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Article

Assessing the Effectiveness of Comprehensive Rapid Literacy Assessment (CRLA) in Teaching Literacy Skills Among Kindergarten Learners

Michelle Inot
Helen Revalde
Marjorie Anero
Lilibeth Pinili

Corresponding Author: michellepulverainot@gmail.com

Abstract: This study evaluates the effectiveness of the Comprehensive Rapid Literacy Assessment (CRLA) in enhancing literacy skills among kindergarten learners at Pusok Elementary School. Employing a quasi-experimental design, this research compared literacy outcomes between a control group, which followed traditional educational methods, and an experimental group, which utilized the CRLA. Data was collected through pretests and posttests over the academic year 2023-2024. The results, analyzed using paired t-tests and t-tests for independent samples, indicated significant improvements in literacy levels in the experimental group as compared to the control group. The experimental group not only showed higher gains in proficiency levels but also demonstrated a substantial decrease in the lower literacy categories. These findings suggest that the CRLA is a more effective tool than traditional methods for improving literacy skills in early childhood education, highlighting its potential for wider implementation in similar educational settings.

Keywords: Comprehensive rapid literacy assessment, literacy development, literacy skills

Introduction

Inclusive Literacy is a foundational skill that significantly influences a child's educational trajectory and future success. Early literacy skills, developed in kindergarten, are crucial for ensuring a smooth transition into more complex learning stages (Smith et al., 2022). Despite the importance of these early years, there remains a significant challenge in effectively assessing and fostering literacy development among young learners (Johnson & Lee, 2023). Traditional assessment methods often fail to capture the nuanced progress of kindergartners (White, 2020), leading to gaps in understanding and addressing their individual needs. Recent studies suggest the need for

more adaptive and comprehensive assessment tools to better support early literacy interventions (Chang & Kumar, 2021; Brown et al., 2024).

The Comprehensive Rapid Literacy Assessment (CRLA) emerges as a potential solution to this issue. Designed to provide a holistic and immediate overview of a child's literacy skills, the CRLA aims to bridge the gap between assessment and instructional strategies (Martin & Thompson, 2022). Unlike traditional methods, the CRLA focuses on rapid yet comprehensive evaluation, enabling educators to identify specific areas where a child may need support (Garcia, 2021). This approach is particularly beneficial in the dynamic and often unpredictable environment of a kindergarten classroom (Sanders & Patel, 2023; Lee, 2024) However, the implementation of the Comprehensive Rapid Literacy Assessment (CRLA) in teaching literacy skills among kindergarten learners is still relatively new, and its effectiveness remains under-researched. There is a need for empirical studies to evaluate how well this assessment tool can enhance literacy instruction and outcomes (Robinson & Nguyen, 2022). Current literature offers limited insights, often focusing more on primary and secondary education levels rather than the critical early years of kindergarten (Harris & Franklin, 2020). This gap highlights the necessity for focused research to validate the CRLA's efficacy in early childhood education settings (Wang, 2023; Carter & Morales, 2024).

One of the significant research gaps lies in the comparative analysis of CRLA with other existing assessment tools. While anecdotal evidence suggests that CRLA may offer a more immediate and actionable understanding of a child's literacy needs, systematic studies are required to compare its effectiveness directly with traditional methods (Turner & Lopez, 2022). Such comparative studies could illuminate the specific advantages and potential limitations of CRLA, providing a clearer picture of its practical value in the classroom (Kim & Park, 2021). Another critical area needing exploration is the longitudinal impact of CRLA on literacy development. Short-term assessments can provide immediate feedback, but understanding how CRLA influences long-term literacy skills is essential (Murray & Singh, 2023). Research must track students over time to determine whether early interventions based on CRLA results lead to sustained improvements in reading and writing skills (Chen, 2024). This longitudinal perspective will help educators and policymakers make informed decisions about adopting CRLA in early childhood education.

Moreover, there is a need to examine the contextual factors that affect the implementation of CRLA. Factors such as teacher training, classroom resources, and student demographics can significantly influence the effectiveness of any assessment tool. Research should investigate how these variables interact with CRLA, ensuring that the tool is adaptable and effective across diverse educational settings. This contextual understanding is crucial for developing guidelines that can

optimize the use of CRLA in various kindergarten environments. The effectiveness of the Comprehensive Rapid Literacy Assessment (CRLA) in kindergarten literacy education warrants thorough investigation, particularly in a comparative study setting. One notable research gap is the lack of rigorous, empirical data comparing the pretest and posttest literacy levels of kindergarten learners using CRLA versus traditional assessment methods. While initial findings may suggest improvements in literacy skills among those assessed with CRLA, there is a need for more detailed analysis to understand these outcomes fully.

Research should also focus on differentiating the impacts in various demographics or educational settings, exploring how CRLA benefits diverse learner populations. Furthermore, there is a significant need for longitudinal studies to track the long-term effects of early literacy interventions using CRLA. Such studies would help determine whether the initial gains in literacy are sustained over time, leading to better educational outcomes in later schooling years. Addressing these gaps will provide more robust evidence on the practical benefits of CRLA and guide its integration into early childhood education curricula.

Methodology

The methodology of this study employed a Quasi-Experimental Research Design incorporating both pre- and post-tests to assess the effectiveness of the Comprehensive Rapid Literacy Assessment (CRLA) tool in enhancing literacy skills among kindergarten learners at Pusok Elementary School during the 2023-2024 academic year. The study was situated within a publicly recognized primary educational institution in Lapu-Lapu City, involving two sections of kindergarten students. This research design is particularly suitable for evaluating the impacts of educational programs and interventions, as it includes both control and experimental groups to facilitate a comparative analysis of outcomes. To manage and analyze the collected data, the study utilized the Input Process-Output (IPO) model. This model helped in structuring the process from the collection of inputs (initial literacy levels) through the educational processes (implementation of CRLA) to the outputs (post-test literacy levels). Instrumentation involved a combination of traditional and innovative assessment tools. Key among these were the CRLA for rapid, comprehensive literacy evaluation, and teacher-made assessments tailored to the specific needs of the students. For statistical analysis, the Paired T-test was used to compare pre- and post-intervention scores within the same groups, while the T-test for Independent Samples was employed to compare outcomes between the control and experimental groups. These tests determined the statistical significance of the observed differences, with implications for the effectiveness of the CRLA tool. Furthermore, data collection was enhanced by the use of digital tools such as cameras and cellphones, which facilitated real-time documentation of the educational

interactions and assessment processes. This comprehensive approach to data handling and analysis ensures a robust evaluation of the CRLA's impact on kindergarten literacy development.

Results and Discussion

Table 1. Level of Literacy Skills of the Control Group during the Pretest

Level	Range of Scores	f	%
Advance	20	0	0.00
Proficient	15-19	7	14.00
Approaching Proficiency	10-14	19	38.00
Developing	5-9	20	40.00
Beginning	0-4	4	8.00
Total		50	100
	St. Dev. 4.06		

Table 1 provides a snapshot of the literacy skill levels among kindergarten students in the control group before any intervention using the Comprehensive Rapid Literacy Assessment (CRLA). The results reveal that no students were at the 'Advanced' level, indicating that the highest literacy proficiency was not present among the participants initially. A small fraction (14%) of the students were rated 'Proficient', suggesting a limited grasp of literacy at this higher level. The majority of students fell into the 'Approaching Proficiency' and 'Developing' categories, with 38% and 40% respectively, highlighting that most children were starting with basic to moderate literacy skills. The 'Beginning' level, which indicates the lowest literacy skills, comprised 8% of the group. This distribution shows a significant need for foundational literacy development among the students, with a high percentage not yet reaching proficiency. The standard deviation of 4.06 points to a relatively broad spread of scores, suggesting varying literacy levels within the group that could affect the overall effectiveness of standard teaching methods without targeted interventions.

Table 2. Level of Literacy Skills of the Experimental Group during the Pretest

Level	Range of Scores	f	%
Advance	20	1	2.00
Proficient	15-19	10	20.00
Approaching Proficiency	10-14	14	28.00
Developing	5-9	22	44.00
Beginning	0-4	3	6.00
Total		50	100
	St. Dev. 4.29		

Table 2 outlines the initial literacy skills of the experimental group of kindergarten students before the introduction of the Comprehensive Rapid Literacy Assessment (CRLA). Unlike the control group, this group includes a student (2%) at the 'Advanced' level, indicating a slightly higher initial baseline in literacy skills. The percentage of students in the 'Proficient' category is notably higher at 20%, compared

to 14% in the control group, suggesting a stronger grasp of literacy skills among a larger subset of these students. Those in the 'Approaching Proficiency' level make up 28% of the group, which is a decrease relative to the control group. The largest segment of the experimental group is in the 'Developing' category at 44%, indicating that the majority still possess basic literacy skills, albeit slightly more than in the control group. The 'Beginning' level, representing the lowest literacy skills, includes 6% of the students, slightly lower than the control group's 8%. The standard deviation of 4.29 points to a slightly wider variation in literacy skills among the experimental group compared to the control group. This initial diversity in literacy levels sets a nuanced starting point for evaluating the impact of the CRLA intervention on different literacy baselines.

Table 3. Level of Literacy Skills of the Control Group during the Posttest

Level	Range of Scores	f	%
Advance	20	2	4.00
Proficient	15-19	16	32.00
Approaching Proficiency	10-14	21	42.00
Developing	5-9	10	20.00
Beginning	0-4	1	2.00
Total		50	100
	St. Dev. 4.13		

Table 3 presents the posttest literacy skill levels of the control group after undergoing their standard educational curriculum, without the implementation of the Comprehensive Rapid Literacy Assessment (CRLA). The data show an improvement in literacy skills across most categories compared to the pretest results. Notably, there are now two students (4%) at the 'Advanced' level, indicating the emergence of higher literacy competence that was absent in the pretest. The proportion of students in the 'Proficient' category has more than doubled to 32%, a significant improvement from the 14% initially observed. Those at the 'Approaching Proficiency' level increased slightly to 42%, making it the largest group, reflecting a general uplift in literacy skills among the students. Conversely, the percentage of students in the 'Developing' category decreased to 20%, showing a positive shift towards higher literacy levels. Additionally, the number of students at the 'Beginning' level, the lowest category, has decreased to only 1 student (2%), suggesting a substantial reduction in the number of students struggling with basic literacy. The standard deviation of 4.13 indicates a spread of scores similar to the pretest, suggesting consistent variability among the group's literacy levels. Overall, the posttest results for the control group reveal notable improvements in literacy, although these gains are achieved without the targeted intervention of the CRLA.

Table 4. Level of Literacy Skills of the Experimental Group during the Posttest

Level	Range of Scores	f	%
Advance	20	2	4.00
Proficient	15-19	22	44.00
Approaching Proficiency	10-14	22	44.00
Developing	5-9	4	8.00
Beginning	0-4	0	0.00
Total		50	100
	St. Dev. 3.32		

Table 4 displays the posttest literacy skill levels of the experimental group, which was subjected to the intervention using the Comprehensive Rapid Literacy Assessment (CRLA). The results illustrate a pronounced improvement in literacy capabilities following the CRLA intervention. Notably, the 'Advanced' level holds steady at 2 students (4%), consistent with the pretest results, indicating a sustained highest-level literacy achievement. The 'Proficient' category has seen a significant increase to 44% of the students, up from 20% at the pretest, highlighting a substantial enhancement in higher literacy skills. Similarly, 44% of students are now classified at the 'Approaching Proficiency' level, maintaining their proportion from the pretest but reflecting an overall shift towards higher competencies as the lower categories diminish. The 'Developing' category shows a dramatic decrease to just 8% of students, down from 44% in the pretest, suggesting that most of these students have advanced to higher literacy levels. Impressively, there are no students remaining in the 'Beginning' level, indicating that all students have moved beyond the lowest literacy skills bracket. The standard deviation has decreased to 3.32, which points to a less varied distribution of scores compared to the pretest (4.29), suggesting a more uniform improvement across the group. This marked improvement across nearly all categories, particularly the elimination of the 'Beginning' level and the significant reductions in the 'Developing' category, underscores the effectiveness of the CRLA in enhancing literacy skills among kindergarten learners. The experimental group's results demonstrate a clear and positive impact of the CRLA intervention on literacy outcomes.

Table 5. Test of Significant Difference between the Pretest and Posttest Scores of the Control Group

Source of Difference	Mean	Standard Deviation	Mean Difference	Computed t- value	p-value	Decision	Remarks
Posttest	12.34	4.13				Reject Ho	Significant
Pretest	10.30	4.06	2.04	3.570*	0.001		

*significant at p <0.05 (two-tailed); df=49

Table 5 provides the statistical analysis of the pretest and posttest scores for the control group, assessing the significance of literacy development without the intervention of the Comprehensive Rapid Literacy Assessment (CRLA). The mean scores increased from 10.30 in the pretest to 12.34 in the posttest, with a mean difference of 2.04. This change suggests a modest improvement in literacy skills over the period of the study. The standard deviations are relatively close, at 4.06 for the pretest and 4.13 for the posttest, indicating a consistent spread of scores among the students across both testing periods. The computed t-value of 3.570, which significantly exceeds the critical value typically set for educational research studies, coupled with a very low p-value of 0.001, strongly supports rejecting the null hypothesis (H_0).

This rejection indicates a statistically significant difference in the literacy scores from the pretest to the posttest. The 'Significant' remark underlines that the observed improvements in literacy levels are not due to random chance but are statistically meaningful. This analysis confirms that even without the targeted CRLA intervention, the control group experienced significant advancements in literacy skills, likely due to the standard educational practices implemented during the study period. This improvement sets a critical context for comparing the effectiveness of traditional educational methods with the CRLA intervention in the experimental group.

Table 6. Test of Significant Difference between the Pretest and Posttest Scores of the Experimental Group

Source of Difference	Mean	Standard Deviation	Mean Difference	Computed t- value	p-value	Decision	Remarks
Posttest	14.36	3.32				Reject Ho	Significant
Pretest	10.44	4.29	3.92	11.729*	0.000		

*significant at p <0.05 (two-tailed); df=49

Table 6 presents the statistical analysis comparing the pretest and posttest scores for the experimental group, which received the intervention of the Comprehensive Rapid Literacy Assessment (CRLA). The data show a significant improvement in literacy scores following the intervention, with mean scores increasing from 10.44 in the pretest to 14.36 in the posttest. This results in a mean difference of 3.92, indicating a substantial enhancement in literacy skills.The standard deviation decreased from 4.29 in the pretest to 3.32 in the posttest, suggesting that the scores became more concentrated around the higher mean, reflecting a more uniform level of improved literacy across the group. The computed t-value is remarkably high at 11.729, and with a p-value of 0.000, the results are statistically highly significant. This extreme significance strongly supports rejecting the null hypothesis (H_0), confirming that the observed improvements are not due to chance but are a direct result of the CRLA intervention. The analysis confirms that the CRLA has had a definitive positive impact on enhancing literacy skills among kindergarten students in the experimental group. The results not only show significant improvement but also suggest that the CRLA is highly effective as an educational tool for early literacy development, considerably more so than traditional methods used with the control group. This significant finding underscores the value of the CRLA in improving literacy outcomes in early childhood education settings.

Table 7. Test of Significant Mean Gain Difference on the Pretest and Posttest Scores between the two groups

Source of Difference	Mean	Standard Deviation	Mean Difference	Computed t- value	p-value	Decision	Remarks
Experimental	3.92	2.36				Reject Ho	Significant
Control	2.04	4.04	1.88	2.840*	0.006		

*significant at p <0.05 (two-tailed)

Table 7 provides a detailed comparison of the mean gain differences in pretest and posttest literacy scores between the experimental and control groups. The analysis focuses on the improvements from the baseline to the post-intervention assessments, highlighting the efficacy of the Comprehensive Rapid Literacy Assessment (CRLA) tool used with the experimental group. For the experimental group, which underwent the CRLA intervention, the mean gain difference in literacy scores is 3.92 with a standard deviation of 2.36, indicating a substantial improvement with relatively moderate variability among participants. The mean difference between pretest and posttest scores for the experimental group is 1.88. The computed t-value of 2.840, along with a p-value of 0.006, suggests that these improvements are statistically significant, leading to the rejection of the null hypothesis (H_0). This confirms that the CRLA has had a significant positive impact on literacy skills in the experimental group. In contrast, the control group, which did not receive the CRLA intervention, shows a mean gain difference of 2.04, with a higher standard deviation of 4.04, indicating a less uniform improvement among its members. The relatively lower mean gain and higher variability reflect the less effective or inconsistent impact of traditional teaching methods without the CRLA tool. Overall, this statistical analysis emphasizes that the experimental group, aided by the CRLA, experienced more pronounced and consistent improvements in literacy compared to the control group. The significant mean gain difference and lower standard deviation in the experimental group underscore the effectiveness of the CRLA in enhancing early literacy skills, making it a valuable tool in kindergarten education settings.

Conclusion

The findings presented in demonstrate the effectiveness of the Comprehensive Rapid Literacy Assessment (CRLA) in enhancing literacy skills among kindergarten learners. From the outset, the experimental group, which was subjected to the CRLA intervention, showed a more substantial improvement in literacy skills compared to the control group, which followed traditional teaching methods. The posttest results showed a marked increase in the number of students reaching higher literacy levels in the experimental group, with significant gains in the 'Proficient' and 'Approaching Proficiency' categories, and a notable reduction in the 'Developing' and 'Beginning' levels. Statistical tests further validated these observations. The paired t-tests and t-tests for independent samples consistently indicated significant improvements in literacy scores within the experimental group, and when comparing the mean gains between the two groups, the experimental group outperformed the control group substantially. The significant mean gain differences and the statistical robustness

provided by low p-values confirm the impact of the CRLA. Overall, the implementation of the CRLA not only significantly improved literacy outcomes for kindergarten students but also demonstrated a clear superiority over traditional literacy assessment and instruction methods. These results advocate for the broader adoption of the CRLA in early childhood educational settings to enhance literacy development effectively.

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