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OUTDOOR LITERACY SPACES AND READING COMPREHENSION: EVIDENCE FROM ELEMENTARY LEARNERS IN BENGUET

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ABSTRACT

Reading comprehension remains a persistent challenge among elementary learners, particularly in rural and multigrade classrooms where access to literacy-rich learning environments is limited. This study determined the effectiveness of the Learning Park in improving the reading comprehension performance of elementary learners at Balili Elementary School in La Trinidad during School Year 2025–2026. The study employed a quantitative quasi-experimental one-group pretest–posttest research design. Fourteen elementary learners served as respondents and were selected based on established inclusion criteria. Data were gathered using an adapted Philippine Informal Reading Inventory (Phil-IRI) reading comprehension assessment tool that measured literal, inferential, and critical comprehension skills. Descriptive statistics such as frequency and mean were used to describe learners' performance, while a dependent t-test was utilized to determine the significant difference between pretest and posttest scores. Findings revealed that the learners obtained a mean pretest score of 8.64, interpreted as Instructional level, indicating that learners initially required teacher assistance in comprehending texts. After the implementation of the Learning Park intervention, the mean posttest score increased to 14.00, corresponding to the Independent level. Furthermore, the computed t-value of 8.121 was greater than the critical value of 1.771 at the 0.05 level of significance, indicating a statistically significant improvement in learners' reading comprehension performance. The study concluded that the Learning Park is an effective, learner-centered, and activity-based

instructional intervention that enhances reading comprehension, promotes learner engagement, and supports literacy development among elementary learners.

KEYWORDS: Learning Park, reading comprehension, elementary learners, literacy intervention, experiential learning, Phil-IRI, multigrade classroom, learner-centered instruction

INTRODUCTION

Reading comprehension is widely recognized as one of the most essential literacy competencies necessary for academic success and lifelong learning (UNESCO, 2023). Across global educational systems, learners continue to encounter difficulties in comprehending texts, interpreting meanings, and applying higher-order thinking skills required for meaningful literacy development (World Bank, 2024). Studies emphasize that reading comprehension is not limited to word recognition but involves cognitive processes such as schema activation, inference-making, critical analysis, and the integration of prior knowledge with textual information (Iris Reading, 2022; Zhao & Zhu, 2012). Strong comprehension skills enable learners to acquire content knowledge, improve vocabulary development, participate in social interaction, and make informed decisions in real-life contexts (Eastern Washington University, 2023; Genie Academy, 2025). However, international assessments continue to reveal concerning literacy gaps among elementary learners, particularly in developing countries where foundational reading skills remain weak (UNESCO, 2023; OECD, 2022). In Latin America, the UNESCO Regional Comparative and Explanatory Study (ERCE) highlighted persistent struggles among learners in transitioning from decoding to comprehension (UNESCO, 2021). Similarly, Sub-Saharan Africa continues to experience severe literacy challenges, with nearly 90% of children unable to read and understand simple texts by age ten, a condition referred to as “learning poverty” (World Bank, 2024). In many Asian countries, literacy experts have advocated for contextualized, learner-centered, and experiential approaches to reading instruction to address comprehension difficulties among young learners (UNESCO Bangkok, 2023; Bui, 2023).

In the Philippines, reading comprehension remains a critical educational concern despite continuous literacy interventions and reforms under the K to 12 curriculum (DepEd, 2025). Results from the Philippine Informal Reading Inventory revealed that many elementary learners continue to perform at the instructional and frustration levels in reading comprehension, indicating difficulties in understanding and interpreting texts independently

(Phil-IRI, 2025). Reports further indicate that approximately 85% of Filipino children struggle with reading simple passages, particularly after the disruptions caused by the COVID-19 pandemic (UNICEF, 2022). Factors such as limited access to reading materials, overcrowded classrooms, inadequate literacy support, and socioeconomic constraints continue to hinder literacy development among learners (Tolibas, 2025; Soliven & Lopez, 2023). These challenges are even more evident in rural and multigrade classrooms where teachers simultaneously manage learners with varying reading abilities and learning needs (Mathavan et al., 2022). Consequently, educators have explored innovative and activity-based literacy environments that encourage learner participation, collaboration, and meaningful engagement with texts (Hassinger-Das et al., 2020; Bustamante et al., 2022). One emerging approach is the development of Learning Parks, which are literacy-rich outdoor spaces integrating reading materials, word games, storytelling activities, and experiential learning opportunities designed to strengthen reading comprehension and learner motivation (Studocu, 2022; Studocu, 2023). Research suggests that these environments support schema activation, reduce cognitive load, and enhance learners' interaction with authentic learning experiences (Sweller, 1988; Parker et al., 2022). Despite the promising outcomes of learning parks and community-based literacy interventions, limited studies have examined their effectiveness in improving the reading comprehension of elementary learners in Philippine rural settings. Hence, this study was conducted to determine the effectiveness of the Learning Park in enhancing the reading comprehension skills of elementary learners at Balili Elementary School in La Trinidad and to contribute evidence-based insights into innovative, learner-centered, and community-supported literacy interventions.

Although numerous studies have examined reading comprehension and literacy development, existing literature remains largely concentrated on classroom-based, technology-assisted, and teacher-directed interventions, with limited attention given to experiential and outdoor literacy environments. Current theories on reading comprehension, particularly Schema Theory, emphasize the importance of prior knowledge, contextual learning, and meaningful engagement in constructing understanding from texts (Zhao & Zhu, 2012; Bui, 2023). However, many studies operationalizing Schema Theory focus primarily on structured classroom strategies such as guided reading, graphic organizers, and questioning techniques, while insufficiently exploring how physical and environmental learning spaces such as Learning Parks can facilitate schema activation and deeper comprehension among elementary

learners. Consequently, there remains a theoretical gap regarding how contextualized outdoor literacy environments support the cognitive processes involved in reading comprehension.

Another theoretical gap exists in the application of Cognitive Load Theory within literacy interventions designed for elementary and multigrade learners. While Cognitive Load Theory posits that learning improves when instructional materials reduce unnecessary mental burden and optimize cognitive processing (Sweller, 1988), most related studies have focused on multimedia learning, digital platforms, and classroom instructional designs rather than experiential outdoor settings. Existing literature provides limited discussion on how Learning Parks—through multisensory activities, interactive materials, and authentic learning experiences—may reduce extraneous cognitive load and improve learners’ comprehension performance. Furthermore, there is insufficient empirical evidence explaining how outdoor literacy environments influence learners’ inferential and critical comprehension skills, particularly among children in rural public schools and multigrade classes where instructional conditions significantly differ from traditional classroom contexts.

Moreover, although Motivational Theory of Learning and Experiential Learning Theory emphasize active participation, learner engagement, and authentic experiences as essential components of effective learning (Kolb, 1984; Deci & Ryan, 2000), limited studies have integrated these theoretical perspectives into literacy interventions focused on reading comprehension. Existing research often examines learner motivation and experiential learning separately from comprehension outcomes, creating a gap in understanding how motivational and experiential factors collectively influence literacy development. In the Philippine setting, particularly in rural elementary schools, there remains a scarcity of studies investigating how learner-centered and community-supported literacy spaces such as Learning Parks foster engagement, sustain reading interest, and improve comprehension outcomes. Hence, the present study seeks to address these theoretical gaps by examining the effectiveness of a Learning Park as an experiential, motivational, and cognitively supportive literacy intervention for elementary learners at Balili Elementary School in La Trinidad.

METHODOLOGY

This study employed a quantitative quasi-experimental one-group pretest–posttest design to determine the effectiveness of the Learning Park in improving the reading comprehension skills of elementary learners. Conducted among multigrade learners at Balili Elementary School, La Trinidad during School Year 2025–2026, the study included participants who were

officially enrolled, regularly attending classes, had parental consent, and completed both the pretest and posttest. Data were gathered using an adapted reading assessment tool from the Philippine Informal Reading Inventory (Phil-IRI), which assessed learners' literal, inferential, and critical comprehension skills. The intervention involved administering a pretest, exposing learners to Learning Park activities, and conducting a posttest to measure improvements in reading comprehension performance.

The adapted Phil-IRI instrument served as the basis for ensuring the reliability and validity of the assessment. Necessary permissions and endorsements were secured from educational authorities, school administrators, and parents prior to data collection. Descriptive statistics, including frequencies and means, were utilized to describe learners' performance, while a dependent t-test was employed to determine significant differences between pretest and posttest scores. Ethical standards were strictly observed through informed consent, confidentiality, voluntary participation, and proper acknowledgment of all references and AI-assisted tools used in the conduct of the study to uphold academic integrity and transparency.

RESULTS AND DISCUSSIONS

Reading Comprehension Performance of Learners Before the Implementation of the Learning Park

Table 1 presents the pretest reading comprehension performance of the learners prior to the implementation of the Learning Park intervention. The pretest served as an initial assessment designed to determine the learners' baseline reading comprehension abilities before exposure to the intervention. Establishing baseline data is important in identifying learners' existing comprehension levels and in determining the extent of improvement after the implementation of the Learning Park activities.

Table 1: Scores of Learners in Reading Comprehension Before Implementation of the Learning Park.

Learners	Pre-test Score	Descriptive Equivalent
1	3	Frustration
2	3	Frustration
3	12	Instructional
4	11	Instructional
5	12	Instructional
6	13	Instructional
7	12	Instructional
8	13	Instructional
9	6	Frustration
10	9	Instructional
11	6	Frustration
12	5	Frustration
13	5	Frustration
14	11	Instructional
Total	121	
Mean	8.64	Instructional

Legend:

Score	Descriptive Equivalent	Symbol	No. of Learners	Percentage
14-20	Independent	Ind	0	0%
7-13	Instructional	Ins	8	57.14%
1-6	Frustration	F	6	42.86%
	TOTAL		14	100%

Results revealed that the learners obtained a mean pretest score of 8.64, which corresponds to the Instructional level. This finding suggests that the learners were generally capable of understanding reading materials only with teacher assistance and guidance. Among the 14 learners, eight or 57.14% were categorized under the Instructional level, while six or 42.86% fell under the Frustration level. Learners classified at the Frustration level experienced considerable difficulty in decoding words, interpreting ideas, and constructing meaning from the text independently. Moreover, none of the learners reached the Independent level during the pretest, indicating that the class as a whole had not yet achieved mastery of grade-level reading comprehension skills prior to the intervention.

The observed distribution of learners across the Instructional and Frustration levels reflects reading conditions commonly reported in many Philippine elementary schools, particularly in rural and resource-limited settings. According to Lumapas and Reyes (2023), learners with limited exposure to literacy materials and reading-rich environments often demonstrate below-grade-level comprehension skills, highlighting the necessity for focused literacy

interventions. The relatively high percentage of learners categorized at the Frustration level in this study further emphasizes the need for effective and responsive instructional support.

The findings also corroborate previous studies indicating that many Filipino learners begin the school year with weak or developing reading comprehension abilities. Nonie et al. (2020) observed that elementary learners frequently demonstrate low to average comprehension performance due to limited reading exposure and insufficient literacy engagement. Likewise, Dela Cruz and Santos (2021) reported that learners in rural and semi-urban schools commonly fall within the Instructional level during initial reading assessments, suggesting the need for intervention programs aimed at improving comprehension skills. Ocampo (2022) further explained that inadequate prior literacy experiences often contribute to poor reading performance among elementary learners. In addition, Cain and Oakhill (2019) emphasized that early identification of struggling readers is essential because persistent reading difficulties may negatively influence overall academic achievement if left unaddressed.

The pretest results provide an important benchmark for evaluating the effectiveness of the Learning Park intervention. The mean score of 8.64 serves as the baseline against which learners' posttest performance may later be compared to determine possible improvements in reading comprehension. Based on the findings, the assumption stating that learners' reading comprehension performance before the implementation of the Learning Park was at the Frustration level is rejected. The data clearly indicate that the overall reading comprehension performance of the learners prior to the intervention was at the Instructional level rather than the Frustration level.

Reading Comprehension Performance of Learners After the Implementation of the Learning Park

Table 2 presents the posttest results of the learners after the implementation of the Learning Park intervention. The findings demonstrate a substantial improvement in the learners' reading comprehension performance compared to their pretest results. The learners obtained an overall mean score of 14.00, which falls under the Independent level of reading proficiency. This indicates a notable increase from the pretest mean score of 8.64, previously classified under the Instructional level. The improvement suggests that the Learning Park intervention contributed positively to the enhancement of learners' comprehension skills and reading independence.

Table 2: Score of Learners in Reading Comprehension after the Implementation of the Learning Park .

Learners	Post-test Score	Descriptive Equivalent
1	8	Instructional
2	8	Instructional
3	15	Independent
4	15	Independent
5	18	Independent
6	16	Independent
7	15	Independent
8	16	Independent
9	16	Independent
10	16	Independent
11	15	Independent
12	14	Independent
13	9	Instructional
14	15	Independent
Total	196	
Mean	14.00	Independent

Legend:

Score	Descriptive Equivalent	Symbol	No. of Learners	Percentage
14-20	Independent	Ind	11	78.57%
7-13	Instructional	Ins	3	21.43%
1-6	Frustration	F	0	0%
	TOTAL		14	100%

An examination of the individual posttest scores shows that eleven learners, representing 78.57% of the respondents, achieved the Independent level with scores ranging from 14 to 18. Learners under this category were already capable of reading and comprehending texts independently with minimal or no instructional support. Meanwhile, three learners or 21.43% remained at the Instructional level, obtaining scores between 8 and 9. Although these learners still required some degree of guidance, their performance reflected improvement compared to their initial pretest results. Notably, none of the learners remained under the Frustration level during the posttest assessment. This outcome indicates that the Learning Park intervention effectively addressed the reading difficulties previously experienced by struggling readers and helped improve their ability to comprehend texts more effectively.

The improvement in learners' reading comprehension performance supports previous studies emphasizing the effectiveness of interactive, contextualized, and learner-centered literacy

interventions. Reyes (2023) reported that learners exposed to print-rich and activity-based learning environments demonstrated higher comprehension performance than those subjected solely to conventional classroom instruction. Similarly, Flores and Gonzales (2022) found that outdoor and semi-structured literacy spaces enhanced learner engagement, motivation, and reading fluency among elementary pupils. Villanueva et al. (2021) also observed that educational activity stations and literacy parks promoted deeper text processing and improved comprehension outcomes, particularly among learners initially classified at the Frustration level. These findings reinforce the constructivist perspective that learners acquire knowledge more effectively when actively engaged in meaningful learning experiences within their environment.

The increase in the group mean from the Instructional level to the Independent level further validates theories emphasizing experiential and scaffolded learning. Piaget's constructivist theory, as cited by Reyes (2023), explains that children learn best through active interaction with their surroundings and through experiences that encourage exploration and discovery. Likewise, Zimmerman and Kitsantas (2020) emphasized that structured activities promoting learner autonomy and self-regulation contribute significantly to reading comprehension development. The Learning Park appeared to provide learners with opportunities to interact with varied reading materials, participate in engaging literacy activities, and gradually build confidence in comprehending texts independently.

The posttest findings are likewise supported by international research on reading interventions. Murphy and O'Sullivan (2024) highlighted that structured and targeted reading comprehension programs consistently improve learners' literacy performance when instructional activities are aligned with learners' proficiency levels and learning needs. In the present study, the Learning Park served as a responsive and purposeful instructional environment that enabled learners to transition from assisted reading toward independent comprehension. Achieving the Independent level signifies that learners can now process grade-appropriate reading materials with minimal support, which is considered an important indicator of academic readiness and future learning success across subject areas (Ehri, 2020).

Overall, the posttest results provide strong evidence regarding the effectiveness of the Learning Park in enhancing the reading comprehension performance of elementary learners. The findings support the assumption of the study stating that the reading comprehension

performance of learners significantly improved after the implementation of the Learning Park intervention.

Significant Difference Between the Pretest and Posttest

Scores of Learners in Reading Comprehension

Table 3 presents the comparison between the learners' pretest and posttest scores in reading comprehension and the results of the t-test analysis conducted to determine whether a significant difference existed before and after the implementation of the Learning Park intervention. The findings revealed that the learners obtained a mean pretest score of 8.64, interpreted as Instructional level, while the mean posttest score increased to 14.00, corresponding to the Independent level. Statistical analysis further showed a computed t-value of 8.121, which exceeded the critical t-value of 1.771 at the 0.05 level of significance with 13 degrees of freedom. Based on this result, the null hypothesis was rejected, indicating that a statistically significant difference existed between the learners' pretest and posttest scores.

Table 3: Significant Difference Between the Scores of Learners in Reading Comprehension Before and After the Use of the Learning Park.

Learners	Pretest	DE	Posttest	DE	D
1	3	F	8	Ins	5
2	3	F	8	Ins	5
3	12	Ins	15	Ind	3
4	11	Ins	15	Ind	4
5	12	Ins	18	Ind	6
6	13	Ins	16	Ind	3
7	12	Ins	15	Ind	3
8	14	Ind	16	Ind	3
9	6	Ins	16	Ind	10
10	9	Ins	16	Ind	7
11	6	Ins	15	Ind	9
12	5	F	14	Ind	9
13	5	F	9	Ins	4
14	11	Ins	15	Ind	4
SUM	121		196		75
MEAN	8.64	Ins	14.00	Ind	

$$t_{\text{comp}} = 8.121$$

$$t_{0.05, 13 \text{ df}} = 1.771$$

Result: Significant Difference

Decision: Reject H_0

A closer examination of the learners' individual performances demonstrated consistent improvement across all respondents. All learners registered positive gains between their pretest and posttest scores, with increases ranging from 3 to 10 points. Learner 9 obtained the highest improvement, increasing from a score of 6 to 16, thereby moving from the Frustration level to the Independent level. Similarly, Learners 11 and 12 showed substantial gains of 9 points each and successfully transitioned from the Frustration level to the Independent level. These individual improvements strongly support the overall statistical findings and suggest that the Learning Park intervention effectively enhanced learners' reading comprehension performance.

The significant increase in learners' scores aligns with previous studies emphasizing the effectiveness of activity-based and enriched literacy interventions. Ferrer and Maximo (2023) found that learners exposed to interactive literacy programs demonstrated statistically significant gains in reading comprehension due to sustained learner engagement and meaningful interaction with texts. Bernardo and Llego (2022) likewise reported that structured reading interventions conducted in enriched learning environments significantly improved the comprehension abilities of learners classified at the Frustration and Instructional levels. Suarez (2021) further explained that learning spaces intentionally designed to stimulate learner participation and reflection encourage the development of metacognitive skills associated with improved comprehension performance. In the same manner, Tunmer and Chapman (2019) emphasized that interventions integrating both decoding and comprehension support commonly produce significant gains in reading achievement among elementary learners.

The improvement in reading comprehension may also be attributed to the design and structure of the Learning Park itself. According to Wijekumar et al. (2023), structured and scaffolded literacy interventions that provide learners with purposeful and engaging reading experiences contribute significantly to comprehension development. The Learning Park created an organized, interactive, and learner-centered environment where learners were encouraged to actively engage with reading materials through varied literacy activities. This type of environment likely enabled learners to strengthen their comprehension abilities while gradually developing independence in reading. Furthermore, the findings support the principles of constructivist learning theory, which posits that learners acquire knowledge more effectively through active participation and experiential learning opportunities (Hamdan

et al., 2021). By integrating movement, play, collaboration, and literacy tasks into a meaningful learning environment, the Learning Park provided learners with multiple opportunities to construct understanding and improve reading comprehension skills.

Overall, the findings demonstrate that the Learning Park served as an effective instructional intervention in enhancing the reading comprehension performance of elementary learners. The transition of the learners' overall performance from the Instructional level during the pretest to the Independent level during the posttest, together with the elimination of learners under the Frustration category, confirms the positive impact of the intervention. Since the computed t-value was greater than the critical value, the assumption stating that there is no significant difference between the pretest and posttest scores of learners before and after the implementation of the Learning Park was rejected. Therefore, the study concludes that the Learning Park significantly improved the reading comprehension performance of learners at Balili Elementary School.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study concluded that elementary learners experienced difficulties in reading comprehension due to learning gaps and limitations within their learning environment, highlighting the need for responsive literacy interventions. The findings further revealed that the Learning Park served as an effective and innovative instructional strategy that significantly improved learners' reading comprehension performance from the Instructional level to the Independent level. Moreover, the Learning Park promoted active learner engagement, encouraged the use of metacognitive reading strategies, and created a motivating and learner-centered literacy environment that supported comprehension development.

Recommendations

Based on the findings, it is recommended that teachers regularly integrate the Learning Park into reading instruction, particularly for learners identified at the Frustration and Instructional levels. Schools should provide continuous support through adequate resources, maintenance, and sustained implementation of literacy-rich learning spaces. Additionally, the Learning Park may be complemented with other evidence-based literacy strategies to maximize comprehension gains. Future researchers are likewise encouraged to conduct similar studies involving larger populations, multiple school settings, and more rigorous research designs to

further validate the effectiveness of the Learning Park in improving reading comprehension among elementary learners.

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