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Effectiveness of Audio Posters as Innovative Instructional Materials for Enhancing the Phonemic Awareness of Kindergarten Learners: A Quasi-Experimental Study

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ABSTRACT

Phonemic awareness is a fundamental early literacy skill that enables young learners to recognize, identify, blend, segment, and discriminate individual speech sounds in spoken words. Developing this skill during the Kindergarten years is crucial as it provides a foundation for subsequent reading and literacy development. This paper determined the effectiveness of Audio Posters as innovative instructional materials for enhancing the phonemic awareness of Kindergarten learners at Babag II Elementary School, Lapu-Lapu City, Cebu. A quasi-experimental pretest-posttest design was employed involving 60 Kindergarten learners, with 30 learners assigned to the control group and 30 to the experimental group. A researcher-made Phonemic Awareness Development Assessment Tool was used to assess learners' phonemic-awareness performance before and after the intervention. Pretest results showed that all learners in both groups were at the Beginning level. After the intervention, 20 learners (66.67%) in the experimental group reached the Developing level, and 2 (6.67%) reached the Consistent level, while all learners in the control group remained at the Beginning level. The experimental group obtained a higher posttest mean of 136.70 (SD = 11.95) than the control group, which obtained 86.40 (SD = 7.06). Welch's independent-samples t-test revealed a statistically significant difference between the groups, $t(47.05) = -19.84$, $p < .001$. The Audio Poster was associated with improved phonemic awareness among learners. The study recommends using it as supplementary instructional material and continuing to provide structured phonemic-awareness activities. The study developed an Audio Poster-Based Phonemic Awareness Learning Package for Kindergarten learners as its output.

KEYWORDS

Phonemic awareness, Audio Posters, early literacy, Kindergarten learners, phoneme blending, phoneme segmentation

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1. Introduction

Early literacy development serves as a critical foundation for children's later success in reading and learning. During the early years, learners gradually develop an understanding of how spoken language is organized and how sounds are represented through written symbols. Among the essential skills developed during this stage is phonemic awareness, which refers to the ability to recognize and manipulate individual phonemes within spoken words. This skill is particularly important because it supports children's understanding of the alphabetic principle and helps them connect speech sounds with letters during beginning reading instruction (Ehri, 2022). Research has also shown that explicit instruction in phonemic awareness contributes to the development of word reading and spelling, particularly when learners are taught to identify, blend, segment, and manipulate individual sounds systematically (Ehri et al., 2001). Thus, phonemic awareness should be treated as a specific component of early literacy instruction rather than as a general listening activity.

The development of phonemic awareness requires learners to perform several distinct sound-processing tasks. Children may be asked to identify the first sound in a word, combine separate phonemes to form a word, divide a spoken word into individual sounds, identify where a sound occurs within a word, or distinguish one sound from another. These tasks vary in difficulty and therefore require carefully sequenced instruction. The National Reading Panel (2000) concluded that phonemic-awareness instruction is most effective when children receive explicit opportunities to manipulate phonemes rather than being exposed only to general language activities. In addition, Ehri et al. (2001) found that instruction focusing on a limited number of phonemic operations, particularly blending and segmentation, can support both phonemic-awareness development and subsequent reading

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acquisition. These findings support the use of instructional materials that provide repeated and structured practice across several phonemic-awareness competencies.

Technology-supported instruction may also provide useful opportunities for strengthening early literacy skills when it is integrated with clear instructional objectives. Verhoeven et al. (2020), through a meta-analysis of computer-supported early literacy interventions, found that digital and technology-assisted programs can contribute positively to literacy development among preschool and kindergarten learners. Similarly, Kartal and Terziyan (2016) reported that game-like computer activities designed specifically for phonological awareness can support young children's development of sound-related skills. Skaraki (2021) likewise found that tablet-supported activities could reinforce preschool children's phonemic awareness when learners actively engaged with structured sound tasks. These studies suggest that technology is most useful when it supports purposeful practice, learner interaction, repetition, and teacher-guided instruction rather than functioning merely as an additional classroom device.

The use of multimedia resources is particularly relevant for young learners because combining auditory and visual information can make abstract sound concepts more concrete and accessible. Multimedia learning theory emphasizes that learners can benefit when verbal and visual information are presented in a coordinated manner that supports rather than overloads cognitive processing (Mayer, 2021). In phonemic-awareness instruction, this principle may be applied by pairing visual representations with recorded or teacher-produced speech sounds so that learners can simultaneously see a cue and hear the target phoneme. This type of multimodal presentation may be especially helpful for beginning learners who need repeated exposure to sound patterns. In the Philippine context, the Department of Education has likewise emphasized foundational literacy and the use of developmentally appropriate and varied instructional strategies through the MATATAG Curriculum (Department of Education [DepEd], 2024). These directions support the development of instructional resources that combine auditory, visual, and interactive elements to address beginning literacy needs.

Building on these principles, the present study investigates the effectiveness of Audio Posters as supplementary instructional materials for improving the phonemic awareness of Kindergarten learners at Babag II Elementary School in Lapu-Lapu City, Cebu. The Audio Posters combine visual prompts with structured audio activities designed to strengthen first-sound identification, phoneme blending, phoneme segmentation, recognition of beginning, medial, and final sounds, and word-sound discrimination. Although previous research has examined computer-assisted, tablet-based, and game-like approaches to phonological and phonemic-awareness instruction, comparatively less attention has been given to low-cost physical instructional materials that integrate printed visual cues with guided audio activities. This gap provides the rationale for examining whether Audio Posters can offer a practical and developmentally appropriate supplementary intervention for kindergarten learners. Through a quasi-experimental pretest-posttest design, the study seeks to determine whether exposure to Audio Posters results in measurable improvements in learners' phonemic-awareness performance.

2. Literature Review

Phonemic awareness is a fundamental component of early literacy development because it enables children to recognize, distinguish, and manipulate individual sounds in spoken words. Ehri (2022) emphasized the importance of integrating phonemic awareness with letter-sound instruction to establish the foundational skills necessary for accurate word recognition and beginning reading. Similarly, Rice et al. (2022), in their meta-analysis of 46 experimental and quasi-experimental studies, found that phonemic-awareness instruction produced a moderate positive effect on learners' phonemic-awareness performance, demonstrating the importance of explicit and systematic instruction during the early years. Blevins (2024) further highlighted the effectiveness of targeted instruction in developing phoneme identification, blending, and segmentation skills among Kindergarten and early-grade learners. In addition, Gencten & Aydemir (2023) examined technology-supported approaches to phonological-awareness development, providing a relevant perspective on using interactive instructional resources for early literacy learning. Veloso (2026) also identified substantial foundational learning challenges among children worldwide, emphasizing the need for early interventions that strengthen essential reading-related competencies. These findings suggest that assessing the phonemic-awareness levels of kindergarten learners is necessary to identify their strengths and difficulties in first-sound identification, phoneme blending, phoneme segmentation, sound-location identification, and word-sound discrimination.

Furthermore, innovative instructional strategies that incorporate auditory, visual, and interactive learning experiences may contribute to the development of phonemic-awareness skills among young learners. Fernandez-Otoya et al. (2022) reviewed technology-assisted phonological-awareness and phonics instruction and found that digital approaches may support early literacy learning when integrated with appropriate teacher guidance. Codill & Codilla (2026) reported that Kindergarten learners exposed to downloaded-video instruction demonstrated better phonemic-awareness outcomes than learners in a comparison group. Likewise, Dobles & Marquez (2025) observed improvements in phonemic-awareness performance following play-based instructional activities, particularly in sound fluency and blending. At the policy level, Antoninis et al. (2023) emphasized that educational technology is most beneficial when its use is guided by clear learning objectives and appropriate instructional practices. The Department of Education (2024), through the phased implementation of the MATATAG Curriculum, likewise prioritized foundational learning competencies during the early years of basic education. Collectively, these findings support the importance of determining Kindergarten learners' existing phonemic-awareness levels and developing appropriate interventions to address identified learning difficulties. In the present study, the assessment results will serve as the basis for evaluating the

effectiveness of Audio Posters as supplementary instructional materials designed to strengthen specific phonemic-awareness competencies.

3. Methodology

This study employed a quasi-experimental research design, specifically the non-equivalent control group pretest–posttest design, to determine the effectiveness of Audio Posters in enhancing the phonemic awareness of Kindergarten learners at Babag II Elementary School, Lapu-Lapu City, Cebu, during School Year 2026–2027. Two intact Kindergarten classes served as the experimental and control groups without random assignment of individual learners. The experimental group received regular instruction supplemented with Audio Posters, while the control group underwent conventional phonemic-awareness instruction using printed materials, flashcards, pictures, and teacher-guided activities. Both groups covered the same learning competencies within the same intervention period. Data were gathered using a researcher-made Phonemic Awareness Development Assessment Tool administered before and after the intervention. The assessment measured first-sound identification, phoneme blending, phoneme segmentation, identification of beginning, middle, and final sounds, and word-sound discrimination. Each correct response received one point, while an incorrect response received zero. Learners' performance was classified as Consistent (91–100%), Developing (75–90%), or Beginning (74% and below). The instrument underwent validation and reliability procedures to support accurate and consistent assessment.

Before implementation, the researcher secured the necessary institutional approvals, school permissions, and written parental consent. Pretests were administered under comparable conditions, followed by the intervention and subsequent posttests. Learners' responses were recorded, scored, and organized for statistical analysis. Frequency and percentage described performance classifications, while mean and standard deviation summarized assessment scores. Welch's independent-samples t-test was specified to compare posttest performance between groups at the 0.05 significance level. Pretest results were also examined to establish baseline comparability. The findings provided the basis for evaluating the instructional effectiveness of Audio Posters and developing an Audio Poster-Based Phonemic Awareness Learning Package appropriate for kindergarten learners.

4. Results

Table 1. Pretest Level of Phonemic Awareness of Kindergarten Learners

Level of Phonemic Awareness	Percentage Range	Control Group f	Percentage	Experimental Group f	Percentage
Consistent (CO)	91–100%	0	0.00%	0	0.00%
Developing (DV)	75–90%	0	0.00%	0	0.00%
Beginning (BG)	74% and below	30	100.00%	30	100.00%
Total		30	100.00%	30	100.00%

Table 1 shows that all 30 Kindergarten learners (100.00%) in both the control and experimental groups were classified under the Beginning (BG) level during the pretest. No learners reached the Developing (DV) or Consistent (CO) levels, indicating that both groups demonstrated limited phonemic-awareness skills before the intervention. These findings suggest that learners require structured, engaging, and targeted instructional support. The results further emphasize the importance of implementing Audio Posters to strengthen foundational phonemic-awareness competencies and improve learners' early literacy development.

Table 2. Posttest Level of Phonemic Awareness of Kindergarten Learners

Level of Phonemic Awareness	Percentage Range	Control Group f	Percentage	Experimental Group f	Percentage
Consistent (CO)	91–100%	0	0.00%	2	6.67%
Developing (DV)	75–90%	0	0.00%	20	66.67%
Beginning (BG)	74% and below	30	100.00%	8	26.67%
Total		30	100.00%	30	100.00%

Table 2 reveals that all 30 learners (100.00%) in the control group remained at the Beginning level during the posttest. In contrast, the experimental group showed improvement, with 20 learners (66.67%) reaching the Developing level, two (6.67%) achieving the Consistent level, and eight (26.67%) remaining at the Beginning level. These findings suggest that Audio Posters may have contributed to improved phonemic awareness. The results imply that integrating audiovisual instructional materials can support foundational literacy development and enhance Kindergarten learners' sound-recognition skills.

Table 3. Difference Between the Control and Experimental Groups in Their Posttest Levels of Phonemic Awareness

Group	N	Mean	SD	Mean Difference	*t*-value	df	*p*-value	Decision on H_0	Interpretation
Control Group	30	86.40	7.06						
Experimental Group	30	136.70	11.95	50.30	-19.84	47.05	< .001	Reject H_0	Significant

Table 3 reveals a statistically significant difference in the posttest phonemic-awareness performance of the control and experimental groups. The experimental group obtained a higher mean score (136.70) than the control group (86.40), with a mean difference of 50.30. The computed t-value of -19.84 and p-value below 0.001 indicate significance; thus, the null hypothesis is rejected. These findings suggest that Audio Posters effectively enhanced learners' phonemic awareness, emphasizing their potential as innovative instructional materials for strengthening foundational literacy skills among kindergarten learners.

5. Discussion

The findings revealed that all Kindergarten learners in both the control and experimental groups were classified at the Beginning level during the pretest, indicating limited phonemic-awareness skills prior to the intervention. This suggests that the learners initially experienced difficulty in recognizing, identifying, blending, segmenting, and discriminating sounds in spoken words. Phonemic awareness is an important foundation for beginning reading because it enables learners to understand how spoken sounds correspond to written letters and words (Ehri, 2022). Likewise, the National Reading Panel (2000) emphasized that systematic phonemic-awareness instruction contributes to the development of reading and spelling skills among young learners. Following the intervention, the experimental group showed considerable improvement, with 66.67% reaching the Developing level and 6.67% attaining the Consistent level, while all learners in the control group remained at the Beginning level. This improvement suggests that Audio Posters may have provided useful visual and auditory support that helped learners engage more actively in sound-identification and sound-manipulation activities. This interpretation is consistent with Ehri et al. (2001), who found that explicit instruction in manipulating phonemes can significantly improve children's phonemic awareness and contribute to early reading development.

Furthermore, the posttest results showed a statistically significant difference between the experimental and control groups. The experimental group obtained a mean score of 136.70 compared with 86.40 for the control group, resulting in a mean difference of 50.30. With a reported t-value of −19.84 and a p-value below .001, the findings indicate that learners exposed to Audio Posters demonstrated stronger phonemic-awareness performance than those who received conventional instruction alone. The improvement is educationally important because the ability to decode printed words depends partly on learners' capacity to connect written symbols with their corresponding speech sounds, a fundamental component of beginning reading (Gough & Tunmer, 1986). Moreover, developmentally appropriate instruction should provide young children with engaging, purposeful, and responsive learning experiences suited to their developmental needs (National Association for the Education of Young Children [NAEYC], 2020). Overall, the findings suggest that Audio Posters may serve as a useful supplementary instructional resource for developing first-sound identification, blending, segmentation, sound-location identification, and word-sound discrimination among Kindergarten learners.

6. Conclusion

Based on the findings, the Audio Poster was effective in enhancing the phonemic awareness of the Kindergarten learners in the experimental group. Although both the control and experimental groups began at the Beginning level, the experimental group improved more after the intervention and achieved significantly higher posttest scores than the control group. These findings indicate that the Audio Poster can serve as a useful supplementary instructional material for developing phonemic awareness among Kindergarten learners. The results further provided a basis for developing the proposed Audio Poster-Based Phonemic Awareness Learning Package for Kindergarten learners.

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