INTERNATIONAL JOURNAL OF ADVANCED MULTIDISCIPLINARY STUDIES
Volume VI, Issue 9 September 2026, eISSN: 2799-0664

Analysis of Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Data as Basis for Developing a Kindergarten Literacy Intervention Program

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Abstract — This descriptive-developmental study analyzed Beginning of Year (BOY), Middle of Year (MOY), and End of Year (EOY) Dynamic Indicators of Basic Early Literacy Skills (DIBELS) results of 36 kindergarten learners at a rural public school in Montana, United States during School Year 2025–2026 to inform a proposed literacy intervention program. Existing assessment records were summarized using means, standard deviations, frequencies, percentages, and gain scores. Mean Letter Naming Fluency increased from 22.08 to 58.17, Phoneme Segmentation Fluency from 9.50 to 49.86, Nonsense Word Fluency–Correct Letter Sounds from 9.22 to 53.50, and Nonsense Word Fluency–Words Recoded Correctly from 0.75 to 15.00. The mean DIBELS Composite Score increased from 303.64 to 464.67. At EOY, 35 learners (97.22%) met or exceeded the overall composite benchmark, while one (2.78%) remained below benchmark. Despite overall growth, measure-specific results indicated continuing support needs, particularly in phonemic awareness and letter naming. The findings informed a proposed differentiated Kindergarten Literacy Intervention Program incorporating explicit foundational-skills instruction and progress monitoring. The program was not implemented or evaluated in this study; therefore, no claim about its effectiveness is made.

Keywords: DIBELS; kindergarten; early literacy; letter naming fluency; phoneme segmentation; nonsense word fluency; intervention

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I. INTRODUCTION

Early literacy development is widely recognized as a critical foundation for children's academic success and lifelong learning. The acquisition of foundational literacy skills during the early years of schooling enables learners to develop the competencies necessary for reading comprehension, independent learning, and successful participation in classroom activities. These foundational skills include alphabet knowledge, phonemic awareness, letter-sound correspondence, and beginning decoding abilities. Foorman et al. (2016) emphasized the importance of systematic instruction in foundational reading skills, particularly phonological awareness, decoding, and the relationship between sounds and letters. Their findings suggest that early literacy development requires intentional instruction supported by evidence-based practices. Consequently, assessing and monitoring these competencies during kindergarten is essential for identifying learners who may experience reading difficulties and providing appropriate instructional support.

The importance of early literacy education extends beyond determining whether learners have acquired specific reading skills. Equally important is understanding how these competencies develop and improve throughout the academic year. Literacy acquisition is a developmental process in which learners demonstrate varying levels of performance and rates of improvement depending on their prior learning experiences, individual abilities, and instructional opportunities. Assessing literacy performance at only one point in time may provide limited information about learners' overall development. In contrast, repeated assessments allow educators to examine changes in performance, identify areas of improvement, and recognize skills that require additional instructional attention. Therefore, the systematic monitoring of literacy progress is an essential component of effective early childhood education because it provides information that can guide instructional planning and intervention development.

At the global level, foundational literacy remains a major educational concern. The World Bank et al. (2022), in The State of Global Learning Poverty: 2022 Update, reported that approximately 70% of children in low- and middle-income countries were estimated to be unable to read and understand a simple text by the age of ten. This finding highlights the continuing challenge of ensuring that children acquire essential reading competencies during their early years

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of education. The report emphasized the importance of prioritizing foundational learning, assessing students' learning levels, and implementing evidence-informed approaches to address literacy difficulties. These recommendations demonstrate that improving literacy outcomes requires not only access to education but also systematic efforts to understand learners' performance and respond to their educational needs. Although the report addresses learning poverty at a global level, its emphasis on foundational skills and assessment-informed instruction provides a relevant perspective for examining early literacy development within individual school settings.

In the United States, early literacy continues to be a significant educational priority. National reading assessment results have demonstrated that many elementary learners experience difficulties meeting expected reading proficiency levels. The National Center for Education Statistics (NCES, 2022) reported substantial concerns regarding reading achievement among fourth-grade learners, underscoring the need to strengthen foundational reading instruction during the preceding years of schooling. These concerns suggest that efforts to improve reading achievement should begin during kindergarten, when children are developing the essential skills that support later reading proficiency. Early identification of literacy difficulties, accompanied by appropriate instructional intervention, may help prevent learning gaps from becoming more pronounced as students advance through elementary education.

Research on evidence-based literacy instruction further supports the importance of identifying and monitoring foundational reading competencies. Foorman et al. (2016), through the Institute of Education Sciences, recommended explicit instruction in sound awareness, letter-sound relationships, decoding, and word recognition to support early reading development. These instructional recommendations are relevant to the assessment of kindergarten literacy skills because they identify specific competencies that contribute to beginning reading achievement. In particular, letter naming, phoneme segmentation, and the application of letter-sound relationships represent important dimensions of early literacy development. Monitoring these skills allows teachers to recognize learners who may require additional support and determine which areas should receive greater instructional emphasis. Thus, assessment and instruction should function as complementary processes in which evidence of student performance informs the selection of appropriate teaching strategies.

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One widely used instrument for assessing foundational literacy development in the United States is the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). DIBELS consists of brief, standardized measures designed to assess early literacy competencies and identify learners who may be at risk for reading difficulties. The University of Oregon, Center on Teaching and Learning (2024), provides updated DIBELS 8th Edition assessment materials and resources that support the administration and interpretation of early literacy measures. These resources reflect the continued use of standardized assessments to evaluate foundational reading competencies and support educational decision-making. Through DIBELS, educators can obtain information about learners' literacy performance and use assessment results to identify instructional needs.

Among the DIBELS measures administered during kindergarten, Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency–Correct Letter Sounds (NWF-CLS) provide important information about different aspects of foundational literacy development. Letter Naming Fluency assesses learners' ability to recognize and name printed letters, reflecting their familiarity with the alphabetic system. Phoneme Segmentation Fluency measures their ability to identify and segment individual sounds in spoken words, which is an essential component of phonemic awareness. Nonsense Word Fluency–Correct Letter Sounds assesses learners' ability to apply letter-sound knowledge when responding to unfamiliar letter combinations, providing information about their emerging alphabetic decoding skills. Although these measures assess distinct competencies, they collectively provide a useful picture of learners' developing foundational literacy abilities.

The usefulness of DIBELS is further strengthened by its administration during designated benchmark periods throughout the school year. Beginning of Year (BOY) assessments establish baseline information regarding learners' initial literacy performance. Middle of Year (MOY) assessments provide information about progress during the first part of the academic year, while End of Year (EOY) assessments reflect learners' performance toward the conclusion of kindergarten. Examining results across these three assessment periods allows educators to describe patterns of literacy growth, determine changes in performance, and identify competencies demonstrating limited improvement. Such an approach is particularly important because learners who demonstrate similar performance at the end of the school year may have experienced different

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developmental trajectories. Consequently, examining literacy progress over time provides additional information that may not be evident from a single assessment result.

The systematic examination of literacy progress is especially important in rural and small-school communities in the United States. Rural schools may encounter educational challenges related to geographic isolation, limited access to specialized instructional services, staffing constraints, and professional development opportunities. These circumstances can influence the availability of targeted literacy interventions and the resources needed to support learners experiencing reading difficulties. In such settings, the effective use of existing assessment information can be particularly valuable because it enables educators to identify instructional priorities based on documented learner performance. Rather than relying exclusively on general educational trends, school-level literacy analysis can provide information that directly reflects the learning needs of students within a particular educational environment.

Research conducted in rural educational settings has also highlighted the importance of assessment-informed reading instruction. Project READERS, an initiative associated with the Institute of Education Sciences-supported National Center for Research on Rural Education, examined approaches to improving reading instruction and intervention in rural schools. The project involved multiple rural schools and focused on strengthening teachers' use of assessment information and instructional practices to address reading difficulties. Such research demonstrates the relevance of data-informed literacy instruction within rural educational contexts. However, findings from large-scale investigations involving several schools may not fully explain the particular patterns of literacy development observed within an individual small rural school system. Therefore, localized investigations remain valuable for identifying school-specific learning needs and developing contextually appropriate instructional responses.

At the local level, a rural public school in Montana, United States administers DIBELS assessments to kindergarten learners during the Beginning of Year, Middle of Year, and End of Year benchmark periods. These assessments provide information regarding learners' foundational literacy performance throughout School Year 2025–2026. Specifically, the results for Letter Naming Fluency, Phoneme Segmentation Fluency, and Nonsense Word Fluency–Correct Letter Sounds offer opportunities to examine the development of alphabet knowledge, phonemic

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awareness, and beginning decoding skills. Although the assessment results provide useful information regarding individual learner performance, systematically examining the results across the three benchmark periods can generate a more comprehensive understanding of literacy growth and identify areas requiring additional instructional support.

Despite the established importance of early literacy assessment, progress monitoring, and evidence-based reading instruction, a localized research gap remains concerning the systematic use of BOY, MOY, and EOY DIBELS results as the direct basis for developing a kindergarten literacy intervention program within a small rural school. Existing literature provides substantial evidence regarding effective foundational reading instruction and the value of early assessment. However, general instructional recommendations and large-scale assessment findings do not necessarily identify the specific literacy competencies in which learners at a rural public school in Montana, United States demonstrate the greatest improvement, the least progress, or continuing difficulty. Addressing this gap requires a school-level examination of literacy performance and growth patterns using the assessment information already available within the educational setting.

Furthermore, an important aspect of the research gap concerns the distinction between measuring literacy achievement and understanding literacy progress. Achievement data describe learners' performance at a particular assessment period, whereas growth analysis examines changes in performance across multiple assessment periods. Although both forms of information are valuable, relying solely on end-of-year performance may overlook differences in learners' developmental progress. For instance, some learners may demonstrate considerable improvement but remain below expected benchmark levels, while others may meet benchmark expectations despite showing relatively limited growth. Therefore, examining both performance and growth is necessary to develop a more accurate understanding of learners' literacy development and instructional needs.

Another dimension of the research gap involves the translation of assessment findings into educational intervention planning. The availability of standardized assessment results does not automatically lead to the development of targeted instructional programs. Assessment information must be systematically organized, analyzed, and interpreted to determine which competencies require intervention and which instructional strategies may be most appropriate. Without this

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process, schools may have difficulty establishing instructional priorities that reflect the actual learning needs of their students. Thus, there is a need to connect the analysis of literacy performance and growth with the development of a structured Kindergarten Literacy Intervention Program that responds to identified areas of difficulty.

This gap is particularly relevant to a rural public school in Montana, United States because the analysis of kindergarten literacy data can provide evidence directly applicable to the school's instructional context. By examining learners' performance across the three assessment periods, the study can determine their foundational literacy levels, describe growth trends, identify competencies with the least improvement, and establish the proportion of learners who remain at risk or below benchmark expectations at the end of the academic year. These findings can provide a basis for prioritizing instructional needs and designing targeted interventions that address specific areas of literacy development. Moreover, the proposed program may serve as a practical resource for teachers in planning differentiated instruction and supporting learners who require additional assistance.

Therefore, the present study, entitled Analysis of DIBELS Data as Basis for Developing a Kindergarten Literacy Intervention Program, sought to analyze the early literacy performance of kindergarten learners at a rural public school in Montana, United States during School Year 2025–2026. Specifically, it examined Letter Naming Fluency, Phoneme Segmentation Fluency, and Nonsense Word Fluency–Correct Letter Sounds across the Beginning of Year, Middle of Year, and End of Year assessment periods. Through the systematic analysis of literacy performance, growth trends, areas of least improvement, and end-of-year benchmark classifications, the study aimed to provide an empirical basis for developing a context-specific Kindergarten Literacy Intervention Program. Ultimately, the study sought to contribute to evidence-informed instructional planning, the early identification of literacy difficulties, and the improvement of foundational reading support among kindergarten learners in a small rural educational setting.

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Literature Review

Early literacy instruction requires systematic attention to phonemic awareness, alphabetic knowledge, and decoding (Foorman et al., 2016). DIBELS provides repeated benchmark measures that can inform early identification and differentiated instructional planning. The study draws on the Simple View of Reading, sociocultural scaffolding, response to intervention, and data-driven decision-making as described in the source thesis. Assessment-informed intervention is particularly relevant in a small rural school where locally observed needs may differ from general trends.

This study is anchored on theories and educational policies that emphasize the importance of early literacy assessment, progress monitoring, and intervention in improving reading outcomes among kindergarten learners. The study specifically focuses on the analysis of DIBELS results and the development of a proposed Kindergarten Literacy Intervention Program.

One of the major theories supporting this study is the Simple View of Reading Theory, which explains that reading comprehension is the product of decoding and language comprehension (Foorman et al., 2020). In early childhood education, foundational skills such as phonemic awareness, alphabetic knowledge, and decoding are essential in developing reading proficiency. Since DIBELS measures these foundational literacy skills, the theory directly supports the use of DIBELS data in assessing literacy performance and identifying learners who may require intervention.

The study is also anchored on Vygotsky's Sociocultural Theory, particularly the concept of the Zone of Proximal Development (ZPD). According to Vygotsky (1978), children learn best when provided with appropriate instructional support and scaffolding based on their developmental needs. In this study, the analysis of DIBELS data helps identify the literacy needs of kindergarten learners, enabling teachers to provide targeted instructional strategies and interventions appropriate to learners' performance levels.

In addition, the study is supported by the Response to Intervention (RTI) Framework, which emphasizes early identification, continuous progress monitoring, and tiered instructional support for struggling learners (Jenkins et al., 2020). DIBELS is widely used within RTI

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frameworks as a universal screening and progress monitoring tool. Through BOY, MOY, and EOY assessments, learners who demonstrate literacy difficulties may be identified early and provided with appropriate interventions.

The study is further guided by the principles of Data-Driven Decision-Making Theory, which highlights the importance of using assessment data to improve instructional practices and student outcomes (Datnow & Park, 2019). The analysis of DIBELS results provides educators with evidence-based information that may guide instructional planning and intervention development.

II. METHODOLOGY

This study employed a descriptive-developmental research design to analyze Kindergarten learners' DIBELS assessment results and used the findings as the basis for developing a proposed Kindergarten Literacy Intervention Program. The design was appropriate because the study had two interconnected components: the descriptive analysis of existing literacy assessment data and the development of an instructional intervention based on the identified literacy needs of the learners.

The descriptive component of the study involved the systematic examination of existing DIBELS data collected during the Beginning of Year (BOY), Middle of Year (MOY), and End of Year (EOY) benchmark periods. The study described learners' literacy performance, identified patterns of growth, and determined areas of persistent difficulty without manipulating the learners' instructional conditions. The purpose was to establish an evidence-based description of the literacy status and development of the Kindergarten learners.

The developmental component was supported by the work of Richey (1994), who conceptualized developmental research as the systematic study of designing, developing, and evaluating instructional programs, processes, and products. Richey identified the development and evaluation of instructional products as an important form of developmental research. Richey and Klein (2005) further established developmental research as a systematic approach that could produce contextually specific knowledge through the design and development of instructional

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products and processes. Their subsequent work on design and development research further identified product and tool research as a major category of developmental inquiry.

The descriptive-developmental approach was also supported by contemporary educational research. For example, Maramag-Esguerra (2026) employed a descriptive-developmental design to develop contextualized instructional materials for struggling readers. The study demonstrated the applicability of this approach when learner needs were identified and the findings were subsequently used to develop an instructional product responsive to those needs.

In the present study, the DIBELS assessment results served as the empirical basis for the developmental process. The BOY, MOY, and EOY results were examined to determine learners' literacy performance and growth patterns. The identified strengths, weaknesses, and areas of need then informed the content, instructional strategies, activities, and progress-monitoring components of the proposed Kindergarten Literacy Intervention Program. Thus, the intervention program was context-specific and data-informed, reflecting the actual literacy needs of Kindergarten learners in a rural public school in Montana, United States.

The design was appropriate because the study did not seek to experimentally determine the effectiveness of the proposed intervention. Instead, its purpose was to analyze existing assessment data and develop an intervention based on the evidence obtained from that analysis. Evaluation of the actual effectiveness of the proposed intervention would constitute a subsequent phase of research and could employ a quasi-experimental or experimental design

The school was selected as the research environment because it had available and complete DIBELS assessment data for Kindergarten learners for School Year 2025–2026. Furthermore, the school's existing literacy assessment practices provided relevant data needed to analyze literacy performance and identify areas requiring instructional support. The researcher's accessibility to the assessment data and familiarity with the school's literacy practices also supported the conduct of the study.

The respondents of the study consisted of Kindergarten learners enrolled at a rural public school in Montana, United States during School Year 2025–2026. These learners served as the source of the DIBELS assessment data analyzed in the study.

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The study utilized complete enumeration sampling, wherein all available Kindergarten learners with complete BOY, MOY, and EOY DIBELS assessment results were included in the analysis.

The primary research instrument used in the study was the DIBELS assessment. DIBELS was a standardized literacy assessment tool developed by the University of Oregon and widely used to measure foundational early literacy skills among young learners.

The instrument consisted of assessment results obtained from the Beginning of Year (BOY), Middle of Year (MOY), and End of Year (EOY) benchmark periods for Kindergarten learners during School Year 2025–2026. The assessment measured key literacy variables, including phonemic awareness, alphabetic principle, decoding skills, and early reading fluency.

DIBELS utilized benchmark performance levels to classify learners according to literacy risk categories, such as benchmark, strategic, and at-risk. These classifications served as the basis for analyzing learners' literacy performance and growth patterns.

Since DIBELS was a standardized assessment instrument, its validity and reliability had already been established through extensive research and field testing. According to Good and Kaminski (2020), DIBELS demonstrated strong reliability and validity in assessing early literacy skills and identifying learners who might be at risk for reading difficulties. Therefore, no additional validation or reliability testing was conducted by the researcher.

Prior to the conduct of the study, the researcher secured permission from the administration of a rural public school in Montana, United States to access and utilize the DIBELS assessment results of Kindergarten learners for School Year 2025–2026. Approval from the adviser and other concerned authorities was also obtained before the collection of data.

Upon approval, the researcher retrieved the BOY (Beginning of Year), MOY (Middle of Year), and EOY (End of Year) DIBELS assessment records from the school's literacy assessment database and official records. Since the study utilized existing assessment data, no additional distribution of research instruments to respondents was conducted.

The data-gathering process was conducted within the duration approved by the school administration. After retrieval, the assessment results were organized, tabulated, and encoded for

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analysis. Only learners with complete BOY, MOY, and EOY assessment records were included in the study.

To ensure confidentiality and ethical compliance, all collected data were treated with strict confidentiality and were used solely for academic and research purposes. Students' names and personally identifiable information were not disclosed in the presentation of results.

This study adhered to ethical standards in the conduct of educational research. Prior to data collection, permission was secured from the administration of a rural public school in Montana, United States to access and utilize the DIBELS assessment results of Kindergarten learners for research purposes.

Since the study utilized existing assessment records, informed consent procedures required by the school and relevant authorities were observed. Participation in the study was voluntary, and only assessment records approved for research use were included in the analysis.

Confidentiality and anonymity of the respondents were strictly maintained throughout the study. Students' names and any personally identifiable information were not included in the presentation, analysis, or reporting of data. Codes or numerical identifiers were used instead of actual names to protect the identities of the learners.

All collected data were stored securely in password-protected digital files accessible only to the researcher and adviser. Printed documents, if any, were kept in a secure location. The data were used solely for academic and research purposes and were properly disposed of after the completion of the study in accordance with ethical research practices.

The data gathered from the DIBELS assessment results were analyzed using appropriate statistical tools to determine the literacy performance and growth of Kindergarten learners across the Beginning of Year (BOY), Middle of Year (MOY), and End of Year (EOY) benchmark periods.

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The following statistical tools were utilized in the study:

Frequency and Percentage. These were used to determine the number and proportion of Kindergarten learners under each literacy performance level, such as benchmark, strategic, and at-risk.

Mean. This was used to determine the average literacy performance of Kindergarten learners across the BOY, MOY, and EOY assessments.

Gain Scores. These were used to measure the improvement in learners' literacy performance from the BOY to the EOY benchmark assessments.

Repeated Measures Analysis of Variance (ANOVA). This statistical test was used to determine whether there were significant differences in learners' DIBELS scores across the BOY, MOY, and EOY assessment periods. The test was conducted at a 0.05 level of significance.

The statistical analysis of the data was performed using appropriate software, such as Microsoft Excel and/or the Statistical Package for the Social Sciences (SPSS), to ensure accurate computation and interpretation of the results.

The following terms were defined operationally as used in this study:

At-Risk Level. Referred to the performance level indicating that a student was significantly below expected literacy standards and required intensive intervention.

Beginning of Year (BOY). Referred to the initial assessment period conducted at the start of the school year to determine the baseline literacy skills of Kindergarten learners.

Benchmark Level. Referred to the performance level indicating that a student was meeting expected literacy standards and was likely to achieve reading success.

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Data-Driven Instruction. Referred to the use of assessment results to guide teaching strategies and instructional decisions.

DIBELS. Referred to a standardized assessment tool used to measure key components of early literacy, including phonemic awareness, alphabetic principle, and reading fluency.

Early Literacy Skills. Referred to foundational reading abilities, such as phonemic awareness, letter recognition, decoding, and fluency, that were essential for reading development in Kindergarten.

End of Year (EOY). Referred to the final assessment period conducted at the end of the school year to evaluate learners' overall literacy development.

Gain Scores. Referred to the numerical differences between learners' scores across assessment periods, which were used to measure improvement in literacy skills.

Intervention Program. Referred to the structured set of instructional strategies and activities developed in this study to address identified literacy gaps among Kindergarten learners.

Kindergarten Learners. Referred to students enrolled at the Kindergarten level during School Year 2025–2026 who were the subjects of this study.

Literacy Growth. Referred to the improvement in learners' early literacy skills, as measured by changes in DIBELS scores from BOY to EOY.

Literacy Performance. Referred to the level of learners' reading ability, as indicated by their DIBELS scores across the BOY, MOY, and EOY assessments.

Middle of Year (MOY). Referred to the midyear assessment period used to monitor learners' progress in early literacy skills.

Strategic Level. Referred to the performance level indicating that a student required additional support to meet literacy expectations.

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III. RESULTS AND DISCUSSION

The analyses below retain the thesis results and distinguish descriptive growth from causal evidence. The sample comprised 36 learners with complete BOY, MOY, and EOY records.

TABLE 1. LETTER NAMING FLUENCY ACROSS ASSESSMENT PERIODS

Assessment Period	N	Mean	SD	Minimum	Maximum
BOY	36	22.08	11.57	0	46
MOY	36	41.33	9.72	21	56
EOY	36	58.17	16.49	22	82

The results presented in Table 2 reveal a progressive increase in Letter Naming Fluency, with the mean score improving from 22.08 at BOY to 41.33 at MOY and 58.17 at EOY. This pattern is consistent with the findings of Piasta and Wagner (2010), whose meta-analysis demonstrated that alphabet instruction contributes positively to children's alphabet knowledge and early literacy development. Similarly, the National Reading Panel (2000) recognized alphabetic knowledge and the understanding of relationships between letters and sounds as important components of beginning reading instruction. Foorman et al. (2016) further emphasized the importance of systematic instruction in letter-sound relationships as a foundation for decoding and word recognition. T

These studies support the educational significance of the observed increase in letter-naming performance. Nevertheless, the variation in EOY scores suggests that some learners may continue to require differentiated instruction to strengthen alphabet recognition and automaticity.

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TABLE 2. PHONEME SEGMENTATION FLUENCY ACROSS ASSESSMENT PERIODS

Assessment Period	N	Mean	SD	Minimum	Maximum
BOY	36	9.50	6.31	0	25
MOY	36	31.94	6.43	21	45
EOY	36	49.86	10.07	35	69

Table 3 demonstrates an increase in Phoneme Segmentation Fluency, with mean scores rising from 9.50 at BOY to 31.94 at MOY and 49.86 at EOY. This pattern aligns with the findings of the National Reading Panel (2000), which established that phonemic awareness instruction can improve children's ability to manipulate speech sounds and contribute to reading development. Similarly, Melby-Lervåg et al. (2012), through a meta-analytic review, identified phonemic awareness as an important predictor of later reading skills. Foorman et al. (2016) also recommended explicit instruction in identifying and manipulating sounds in spoken words to support beginning reading.

These findings reinforce the importance of phoneme segmentation as a foundational literacy competency. However, the differences in learners' EOY performance indicate that continued monitoring and targeted phonemic awareness instruction may be necessary for students who demonstrate weaker skills.

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TABLE 3. NONSENSE WORD FLUENCY

NWF Component	BOY Mean (SD)	MOY Mean (SD)	EOY Mean (SD)	BOY-EOY Gain
NWF-CLS	9.22 (7.95)	34.64 (7.89)	53.50 (16.72)	44.28
NWF-WRC	0.75 (1.27)	7.22 (3.43)	15.00 (5.96)	14.25

The results in Table 4 indicate improvement in both NWF-CLS and NWF-WRC, suggesting development in learners' application of letter-sound relationships and beginning decoding skills. NWF-CLS increased from 9.22 at BOY to 53.50 at EOY, while NWF-WRC increased from 0.75 to 15.00. These findings are consistent with Ehri's (2022) explanation of orthographic mapping, which emphasizes the importance of connecting graphemes with phonemes in developing accurate and automatic word recognition. Likewise, Castles et al. (2018) emphasized that acquiring knowledge of the alphabetic principle and developing decoding skills are essential stages in learning to read. Foorman et al. (2016) further recommended explicit instruction in decoding and word recognition to strengthen foundational reading abilities.

These studies support the interpretation that increasing nonsense-word fluency scores reflect developing alphabetic decoding competencies, although the two NWF components should be interpreted according to their respective scoring systems.

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TABLE 4. GROWTH TRENDS ACROSS BENCHMARK PERIODS

Measure	BOY Mean	MOY Mean	EOY Mean	BOY-MOY Gain	MOY-EOY Gain	BOY-EOY Gain
LNF	22.08	41.33	58.17	19.25	16.83	36.08
PSF	9.50	31.94	49.86	22.44	17.92	40.36
NWF-CLS	9.22	34.64	53.50	25.42	18.86	44.28
NWF-WRC	0.75	7.22	15.00	6.47	7.78	14.25
WRF*	1.17	3.44	16.75	2.28	13.31	15.58
Composite	303.64	385.19	464.67	81.56	79.47	161.03

Table 5 shows a consistent upward trend across the available DIBELS measures, with the mean Composite Score increasing from 303.64 at BOY to 385.19 at MOY and 464.67 at EOY. This pattern highlights the importance of examining literacy development across multiple assessment periods. The University of Oregon, Center on Teaching and Learning (2020), in the DIBELS 8th Edition Technical Manual, documented the use of benchmark assessments and growth information to evaluate early reading development. Similarly, the University of Oregon (2022), through its revised Zones of Growth technical report, provided a framework for interpreting student progress in relation to expected growth patterns. Verhoeven et al. (2020) also demonstrated through a meta-analysis that early literacy interventions can positively influence phonological awareness and reading-related skills.

Together, these sources support the importance of monitoring literacy development over time. However, the observed increases in the present dataset cannot establish that a particular instructional approach caused the improvement.

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TABLE 5. BOY-TO-EOY RAW-SCORE GROWTH

Measure	BOY Mean	EOY Mean	Raw Mean Gain
LNF	22.08	58.17	36.08
PSF	9.50	49.86	40.36
NWF-CLS	9.22	53.50	44.28
NWF-WRC	0.75	15.00	14.25
WRF	1.17	16.75	15.58

Table 6 indicates that NWF-WRC demonstrated the smallest numerical BOY-to-EOY gain at 14.25 points, followed by WRF at 15.58 points. However, these results must be interpreted cautiously because the DIBELS measures have different scoring systems and developmental expectations. The University of Oregon, Center on Teaching and Learning (2020), emphasized the importance of interpreting DIBELS performance using measure-specific benchmarks and growth information. Likewise, Foorman et al. (2016) recommended systematic instruction in decoding and word recognition, supporting the need to examine specific literacy competencies rather than relying exclusively on overall reading performance. Verhoeven et al. (2020) further demonstrated that early literacy interventions can influence multiple reading-related competencies, including letter knowledge and decoding.

These findings suggest that identifying areas of least improvement should involve not only numerical gains but also benchmark attainment and individual instructional needs.

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TABLE 6. END-OF-YEAR COMPOSITE BENCHMARK STATUS

EOY Status	Frequency	Percentage
Above Benchmark / Blue Core Support	26	72.22%
Benchmark / Green Core Support	9	25.00%
Below Benchmark / Strategic Support	1	2.78%
Well Below Benchmark / Intensive Support	0	0.00%
Total	36	100.00%

Table 7 shows that 26 learners (72.22%) were classified above benchmark, 9 learners (25.00%) met benchmark expectations, and 1 learner (2.78%) remained below benchmark at EOY. These classifications highlight the usefulness of standardized literacy screening in identifying learners who may require additional instructional support. The University of Oregon, Center on Teaching and Learning (2020), presented reliability, validity, and classification-accuracy evidence supporting the use of DIBELS 8th Edition for early literacy screening.

Similarly, the Institute of Education Sciences describes DIBELS 8th Edition as an instrument developed for identifying early reading difficulties and monitoring reading development. The University of Oregon's DIBELS guidance also emphasizes that learners should continue to be screened across benchmark periods because meeting an earlier benchmark does not guarantee meeting subsequent expectations. These sources support using EOY classifications to identify students who may benefit from continued monitoring and intervention.

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TABLE 7. END-OF-YEAR SUPPORT NEEDS BY MEASURE

Measure	Core Support n (%)	Strategic Support n (%)	Intensive Support n (%)
LNF	29 (80.56%)	0 (0.00%)	7 (19.44%)
PSF	26 (72.22%)	8 (22.22%)	2 (5.56%)
NWF-CLS	34 (94.44%)	2 (5.56%)	0 (0.00%)
NWF-WRC	34 (94.44%)	1 (2.78%)	1 (2.78%)
WRF	32 (88.89%)	3 (8.33%)	1 (2.78%)

Table 8 reveals that learners demonstrated different levels of support needs across foundational literacy competencies. Although most learners reached core-support ranges, PSF showed the largest combined proportion requiring additional support (27.78%), while LNF identified 19.44% of learners in the intensive-support range. These findings emphasize the importance of examining individual literacy skills rather than relying solely on composite performance. Foorman et al. (2016) recommended explicit instruction in foundational reading competencies, particularly phonological awareness and letter-sound relationships. Similarly, a meta-analysis published in 2022 found that phonemic awareness instruction was associated with positive effects on segmentation skills among learners suspected of having reading disabilities, with stronger instructional effects in kindergarten and first grade.

A systematic review of Tier 2 oral language and early reading interventions also identified evidence supporting structured small-group interventions incorporating explicit instruction and multiple literacy skills. Collectively, these studies provide a research-based justification for prioritizing phonemic awareness, alphabet knowledge, and differentiated literacy support in the proposed Kindergarten Literacy Intervention Program.

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Proposed Kindergarten Literacy Intervention Program

The proposed Kindergarten Literacy Intervention Program was developed based on the findings of the analysis of the DIBELS data of the 36 Kindergarten learners. Although the learners demonstrated overall growth from Beginning of Year (BOY) to Middle of Year (MOY) and End of Year (EOY), the results showed differences in individual performance and continuing needs in specific foundational literacy skills.

The program is designed to provide systematic, explicit, differentiated, and data-informed literacy instruction. It focuses on Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency (NWF). Learners who demonstrate greater difficulty may receive more intensive instruction, while learners who meet expected performance may continue receiving core instruction and enrichment.

The proposed program aims to strengthen the foundational literacy skills of Kindergarten learners through targeted instruction and regular progress monitoring based on identified literacy needs.

The program specifically aims to improve learners' ability to recognize and name letters accurately and fluently; identify, blend, and segment individual sounds in spoken words; demonstrate accurate letter-sound correspondence; and apply letter-sound knowledge when decoding unfamiliar words. It also aims to use regular progress-monitoring results to guide instructional decisions and determine whether learners require continued, increased, or reduced intervention support.

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TABLE 8. PROPOSED KINDERGARTEN LITERACY INTERVENTION PROGRAM

Identified Need	**Objective**	**Suggested Activities**	**Schedule**	**Progress Monitoring**
Letter naming automaticity	Increase rapid and accurate recognition and naming of uppercase and lowercase letters.	Timed letter-name practice; alphabet sorting; letter matching; rapid naming cards; brief cumulative review.	10–15 minutes, 3–4 times weekly	LNF progress-monitoring probes
Phonemic awareness / segmentation	Improve ability to identify, isolate, blend, and segment phonemes in spoken words.	Elkonin boxes; sound tapping; oral blending; phoneme segmentation games; picture-based sound activities.	15 minutes, 4 times weekly	PSF progress-monitoring probes
Letter-sound correspondence	Strengthen accurate and automatic production of common letter sounds.	Explicit letter-sound instruction; sound-symbol cards; cumulative review; controlled word-	10–15 minutes, 3–4 times weekly	NWF-CLS probes

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		building activities.		
Decoding / recoding	Improve application of letter-sound knowledge to decode unfamiliar CVC and nonsense words.	Continuous blending; word chains; sound-by-sound decoding; decodable word lists; teacher modeling with gradual release.	15–20 minutes, 3–4 times weekly	NWF-WRC probes
Word reading fluency	Increase accurate and increasingly automatic reading of taught words.	High-frequency word review; decodable text practice; phrase reading; repeated reading of short controlled passages.	10–15 minutes, 3–4 times weekly	WRF and classroom reading checks

The intervention may be differentiated according to the learners' DIBELS performance. Learners who demonstrate expected performance may continue to receive regular classroom literacy instruction with enrichment opportunities. Learners who demonstrate moderate difficulty may receive targeted small-group intervention in the identified skill area. Learners demonstrating substantial difficulty may receive more intensive instruction in a smaller group or individually, with more frequent progress monitoring.

The intervention groups should remain flexible rather than permanent. Learners may move between levels depending on their progress-monitoring results.

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The program may begin with a review of each learner's most recent DIBELS results to identify the specific skill requiring support. Learners with similar needs may then be grouped for targeted instruction. Teachers may provide short, explicit intervention sessions several times each week in addition to regular classroom literacy instruction.

Instruction should include teacher modeling, guided practice, immediate corrective feedback, repeated practice, and opportunities for independent application. Progress should be monitored regularly using the appropriate DIBELS measure. Results may then be used to determine whether the learner is responding to the intervention or whether the instructional intensity needs to be adjusted.

Progress monitoring is an important component of the proposed program. Learners receiving targeted intervention may be assessed periodically using the DIBELS measure corresponding to the skill being taught. LNF may be used to monitor letter-naming development, PSF to monitor phonemic segmentation, and NWF-CLS and NWF-WRC to monitor letter-sound knowledge and early decoding.

Teachers may maintain an individual progress record for each learner. If a learner demonstrates consistent improvement, the intensity of intervention may gradually be reduced. If progress remains limited, the teacher may increase instructional frequency, reduce group size, provide additional modeling and practice, or modify the intervention strategy.

Through the proposed program, Kindergarten learners are expected to demonstrate improved automatic recognition and naming of letters, stronger phonemic awareness and segmentation skills, increased knowledge of letter-sound relationships, and improved ability to decode unfamiliar words. The program is also expected to help teachers identify learners who require additional support earlier and make instructional decisions based on assessment data.

The proposed Kindergarten Literacy Intervention Program provides a structured response to the literacy needs identified through the DIBELS data analysis. Rather than providing the same intervention to all learners, the program emphasizes targeted and differentiated instruction based on individual performance. The use of regular progress monitoring will allow teachers to

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determine whether learners are responding to instruction and to adjust the level of support when necessary.

Limitations and Recommendations

The findings of the study should be considered in light of several limitations. First, the study was limited to 36 Kindergarten learners from one school setting during School Year 2025–2026. Therefore, the findings describe the performance of this particular group and should not automatically be generalized to all Kindergarten learners or other school settings.

Second, the study relied on existing DIBELS assessment records. The analysis was therefore limited to the literacy skills and measures contained in the available dataset.

Third, the study was descriptive in nature. Although the results showed growth in learners' scores across the school year, the study was not designed to determine whether a particular instructional strategy, teacher, curriculum, or intervention caused the observed improvement.

Fourth, the DIBELS measures assess specific components of early literacy and do not represent every aspect of literacy development. Other factors such as vocabulary, comprehension, oral language, home literacy experiences, attendance, and individual learner characteristics were not examined in the present study.

Finally, the proposed Kindergarten Literacy Intervention Program was developed based on the findings of the study but was not implemented or evaluated as part of the present research. Therefore, the study does not make conclusions regarding the effectiveness of the proposed program.

Based on the findings and conclusions of the study, it is recommended that teachers continue to use BOY, MOY, EOY, and progress-monitoring data to identify learners who require additional literacy support. Learners demonstrating strategic or intensive needs should receive explicit, systematic, and differentiated instruction focused on the specific foundational skill in which difficulty is observed.

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Particular attention may be given to phonemic awareness and letter-naming automaticity, since the EOY skill-level analysis identified continuing needs among some learners in these areas. Instruction in letter-sound correspondence, blending, decoding, and word reading should likewise be continued to strengthen learners' progression from foundational skills toward increasingly fluent reading.

School administrators and literacy personnel may consider the proposed Kindergarten Literacy Intervention Program as a framework for providing targeted support. Learners may be grouped according to their demonstrated needs, and their progress should be monitored regularly so that the intensity and focus of instruction can be adjusted based on their response.

Parents and guardians may also be encouraged to support early literacy development at home through developmentally appropriate activities such as alphabet practice, sound games, shared reading, and opportunities to practice letter-sound relationships and beginning word reading.

Finally, future researchers may conduct similar studies using larger samples, multiple schools, or several school years. Future studies may also examine additional literacy variables and learner characteristics. Most importantly, subsequent research may implement and evaluate the proposed Kindergarten Literacy Intervention Program to determine its effectiveness in improving the foundational literacy skills of learners who remain below expected benchmarks.

IV. CONCLUSION

Based on the findings, it is concluded that the Kindergarten learners demonstrated overall improvement in foundational literacy skills throughout School Year 2025–2026. The consistent increase in DIBELS scores from BOY through MOY to EOY indicates positive development in letter naming, phonemic awareness, letter-sound knowledge, and early decoding skills.

The findings further show that examining only the overall class performance may not fully represent the literacy needs of individual learners. Although most learners reached or exceeded the expected overall benchmark at EOY, skill-specific results revealed that some learners continued

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to require additional support. Therefore, DIBELS data can be useful not only for describing class-level literacy growth but also for identifying specific areas in which differentiated instruction and intervention may be needed.

It is further concluded that a data-informed and differentiated literacy intervention program may be developed based on the identified needs of the learners. Such a program should provide explicit and systematic instruction in foundational literacy skills while using regular progress monitoring to guide instructional decisions.

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