Effectiveness Of Elkonin Boxes in Improving the Beginning Reading Skills of Grade Two Pupils

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Abstract — This action research investigated the effectiveness of Elkonin Boxes in improving the beginning reading skills of grade two pupils at Don Pedro Festejo Memorial School, Santa Lucia District, Schools Division Office of Ilocos Sur, Philippines. The study aimed to address reading proficiency issues through a one-group experimental design, focusing on phonemic awareness as a foundational literacy skill. Conducted with 13 grade two pupils, the intervention employed Elkonin Boxes to enhance phonemic segmentation, decoding skills, and reading fluency. Data collection involved a pre-test and post-test to measure reading levels before and after the intervention, with results analyzed using mean scores, percentages, and paired t-tests. The study anticipated that structured phonemic awareness practice would lead to significant reading improvements, helping students progress from "Poor" to "Outstanding" reading levels. Findings were expected to substantiate Elkonin Boxes as an effective, evidence-based method for supporting early literacy development and bridging reading gaps among struggling learners. This project contributed to the "Every Child A Reader Program" (ECARP) and aligned with national literacy initiatives under the Department of Education. The research findings were disseminated through various channels, including social media, public schools, and local radio, to promote awareness and encourage wider adoption of effective literacy strategies in similar educational contexts.

Keywords — Elkonin Boxes, phonemic awareness, early literacy, reading intervention, Grade two pupils, reading proficiency

I. Introduction

In a world rich with information and diverse perspectives, the ability to read is not merely a fundamental skill but a gateway to enlightenment and empowerment. Reading opens doors to new worlds, allowing individuals to explore the depths of human imagination, gain profound insights from historical narratives, and engage with a myriad of ideas that shape our understanding of the present and future.

Mastering the art of reading serves as a pivotal tool for lifelong learning, seamlessly connecting individual knowledge with the absorption of new information, thus ensuring the timeless transmission of wisdom across generations (Maruyama & Kurosaki, 2021). Accordingly, the ability to read is a critical skill that empowers individuals to access and absorb knowledge and insights derived from human experiences (Van De Weijer-Bergsma & Van Der Ven, 2021).

Without proficiency in reading, individuals are denied the opportunity to unearth truths, discern credible information from unreliable sources, and comprehend the world around them.

A study contend that the insufficient reading comprehension skills of students significantly impact them, leading to poor academic performance as the most noticeable consequence (Holtzman et al., 2023). Supporting this assertion, Scholz et al. (2020) conducted a study affirming that proficiency in reading is linked to academic success in the subjects they examined. The study underscores the importance of recognizing reading skills when aiming to enhance students' academic performance.

Nonetheless, learning to read is a multifaceted process that involves acquiring the skills to decode written language and understanding how to derive meaning from texts. Mikeska et al. (2023) suggests that students who struggle with decoding often lack phonemic awareness, potentially hindering their comprehension of the concept of "sound." While these students may possess adequate auditory skills and the ability to identify alphabet letters, they often lack a comprehensive understanding of the meaning associated with these letters. Proficiency in phonemic awareness is vital for mastering the English language, which employs an alphabetic writing system where letters represent individual speech sounds independently and in combination. Students with a solid grasp of phonemic awareness can effectively analyze words into constituent sounds, recognize their identities, and reconstruct them. Without this foundation, students may find the print system confusing in its representation of spoken words. Additionally, a lack of phonemic awareness poses challenges in language acquisition, particularly in reading and spelling, as a firm grasp of basic sounds serves as the cornerstone for decoding skills.

Moreover, phonemic awareness entails students developing the ability to perceive and manipulate sounds while grasping the concept that spoken words consist of sequences of these sounds. Those who can quickly identify phonemes demonstrate improved reading fluency due to their rapid processing. Conversely, students who take longer to process phonemes encounter difficulties in understanding spoken words. The decoding of words becomes time-consuming, leaving limited time for interpreting the content being read (Perera et al., 2022).

Fatimayin (2015) emphasizes that becoming proficient in reading depends on motivation, consistent practice, effective teaching approaches, and reinforcement. In fact, the Department of Education designates November as National Reading Month (DepEd Memorandum 244 s. 2011), hosting a series of events culminating in the celebration of "Araw ng Pagbasa Day" observed every November 27th (RA 10556).

Unfortunately, the 2018 Programme for International Student Assessment (PISA) reported that the Philippines ranked lowest in reading comprehension among 15-year-olds across 79 nations. Concurrently, the 2019 Southeast Asia Primary Learning Metrics (SEA-PLM) revealed alarming statistics: 27% of Grade 5 Filipino students could only identify individual words, while only 10% achieved sufficient reading proficiency for a successful transition to high school.

Furthermore, a report by the World Bank in 2022 stated that nine out of 10 or 91 percent of Filipino children were still struggling to read simple texts by age 10 or late primary age. In 2022, PISA results also showed that the number of students performing below a basic skill level in math, reading, and science remained relatively unchanged compared to the 2018 scores.

Likewise, DepEd Memorandum 173 series 2019, titled "Hamon: Bawat Bata Bumabasa (3Bs initiative)," acknowledges the findings from national assessments, specifically highlighting the challenges faced by early-grade learners in meeting the established standards for early language, literacy, and numeracy. This underscores the imperative need to reinforce the "Every Child A Reader Program (ECARP)," a nationwide initiative outlined in Enclosure to DepEd Order No. 70, s. 2011, aimed at ensuring every child achieves reading proficiency at their respective grade level.

Similarly, DepEd Memorandum No. 1 series of 2024, Implementation of Catch-up Fridays, serves as a learning approach designed to enhance fundamental, social, and pertinent skills essential for fulfilling the goals of the basic education curriculum. This program plays a crucial role within the National Reading and Mathematics Programs, vital subprograms outlined in DO No. 13, s. 2023, otherwise known as the “Adoption of the National Learning Recovery Program (NLRP). The subprogram is committed to advancing literacy growth based on the building blocks of early-grade reading skill development (Galvez Tan & Alampay, 2022).

Moreover, the issue of reading poverty extends to Don Pedro Festejo Memorial School. Findings from the Functional Literacy Assessment Tool (FLAT), administered by the researcher to second-grade pupils, unveiled that 13 students did not attain the requisite reading proficiency expected for their grade level. Given these obstacles and the urgent need to address this prevailing problem, the researcher is driven to employ “Elkonin Boxes” as an intervention. With this approach, the researcher aims to confront the prevalent concern of inadequate reading proficiency among their students, particularly focusing on phonemic awareness as a fundamental skill in the beginning reading stage. This intervention aims to equip students with the necessary resources essential for their academic advancement.

II. Methodology

This study employed a one-group pre-test/post-test experimental design. Thirteen grade two students (11 male, 2 female) from Don Pedro Festejo Memorial School participated.

Data Collection: A 30-item pre-test assessed baseline reading proficiency. A three-month intervention followed, using Elkonin Boxes to enhance phonemic segmentation and decoding skills through structured sessions. A post-test, using the same 30-item assessment, measured reading levels after the intervention.

Data Analysis: Mean scores, percentages, and a paired t-test were used to analyze the data and compare pre- and post-intervention reading levels. Reading levels were categorized using the following descriptive equivalents: Outstanding (24.01-30), High (18.01-24), Fair (12.01-18), Poor (6.01-12), and Needs Improvement (0.0-6).

Ethical Considerations: Informed consent was obtained from parents/guardians. Confidentiality was maintained through anonymization of data.

III. Results and Discussion

Reading level of the grade two pupils before and after their exposure to Elkonin Boxes. The table shows the reading level of grade two pupils before and after their exposure to Elkonin Boxes, a phonemic awareness tool used to help young learners improve their reading skills.

Table 1. Reading level of the Grade Two pupils before and after their exposure to Elkonin Boxes

	n	Mean	Description	Mean Difference
Before	13	9.16	Poor	16.14
After	13	25.30	Outstanding	

The mean reading level before using Elkonin Boxes is reported as 9.16, categorized as "Poor," while the mean reading level after the intervention has significantly increased to 25.30, categorized as "Outstanding." The mean difference between the pre- and post-intervention scores is 16.14, suggesting a substantial improvement in the pupils' reading abilities following the use of Elkonin Boxes.

Elkonin Boxes are a well-regarded instructional tool for early literacy because they help children segment words into individual sounds, which enhances their phonemic awareness and decoding skills (Brady, 2020; Ehri, 2014). Phonemic awareness, or the ability to identify and manipulate sounds within words, is a foundational skill for reading fluency (National Reading Panel, 2000). Studies have demonstrated that this skill is critical for young readers and that effective phonemic interventions can lead to significant reading gains, especially among students who initially struggle with reading (Adams, 1990; Moats, 2010). The data presented in this table align with these findings, showing that students who engaged with Elkonin Boxes improved from a poor to an outstanding reading level, reinforcing the effectiveness of phonemic awareness activities in early education.

The mean difference of 16.14 points highlights a marked improvement in reading ability, which could be attributed to the structured, visual nature of Elkonin Boxes. This method requires students to focus on each phoneme in a word by moving a marker into each box, thereby reinforcing the connection between sounds and their corresponding letters or letter combinations

(Adams, 1990; Lane & Pullen, 2015). The substantial increase in mean reading scores after the intervention underscores the importance of multisensory learning techniques in early literacy development, especially for students with initial reading difficulties (Ehri, 2014; Snow, Burns, & Griffin, 1998).

The reading level descriptions, "Poor" before and "Outstanding" after the intervention, suggest that the students' reading capabilities were transformed through consistent practice with Elkonin Boxes. Research indicates that early interventions targeting phonemic awareness can produce substantial reading gains, especially when they involve explicit, systematic instruction (Stahl & Murray, 1994; Torgesen, Wagner, & Rashotte, 1994). The shift from "Poor" to "Outstanding" further emphasizes the critical role that targeted phonemic awareness instruction can play in improving reading outcomes for young learners (National Institute for Literacy, 2009). This type of structured phonemic awareness training can help bridge the gap for struggling readers, enabling them to catch up with their peers.

Moreover, the use of Elkonin Boxes aligns with the principles of the Simple View of Reading, which posits that reading comprehension is the product of both decoding and language comprehension skills (Gough & Tunmer, 1986). Since Elkonin Boxes specifically support decoding, they are particularly valuable for developing one half of this equation, which is often a key struggle for beginning readers. The dramatic improvement in mean scores suggests that the intervention may have helped students become more proficient in decoding, an essential step toward reading fluency and comprehension (Kilpatrick, 2015; Lyon, Shaywitz, & Shaywitz, 2003).

The consistent improvement across a sample of 13 students indicates that Elkonin Boxes may be broadly effective as a classroom intervention for phonemic awareness. Although a larger sample size would provide greater statistical power, the significant mean difference observed here is consistent with other studies suggesting the efficacy of Elkonin Boxes in diverse early education settings (National Reading Panel, 2000; Snow et al., 1998). The use of Elkonin Boxes, therefore, appears to be an evidence-based approach to improving reading skills in grade two students, as shown by the remarkable shift in mean reading levels post-intervention.

In conclusion, the data presented in the table highlight the effectiveness of Elkonin Boxes in enhancing phonemic awareness and improving reading levels among grade two students. The mean difference of 16.14 points, alongside the qualitative shift from "Poor" to "Outstanding," underscores the significant gains that targeted phonemic awareness interventions can offer. This analysis aligns with existing literature supporting phonemic awareness as a cornerstone of early reading instruction and demonstrates how tools like Elkonin Boxes can play a transformative role in literacy education (Moats, 2010; Adams, 1990; Ehri, 2014).

Significant Difference in the Pupil’s reading level before and after the Intervention. The table presents an analysis of the significant difference in the reading levels of grade two pupils

before and after exposure to an intervention, likely involving Elkonin Boxes, which are widely used for developing phonemic awareness in early readers.

Table 2. Analysis of the Significant Difference in the Pupil's reading level before and after the Intervention

	n	Mean	t-value	p-value	Significance	Decision
Before	13	9.16	12.928**	0.001	Significant	Reject H0
After	13	25.30				

The "t-value" of 12.928 and "p-value" of 0.001 reveal a statistically significant difference in reading levels following the intervention. Since the p-value is below the commonly accepted threshold of 0.05, the analysis results in a decision to reject the null hypothesis (H_0), suggesting that the observed improvement in reading levels is not due to chance but rather to the impact of the intervention (Cohen, 1988; Field, 2013).

The considerable increase in mean reading levels from 9.16 to 25.30 indicates substantial improvement, moving the pupils' reading abilities from what may have been a "poor" category to a much higher level. This improvement underscores the efficacy of the intervention in enhancing reading skills among young learners, consistent with research showing that targeted phonemic awareness activities can greatly improve literacy outcomes (Ehri, 2014; Adams, 1990). This significant difference suggests that the intervention was successful in addressing the key elements of reading development, such as phonemic awareness, decoding skills, and perhaps even vocabulary growth (National Reading Panel, 2000; Snow, Burns, & Griffin, 1998).

The high t-value of 12.928 suggests a strong effect size, indicating that the intervention had a substantial impact on the pupils' reading levels. In educational research, high t-values often indicate a robust relationship between variables, in this case, between the intervention and improved reading skills (Cohen, 1988; Field, 2013). Such a strong effect size aligns with existing evidence on the effectiveness of phonemic awareness interventions, particularly when implemented consistently and with clear instructional guidance (Torgesen, Wagner, & Rashotte, 1994; Kilpatrick, 2015). This reinforces the value of structured phonemic awareness tools like Elkonin Boxes in fostering significant literacy improvements in young learners.

The p-value of 0.001 confirms the statistical significance of the results, meaning that there is a very low probability (0.1%) that the observed improvement occurred by random chance. This finding aligns with studies that emphasize the role of statistically significant p-values in confirming the effectiveness of educational interventions (Schuele & Boudreau, 2008; Fuchs et al., 2001). The decision to reject the null hypothesis further strengthens the claim that the intervention meaningfully impacted reading levels, making it a reliable approach for improving literacy in similar educational contexts.

The decision to reject the null hypothesis (H_0) supports the conclusion that the intervention caused a significant positive change in the reading abilities of the grade two pupils. This is an important outcome because rejecting H_0 suggests that there is enough statistical evidence to believe in the effectiveness of the intervention. In literacy research, rejecting H0 in favor of the alternative hypothesis typically implies that the intervention can be generalized or applied to broader educational settings with similar outcomes (Gough & Tunmer, 1986; Torgesen et al., 2001). Thus, these findings advocate for the continued use of such interventions in classrooms.

Furthermore, the improvement in reading levels aligns with the Simple View of Reading theory, which posits that reading comprehension is a function of both decoding and language comprehension (Gough & Tunmer, 1986). The intervention appears to have enhanced the decoding skills of pupils, a critical component of early reading development. This connection to established reading theory provides a theoretical foundation for the observed improvement, reinforcing that decoding interventions like Elkonin Boxes are effective in building foundational reading skills (Adams, 1990; Kilpatrick, 2015).

The use of Elkonin Boxes likely supported the pupils in identifying phonemes, segmenting words, and enhancing their understanding of letter-sound relationships. These skills are essential in early literacy development, as phonemic awareness is a predictor of future reading success (Ehri, 2014; National Institute for Literacy, 2009). Phonemic awareness activities have been found to be especially beneficial for struggling readers, as they offer structured practice in recognizing and manipulating sounds, which is crucial for decoding unfamiliar words (Stahl & Murray, 1994; Snow et al., 1998). The table's data reflect the impact of such phonemic awareness practices, suggesting that pupils made substantial progress in reading.

Additionally, the high effect size indicated by the t-value may imply that the intervention addressed more than just phonemic awareness; it could have positively influenced other reading sub-skills, such as vocabulary or comprehension. This is consistent with research that shows how phonemic awareness interventions often lead to broader reading gains, as improved decoding skills allow students to engage more effectively with text (Ehri, 2014; Snow et al., 1998). Therefore, the table supports the hypothesis that systematic phonemic awareness interventions can enhance multiple facets of reading in early learners.

Finally, the findings align with evidence-based literacy research, which underscores the importance of early, intensive reading interventions in supporting long-term literacy success. The shift in mean scores from 9.16 to 25.30 illustrates the potential for substantial reading gains when such interventions are implemented (Moats, 2010; Fuchs et al., 2001). This aligns with a broader body of work demonstrating that early reading interventions yield better outcomes than later ones, particularly for students at risk of reading difficulties (National Reading Panel, 2000; Torgesen et al., 2001). Thus, the table's results emphasize the importance of incorporating phonemic awareness activities like Elkonin Boxes into early literacy curricula to foster foundational reading skills effectively.

IV. Conclusion

1. The data indicate a substantial improvement in the reading levels of grade two pupils after exposure to Elkonin Boxes, with the mean reading level rising from 9.16 (Poor) to 25.30 (Outstanding), showing a mean difference of 16.14.

2. The analysis reveals a statistically significant improvement in the reading levels of grade two pupils following the intervention, leading to the rejection of the null hypothesis and affirming the intervention's effectiveness.

V. Recommendations

1. Given the substantial improvement in reading levels, it is recommended that Elkonin Boxes be incorporated as a regular instructional tool in grade two reading programs, allowing teachers to systematically enhance students' phonemic awareness and reading skills.

2. To build on the demonstrated effectiveness of this intervention, consider implementing Elkonin Boxes in earlier and later grades, especially for students struggling with reading, to support a more consistent development of foundational reading skills across grade levels.

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