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Development, Validation, and Summative Evaluation of Play-Based Learning Materials

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Abstract

This study developed, validated, and summatively evaluated play-based learning materials designed to enhance the language performance of kindergarten learners in Malayugan Integrated School, Flora, Apayao. The study employed a developmental–quasi-experimental research design utilizing a one-group pretest–posttest approach. The respondents consisted of 23 kindergarten learners selected through total enumeration and five expert validators from the School Quality Assurance Team. The developed materials included eight contextualized and curriculum-aligned play-based activities integrating sound play, movement play, sensory play, digital play, and collaborative learning activities targeting listening comprehension, vocabulary development, oral language expression, and phonological awareness. Expert validation was conducted using a rubric adapted from DepEd Division Memorandum No. 167, s. 2021, while learners' language performance was assessed using a Comprehensive Rapid Literacy Assessment (CRLA)-based pretest and posttest. Findings revealed that the developed materials obtained an overall mean rating of 4.77, interpreted as Very Highly Valid. The learners' language performance improved from a pretest mean of 8.00 (Beginning) to a posttest mean of 13.52 (Proficient), with a mean gain of 5.52. Furthermore, the computed t-value of 21.4 exceeded the critical t-value of 2.074 at the 0.05 level of significance, indicating a significant mean gain in learners' language performance after the intervention. The findings established that the developed play-based learning materials effectively enhanced the foundational language competencies of kindergarten learners and may serve as appropriate instructional resources for early childhood language instruction.

Keywords: *play-based learning, kindergarten, language performance, emergent literacy, instructional materials, phonological awareness, early childhood education*



1. Introduction

Language development is fundamental to the cognitive, social, and academic growth of young children. In early childhood education, language serves not only as a means of communication but also as the primary channel through which learners understand their environment, interact with others, and acquire foundational academic skills. Kindergarten, as the formal entry point into the education system, represents a critical period during which oral language, phonological awareness, vocabulary, and listening comprehension rapidly develop. These early language competencies have been consistently identified as strong predictors of later reading proficiency and overall academic success (National Research Council, 2000; Vygotsky, 1978; Whitehurst & Lonigan, 2007).

Despite the recognized importance of early language development, many children begin formal schooling without adequate language foundations. Research conducted in developed countries such as the United States and the United Kingdom demonstrates that disparities in early language exposure, often associated with socioeconomic conditions, contribute to persistent achievement gaps (Hart & Risley, 1995; Law et al., 2017). Similar trends have been observed across Asia. National studies in countries such as Singapore, Malaysia, and Thailand report that learners from linguistically diverse and economically disadvantaged backgrounds frequently experience difficulties in early language acquisition, which negatively affects subsequent literacy development (Ministry of Education Malaysia, 2017; Tan & Deneen, 2020).

In the Philippine context, national assessment results from the Early Language Literacy and Numeracy (ELLN) Program and the Philippine Informal Reading Inventory (Phil-IRI) consistently indicate that a considerable number of early grade learners fail to meet grade-level expectations in oral language, listening comprehension, and emergent literacy skills (Department of Education, 2019; Llegó, 2020). These findings point to continuing gaps in early language instruction and emphasize the need for instructional approaches and learning materials that are responsive to learners' developmental needs and local contexts.

Play-based learning has been widely recognized as an effective approach to addressing early language development challenges. Rooted in developmental psychology and constructivist theory, play-based learning emphasizes child-centered, meaningful, and exploratory engagement with learning content. It provides opportunities for young learners to develop language skills through interaction, imagination, and symbolic representation. Theoretical perspectives advanced by Piaget (1952) and Vygotsky (1978) underscore the role of play in enabling children to operate within their zone of proximal development, facilitating the acquisition of complex linguistic structures through guided interaction and purposeful activity.

Recent international research further supports the effectiveness of play-based approaches in enhancing early language development. In countries such as Finland and New Zealand, play-oriented curricula have been linked to higher learner engagement and improved oral language and emergent literacy outcomes (Whitebread et al., 2019). A meta-analysis by Zosh et al. (2022) reported that structured play interventions significantly improve expressive and receptive language skills, particularly in multilingual and diverse learning environments. In Southeast Asia, including Indonesia and Vietnam, hybrid instructional models that integrate structured play with academic instruction have demonstrated positive effects on vocabulary acquisition, narrative skills, and

learner motivation (UNICEF East Asia and Pacific Regional Office, 2021). Philippine studies similarly indicate that culturally responsive play-based materials contribute to improved participation and expressive language development among kindergarten learners (Saracho & Spodek, 2009).

Despite strong empirical support for play-based instruction, its systematic implementation in Philippine public schools remains limited. One major challenge is the scarcity of validated, curriculum-aligned, and culturally contextualized play-based learning materials. Reports from the Department of Education reveal that many instructional resources used in early literacy instruction are either imported or locally produced without undergoing rigorous processes of validation or effectiveness evaluation (Department of Education, 2021). Consequently, teachers, particularly those assigned to rural and resource-constrained schools, often rely on improvised or untested materials, which may affect instructional consistency and learning outcomes.

These challenges are particularly evident in Malayugan Integrated School, Flora, Apayao, a rural public school serving kindergarten learners from geographically isolated and linguistically diverse communities. Teachers in the school observe wide variations in learners' language readiness upon entry to kindergarten, with many pupils demonstrating limited oral vocabulary, weak listening comprehension, and minimal exposure to structured literacy activities at home. Instructional limitations commonly associated with rural early childhood settings, such as limited access to developmentally appropriate learning resources and the absence of validated instructional materials, further constrain effective language instruction. Although teachers recognize the pedagogical value of play-based learning, the lack of structured and validated materials aligned with the K to 12 Kindergarten Curriculum remains a significant barrier to its consistent implementation.

In response to these identified needs, the present study focuses on the development, validation, and summative evaluation of play-based learning materials designed to enhance the language performance of kindergarten learners at Malayugan Elementary School, Flora, Apayao. Anchored in sociocultural, constructivist, and cognitive learning theories and guided by national curriculum standards, the study aims to produce developmentally appropriate and context-sensitive instructional materials for rural kindergarten classrooms. The summative evaluation component examines both learning outcomes and user perceptions to determine the overall effectiveness, usability, and instructional value of the developed materials. Through this process, the study seeks to contribute to evidence-based early childhood pedagogy and provide practical instructional support for kindergarten teachers working in rural Philippine public schools.

2. Statement of the Problem

This study aimed to develop, validate, and test the effectiveness of play-based learning materials for enhancing language performance among kindergarten learners in Malayugan Integrated School.

Specifically, it sought to answer the following research questions:

1. What are the characteristics and content of the developed play-based learning materials aimed at enhancing language performance in kindergarten learners?
2. What is the level of validity of the developed play-based learning materials as evaluated by experts in terms of:

- a. Content relevance and accuracy
 - b. Pedagogical soundness and age appropriateness
 - c. Usability and practicality
 - d. Technical quality and design
3. What is the level of language performance among kindergarten learners before and after the integration of the developed materials?
 4. Is there a significant mean gain in the language performance of kindergarten learners before and after the use of the developed play-based learning materials?

3. Hypothesis

There is no significant mean gain in the language performance of kindergarten learners before and after the use of the developed play-based learning materials.

4. Theoretical Framework

This study is anchored on several interrelated learning theories that collectively support the development, validation, and efficacy assessment of play-based learning materials aimed at improving the language performance of kindergarten learners. These frameworks provide a robust foundation for designing instructional tools that are pedagogically sound, developmentally appropriate, and cognitively accessible.

Vygotsky's Sociocultural Theory posits that learning is fundamentally a social process, wherein knowledge is constructed through interaction with more knowledgeable others, such as teachers, peers, or parents within a specific cultural context (Vygotsky, 1978). Central to this theory is the Zone of Proximal Development (ZPD), which defines tasks that a child can accomplish with guidance but not independently. Play, according to Vygotsky, is a natural setting for the ZPD, enabling children to experiment with roles, use symbolic language, and engage in advanced forms of communication. This theory informs the present study by emphasizing that play-based learning materials should scaffold language acquisition through social interaction and guided exploration.

Bruner's concept of scaffolding builds upon Vygotsky's ZPD by describing how adults or more skilled peers support a learner's task performance until they can perform independently (Bruner, 1966). In the context of language development, scaffolding involves using visual aids, prompts, modeling, and feedback to guide learners through increasingly complex linguistic tasks. The play-based learning materials developed in this study are designed to embed such scaffolds, making them accessible and responsive to the varying proficiency levels of young learners.

Constructivism asserts that children construct knowledge actively by interacting with their environment and reflecting on their experiences (Piaget, 1952; Vygotsky, 1978). Rather than being passive recipients, learners generate understanding through manipulation, problem-solving, and discovery. Play-based activities exemplify this approach, as they involve hands-on engagement, experimentation, and imaginative expression. This theory justifies the use of play as a medium for language learning and supports the inclusion of exploratory and interactive tasks in the materials.

Cognitive Load Theory emphasizes the limitations of working memory and advocates for instructional design that minimizes extraneous load while maximizing germane load, a cognitive effort directed toward learning (Sweller, 1988). For young learners, materials must be simple, visually clear, and appropriately paced to avoid cognitive overload. In this study, the play-based learning materials are structured to optimize cognitive resources by integrating multimodal inputs (visual, auditory, kinesthetic) and clear task sequences to enhance comprehension and retention of language concepts.

Bandura's Social Cognitive Theory highlights the role of observational learning, modeling, and self-efficacy in behavior and skill acquisition (Bandura, 1986). Children learn by observing competent models, whether peers, adults, or characters in educational materials and imitate language usage in meaningful contexts. Moreover, belief in one's ability (self-efficacy) enhances motivation and persistence in learning tasks. The materials developed under this study incorporate opportunities for guided modeling and self-directed practice, reinforcing learner confidence and language mastery.

Gardner's theory proposes that intelligence is multifaceted and includes linguistic, interpersonal, bodily-kinesthetic, musical, and other modalities (Gardner, 1983). In early childhood settings, acknowledging these intelligences through varied instructional strategies enhances engagement and learning. Play-based learning naturally integrates multiple intelligences, for example, through storytelling (linguistic), role-play (bodily-kinesthetic), or songs (musical). Incorporating these modalities in the design of learning materials supports differentiated instruction and addresses diverse learner strengths in language development.

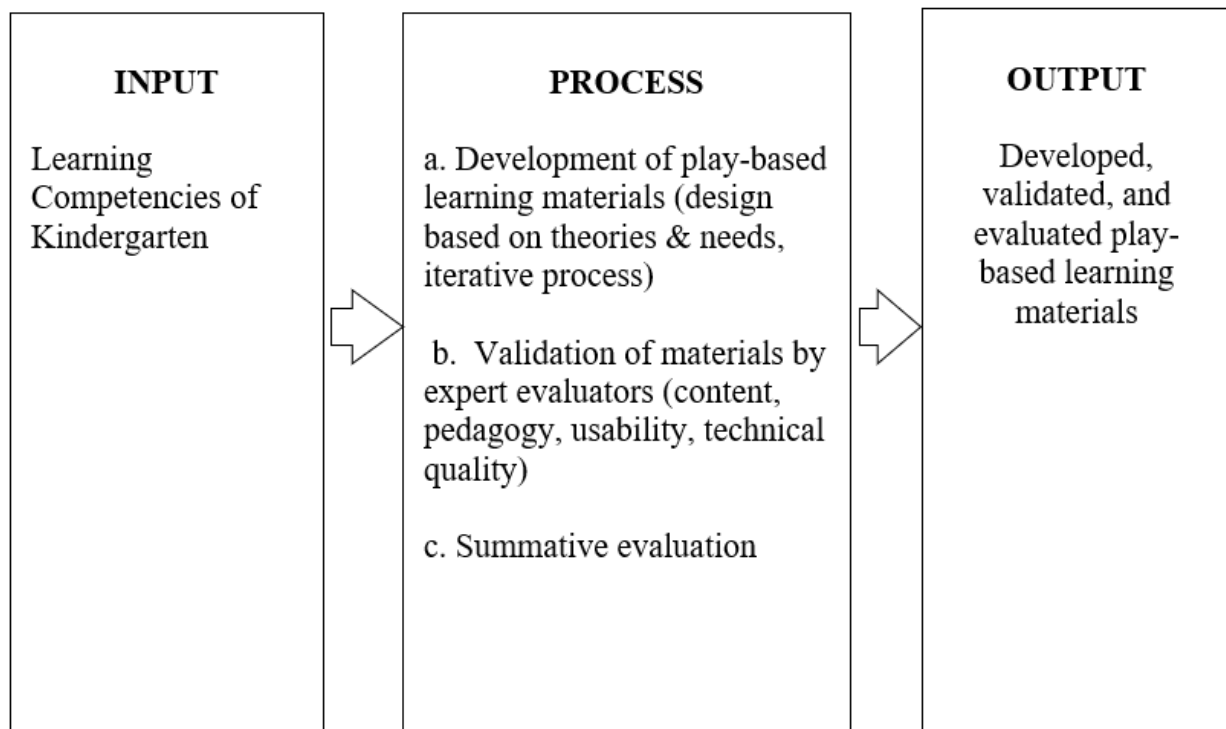


Figure 1. Research Paradigm

Based on the paradigm, the Input phase identifies the essential foundation of the study, which is the learning competencies of kindergarten learners. These competencies serve as the primary basis for determining what areas need to be addressed through the development of play-based learning materials. The input reflects the existing skills and learning requirements of kindergarten learners that guide the design and focus of the instructional materials.

The Process phase represents the systematic procedures undertaken in the study. It begins with the development of play-based learning materials, which is guided by established learning theories and identified learner needs and follows an iterative process to ensure instructional relevance and effectiveness. This is followed by the validation of the developed materials by expert evaluators, focusing on content accuracy, pedagogical soundness, usability, and technical quality. After validation, the process proceeds to the implementation and data collection stage, where the validated play-based learning materials are utilized in actual classroom settings to gather necessary data for evaluation.

The Output phase presents the final product of the study, which is the developed, validated, and evaluated play-based learning materials. This output signifies that the materials have undergone systematic development, expert validation, and practical implementation, ensuring their quality, appropriateness, and readiness for use in supporting kindergarten learning.

5. Methodology

This section presents the research methods and procedures utilized in the study. It includes the research design, locale of the study, respondents of the study, research instrument, data gathering procedure, and statistical treatment of data.

5.1 Research Design

This study employed a developmental–quasi-experimental research design in the development, validation, and summative evaluation of play-based learning materials for kindergarten learners. The developmental component covered the needs assessment, design, development, validation, and revision of the instructional materials. A one-group pretest–posttest quasi-experimental design was utilized to determine the effect of the developed materials on the language performance of kindergarten learners. Descriptive methods were likewise used to analyze the expert validation results of the developed materials.

5.2 Locale of the Study

The study was conducted in the kindergarten class of Malayugan Integrated School located in the Municipality of Flora, Apayao. The school is under the Flora District, Schools Division of Apayao, Cordillera Administrative Region.

5.3 Respondents of the Study

The respondents of the study consisted of 23 kindergarten learners of Malayugan Integrated School enrolled during the School Year 2025–2026. The learners, composed of 11 males and 12 females,

were selected through total enumeration. The kindergarten teacher also participated in the implementation of the study.

For the validation of the developed materials, five expert validators from the Flora District served as evaluators. These included one school head, one master teacher, and three Teacher VI teachers who are members of the School Quality Assurance (QA) Team.

5.4 Research Instruments

The study utilized three research instruments aligned with the objectives of the study.

The primary instructional instrument consisted of eight (8) developed play-based learning activities designed to enhance kindergarten learners' language performance in terms of listening comprehension, oral language expression, vocabulary development, phonological awareness, letter recognition, and social communication. The activities incorporated various forms of play, including sound play, movement play, sorting play, sensory play, digital play, creative play, and guided participation. The materials were contextualized, competency-based, and aligned with the Kindergarten Curriculum Guide and K-10 MATATAG Curriculum. Furthermore, the activities were grounded on Sociocultural Theory, Scaffolding Theory, Constructivist Theory, Cognitive Load Theory, and Communicative Language Teaching (CLT).

To determine the validity and acceptability of the developed materials, a Material Validation Rubric for Expert Evaluators was utilized. The rubric was adapted from DepEd Division Memorandum No. 167, s. 2021 and assessed the materials in terms of content relevance and accuracy, pedagogical soundness and age appropriateness, usability and practicality, and technical quality and design.

To assess learners' language performance, the study utilized a Comprehensive Rapid Literacy Assessment (CRLA)-based pretest and posttest. The instrument measured foundational language competencies, including listening comprehension, vocabulary development, oral language expression, and phonological awareness. The same assessment tool was administered before and after the intervention to ensure consistency in measuring learners' language performance.

5.5 Data Gathering Procedure

The data gathering procedure was conducted systematically and ethically to ensure the reliability and validity of the data collected. Prior to the conduct of the study, approval was secured from the Schools Division Office of Apayao and the administration of Malayugan Integrated School. Informed consent was obtained from the parents or guardians of the kindergarten learners, and ethical standards prescribed by the Department of Education were strictly observed throughout the study.

A needs assessment was conducted through curriculum review and consultation with the kindergarten teacher to identify the learners' language needs and instructional challenges. The results served as the basis for the development of the play-based learning materials. Guided by established learning theories, eight (8) play-based learning materials aligned with the kindergarten 3rd Quarter lessons were developed to enhance learners' language performance.

The developed materials were subsequently submitted to expert validators using the Material Validation Rubric adapted from DepEd Division Memorandum No. 167, s. 2021. The validators assessed the materials in terms of content relevance and accuracy, pedagogical soundness and age

appropriateness, usability and practicality, and technical quality and design. Their comments and recommendations were incorporated in revising and finalizing the materials prior to implementation.

Before the integration of the developed materials, a pretest using the Comprehensive Rapid Literacy Assessment (CRLA) was administered to determine the learners' baseline language performance. The validated play-based learning materials were then integrated into regular kindergarten instruction during the intervention period. After the implementation, a posttest using the same CRLA-based assessment tool was administered. The pretest and posttest results were compared to determine changes in learners' language performance and to provide the summative evaluation of the developed play-based learning materials.

5.6 Statistical Treatment of Data

Descriptive analysis was utilized to present the characteristics and content of the developed play-based learning materials through narrative and tabular presentation.

Frequency, percentage, mean, and standard deviation were used to analyze the expert validation ratings of the developed materials in terms of content relevance and accuracy, pedagogical soundness and age appropriateness, usability and practicality, and technical quality and design.

Scale Range	Descriptive Value	Interpretation
4.21 – 5.00	Very Highly Valid	The material demonstrated excellent quality and fully met the evaluation criteria.
3.41 – 4.20	Highly Valid	The material demonstrated high quality and adequately met the evaluation criteria.
2.61 – 3.40	Moderately Valid	The material demonstrated acceptable quality but required revisions and improvement.
1.81 – 2.60	Slightly Valid	The material demonstrated limited quality and required major revisions.
1.00 – 1.80	Not Valid	The material did not meet the evaluation criteria and required complete revision.

Frequency, mean, and standard deviation were also employed to describe the pretest and posttest language performance of kindergarten learners based on the Comprehensive Rapid Literacy Assessment (CRLA) results.

Score Range	Descriptive Level	Interpretation
17–20	Advanced	Demonstrated highly developed language performance and emergent literacy skills
13–16	Proficient	Demonstrated satisfactory language performance and foundational literacy skills

9-12	Developing	Demonstrated partial mastery of language competencies and required instructional support
5-8	Beginning	Demonstrated limited language competencies and needed intensive support
0-4	Emerging	Demonstrated very minimal language performance and emergent literacy skills

To determine the significant difference between the pretest and posttest language performance of the learners, a paired samples t-test was employed at the 0.05 level of significance.

The analyzed data served as the basis for the interpretation of findings, conclusions, and recommendations of the study.

6. Results and Discussions

This chapter presents the analysis, interpretation, and discussion of the data gathered in the study. The findings are presented according to the sequence of the Statement of the Problem.

Table 1: Characteristics and Content of the Developed Play-Based Learning Materials

Developed Play-Based Materials	Target Language Skill	Type of Play Activity	Aligned Learning Competencies	Characteristics and Content
Lakbay Pilipinas: Tuklasin ang Aking Bansa!	Listening Comprehension, Oral Language Expression, Phonological Awareness	Picture Recognition Play, Movement Play, Digital Play, Application Play	8, 15, 24, 25, 36, 39	Activities focused on recognizing the Philippines, identifying environmental features, producing the /l/ sound, and demonstrating environmental awareness through guided and ICT-based play activities.
Yakapin ang Tunog ng Titik Yy	Phonological Awareness, Oral Language Expression, Social Communication	Sound Play, Identification Play, Digital Play, Application Play	3, 8, 15, 32, 39	Activities focused on producing the /y/ sound, identifying the roles of community leaders, and expressing ideas about responsibility and citizenship through guided play activities.
Ninuno Quest: Hanapin ang	Vocabulary Development, Oral Language Expression,	Sound Play, Picture Recognition Play, Sorting	8, 10, 33, 34, 46	Activities focused on recognizing the /n/ sound, appreciating Filipino identity and culture,

*Development, Validation, and Summative Evaluation of
Play-Based Learning Materials*

Tunog ng Titik Nn	Phonological Awareness	Play, Creative Play		classifying pictures, and expressing ideas through creative and collaborative play tasks.
Gulong ng Gabi't Ulan: Tuklasin ang Ganda ng Aking Bansa!	Listening Comprehension, Vocabulary Development, Oral Language Expression	Sound Play, Picture Recognition Play, Guided Discussion Play, Values Integration Play	8, 24, 35, 36, 40, 42	Activities focused on appreciating nature, identifying environmental elements, recognizing the /g/ sound, and promoting environmental awareness through guided discussion and play.
P-P-P Patrol: Hanapin ang Anyong Lupa at Anyong Tubig!	Vocabulary Development, Phonological Awareness, Oral Communication	Identification Play, Sorting Play, Language Play, Application and Values Play	8, 29, 36, 40, 43	Activities focused on classifying landforms and bodies of water, recognizing the /p/ sound, and promoting environmental appreciation through interactive and collaborative play activities.
P-P-P Patrol: Tuklasin ang Pilipinas gamit ang Titik Pp!	Phonological Awareness, Letter Recognition, Listening Comprehension	Sound Play, Movement Play, Digital Play, Sensory Play	8, 9, 15, 36, 40	Activities focused on producing and writing the letter Pp, identifying animals and objects found in the Philippines, and demonstrating environmental awareness through multisensory play experiences.
Ronda ng mga Hayop: Tuklasin ang Titik Rr at ang Gampanin ng mga Hayop!	Oral Language Expression, Phonological Awareness, Social Communication	Sound Play, Movement Play, Picture Recognition Play, Sensory Play	8, 9, 13, 34, 36	Activities focused on recognizing and writing the letter Rr, identifying animals and their roles, and expressing ideas through guided oral and sensory play activities.
Halaman Hunt: Tuklasin at Bigkasin!	Vocabulary Development, Phonological Awareness, Oral	Picture Recognition Play, Sorting Play, Sound Integration	8, 9, 29, 36, 40, 45	Activities focused on identifying parts and classifying plants, trees, and fruits, recognizing the /d/ sound, and expressing ideas

	Language Expression	Play, Creative Play		through creative and interactive play tasks.
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Table 1 presents the characteristics and content of the developed play-based learning materials designed to enhance the language performance of kindergarten learners. The findings revealed that the materials were developmentally appropriate, competency-based, and aligned with the Kindergarten Curriculum Guide and the K-10 MATATAG Curriculum. The activities integrated language development with themes related to Filipino identity, environmental awareness, culture, community, animals, and nature, thereby providing contextualized and meaningful learning experiences for kindergarten learners.

The developed materials addressed key foundational language competencies, including listening comprehension, oral language expression, vocabulary development, phonological awareness, letter recognition, and social communication. These competencies are essential components of emergent literacy and early language development among young learners. According to the Department of Education Kindergarten Curriculum Guide, kindergarten instruction should provide opportunities for learners to communicate, participate in conversations, recognize letter sounds, and engage in meaningful language experiences through developmentally appropriate activities (Department of Education, 2016). The alignment of the activities with specific learning competencies further indicates that the materials were systematically designed to support curriculum implementation and foundational literacy development.

The findings further showed that the activities incorporated varied forms of play, including sound play, movement play, picture recognition play, sorting play, sensory play, digital play, creative play, and guided participation. This variety of play-based strategies promoted active engagement, learner interaction, exploration, and experiential learning. Activities such as *Lakbay Pilipinas*, *P-P-P Patrol*, *Ronda ng mga Hayop*, and *Halaman Hunt* provided opportunities for learners to associate sounds, symbols, movements, objects, and experiences with language concepts through concrete and interactive tasks. The integration of multisensory activities also supported different learning styles and sustained learner attention during instruction.

Moreover, the inclusion of oral interaction, storytelling, guided discussion, classification, creative expression, and environmental exploration reflects the principles of play-based and constructivist learning. Vygotsky's Sociocultural Theory emphasizes that language develops through social interaction, guided participation, and meaningful communication experiences (Vygotsky, 1978). Similarly, Piaget's Constructivist Theory explains that children actively construct knowledge through exploration and direct engagement with their environment (Piaget, 1952). The developed activities therefore provided authentic opportunities for learners to communicate, collaborate, and construct understanding through guided play experiences.

The integration of ICT-based e-games, sensory writing activities, movement tasks, and collaborative learning further strengthened learner participation and engagement. Research by Zosh et al. (2022) emphasized that play-based learning environments enhance language acquisition, learner motivation, communication skills, and classroom participation among young children. Likewise, Whitehurst and Lonigan (2007) noted that early oral language experiences, phonological awareness activities, and meaningful interaction significantly contribute to emergent literacy and later reading achievement. The incorporation of these elements into the developed materials therefore supports

their instructional relevance and effectiveness in enhancing the language performance of kindergarten learners.

Furthermore, the contextualized nature of the activities strengthened learners' connection to their immediate environment, culture, and experiences. Themes related to the Philippines, community, nature, animals, and environmental protection promoted meaningful learning and reinforced values formation alongside language development. This finding supports the MATATAG Curriculum's emphasis on contextualized, integrative, and learner-centered instruction that promotes holistic development among kindergarten learners (Department of Education, 2023).

Overall, the developed play-based learning materials demonstrated strong alignment with curriculum standards, developmental appropriateness, and play-based pedagogy. The characteristics and content of the materials indicate that they were suitable instructional resources for supporting foundational language competencies, learner engagement, and emergent literacy development among kindergarten learners.

Table 2. Extent of Expert Validation of the Developed Play-Based Learning Materials

CRITERIA	Mean Rating	Descriptive Value
A. Content Relevance and Accuracy	4.60	Very Highly Valid
B. Pedagogical Soundness and Age	4.92	Very Highly Valid
C. Usability and Practicality	4.72	Very Highly Valid
D. Technical Quality and Design	4.84	Very Highly Valid
OVERALL MEAN	4.77	Very Highly Valid

Table 2 presents the extent of expert validation of the developed play-based learning materials in terms of content relevance and accuracy, pedagogical soundness and age appropriateness, usability and practicality, and technical quality and design. The overall mean rating of 4.77 indicated that the materials were very highly valid, suggesting that the developed instructional materials met the expected standards for kindergarten instruction.

Among the evaluation criteria, pedagogical soundness and age appropriateness obtained the highest mean rating of 4.92, indicating that the materials were developmentally appropriate and consistent with effective early childhood instructional practices. This finding implies that the play-based activities, strategies, and learning tasks were suitable for the cognitive, social, and language development levels of kindergarten learners. According to the Department of Education Kindergarten Curriculum Guide, instructional materials for early learners should be interactive, experiential, and developmentally appropriate to support meaningful learning experiences (Department of Education, 2016). The high rating further supports the principle of play-based learning, which emphasizes active participation, exploration, and guided interaction as essential components of language development among young children (Zosh et al., 2022).

Technical quality and design also obtained a very high mean rating of 4.84, indicating that the materials were visually organized, engaging, and appropriate for young learners. The use of age-appropriate illustrations, clear layouts, and interactive elements likely contributed to learner engagement and instructional effectiveness. This finding supports Cognitive Load Theory, which posits that well-structured instructional materials reduce unnecessary cognitive demands and facilitate comprehension among learners (Sweller, 1988). In early childhood education, visually stimulating and organized materials are important in sustaining attention and supporting language acquisition.

Similarly, usability and practicality received a very high mean rating of 4.72, implying that the materials were manageable, adaptable, and easy to implement in classroom instruction. This suggests that teachers can effectively integrate the materials into daily learning activities with minimal difficulty. Practical and teacher-friendly instructional materials are essential in ensuring consistent classroom implementation, particularly in rural and resource-constrained schools.

Content relevance and accuracy obtained a mean rating of 4.60, which also falls under the “very highly valid” category. This indicates that the developed materials were aligned with the Kindergarten Curriculum Guide and appropriately addressed targeted language competencies, including listening comprehension, vocabulary development, oral language expression, and phonological awareness. Whitehurst and Lonigan (2007) emphasized that early language and emergent literacy skills serve as foundational predictors of future reading and academic performance. The alignment of the developed materials with these competencies therefore supports their instructional relevance and educational value.

Table 3. Level of Language Performance of Kindergarten Learners Before and After the Integration of the Developed Play-Based Learning Materials

Measure	Mean	Standard Deviation	Descriptive Level
Pretest	8	1.45	Beginning
Posttest	13.52	1.9	Proficient
Mean Gain	5.52		

Table 3 presents the level of language performance of kindergarten learners before and after the integration of the developed play-based learning materials. The pretest results yielded a mean score of 8.00 with a standard deviation of 1.45, interpreted as Beginning. This indicates that prior to the intervention, the learners demonstrated limited language competencies and required instructional support in listening comprehension, vocabulary development, oral language expression, and phonological awareness.

After the implementation of the developed play-based learning materials, the posttest mean increased to 13.52 with a standard deviation of 1.90, interpreted as Proficient. The findings indicate that the learners developed satisfactory language performance and foundational literacy skills after

exposure to the intervention. The mean gain of 5.52 further demonstrates substantial improvement in learners' language performance following the integration of the play-based learning materials.

The improvement in learners' performance suggests that the developed materials provided meaningful, engaging, and developmentally appropriate learning experiences that supported language acquisition among kindergarten learners. The integration of sound play, movement activities, storytelling, collaborative tasks, and multisensory experiences likely enhanced learners' participation, vocabulary use, listening skills, and oral interaction. According to Whitehurst and Lonigan (2007), early language and emergent literacy skills are strengthened through meaningful oral language experiences and active learner engagement during early childhood instruction.

The findings also support Vygotsky's Sociocultural Theory, which emphasizes that language development occurs through guided interaction, social participation, and meaningful learning experiences (Vygotsky, 1978). The play-based activities integrated in the materials encouraged learner interaction, exploration, and communication, which contributed to the improvement of language competencies. Similarly, Zosh et al. (2022) emphasized that play-based learning environments enhance learner motivation, engagement, and language development among young children through active and experiential learning opportunities.

Moreover, the increase in posttest scores indicates that the developed play-based learning materials effectively supported the development of foundational literacy skills among kindergarten learners. This finding highlights the importance of using developmentally appropriate and curriculum-aligned instructional materials in promoting early language development and improving learner performance in kindergarten classrooms.

Table 4. Test of Significant Mean Gain in the Language Performance of Kindergarten Learners Before and After the Integration of the Developed Play-Based Learning Materials

Test	Mean	t-computed	t-critical	Interpretation
Pretest	8.0	21.4	2.074	Significant
Posttest	13.52			

Significant at 0.05 level of significance

Table 4 presents the test of significant mean gain in the language performance of kindergarten learners before and after the integration of the developed play-based learning materials. The pretest mean score of 8.0 increased to 13.52 in the posttest, indicating improvement in the learners' language performance after exposure to the developed materials. The computed t-value of 21.4 was greater than the critical t-value of 2.074 at the 0.05 level of significance. Thus, the null hypothesis was rejected, indicating a significant mean gain in the language performance of the kindergarten learners after the integration of the developed play-based learning materials.

The findings suggest that the developed play-based learning materials effectively enhanced learners' listening comprehension, vocabulary development, oral language expression, and phonological

awareness. The observed improvement may be attributed to the interactive, multisensory, and learner-centered nature of the play-based activities, which encouraged active participation, communication, and experiential learning among the learners.

The result supports Vygotsky's Sociocultural Theory, which emphasizes that language development is strengthened through guided interaction and meaningful social experiences (Vygotsky, 1978). The integration of storytelling, sound play, movement activities, manipulatives, and collaborative tasks provided learners with opportunities to actively construct knowledge and practice language skills within meaningful learning contexts. The findings are also consistent with Zosh et al. (2022), who reported that play-based learning environments improve learner engagement, oral language development, and emergent literacy skills among young children. Similarly, Whitehurst and Lonigan (2007) emphasized that meaningful oral language experiences and active participation contribute significantly to the development of foundational literacy competencies during early childhood.

Overall, the significant mean gain observed in the study indicates that the developed play-based learning materials served as effective instructional resources in enhancing the language performance of kindergarten learners.

7. Summary of Findings

This study focused on the development, validation, and summative evaluation of play-based learning materials designed to enhance the language performance of kindergarten learners in Malayugan Integrated School, Flora, Apayao. The developed materials incorporated developmentally appropriate, contextualized, and curriculum-aligned play-based activities targeting foundational language competencies, including listening comprehension, vocabulary development, oral language expression, and phonological awareness.

The expert validators evaluated the developed play-based learning materials as very highly valid in terms of content relevance and accuracy, pedagogical soundness and age appropriateness, usability and practicality, and technical quality and design. The findings indicate that the materials were developmentally appropriate, visually engaging, practical, and suitable for kindergarten instruction.

The findings further revealed that the integration of the developed play-based learning materials improved the language performance of kindergarten learners. After exposure to the intervention, the learners demonstrated better foundational language competencies and higher levels of language performance compared to their baseline performance prior to the implementation of the materials.

The test of significant mean gain confirmed that the improvement in learners' language performance after the use of the developed play-based learning materials was statistically significant. The findings therefore established that the developed play-based learning materials effectively enhanced the language performance of kindergarten learners.

8. Conclusions

The developed play-based learning materials were developmentally appropriate, curriculum-aligned, and responsive to the language learning needs of kindergarten learners. The materials effectively integrated interactive and multisensory play-based activities that supported the

development of listening comprehension, vocabulary development, oral language expression, and phonological awareness.

The developed materials demonstrated a very high level of validity in terms of content relevance and accuracy, pedagogical soundness and age appropriateness, usability and practicality, and technical quality and design, indicating their suitability for kindergarten instruction.

The integration of the developed play-based learning materials improved the language performance of kindergarten learners, as evidenced by the increase from the Beginning level to the Proficient level after the intervention.

The significant mean gain between the pretest and posttest results confirmed that the developed play-based learning materials served as effective instructional resources in enhancing the language performance of kindergarten learners.

9. Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed:

1. Kindergarten teachers may utilize the developed play-based learning materials in daily classroom instruction to enhance learners' listening comprehension, vocabulary development, oral language expression, and phonological awareness through meaningful and developmentally appropriate learning experiences.
2. School administrators may support the use of play-based instructional materials by providing learning resources, instructional support, and professional development activities related to play-based learning and early language instruction.
3. Curriculum planners and education supervisors may encourage the development, validation, and utilization of contextualized and curriculum-aligned play-based learning materials consistent with the Kindergarten Curriculum Guide and K-10 MATATAG Curriculum.
4. Instructional material developers may design additional play-based learning resources targeting other developmental domains to support holistic learning among kindergarten learners.
5. Future researchers may conduct similar studies using larger groups of learners, longer intervention periods, or experimental research designs to further establish the effectiveness of play-based learning materials in early childhood education.

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