

Empowering Special Education: Enhancing Reading Skills through SPIRE Program

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Received August 04, 2024; Revised September 06, 2024; Accepted September 12, 2024

Abstract This research paper examines the efficacy of the Specialized Program Individualizing Reading Excellence (SPIRE) in enhancing reading skills among students in special education. The study, Empowering Special Education: Enhancing Reading Skills through SPIRE Program, emphasizes strategies that promote academic success for learners with varied educational needs. Utilizing a structured, multisensory methodology, SPIRE customizes instruction to meet the specific needs of each student, to enhance phonemic awareness, phonics, vocabulary, and comprehension skills. The research adopts quantitative data from reading assessments. The results reveal that the SPIRE Program enhances the reading skills of the SPED students ($p\text{-value} = 0.000$). Thus, the SPIRE program empowers special education students by improving their reading skills through personalized, multisensory instruction. Its impact extends beyond reading proficiency, fostering greater confidence and providing teachers with valuable tools for supporting student success.

Keywords: *Enhancing, fostering, multisensory, strategies, empowering, interventions, phonemic awareness*

Cite This Article: Pede I. Casing, Rowina C. Quijano, Paz Sampaguita T. Aureo, Mitchelle B. Villagonza, and Jever L. Pabilan, "Empowering Special Education: Enhancing Reading Skills through SPIRE Program." *American Journal of Educational Research*, vol. 12, no. 9 (2024): 344-347. doi: 10.12691/education-12-9-1.

1. Introduction

Reading is a fundamental skill that is essential for academic success and continuous learning throughout life. Special education students face unique challenges in developing their reading abilities, requiring specific instructional methods. The study "Empowering Special Education: Enhancing Reading Skills through SPIRE Program" aims to investigate effective approaches to improve reading skills among special education students, through the Specialized Program Individualizing Reading Excellence (SPIRE).

The Specialized Program Individualizing Reading Excellence (SPIRE) is well-known for its structured, multisensory approach tailored to the diverse learning needs of students. It incorporates phonemic awareness, phonics, vocabulary, and comprehension in a comprehensive instructional framework to provide personalized support for enhancing reading skills. By customizing instruction to meet the individual needs of each student, SPIRE addresses the challenges that special education students face in their reading development. This research aims to assess the impact of the SPIRE program on reading skills in special education environments. By combining quantitative data from reading assessments with qualitative insights gathered from teacher and student

interviews, this study offers a thorough understanding of the effectiveness of SPIRE [1,2]. The results of this research are intended to guide educators, policymakers, and stakeholders on the potential advantages of implementing the SPIRE program to support the academic progress of students with special needs.

Supporting and supplementing early reading development with quality instruction is essential. In 2022, the average reading score in fourth grade dropped again, now lower than all previous assessment years going back to 2005 and no different than reading scores in 1992. As such, the need for effective reading instruction is becoming increasingly urgent. In recent years, research on early literacy and reading has provided clearer specifications about reading development, converging on three themes that have gained widespread acceptance: reading is a strategic process, and fluent readers need instruction and practice employing a variety of strategies to understand text, reading instruction should be differentiated to meet the needs of individual students, and the reader's ultimate goal is comprehension of the meaning of text in light of prior knowledge and purpose [3].

Moreover, the researchers conducted this study to empower special education and enhance reading skills through the SPIRE program.

2. Literature Review

The SPIRE curriculum is built on three themes. SPIRE or iSPIRE incorporates the core principles of the Science of Reading and is an evidence-based, explicit, direct, and systematic reading intervention program. Strategies for successful reading are introduced through direct, explicit teacher-led instruction that is systematically planned and organized, allowing students to practice in monitored reading situations. The lessons are sequenced in a way that moves from simple to complex. Lessons through SPIRE draw students back to the core of what reading is all about, employing newly learned strategies in real reading situations to comprehend text [3].

Although research indicates that motivation influences reading development and achievement, studies examining the motivation of primary-age readers are scarce and limited. Assuming school experiences play a role in shaping motivation, younger children's motivation to read within the context of reading intervention programs must be examined. In Erickson's qualitative case study, it takes a step toward addressing the gap in the literature. The motivation and engagement of eight children identified as "at risk" for reading difficulties (four first graders and four-second graders) specific to a pullout reading intervention program were investigated via researcher field notes and video logs, reading specialist engagement questionnaires and interviews, and participatory student interviews. The findings reveal that reports of engagement were mainly consistent with children's preferences for doing reading in the classroom or the intervention setting; however, children's perceptions were essential in understanding how the benefits and costs each associated with the intervention combined to influence motivation [4].

Moreover, the study by Noble et al (2019) stated that shared book reading is thought to have a positive impact on young children's language development, with shared reading interventions often run to boost children's language skills. However, despite the volume of research in this area, several issues remain outstanding. Their meta-analysis explored whether shared reading interventions are equally effective (a) across a range of study designs; (b) across a range of different outcome variables; and (c) for children from different SES groups. It also explored the potentially moderating effects of intervention duration, child age, use of dialogic reading techniques, the person delivering the intervention, and mode of intervention delivery [5].

Furthermore, the study by Olszewski et al., (2018) stated that children with disabilities often demonstrate difficulties in code-focused and meaning-focused literacy domains. Best practice indicates that skills within these domains should be taught together. Their study used principles of ABAB single-case experimental design to monitor the development of narrative retelling and phonemic awareness in a 3rd-grade child identified by her school as a child with disabilities. This child participated in a shared book-reading program that included discussions of the storybook text, a graphic organizer, and explicit instruction on phonemic awareness skills using words within the text. Results indicated significant improvements across both skills corresponding to instruction. Paired sample t-tests corroborated their findings. Their findings support the use of interactive shared reading for simultaneously teaching code-focused

and meaning-focused skills to children with disabilities. Results also support the use of graphic organizers for improving narrative retelling skills for children with disabilities [6].

Interestingly, the results of Unrau et al. (2018) indicated that significant moderators of effect sizes included grade level, number of sources shaping reading self-efficacy, a reading self-efficacy measurement index, and journal publication. In studies that measured the impact of the intervention on reading comprehension, its relationship with reading self-efficacy was analyzed revealing a strong correlation between the two constructs. Discussion includes an exploration of the importance of these findings to future policy, practice, and research on the design of reading self-efficacy measurement instruments and on interventions that utilize major sources of experiences shaping reading self-efficacy [7].

Many students at risk for or identified with reading disabilities need intensive reading interventions. The meta-analysis study of Wanzek et al (2018) provides an update to the Wanzek and Vaughn synthesis on intensive early reading interventions. Effects from 25 reading intervention studies are analyzed to examine the impact of intensive early reading interventions and the relationships between intervention and student characteristics related to outcomes. The weighted mean effect size (ES) estimate ($ES = 0.39$), with a mean effect size adjusted for publication bias ($ES = 0.28$), both significantly different from zero, suggested intensive early reading interventions resulted in positive outcomes for early struggling readers in kindergarten through third grades. There was no statistically significant heterogeneity in the study-wise effect sizes. Exploratory examination of time in intervention, instructional group size, and initial reading achievement are provided [8].

Using the philosophy of liberation from the Brazilian philosopher and teacher Paulo Freire, Rick (2021) formulated the following guiding questions for his research: 1) how is dialogue facilitated within SPIRE, and 2) how is critical action reflected in the reading content of SPIRE? Using these questions as his guide, he synthesized literature surrounding critical literacies and liberation to provide background for readers. In addition, he researched the SPIRE curriculum by reading the materials he used within his classroom and utilized the SPIRE Curriculum website to aid in formulating curriculum background. To analyze SPIRE, along with other prepackaged curriculums, he created a set of codes. These codes were derived from Praxis: dialogue and critical action. These codes were created to analyze the systematic phonics program titled, "S.P.I.R.E" to examine the extent to which SPIRE is a curriculum that allows students to achieve liberation. Analysis showed that the program was in fact, monological because of a preponderance of Teacher-Led Instruction, and the code Reading the Word was majority used to form critical action. Results led him to question how to engage students in liberation from the oppression of 21st century schooling and to a discussion on how to provide students with opportunities for open ended questioning and teacher critical action: critical reflection [9].

Ziegler et al (2020) summarize what is known about learning to read and how this can be formalized in a developmentally plausible computational model of

reading acquisition. The model is used to understand normal and impaired reading development (dyslexia). They show that it is possible to simulate individual learning trajectories and intervention outcomes based on three component skills: orthography, phonology, and vocabulary. They therefore advocate a multifactorial computational approach to understanding reading that has practical implications for dyslexia and intervention [10]. The learning strategy used in the study of Kosilah et al (2023) is introducing the alphabet to students first, utilizing reading corners, conducting tutoring, and habituating to reading together during the learning process. The learning method is by approaching students and giving reading practice tasks and interesting reading spelling books. The forms of teacher efforts are expected to effectively overcome students' reading learning difficulties [11]. Conducting tutoring or after-school programs can also help students [12].

In the study of Alkalah (2016), a qualitative multiple case study was to describe educators' perceptions concerning the implementation of the Specialized Program Individualizing Reading Excellence (SPIRE) as an intervention to help students meet state proficiency standards at a large suburban school district in Utah. Bandura's self-efficacy theory served as the theoretical framework to guide an inquiry into educators' beliefs and how well they executed the SPIRE intervention to answer the central research question, "How do educators explain their perceptions of the use of SPIRE in the classroom?" Her study utilized a multiple-case study design that captured the perception of 12 educators who served in the role of literacy coach, district literacy specialist Title 1 Coordinator, special education teacher, or educational aid. Participants were selected through purposeful sampling to provide rich information about the phenomenon. Data were collected, analyzed, and triangulated through multiple sources: written letters, semi-structured interviews, and focus groups. The data were coded to formulate important ideas and to identify themes. The themes that emerged were educators' understanding of SPIRE, the practice of SPIRE as an intervention, the benefits of SPIRE, barriers to SPIRE, and professional development. Based on her findings, educators perceived that the implementation of SPIRE improved the struggling students' reading scores on state proficiency standards [13].

3. Methods

The study was conducted in Alamogordo, New Mexico, USA. The study involved 24 elementary and 8 middle school SPED students who were officially enrolled in the SPIRE Program for the school year 2023-2024. This is quantitative. The data gathered was based on the Pretest and Post-test. The mean, standard deviation, and t-test were used for statistical analysis. Due to a small number of populations, universal sampling was used. Teachers were licensed for the grade level of students attending the program. Teachers must maintain a daily session attendance record in the shared folder which includes the attending student's PowerSchool Student Number. School rosters will be shared with each school for this purpose.

4. Results and Findings

The students' levels through the SPIRE Program are shown in the following table. Table 1 shows the mean and standard deviation of the student's level. The table displays a mean of 1.75 for the Pretest which is Level II and 2.55 for the Post-Test which is Level III. Results revealed that there is an increase in performance using the SPIRE program.

Table 1. Mean and Standard Deviation of SPIRE Program

	Pretest	Post-test
Mean	1.75	2.55
SD	0.950	0.880

Legend: Mean intervals Description
 1.00-1.49 Level I
 1.50-2.49 Level II
 2.50-3.49 Level III
 3.50-4.49 Level IV
 4.50-5.00 Level V

Table 1 further shows the variability of the reading program where the Pretest has obtained a standard deviation of 0.950 and Post-test has obtained standard deviation of 0.880. It can be concluded that exposure to the SPIRE program might have enhanced reading skills. This is supported by the study of Turap et al n.d. which provides results to satisfy the Every Student Success Act (ESSA) evidence requirement for Level III (Promising Evidence) given the study design and positive, statistically significant findings [3].

Table 2. T-Test Summary for SPIRE Program

	df	t-value	P-value	Interpretation
SPIRE Program	31	4.546	0.000	Significant

Moreover, Table 2 shows the t-test of students' SPIRE program. The analysis yields a computed probability value of 0.000 which is less than 0.05 level of significance. This led to the non-acceptance of the null hypothesis. This means that there is a significant difference in the student's level using the SPIRE program. This implies that the significant difference in their scores could be due to the students' exposure to the reading evidence-based resource from which the students were actively engaged. This is also supported by Water (2020) that being a successful reader is virtually synonymous with being a successful student. While there is a considerable amount of research available for lower elementary struggling readers, the same cannot be said for upper elementary struggling readers in third to fifth grade. When a student reaches third grade, there is a transition from "learning to read" to "reading to learn," and students are now expected to independently implement previously taught phonics strategies. However, struggling readers are so focused on simply decoding the text, that they are unable to develop any meaningful understanding. This study set out to investigate the effectiveness of the phonics-based reading intervention S.P.I.R.E. for fourth and fifth-grade students with specific learning disabilities that have a comorbidity with reading difficulties. Results indicate that the phonics-based multisensory reading intervention

is an effective reading intervention for upper elementary struggling readers [14].

5. Concluding Statements

Based on the analysis and findings of the study the researchers conclude that SPIRE Program enhances the reading skills of the SPED students. Therefore, the SPIRE program empowers special education students by enhancing their reading skills through personalized, multisensory instruction. Its impact extends beyond reading proficiency, fostering greater confidence and providing teachers with valuable tools for supporting student success.

The SPIRE (Specialized Program Individualizing Reading Excellence) program is highly effective in enhancing reading skills for students with special education needs. It provides a systematic, multisensory approach that supports students with learning disabilities, such as dyslexia, to build foundational reading skills.

One of the key strengths of the SPIRE program is its ability to individualize instruction. By focusing on phonemic awareness, phonics, vocabulary, fluency, and comprehension, it adapts to the learning pace and specific needs of each student, helping them make steady progress in reading.

SPIRE employs a multisensory instructional method, engaging students through visual, auditory, and kinesthetic activities. This approach has proven particularly beneficial for students with learning disabilities, as it allows them to connect with the material in various ways, strengthening their retention and understanding.

As students experience success with the SPIRE program, their confidence in reading grows. This boost in self-confidence is critical, as it encourages greater participation in reading activities and fosters a positive attitude toward learning.

Effective implementation of the SPIRE program often requires training and ongoing professional development for special education teachers. This ensures that educators are equipped with the necessary skills and strategies to maximize the program's benefits for their students.

Consistent use of the SPIRE program leads to sustained improvements in reading skills. For many students in special education, the program has shown significant long-term gains in literacy, enabling them to perform better academically and succeed in future educational endeavors.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to mentors, colleagues, parents, students, staff, and admin,

of Alamogordo Public Schools District, the Instructional Coaches and staff of the district, for their tireless support, professional guidance, countless supervision, encouraging comments and patience in assisting with special care and attention. Finally, the authors would like to thank the New Mexico Public Education Department for their professional support.

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