

The Utilization of the Interactive Games in Improving the Sound Recognition of the Kindergarten Learners in Nabua East District, Division of Camarines Sur

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ARTICLE INFORMATION	ABSTRACT
Article history: Published: October 2026 Keywords: Interactive Games Sound Recognition Kindergarten Phonological Awareness Teacher Ratings Nabua East	The study examined interactive-game utilization and perceived sound-recognition outcomes among kindergarten learners in Nabua East District, Division of Camarines Sur, during School Year 2025–2026. The descriptive-evaluative-correlational study involved 44 kindergarten teachers and a researcher-made questionnaire. Weighted means, frequencies, percentages, ranks, and Kendall's coefficient of concordance with chi-square tests were used at the 0.05 level. Letter Hunt, Rhyme Time, Alphabet Ball, Sound Scavengers Hunt, and Starfall ABC's were classified as Very Much Utilized. Indicators for instrumental, animal, environmental, and letter sounds and rhyming were classified as Very Much Evident. Significant rank-order agreement in utilization was reported except for Rhyme Time and Starfall ABC's. Agreement in perceived sound-recognition outcomes was reported except for rhyming. The findings informed recommendations for repeated sound-focused activities, teacher reflection, instructional support, and developmentally appropriate materials. Near-maximum ratings describe favorable teacher judgments; they do not establish universal learner mastery or improvement attributable to the games. Direct assessment and clearer documentation of respondent grouping are needed to evaluate the instructional implications.

1. Introduction

Sound recognition in kindergarten involves several distinguishable forms of listening. Recognizing an animal or instrument differs from identifying a phoneme, connecting a sound to a written letter, or recognizing a rhyme. Interactive games can provide structured opportunities to listen, compare, classify, and respond. Their instructional value depends on which skill the activity targets and how teachers determine whether learners can transfer a response beyond a familiar game.

Foorman et al. (2016) emphasize awareness of speech sounds and their links to letters within foundational reading instruction. This provides a basis for distinguishing general auditory identification from phonological and alphabetic learning. It also suggests that engaging activities should be connected to explicit learning goals and suitable assessment. The study's inclusion of instrumental, animal, and environmental sounds broadens listening assessment, but these domains should not be treated as direct equivalents of reading readiness or phonemic mastery.

The study examined five interactive games: Letter Hunt, Rhyme Time, Alphabet Ball, Sound Scavengers Hunt, and Starfall ABC's. The games encompass physical, verbal, and digital activity formats. Teacher use may vary in planning, facilitation, adaptation, and assessment even when the overall activity is familiar. Examining these components separately can identify where classroom routines appear established and where additional reflection or support may be useful.

In Nabua East District, the study investigated the extent of game utilization, the perceived influence of games on sound recognition, and agreement in rankings across respondent groups. Policy recommendations were formulated from the findings. Teacher professional learning provides a practical route for discussing implementation and adapting activities to learners' needs; the Philippine Learning Action Cell policy supports this collaborative approach (Department of Education, 2016). The study contributes local teacher judgments rather than an experimental comparison of game-based and alternative instruction.

2. Methods

2.1 Research design and scope

The study used a descriptive-evaluative-correlational research design in schools in Nabua East District, Division of Camarines Sur. The stated study period was School Year 2025–2026.

The study assessed reported practices and perceived outcomes through questionnaire responses. Allocation to an intervention, a comparison condition, and repeated outcome measurement were not reported. The findings are interpreted as descriptive evaluations and rank-order analyses; the design label alone does not establish a tested relationship or a causal effect.

2.2 Participants and setting

The study involved 44 kindergarten teachers in schools in Nabua East District, Division of Camarines Sur. The respondents were the raters of the questionnaire indicators; the number of learners represented by their judgments was not reported.

The sampling frame, selection procedure, eligibility criteria, number invited, and response rate were not specified. Consequently, the representativeness of the respondents and the extent to which their judgments describe all schools in the setting cannot be established. No unreported school-level or respondent-group sample sizes were inferred.

2.3 Instrument and measures

The main data-gathering instrument was a researcher-made questionnaire. It assessed the domains presented in the Results, using indicator-level weighted means and verbal classifications. The response anchors, full scoring rules, interpretation cutoffs, validation procedures, pilot testing and reliability estimates were not reported. Category labels are therefore presented as the study's classifications rather than assigned from an assumed rating scale.

The unit represented in each descriptive table is the stated questionnaire indicator. Reported item means are retained without calculating new domain composites. Duplicate statements remain separate reported entries, and an unreported item value is identified as such where applicable. The ratings do not constitute independently scored learner assessments or administrative measures of school performance.

2.4 Data collection and analysis

Questionnaire administration was the stated data-collection approach. The administration mode, collection dates, instructions to respondents, procedures for incomplete responses, and evidence used by raters were not specified. Ethics review, institutional permission, consent and confidentiality procedures were not reported; no approval or consent process is asserted.

The reported analyses were weighted means, frequency counts, percentages, ranks, and Kendall's coefficient of concordance (W) with corresponding chi-square tests. The significance level was 0.05. The tables retain the reported W values, chi-square values and probability thresholds; exact probabilities were not inferred from inequalities. The group-level ranks, degrees of freedom, tie adjustments and statistical software were not specified.

Kendall's W describes concordance in rankings. The reported significance decisions address agreement in indicator orderings; they do not test causal effects, equality of mean ratings, or the relationship between strategy use and outcomes. No direct strategy–outcome correlation coefficient was reported. Nonsignificant concordance is not interpreted as evidence that an activity was unused or that a learner skill was low.

3. Results

The tables present the reported findings by domain, with interpretation immediately after each presentation. Item statements and values remain in their reported order. Uniform verbal classifications appear in table notes; mixed classifications are displayed by item. No missing numerical results or composite scores have been imputed.

Table 1. Game utilization in Letter Hunt

Indicator	Weighted mean
The teacher designs Letter Hunt activities that align with literacy and language learning objectives	4.76
The teacher monitors and assesses learners' progress in letter recognition and word formation through Letter Hunt outcomes	4.76
The teacher selects appropriate letters and words in Letter Hunt to match learners' developmental levels	4.75
The teacher uses Letter Hunt to actively engage learners in recognizing letters and sounds	4.74
The teacher encourages critical thinking by challenging learners to form meaningful words from hunted letters	4.73
The teacher integrates Letter Hunt into lesson flow to reinforce phonics and vocabulary skills	4.67
The teacher manages classroom dynamics effectively to maintain order and maximize learning during Letter Hunt	4.66
The teacher facilitates collaborative participation by encouraging learners to work in pairs or groups during Letter Hunt	4.66
The teacher adapts Letter Hunt rules or mechanics to accommodate diverse learning needs and contexts	4.65
the teacher reflects on the effectiveness of Letter Hunt activities and refines strategies for continuous improvement	4.64

Note. All reported indicators were classified as "Very Much Utilized."

Table 1 shows reported item means from 4.64 to 4.76. Alignment with literacy goals and progress monitoring were prominent in Letter Hunt. Reflection and adaptation occupied the lower end of an otherwise favorable profile. This suggests a useful distinction between conducting an engaging activity and systematically refining it in response to learners. The ratings do not show how well children transferred letter recognition to unfamiliar tasks.

Table 2. Game utilization in Rhyme Time

Indicator	Weighted mean
The teacher designs Rhyme Time activities that align with literacy and phonological awareness objectives	4.98
The teacher integrates Rhyme Time into lesson flow to reinforce vocabulary, spelling, and pronunciation skills	4.98
The teacher facilitates collaborative participation by encouraging learners to work in pairs or groups during Rhyme Time	4.98

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Indicator	Weighted mean
The teacher monitors and assesses learners' progress in rhyming ability and word recognition through Rhyme Time outcomes	4.98
The teacher manages classroom dynamics effectively to maintain order and maximize learning during Rhyme Time	4.98
The teacher reflects on the effectiveness of Rhyme Time activities and refines strategies for continuous improvement	4.98
The teacher adapts Rhyme Time rules or mechanics to accommodate diverse learning needs and contexts	4.97
The teacher encourages creativity by challenging learners to generate new rhymes and playful word combinations	4.97
The teacher selects rhyming words appropriate to learners' developmental levels and language proficiency	4.97
the teacher uses Rhyme Time to actively engage learners in recognizing sound patterns and word families	4.97

Note. All reported indicators were classified as "Very Much Utilized."

Table 2 shows reported item means from 4.97 to 4.98. Rhyme Time received tightly clustered ratings across planning, collaboration and assessment. The small numerical separation offers little basis for prioritizing individual practices. Its later nonsignificant concordance shows that near-uniform favorable means should not be treated as evidence of a shared ordering of the activity components.

Table 3. Game utilization in Alphabet Ball

Indicator	Weighted mean
The teacher selects letters and words in Alphabet Ball that match learners' developmental levels and language proficiency	5.00
The teacher uses Alphabet Ball to actively engage learners in recognizing letters, sounds, and word formation	5.00
The teacher adapts Alphabet Ball rules or mechanics to accommodate diverse learning needs and classroom contexts	4.99
The teacher encourages creativity by challenging learners to form meaningful words or sentences from chosen letters	4.98
The teacher integrates Alphabet Ball into lesson flow to reinforce phonics, spelling, and vocabulary skills	4.97
The teacher monitors and assesses learners' progress in letter recognition and word construction through Alphabet Ball outcomes	4.97
The teacher manages classroom dynamics effectively to maintain order and maximize learning during Alphabet Ball	4.97
The teacher facilitates collaborative participation by encouraging learners to interact and respond during Alphabet Ball	4.96
the teacher reflects on the effectiveness of Alphabet Ball activities and refines strategies for continuous improvement	4.96

Note. All reported indicators were classified as "Very Much Utilized."

Table 3 shows reported item means from 4.96 to 5.00. Letter selection and active participation received the highest reported values. These features emphasize matching the game to learners and involving them in responses. Collaborative participation and reflection remained favorably rated but were relatively lower. The pattern suggests that engagement and instructional review should both be considered when examining the activity.

Table 4. Game utilization in Sound Scavengers Hunt

Indicator	Weighted mean
The teacher adapts Sound Scavenger Hunt rules or mechanics to accommodate diverse learning needs and classroom contexts	4.98
The teacher uses Sound Scavenger Hunt to actively engage learners in identifying, matching, and categorizing sounds	4.98
The teacher integrates Sound Scavenger Hunt into lesson flow to reinforce phonics, vocabulary, and comprehension skills	4.98

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Indicator	Weighted mean
The teacher manages classroom dynamics effectively to maintain order and maximize learning during Sound Scavenger Hunt	4.98
The teacher selects sounds (letters, words, environmental noises, or phonemes) appropriate to learners' developmental levels and language proficiency	4.97
The teacher monitors and assesses learners' progress in sound recognition and auditory processing through Sound Scavenger Hunt outcomes	4.97
The teacher encourages critical thinking by challenging learners to connect sounds with words, meanings, or real-world contexts	4.97
The teacher reflects on the effectiveness of Sound Scavenger Hunt activities and refines strategies for continuous improvement	4.97
The teacher designs Sound Scavenger Hunt activities that align with listening, phonological awareness, and auditory discrimination objectives	4.96
the teacher facilitates collaborative participation by encouraging learners to work in pairs or groups during Sound Scavenger Hunt	4.96

Note. All reported indicators were classified as "Very Much Utilized."

Table 4 shows reported item means from 4.96 to 4.98. Adaptation, active identification and lesson integration were prominent in Sound Scavengers Hunt. These practices connect auditory experience to classroom objectives. The ratings do not establish whether identification of everyday sounds transfers to speech-sound discrimination; the intended sound category and response demand should be explicit in classroom assessment.

Table 5. Game utilization in Starfall ABC'S

Indicator	Weighted mean
The teacher monitors and assesses learners' progress in alphabet mastery and phonemic awareness using Starfall ABC's outcomes	4.99
The teacher selects Starfall ABC's activities appropriate to learners' developmental levels and language proficiency	4.98
The teacher facilitates learner participation by guiding them through interactive tasks within Starfall ABC's	4.98
The teacher adapts Starfall ABC's activities to accommodate diverse learning needs and classroom contexts	4.98
The teacher integrates Starfall ABC's into lesson plans to strengthen early literacy and phonics instruction	4.97
The teacher encourages creativity by prompting learners to explore words, rhymes, and sentences through Starfall ABC's	4.97
The teacher uses Starfall ABC's to actively engage learners in letter recognition, sound association, and word building	4.97
The teacher integrates Starfall ABC's into lesson plans to strengthen early literacy and phonics instruction	4.97
The teacher aligns Starfall ABC's activities with curriculum standards and instructional goals	4.96
the teacher reflects on the effectiveness of Starfall ABC's activities and refines strategies for continuous improvement	4.96

Note. All reported indicators were classified as "Very Much Utilized."

Table 5 shows reported item means from 4.96 to 4.99. Monitoring and developmentally appropriate activity selection were prominent in Starfall ABC's. The repeated lesson-plan statement is retained, limiting interpretation of the number of unique practices represented. Favorable utilization ratings do not establish the independent effectiveness of the digital resource or document access, duration, or teacher guidance.

Table 6. Rank-order agreement for interactive-game utilization

Domain	Kendall's W	Chi-square	Reported probability
Letter Hunt	0.92	24.84	p<0.005
Rhyme Time	0.32	8.64	p>0.05
Alphabet Ball	0.77	20.79	p<0.025

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Domain	Kendall's W	Chi-square	Reported probability
Sound Scavengers Hunt	0.70	18.90	p<0.05
Starfall ABC's	0.67	18.09	p>0.05

Note. Significance level = 0.05. Numerical strings and probability notation are retained as reported; no p-values were recalculated.

Table 6 addresses the research question on rank-order agreement. Agreement was reported as significant for Letter Hunt, Alphabet Ball and Sound Scavengers Hunt, but not for Rhyme Time or Starfall ABC's. This differs from the uniformly favorable utilization classifications. The results show that high mean ratings do not ensure a statistically supported shared ranking. They should not be used to label the nonsignificant games ineffective or to infer differences in learner gains.

Table 7. Perceived sound recognition in Instrumental Sound

Indicator	Weighted mean
The learner identifies distinct instrumental sounds accurately during interactive game activities	5.00
The learner differentiates between similar instrumental sounds (e.g., piano vs. keyboard, drum vs. tambourine) when prompted in games	5.00
The learner responds promptly to auditory cues involving instrumental sounds within interactive tasks	5.00
The learner associates instrumental sounds with corresponding visual or contextual representations in the game	5.00
The learner reflects on and articulates their recognition of instrumental sounds as part of post-game discussions or assessments	5.00
The learner shows increased confidence in distinguishing instrumental sounds in both game and real-world contexts	4.99
The learner demonstrates improved memory recall of instrumental sounds after repeated exposure through interactive play	4.98
The learner collaborates with peers in identifying and matching instrumental sounds during group-based games	4.98
The learner categorizes instrumental sounds into families (e.g., strings, percussion, wind) during game-based challenges	4.97
the learner applies recognition of instrumental sounds to form patterns, sequences, or rhythms in interactive activities	4.97

Note. All reported indicators were classified as "Very Much Evident."

Table 7 shows reported item means from 4.97 to 5.00. Instrumental-sound ratings cover recognition, discrimination, contextual association and explanation. These are different response demands, even though several received the highest reported value. The profile indicates very favorable teacher judgments, while leaving unresolved whether learners could demonstrate the same abilities with unfamiliar instruments or without visual cues.

Table 8. Perceived sound recognition in Animal Sounds

Indicator	Weighted mean
The learner collaborates with peers in identifying and matching animal sounds during group-based games	5.00
The learner shows increased confidence in distinguishing animal sounds in both game and real-world contexts	5.00
The learner identifies distinct animal sounds accurately during interactive game activities	5.00
The learner differentiates between similar animal sounds (e.g., cat vs. tiger, dog vs. wolf) when prompted in games	5.00
The learner demonstrates improved memory recall of animal sounds after repeated exposure through interactive play	5.00
The learner categorizes animal sounds into groups (e.g., domestic vs. wild, farm vs. jungle) during game-based challenges	5.00
The learner collaborates with peers in identifying and matching animal sounds during group-based games	5.00
The learner shows increased confidence in distinguishing animal sounds in both game and real-world contexts	5.00

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Indicator	Weighted mean
The learner responds promptly to auditory cues involving animal sounds within interactive tasks	4.99
The learner associates animal sounds with corresponding visual images or contextual representations in the game	4.99
The learner applies recognition of animal sounds to form patterns, sequences, or storytelling in interactive activities	4.99
the learner reflects on and articulates their recognition of animal sounds as part of post-game discussions or assessments	4.98

Note. All reported indicators were classified as “Very Much Evident.”

Table 8 shows reported item means from 4.98 to 5.00. Animal-sound ratings were close to the highest reported values. Collaboration and confidence appear twice and are retained, so the profile includes repeated content. The lower relative position of explanation suggests a useful distinction between recognizing a familiar sound and articulating how it was identified.

Table 9. Perceived sound recognition in Environmental Sound

Indicator	Weighted mean
The learner differentiates between similar environmental sounds (e.g., wind vs. fan, river vs. rain) when prompted in games	5.00
The learner responds promptly to auditory cues involving environmental sounds within interactive tasks	5.00
The learner categorizes environmental sounds into groups (e.g., natural vs. man-made, indoor vs. outdoor) during game-based challenges	5.00
The learner identifies distinct environmental sounds (e.g., rain, thunder, traffic, birds) accurately during interactive game activities	5.00
The learner associates environmental sounds with corresponding visual images or contextual representations in the game	4.99
The learner demonstrates improved memory recall of environmental sounds after repeated exposure through interactive play	4.99
The learner applies recognition of environmental sounds to form patterns, sequences, or problem-solving tasks in interactive activities	4.99
The learner reflects on and articulates their recognition of environmental sounds as part of post-game discussions or assessments	4.99
The learner collaborates with peers in identifying and matching environmental sounds during group-based games	4.98
the learner shows increased confidence in distinguishing environmental sounds in both game and real-world contexts	4.98

Note. All reported indicators were classified as “Very Much Evident.”

Table 9 shows reported item means from 4.98 to 5.00. Discrimination, prompt responses and categorization were prominent within environmental sounds. These judgments suggest that teachers perceived learners as actively processing everyday auditory information. They do not establish independent phonological competence. Future classroom checks could distinguish familiar sound recognition from responses to new examples and settings.

Table 10. Perceived sound recognition in Letter Sound

Indicator	Weighted mean
The learner associates letter sounds with corresponding letters or visual representations in the game	5.00
The learner applies recognition of letter sounds to form syllables, words, or rhymes in interactive activities	5.00
The learner shows increased confidence in distinguishing letter sounds in both game and real-world contexts	5.00
The learner demonstrates improved memory recall of letter sounds after repeated exposure through interactive play	4.99
The learner categorizes letter sounds into groups (e.g., vowels vs. consonants, voiced vs. voiceless) during game-based challenges	4.99

Indicator	Weighted mean
The learner collaborates with peers in identifying and matching letter sounds during group-based games	4.99
The learner reflects on and articulates their recognition of letter sounds as part of post-game discussions or assessments	4.98
The learner responds promptly to auditory cues involving letter sounds within interactive tasks	4.98
The learner identifies distinct letter sounds accurately during interactive game activities	4.97
the learner differentiates between similar letter sounds (e.g., /b/ vs. /p/, /d/ vs. /t/) when prompted in games	4.96

Note. All reported indicators were classified as “Very Much Evident.”

Table 10 shows reported item means from 4.96 to 5.00. Sound–letter association and application were highly rated, while discrimination of similar sounds occupied the lower end. This distinction is instructionally meaningful because recognizing a familiar letter association differs from distinguishing confusable phonemes. The table identifies a relative area for focused checking without establishing a measured deficit.

Table 11. Perceived sound recognition in Rhyming

Indicator	Weighted mean
The learner associates rhyming sounds with corresponding word families or phonetic patterns in the game	5.00
The learner categorizes rhyming words into groups (e.g., -at, -og, -in) during game-based challenges	5.00
The learner applies recognition of rhyming sounds to create new words, phrases, or short verses in interactive activities	5.00
The learner collaborates with peers in identifying and matching rhyming words during group-based games	5.00
The learner shows increased confidence in distinguishing rhyming sounds in both game and real-world contexts	5.00
The learner reflects on and articulates their recognition of rhyming sounds as part of post-game discussions or assessments	5.00
The learner demonstrates improved memory recall of rhyming words after repeated exposure through interactive play	4.99
the learner responds promptly to auditory cues involving rhyming sounds within interactive tasks	4.99

Note. All reported indicators were classified as “Very Much Evident.”

Table 11 shows reported item means from 4.99 to 5.00. The rhyming profile emphasizes word families, creation and participation. The highest classifications should not be equated with mastery of every rhyme task, especially because only the reported indicators are available. The later nonsignificant concordance concerns the ordering of these behaviors, rather than proof of low rhyming ability.

Table 12. Rank-order agreement for the perceived outcome domains

Domain	Kendall's W	Chi-square	Reported probability
Instrumental Sound	0.86	23.22	p<0.01
Animal Sound	0.76	20.52 9	p<0.025
Environmental Sound	0.78	21.06	p<0.025
Letter Sound	0.86	23.22	p<0.01
Rhyming	0.67	18.09	p>0.05

Note. Significance level = 0.05. Numerical strings and probability notation are retained as reported; no p-values were recalculated.

Table 12 addresses the research question on rank-order agreement. Significant agreement was reported for instrumental, animal, environmental and letter sounds; rhyming was the exception. These tests concern indicator orderings rather than accuracy scores or the causal influence of games. The Animal Sound chi-square string is retained exactly as reported, with its unresolved numerical ambiguity. Clarification is needed before its calculation can be independently checked.

4. Discussion

The utilization and outcome findings answer different questions. The former concern what teachers reported doing; the latter concern the learner behaviors they judged evident. Favorable ratings in both sections do not establish a statistical association between the two sets of responses, because no utilization–outcome correlation is reported. The designation descriptive-evaluative-correlational should therefore not be read as evidence that a relationship was directly estimated.

The distinction among listening constructs is especially important. Recognition of environmental or animal sounds can provide meaningful listening experiences, but phonological instruction requires attention to units of speech and their relation to print (Foorman et al., 2016). Classroom activities should therefore make their intended target explicit. A learner's success in matching a familiar animal sound does not, on its own, demonstrate discrimination of similar letter sounds or the ability to produce a rhyme.

The many ratings close to the highest reported values leave limited descriptive separation among indicators. They may reflect strongly favorable perceptions, but they also make it difficult to identify learners who need additional support. Classroom checks should distinguish recognition, explanation, application, and independent transfer. The nonsignificant rhyming concordance is a reason to examine differences in indicator priorities, not proof that rhyming performance is low.

The policy recommendations emphasize repeated listening, sound comparisons, songs, rhymes, storytelling, reflective discussion, and teacher development. These are proposals arising from the study rather than evaluated interventions. Learning Action Cell sessions could support review of activity goals, learner responses, and adaptations (Department of Education, 2016). Such review would be more informative if supported by examples of learner work and observations rather than reliance on overall impressions alone.

5. Implications for practice and further research

The study supports using the indicator-level pattern as a starting point for local review. Decisions should connect a stated need with a feasible response and a criterion for judging progress. Relative positions within a favorable profile are not equivalent to measured deficits, and a significant ranking result is not evidence that a proposed policy will work. Recommendations should be implemented with attention to context and evaluated rather than assumed effective.

Further research should use clearly defined outcomes and document how they are measured. Direct performance tasks, observations, or independently recorded school indicators could complement questionnaire ratings. A longitudinal or comparative evaluation could examine change over time, provided the design addresses baseline differences and alternative explanations. These are proposed directions for future work, not procedures undertaken in the study.

6. Conclusion

The study characterized all five games as Very Much Utilized and perceived sound-recognition indicators as Very Much Evident. Significant agreement in utilization rankings was reported except for Rhyme Time and Starfall ABC's; agreement in outcome rankings was reported except for rhyming. The recommendations support sound-focused practice, teacher reflection, and appropriate instructional support. The conclusions are limited to teacher ratings and reported concordance; a causal improvement in learners' sound recognition was not demonstrated.

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