend those sounds into meaningful words. As a result, many students fall behind in reading during the early years of schooling.

This study examines the effectiveness of structured phonics-based blending instruction in improving reading abilities among primary school students with Specific Learning Disabilities. A pre-test and post-test intervention design was used. Students were first screened using the Specific Learning Disability Screening Questionnaire (SLD-SQ) and further assessed using the Diagnostic Test for Learning Disability (DTLD). Following identification, a structured phonics instruction program focusing on letter–sound recognition and blending strategies was implemented.

A specially designed **Foundational Literacy Worksheet Module: Phonic Sounds with Blending** was used as the central instructional tool during the intervention. The module included sound recognition activities, letter identification tasks, mirror-image correction exercises, blending practice, word reading tasks, and sentence reading activities.

The intervention was conducted over several weeks with regular guided practice using multisensory learning strategies. The results indicated clear improvement in students' ability to recognize letter sounds, blend phonemes, decode simple words, and read short sentences. Students also showed increased confidence and engagement during reading tasks.

The findings suggest that structured phonics instruction combined with blending practice and targeted worksheet modules can significantly improve early reading skills among students with Specific Learning Disabilities.

Introduction

Reading is one of the most important skills acquired during the early years of schooling. It serves as the foundation for academic learning, communication, and access to knowledge across all subjects. Children who develop strong reading abilities during the primary grades are more likely to succeed academically in later stages of education.

Learning to read involves several interconnected processes. Children must recognize letters, understand the relationship between letters and sounds, and combine these sounds to form meaningful words. This process requires the development of phonological awareness, decoding ability, and reading fluency.

For many students, these skills develop gradually through classroom instruction and practice. However, children with **Specific Learning Disabilities (SLD)** often experience significant difficulty in acquiring reading skills. They may struggle to recognize letter sounds, remember sound patterns, or blend sounds into words. These challenges make reading slow, inaccurate, and frustrating.

Research in literacy education has emphasized the importance of phonics-based instruction in early reading development (Ehri, 2005; National Reading Panel, 2000). Phonics teaching focuses on helping learners

understand how letters represent sounds and how these sounds combine to form words. Through structured instruction and repeated practice, students learn to decode unfamiliar words independently.

A critical component of phonics instruction is blending. Blending refers to the process of combining individual sounds (phonemes) to form complete words (Adams, 1990; Ehri, 2014). For example, when students combine the sounds /c/, /a/, and /t/, they produce the word cat. When students master blending, they develop the ability to read new words without relying solely on memorization.

Students with Specific Learning Disabilities often find blending particularly challenging (Snowling, 2013; Lyon, Shaywitz, & Shaywitz, 2003). Even when they can identify individual letter sounds, they may struggle to hold these sounds in memory long enough to combine them into a word. Therefore, targeted instructional strategies are necessary to help them practice and develop this skill.

The present study explores the effectiveness of structured phonics instruction with blending practice among primary school students with Specific Learning Disabilities. The research also examines the role of a specially designed worksheet module that provides systematic activities to support phonics learning.

Statement of the Problem

Reading acquisition is a complex cognitive process that requires the integration of several skills including phonological awareness, memory, and language processing. For students with Specific Learning Disabilities, these processes may not develop in the same way as they do for typical learners.

In many classrooms, reading instruction still relies heavily on memorization and repetition. While such approaches may work for some students, they often fail to address the specific learning needs of students with reading difficulties.

One of the major challenges faced by students with SLD is the **inability to blend sounds** effectively. Students may recognize individual letters but cannot combine them to read words. This difficulty creates a barrier to reading fluency and comprehension.

Without early intervention, students with reading difficulties may experience:

- persistent academic struggles
- reduced motivation toward learning
- low confidence in classroom participation

In multilingual environments such as Tamil Nadu, the challenge is further complicated by the fact that many students learn English as a second language while speaking another language at home. Differences between language sound systems may add additional difficulty to reading acquisition.

Therefore, there is a need to identify effective instructional methods that support the development of foundational literacy skills among students with Specific Learning Disabilities.

Objectives of the Study

The main objective of this study is to examine the effectiveness of phonics-based blending instruction in improving reading skills among primary school students with Specific Learning Disabilities.

The specific objectives are:

1. To identify students with possible Specific Learning Disabilities using screening and diagnostic tools.
2. To examine the reading difficulties faced by students with learning disabilities.
3. To implement a structured phonics-based instructional program focusing on letter sounds and blending.
4. To use a worksheet module designed to support phonics learning through systematic activities.
5. To measure improvements in reading ability after the instructional intervention.

Research Questions

The study was guided by the following research questions:

1. What reading difficulties are commonly observed among primary students with Specific Learning Disabilities?
2. Can phonics-based blending instruction improve decoding skills among these students?
3. Does structured phonics practice improve letter-sound recognition and reading fluency?
4. How effective is the worksheet-based phonics module in supporting reading development?

Conceptual Framework

The conceptual framework of this study is based on the relationship between **phonological awareness, phonics instruction, blending skills, and reading development**.

Students with Specific Learning Disabilities often have weaknesses in phonological processing (Stanovich, 1986; Snowling, 2013). These weaknesses affect their ability to identify sounds in spoken language and connect those sounds to written letters.

Phonics instruction aims to strengthen this connection by teaching students how letters represent sounds and how these sounds combine to form words. Through repeated practice in blending and decoding, students gradually develop the ability to read unfamiliar words.

The framework assumes that:

1. **Phonological awareness** supports sound recognition.

2. **Phonics instruction** strengthens sound–letter relationships.
3. **Blending practice** improves decoding ability.
4. **Improved decoding** leads to better reading fluency and comprehension.

The worksheet module used in this study acts as a structured instructional tool that supports these learning processes.

Worksheet Module: Phonic Sounds with Blending

A **Foundational Literacy Worksheet Module** was designed as the main teaching resource during the intervention. The module focuses on developing phonics awareness and blending skills among primary learners with Specific Learning Disabilities.

Learning Objectives

By the end of the module, students should be able to:

- identify individual letter sounds
- recognize uppercase and lowercase letters
- practice sound identification
- overcome mirror-image confusion of letters
- blend two or three sounds to form words
- read simple words and short sentences

Warm-Up Activity: Sound Recognition

The instruction begins with an activity where students learn to associate sounds with actions.
Students practice sounds in groups:

Group 1: s, a, t, i, p, n
Group 2: c/ck, e, h, r, m, d
Group 3: g, o, u, l, f, b
Group 4: ai, j, oa, ie, ee, or
Group 5: z, w, ng, v, oo (short), oo (long)
Group 6: y, x, ch, sh, th
Group 7: qu, ou, oi, ue, ar

Large fonts and clear spacing are used to make the materials easier for students with learning difficulties.

Sound Practice and Identification

Students practice identifying individual sounds using engaging activities such as:

- mystery box games
- sound recognition activities
- musical chair sound games
- hide-and-seek sound identification

These activities strengthen both motor memory and auditory recognition.

Letter Identification

Students practice identifying uppercase and lowercase letters through handwriting worksheets. These exercises help students connect visual letter forms with corresponding sounds.

Mirror-Image Correction

Many students with learning disabilities confuse letters such as **b/d, p/q, m/w, u/n**. Special worksheets are used to help students identify and correct these mirror-image reversals.
Picture-based activities help reinforce correct letter recognition.

Blending Practice

Blending practice forms the **core component** of the instructional program.
Students learn to blend consonant-vowel-consonant (CVC) words such as:

c-a-t = cat
s-u-n = sun
m-a-t = mat

Activities include:

- hopscotch sound blending
- board games such as Ludo
- magic spoon word building

These activities help students associate sounds visually and orally.

Auditory Discrimination Activities

Students listen to a spoken word and identify the correct option.
Examples:

sat	/	pat	/	mat
pen	/	pan	/	pin
log	/	leg	/	lag
cup	/	cap	/	cop

bug / big / bag
The teacher says one word and students circle the correct option.

Word and Picture Matching
Students match written words with pictures.
Examples:
Pig
Sun
Map
Cup
This activity strengthens visual recognition and meaning association.

Fill-in-the-Missing Sound
Students complete words by filling in missing letters.

C	_	t
S	_	t

P _ g
These exercises reinforce blending and decoding.

High-Frequency Word Reading
Students practice reading commonly used words that cannot always be easily blended.
Examples include:
I, the, he, she, me, we, be, was, to, do, are, you, your, come, some, said, here, there, they, go, no, so, my, one, by, only, old, like, have, live, give, little, down, what, when.
Teachers use **echo reading**:
Teacher reads → student repeats.

Sentence Reading
Students practice reading short sentences.
Examples:

I	want	pen.

He is there.
Short paragraphs are also introduced gradually.

Teaching Strategies for SLD Students
Effective strategies include:
- using large fonts
- including pictures with every word
- repeating sounds frequently
- using multisensory learning
- providing guided examples before independent practice

Methodology

This study adopted a **quasi-experimental research design** using a pre-test and post-test approach.

Participants
The participants were primary school students aged **6–12 years** who showed persistent reading difficulties. Students were screened using the **Specific Learning Disability Screening Questionnaire (SLD-SQ)** and further assessed using the **Diagnostic Test for Learning Disability (DTLD)**.
A total of **100 students** identified with learning difficulties participated in the study.

Location of the Study
The research was conducted in **government schools in the Chennai region of Tamil Nadu, India**. These schools serve students from diverse socio-economic backgrounds, and many learners study English as a second language.

Intervention Procedure

The instructional intervention involved structured phonics sessions conducted over several weeks.
Each session included:

- sound recognition exercises
- blending practice
- worksheet-based activities
- guided reading practice

The worksheet module described earlier was used extensively during the teaching sessions.

Data Collection

Data were collected through:

- screening results
- diagnostic assessments
- pre-test reading assessments
- post-test reading assessments
- classroom observations

Results and Discussion

The comparison of pre-test and post-test scores showed noticeable improvement in several areas of reading development.
Before the intervention, students showed difficulty in:

- recognizing letter sounds
- blending phonemes
- decoding simple words
- reading short sentences

Many students attempted to read words letter by letter and frequently paused between sounds.
After the intervention, several positive changes were observed.
Students demonstrated improved **letter-sound recognition** and were able to identify phonemes more quickly.
Blending ability also improved significantly. Students who previously struggled to combine sounds were able to read simple CVC words more accurately.Word decoding accuracy improved as students began to rely less on guessing and more on sound-based strategies. Reading fluency also increased. Students were able to read simple sentences with fewer pauses.
Another important change was the improvement in students' **confidence and participation**. Students who were initially hesitant to read began to participate more actively during classroom activities.
These findings indicate that structured phonics instruction combined with worksheet-based practice can significantly support reading development among students with Specific Learning Disabilities.

Educational Implications

The findings highlight several important implications for teachers and schools.
Teachers should provide systematic phonics instruction during the early years of schooling (National Reading Panel, 2000; Ehri et al., 2001). Sound-based teaching helps students understand how words are constructed.
Multisensory learning methods should also be used to support students with learning difficulties (Birsh & Carreker, 2018; Shaywitz, 2003). Activities involving visual, auditory, and kinesthetic elements improve engagement and retention.
Early identification of reading difficulties is equally important. Screening tools can help teachers identify students who require additional support.
Finally, schools should provide additional reading practice and structured teaching materials for struggling readers.

Limitations of the Study

The study has several limitations.
The sample size was limited to a specific group of students in selected schools. Therefore, the results cannot be generalized to all learners with reading difficulties. The duration of the intervention was also relatively short, and longer programs may produce different outcomes. Other factors such as home literacy environment and parental support were not examined in this study.

Conclusion

This study examined the effectiveness of phonics-based blending instruction in improving reading skills among primary school students with Specific Learning Disabilities.
The results demonstrated significant improvement in:

- letter-sound recognition
- phoneme blending
- word decoding
- reading fluency

The worksheet-based instructional module played a key role in supporting systematic phonics learning. The findings suggest that structured phonics instruction combined with blending practice can help students with learning disabilities develop foundational literacy skills.

Early intervention, multisensory teaching methods, and well-designed instructional materials can significantly improve reading outcomes for struggling learners.

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