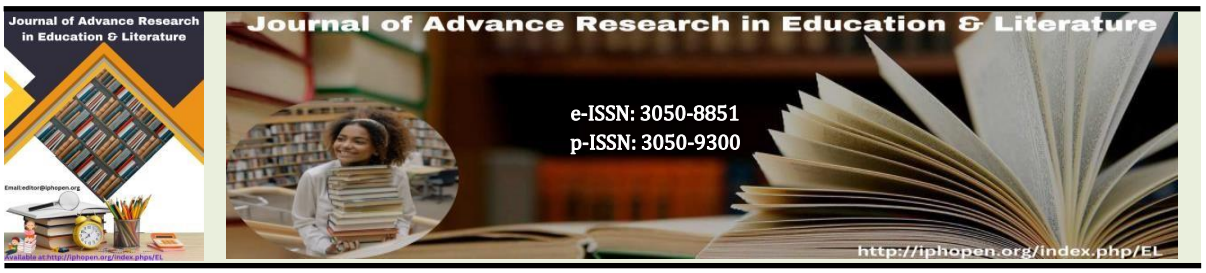

Explicit Instruction a Rudiment for the Development of Reading Skills in Learners with Dyslexia in an inclusive primary schooling the Buea Municipality Cameroon

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Abstract

This study sought to investigate explicit instruction as a rudiment in the development of reading skills in learners with dyslexia in the Buea Municipality. Specifically, it investigated the effect of systematic phonics instruction (drill-practice) and guided modeled reading (guided practice) on the development of reading skills in learners with dyslexia. The experimental research design with the quasi-experimental design, Pre- test and Posttest with Non-Randomized Experimental and Control groups was used. Interview and observation guides were used to corroborate the data collected from the experiment. purposively14 pupils from class four of Government school Buea Townin the Buea Municipality was selected to constitute the participants in the control and the experimental groups. Data range and validation checks were performed in SPSS version 26.0 (IBM Inc., 2012). Cramer's V test was used to measure the association between the categorical variables. The extent to which explicit instruction fosters the development of reading skill was discussed using Chi –Square test of the equality of the proportion. Statistics were discussed at the 95% Confidence Level (CL), that is Alpha=0.05. The results revealed that both systematic phonics instruction and guided modeled reading significantly foster the development of reading skills of learners with dyslexia who were in the experimental group as shown by Cramer's V test which indicates that more children (85.7%) from the experimental group made progress after the posttest compared to (14.3%) for the control group. This difference was statistically significant at the 95% confident level and Cramer's V test further proved that progress was significant within the groupsatV=0.714; P=0.008. It was generally concluded that explicit instruction significantly fosters the development of reading skills of children with dyslexia who were taught using the strategies in the Buea Municipality. It is therefore recommended that systematic phonics instruction and guided modeled reading be incorporated into the curriculum, and training on the use of this method be provided to teachers for effective use in teaching of learners with dyslexia.

Keywords: *Development, Explicit, Instruction, Rudiment, Learners with Dyslexia, Reading Skills.*

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Introduction

Reading is foundational skill that underpins academic achievement and lifelong learning and a great determinant of successful functioning inthe 21st century society. However, acquiring reading skill is very hectic for learners with dyslexia which is a neuro developmental disorder characterised by difficulties with accurate and fluent word recognition and poor spelling. Many learners with dyslexia remain underserved due to limited awareness, insufficient teacher training and the lack of targeted instructional strategies. Explicit instruction has been used over time to record a significant improvement in the reading ability of learners with dyslexia across the globe. It is a systematic method which includes direct teaching of concepts and skills guided practice and continuous feedback. It emphasises clarity, repetition and the gradual release of responsibility, making it particularly effective for learners who struggle with decoding, phonemic awareness and reading comprehension. Despite the growing global recognition of the benefits of explicit instruction for learners with reading difficulties, its application within the Cameroonian context particularly in Buea remains unexplored. This paper investigated the role of explicit instruction as a foundational tool in the development of reading skills among primary school learners with dyslexia in Buea.

Literature Review

Reading is one of the competences necessary for effective participation in modern life and it is a prerequisite for the achievement of many other competences, both generic and specific. It underpins access to all learning areas across the curriculum.It is a cognitive process of decoding written symbols to extract and construct meaning. It involves decoding, which is translating written symbols into their spoken equivalents, comprehension which is understanding and interpreting the meaning of words and sentences in context. Reading is not an innate human ability, rather it is a culturally acquired skill that coopts brain systems originally evolved for spoken language and object recognition (Ritchey & Goeke (2006).

According toBowers, & Newby (2012) reading can also be seen as a multifaceted cognitive activity that involves both lower-level (automatic) and higher-level (strategic and interpretative) cognitive processes, which work interactively to support fluent and meaningful reading. They believe that the lower-level processes are often automatic and operate rapidly and are essential for decoding and word recognition and that it constitutes,

- Phonological processing which is the ability to recognise and manipulate the sound structures of language such as phonemes and syllables. It involves a high sensitivity to the sound structure of language, crucial for decoding and is a strong predictor of early reading ability and it subtypes are Phonemic awareness which is the ability to identify and isolate individual sounds(phonemes) in spoken words. Phonemic awareness is the most basic of the abilities related to reading and a skill that the reading process is built upon. With most readers the process comes naturally, and they are not aware that they are even doing it. It is learned through listening oral language and then integrated with written print and can be improved through instruction and practice. It also involves phonological memory which is the ability to retain phonological information in short-term memory. It also involves rapid automatised naming (RAN) which is quickly naming familiar symbols or objects, linked to reading fluency.
- Orthographic processing: this is the ability to recognise written word forms and spelling patterns. It supports accurate and fluent word recognition without relying solely on phonological decoding.
- Decoding and word recognition: this is the process of converting graphemes (letters) into phonemes (sounds) a skill essential for reading unfamiliar words. Word recognition becomes increasingly automatic with practice facilitating fluent reading.
- Fluency: reading fluency refers to the ability to read with speed, accuracy and appropriate

expression. It acts as a bridge between decoding and comprehension as it reduces cognitive load and allows more resources to be allocated to understanding the text.

Snowling & Hulme, (2012), building on the study by Bowers, & Newby (2012) states that the higher-level processes involve interpretation, integration and reasoning which are essential for comprehending and making sense of what is read, and it constitute,

- Lexical access and semantic processes: the lexical access is the retrieval of words meaning from the memory while semantic processing involves understanding the meaning of individual words and how to they relate to each other in context
- Syntactic parsing: which s the process of analysing sentence structure to understand relationships between words. It allows readers to determine who did what to whom which is critical for sentence level comprehension.
- Inferencing: which has to do with drawing conclusions and connecting ideas that are not explicitly stated in the text. Readers must integrate information with prior knowledge to make these inferences
- Discourse and pragmatic integration: understanding passages or story requires integrating ideas across sentences and paragraph (discourse processing) and interpreting language in context (pragmatic comprehension). This allows the construction of a coherent mental model of the text.
- Metacognition and executive function: this refers to readers awareness and control of their own reading processes. Skilled readers monitor their understanding adjust strategies and re-read if necessary. Executive functions like attention shifting, inhibition and working memory also contribute significantly.

They further state that reading involves the dynamic interaction between lower-level automatic processes and higher-level interpretive processes. While lower-level processes lay the groundwork for decoding and fluency, higher level processes are crucial for comprehension and knowledge construction. A complete understanding of whatever is being read requires the integration of both levels especially in educational and clinical context. It could therefore be said that reading is complex learned skill involving coordinated activity cross multiple brain regions and cognitive systems.

The development of reading skills is a critical milestone in a child's academic journey and is closely linked to future educational success. Reading acquisition is a complex, multifaceted process involving phonological awareness, decoding, fluency, vocabulary, and comprehension.

Reading development begins well before formal schooling, with emergent literacy skills such as print awareness, letter knowledge, and phonological awareness playing a vital role in early reading acquisition (Ehri et al., 2001). Chall (1983) stage-based model of reading development holds that in early childhood (ages 4–7), children move from pre-reading to initial decoding, by ages 7–9, they develop fluency and begin to read for meaning and in later childhood, reading becomes more automatic and supports knowledge acquisition across subjects. This staged progression highlights the importance of early mastery of foundational skills to ensure success in later academic tasks. Children learn to decode by mastering grapheme-phoneme correspondences. Children who do not develop decoding skills early often struggle with reading fluency and comprehension later. Fluency acts as a bridge between decoding and comprehension.

Fluent readers use less cognitive energy on decoding and can focus on understanding the text. Vocabulary knowledge is both a product of and a contributor to reading development. Children with rich oral vocabularies are better equipped to understand what they read. Reading comprehension, the goal of reading, depends on the integration of decoding, fluency, vocabulary, and background knowledge (Cain & Oakhill, 2007).Reading development is influenced by a

variety of external factors such as socioeconomic status (SES) which has been linked to disparities in vocabulary, access to books, and parental involvement, also early intervention, and consistent reading practice at home and school contribute positively to literacy outcomes. A strong instructional framework, combined with supportive environments, can ensure successful literacy development for most children (Rasinski, 2003).

Dyslexia is a specific learning disorder that typically becomes evident in early childhood, particularly during the first years of formal education. Among children aged 6–11, this condition manifests through difficulties in decoding, spelling, and reading fluency despite adequate intelligence and learning opportunities (Lyon, Shaywitz, &Shaywitz, 2003).Children between the ages of 6 and 11 with dyslexia often present with deficits in phonological processing, including difficulties with phonemic awareness, rapid naming, and verbal memory (Snowling, 2000). These deficits interfere with the ability to form letter-sound associations and decode unfamiliar words. Neuroimaging studies show that dyslexic children have under activation in the left hemisphere's posterior reading systems, especially the temporo-parietal and occipital-temporal areas (Shaywitz et al., 2002). These neurological differences are present from early childhood and are not due to lack of exposure to reading.

Dyslexia affect more than just reading ability; it also has profound implications for academic performance and emotional well-being. Children aged 6–11 are often required to read to learn across subjects, and dyslexia can hinder progress in areas like mathematics, science, and social studies. Morgan, Farkas, Tufis, and Sperling (2008) found that children with dyslexia are at greater risk for academic disengagement and low self-esteem. Negative academic experiences often contribute to frustration, anxiety, and avoidance behaviors. Dyslexia do not manifest uniformly across all children. Some learners show more severe deficits, while others have mild or compensated profiles. Pennington (2006) highlighted that, dyslexia often co-occur with attention-deficit/hyperactivity disorder (ADHD) or speech and language impairments, complicating diagnosis and treatment. As such, assessments must be comprehensive, and interventions individualized to address the range of challenges experienced by each child.

Dyslexia is a specific learning disorder characterized by difficulties in accurate and/or fluent word recognition, poor spelling, and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is unexpected in relation to other cognitive abilities and classroom instruction (Lyon, Shaywitz, &Shaywitz, 2003). The phonological deficit hypothesis posits that dyslexia primarily stems from impairments in phonemic awareness which is the ability to identify and manipulate the smallest units of sound in spoken words (Snowling, 2000). This deficit affects the acquisition of foundational decoding skills, making it difficult for learners to link sounds with written symbols. Wagner and Torgesen (1987) found that phonological awareness in kindergarten strongly predicts later reading achievement, suggesting that deficits in this area are a major impediment to early reading development in dyslexic learners.

Learners with dyslexia experience significant challenges in decoding unfamiliar words due to impaired phonological processing. Vellutino et al. (2004) argue that these learners are less able to infer spelling-sound correspondences, leading to slow and error-prone decoding. Consequently, their word recognition becomes less automatic, which not only delays reading development but also increases cognitive load during reading tasks. Reading fluency defined as the ability to read with speed, accuracy, and appropriate expression develops more slowly in learners with dyslexia. Shaywitz et al. (2003) demonstrated through neuroimaging studies that dyslexic readers exhibit under activation in the left hemisphere's reading network, particularly in regions responsible for rapid word recognition. This neurological pattern correlates with reduced fluency and persistent struggles with reading efficiency, even after decoding improves. Although

decoding is the primary barrier in early reading, comprehension becomes a central challenge as academic demands increase.

According to Cain, Oakhill, and Bryant (2004), poor decoding skills disrupt comprehension by limiting access to textual meaning. Moreover, because dyslexic learners often avoid reading, they are exposed to fewer vocabulary-building and comprehension-enhancing experiences, creating a cycle of reading failure. The development of reading skills in dyslexic learners is not uniform. Pennington (2006) notes that dyslexia often co-occur with other neuro developmental disorders such as ADHD and specific language impairment (SLI), which can exacerbate reading difficulties and complicate intervention efforts. This variability underscores the need for individualized assessment and instruction. The development of reading skills in learners with dyslexia is shaped by persistent phonological processing deficits, disrupted decoding and fluency, and limited exposure to rich language input. Understanding the cognitive and linguistic foundations of dyslexia continues to be essential for developing effective educational strategies that support successful reading outcomes.

Learners with dyslexia follow similar stages of reading development as typically developing readers, but with delays, difficulties, and the need for targeted, explicit instruction. The stages outlined below are adapted from Chall's (1983) model of reading development, with specific focus on how dyslexia affect progression. Pre-Reading Stage (Birth–6 years) which focus on oral language development, phonemic awareness, exposure to print. However, learners with dyslexia have difficulties with phonological awareness, rhyming, and letter-sound associations (Snowling& Hulme, 2012).Initial Reading / Decoding Stage (6–7 years) which focuses on learning the alphabetic principle, decoding simple words, but for learners with dyslexia they struggle with grapheme-phoneme correspondences, slow decoding, frequent errors (Lyon, Shaywitz, &Shaywitz, 2003).Confirmation and Fluency Stage (7–8 years) which dwell on improving decoding speed, recognizing high-frequency words, building fluency but for learners with dyslexia Reading remains laboured and inaccurate, affecting fluency and motivation (Torgesen et al., 2001).Reading for Learning (9–14 years) which constitute reading to learn new information across subjects however, dyslexic learners face ongoing issues with reading comprehension due to persistent decoding problems and limited vocabulary (Shaywitz, 2003).Multiple Viewpoints (15–18 years) typical focus on analysing texts with multiple perspectives, critical thinking but for learners with dyslexia have difficulty with abstract language, academic vocabulary, and synthesizing information (Snowling & Hulme, 2012). Construction and reconstruction (College and Beyond) where evaluating and integrating diverse sources of information is the main characteristic but for learners with dyslexia reading remains effortful and may rely heavily on compensatory strategies. Dyslexia do not change the sequence of reading development stages but significantly impacts the pace and nature of progress. Early, explicit, and sustained intervention is essential to help learners with dyslexia navigate each stage successfully.

Even though dyslexic learners follow the same stages in reading development they however face inexplicable difficulties such as difficult to recognize written words quickly and accurately, sounding out unfamiliar words, skipping or misreading small words, and problems with comprehension, especially when reading aloud. They also exhibit inconsistency in spelling patterns, they have challenges in organizing ideas, they reverse letters and numbers and have difficulties retrieving words, struggle with phonemic awareness they possess high verbal skills but lag in literacy abilities (Lewis, 2013).

Birsh, (2018) holds that just as reading is classified into high- and low-level processing so are the various types of dyslexia manifested by learners across the board. At the low-level processing are the following types of dyslexia:

- Orthographic dyslexia: this is the inability to recognise written word forms and spelling patterns.
- Decoding and word recognition dyslexia: this is the inability to convert graphemes (letters) into phonemes (sounds).
- Fluency dyslexia: the inability to read with speed, accuracy and appropriate expression.

At the higher-level processes are the following types of dyslexia

- Comprehension dyslexia which is the inability to interpret, integrate and making sense of what is read.
- Lexical access dyslexia: which is the inability to retrieve words meaning from the memory
- Semantic processing dyslexia: which is the inability to understand the meaning of individual words and how they relate to each other in context.
- Syntactic parsing dyslexia: which is the inability to analyse a sentence structure to understand relationships between words.
- Inferencing dyslexia: which is the inability to draw conclusions and connect ideas that are not explicitly stated in the text.
- Discourse processing dyslexia: Inability to understand passages or story integrating ideas across sentences and paragraph
- Pragmatic integration dyslexia: this is the inability to interpret language in context
- Pragmatic comprehension dyslexia which is the inability to construct a coherent mental model of a text.
- Metacognition dyslexia: which is inability to be aware and in control of their own reading processes that is inability to monitor their understanding, adjust strategies and re-read if necessary.
- Executive function dyslexia: which include deficit in attention shifting, inhibition and working memory.

Explicit instruction is a structured systematic and direct method of teaching that involves clear modeling, guided practice and feedback. It is particularly effective for teaching foundational skills and for learners with learning difficulties. It is characterized by clear learning goals, step-by step demonstration (modeling), guided practice with corrective feedback, independent practice and frequent checks for understanding (Archer & Hughes, 2011). They further highlighted that explicit instruction includes lesson structure (clearly defined objectives and consistent routines), modeling (I do phase where teacher demonstrates the skill), guided practice (we do phase with prompts and scaffolds), independent practice (you do where the student apply the skills) and review and feedback (frequent opportunities to review and correct errors). It is a scientifically grounded highly effective method, especially for learners who benefit from clarity, structure and feedback, while it may need to be supplemented with exploratory or constructivist approaches for advanced learners. It forms the foundation of effective teaching for foundational skills.

John Sweller (1980) Cognitive load theory significantly situates explicit instruction as a scientific method in teaching learners with dyslexia. The theory is based on the premise that human cognitive architecture, especially the limitations of working memory, has significant implications for instructional design. It explains how instructional materials should be structured to optimize learning and avoid overloading the learner's cognitive capacity. It emphasizes that the working Memory has limited capacity (typically 7±2 elements) and duration (~20 seconds without rehearsal), long-term Memory has a vast storage of knowledge organized in schemas and that the goal of instruction is to help learners form schemas to reduce cognitive load in future tasks. He identified three kinds of cognitive load, Intrinsic Load which is related to the complexity of the content and the interactivity of elements, and it depends on both the material

and the learner's expertise. Extraneous Load which is imposed by the way information is presented rather than the material itself and that poor instructional design increases this load and lastly Germane Load which is the mental effort invested in constructing and automating schemas and this is the "productive" load and should be maximized. Based on this, Sweller stipulates the following instructional principles; *Worked Example Effect:* Present step-by-step solutions to problems to reduce intrinsic load. *Split-Attention Effect* which calls on instructors to avoid requiring learners to integrate information from multiple sources (such as diagrams and text apart).*Modality Effect* which calls for the use of audio narration with visuals rather than on-screen text to optimize working memory. *Redundancy Effect* which says instructors should *r*emove unnecessary information to prevent overload. *Expertise Reversal Effect* saying that as learners gain expertise, the effectiveness of explicit guidance diminishes as such instruction must adapt. These serve as a foundation for explicit instruction since structured guidance helps manage intrinsic and extraneous load, step-by-step teaching enables effective schema formation and frequent checks, and scaffolding align with managing cognitive demands.

Information processing theory is another fundamental scientific base for explicit instruction. It likens the human mind to a computer, focusing on how information is encoded (taken in), stored (retained over time) and retrieved (accessed for use). It postulates the Three-Stage Model of Memory; *Sensory Memory* which receives input from the environment via the senses and is characterized by very short duration holding information for 0.5 to 4 seconds and has a high capacity which quickly decays information unless attended to. *Working Memory (Short-Term Memory)*which temporarily holds information that is actively being processed and has limited capacity of about 7 ± 2 items (Miller, 1956) and duration of 15–30 seconds, unless rehearsed and it processes new information and retrieves relevant prior knowledge from long-term memory. *Long-Term Memory* is a permanent store of information and has unlimited capacity, duration and organized information in schemas or mental structures. It involves the following Cognitive Processes in Learning; Attention (Filters sensory input into working memory) Encoding (Organizes information to be stored in long-term memory), Rehearsal (repetition helps retain information in working memory or encode it to long-term memory), and retrieval (Accessing stored information when needed). This theory supports explicit instruction through its emphasis on the use of the principles of explicit instruction in the class such as clear presentation which help direct attention, chunking which is grouping information into manageable units, scaffolding which is supporting learners as they encode and retrieve information, repetition and review which strengthens retrieval paths in memory and the use of graphic organizers and advance organizers which helps learners connect new info with prior knowledge (schema activation).

Studies confirm the efficacy of explicit instruction for dyslexic learners. For instance, Torgesen et al. (2001) demonstrated that explicit phonics instruction significantly improved decoding and fluency in children with severe reading disabilities. Similarly, the National Reading Panel (2000) endorsed explicit instruction as essential for early reading success, particularly for students with learning difficulties. Explicit instruction stands as a cornerstone in the education of learners with dyslexia. Its direct, structured, and supportive approach aligns with the specific cognitive needs of dyslexic learners, providing them with a reliable pathway toward reading competence. Educational systems should prioritize this methodology to ensure equitable literacy outcomes.

Reading is a fundamental skill that underpins academic achievement and lifelong learning across the globe. In Cameroon and specifically in Buea a municipality known for its diverse linguistic background and educational ambition, the challenges facing learners with dyslexia are compounded by a series of issues such as limited resources, lack of trained special education personnel and minimal awareness of learning disabilities among educators and caregivers. Despite the existence of inclusive education policies, the practical implementation of targeted interventions like the use of explicit instruction remains inadequate. Most schools in Buea still

employ traditional, whole language or discovery-based approaches that may not effectively support struggling readers particularly those with dyslexia. The implementation of explicit instruction in classroom Buea holds promise as a critical rudiment for improving the literacy outcomes of learners with dyslexia. Yet there is a notable gap in localized research and application of such pedagogical practices within the region's educational framework.

Statement of the problem

Despite growing awareness of inclusive education in Cameroon, learners with dyslexia in Buea continue to face significant difficulties in acquiring basic reading skills. Traditional teaching methods often lack the structure and support required to meet the unique learning needs of these students. Explicit instruction, recognized globally as an effective intervention for reading difficulties, is rarely implemented systematically in classrooms across the municipality. This instructional gap contributes to persistent underachievement, low literacy levels and academic frustration among dyslexic learners. The absence of teacher training on dyslexia-specific strategies coupled with limited instructional resources and a lack of empirical research in local context, hinders the effective development of reading interventions. As such it becomes critical to explore how explicit instruction can serve as a foundational approach to enhance the reading abilities in learners with dyslexia in Buea. This study seeks to investigate the role of explicit instruction as a rudiment for the development of reading skills in learners with dyslexia in Buea thereby addressing a pressing need for evidence-based contextual relevant teaching strategies.

Objective

This study sought to investigate explicit instruction as a rudiment in the development of reading skills in learners with dyslexia in the Buea Municipality. The reading ability measured in this study were phonemic awareness, reading comprehension and fluency. Specifically, it investigated:

- The effect of systematic phonics instruction (drill-practice) on the development of reading skills in learners with dyslexia in Buea.
- Guided modelled reading (guided practice) on the development of reading skills in learners with dyslexia.

Research methodology

This study adopted the experimental design, and the type used was the quasi-experiment since the participants of the study were not randomised and the type of quasi-experimental design was the comparative pre-test/post-test design with non-randomized experimental and control groups. In this study, participants were shared into the experimental and control groups based on teacher nomination. The control (comparison) group was like the experimental (treatment) group in terms of baseline or pre-intervention characteristics. There was a pre-test and post-test plan for both experimental and control groups. In this study, the researcher substituted statistical "control" for the absences of physical controls of experimental situation.

The study sampled fourteen (14) pupils within the age bracket of 9-11years in class four with dyslexia at the Government primary school Buea Town. This is an inclusive institution created by the government of Cameroon to serve as a pilot institution for inclusive education at the basic education level. The purposive sampling technique was also applied in the choice of the school since it is one of the pilot schools for the implementation of inclusive education in the Buea Municipality.To identify children with dyslexia in the school for this study, the researcher used informal methods of identification which constituted the use of the following informal methods; discussions with current class teachers, school records and folios of pupils' work demonstrating their abilities and a teacher made use of the Dyslexia Screening tool by Angela Fawcett and Rod Nicolson doe juniors (6-11years). From this test 20 pupils were identified as suspected cases of

dyslexia. The researcher then administered two diagnostic tests, Woodcock Johnson IV tests of achievement and Ihenacho reading diagnostic test on the 20 suspected cases where 14 were diagnosed with dyslexia ranging from mild to profound conditions.

A child was assumed dyslexic in each of the evaluation process if he or she had a score of 1.5-2 standard deviation below the mean. A pre and posttest instrument was also created to test the reading ability of learners made of 10 items arranged in groups of 5 and a master plan of activities with 10 activities on each specific indicator of explicit instruction that is systematic phonics instruction (drill-practice) and guided modelled reading (guided practice) developed by the researcher which was used as a guide during the training program. The quantitative data, a pre-designed EpiData Version 3.1 (EpiData Association, Odense Denmark, 2008) database which had in-built consistency and validation checks was used to enter the data. Further consistency, data range and validation checks were also performed in SPSS version 26.0 (IBM Inc., 2012). Cramer's V test was used to measure the association between the categorical variables. The extent to which explicit instruction foster the development of reading skill was discussed using Chi –Square test of the equality of the proportion. Statistics were discussed at the 95% Confidence Level (CL), that is Alpha=0.05. That is, depending on the assumption or the hypothesis under discussion, this was to be accepted or rejected if P-Value is greater or less than Alpha. For instance, for the difference between the control and the experimental groups to be significant, the calculated P-Value shall be <0.05.The consent of the pupils who participated in the study was sought by visiting the school concerned and the parents of the pupils selected, and they were given a letter of consent to sign any child whose parent did not sign the letter were automatically eliminated from the study.

Results of the study

The study sought to investigate the impact of explicit instruction operationalized assystematic phonics instruction (drill-practice) and guided modelled reading (guided practice). The data collected from the field were analyzed using the Statistical Package for Social Scientists (SPSS) Version 26.0 and the results of this study are disclosed below.

Result of research objective one: The effect of systematic phonics instruction (drill-practice) on the development of reading skills in learners with dyslexia in Buea.

The found that the improvement in scores observed in both groups after the intervention was significant ($p<0.05$) for the experimental group and not significant ($p\geq0.05$) for the controlled group as calculated by the Wilcoxon Signed Ranked Test. There was more progress made in the experimental group (85.7%) than in the control group (14.3%) when comparing pre-test and post-test scores. Pre-test average scores were 1 for both experimental and controlled groups but significantly increased by 8.86 for the experimental group and by just 0.14 for the controlled group. Average test scores were not different in both groups for the pre-test but were different in the post-test (after the intervention), and the difference was significant ($p<0.05$) as calculated by the Kolmogorov-Smirnov-Z test as shown below.

Table 1: comparing the effect of systematic phonics instruction (drill-practice) on the development of reading skills in learners with dyslexia in Bueaby both control and experimental groups of children with dyslexia.

Groups		Pre-test	Post-test	Mean difference	Wilcoxon Signed Ranks Test
Experimental group	Mean	1.00	9.86	8.86	Z=-2.410 P=0.016
	Std. Error of Mean	0.724	0.143		
	Minimum	0	9		
	Maximum	5	10		
	Std. Deviation	1.915	.378		
Control group	Mean	1.00	1.14	0.14	Z=-0.447 P=0.655
	Std. Error of Mean	0.724	0.705		
	Minimum	0	0		
	Maximum	5	5		
	Std. Deviation	1.915	1.864		
	Mean difference	0	8.72		
	Kolmogorov-Smirnov-Z test	Z=0.000 P=1.00	Z=1.871 P=0.002		

The Kolmogorov-Smirnov-Z test (compare between experimental and control group) and Wilcoxon Signed Ranks Test (compare between pre-test and post-test) were used. In the experimental group, the average score rose sharply from 1.0 in the pre-test to 9.86 in the post-test, and the Wilcoxon Signed Ranks Test shows clearly that this progress was scientifically significant. An indication that "drill and practice" helped the children in the experimental group to perform better in the post-test on phonemic awareness, reading comprehension and reading fluently. In the control group however, though there was slight progress in the mean score after the post-test, the statistics generated by the Wilcoxon Signed Ranks Test show that the progress was insignificant.

Comparing the pre-test and post-test among the two groups, the Kolmogorov Smirnov Z-test proves clearly that the difference in scores among the two groups for the pre-test was insignificant (Z=0.00, P=1.00), but the difference was significant for the post-test after the experimental group (Z=1.871, P=0.002) were instructed using drill and practice. This is evidence that drill and practice has a significant relationship with the development in reading skills among children with dyslexia as shown on fig one below.

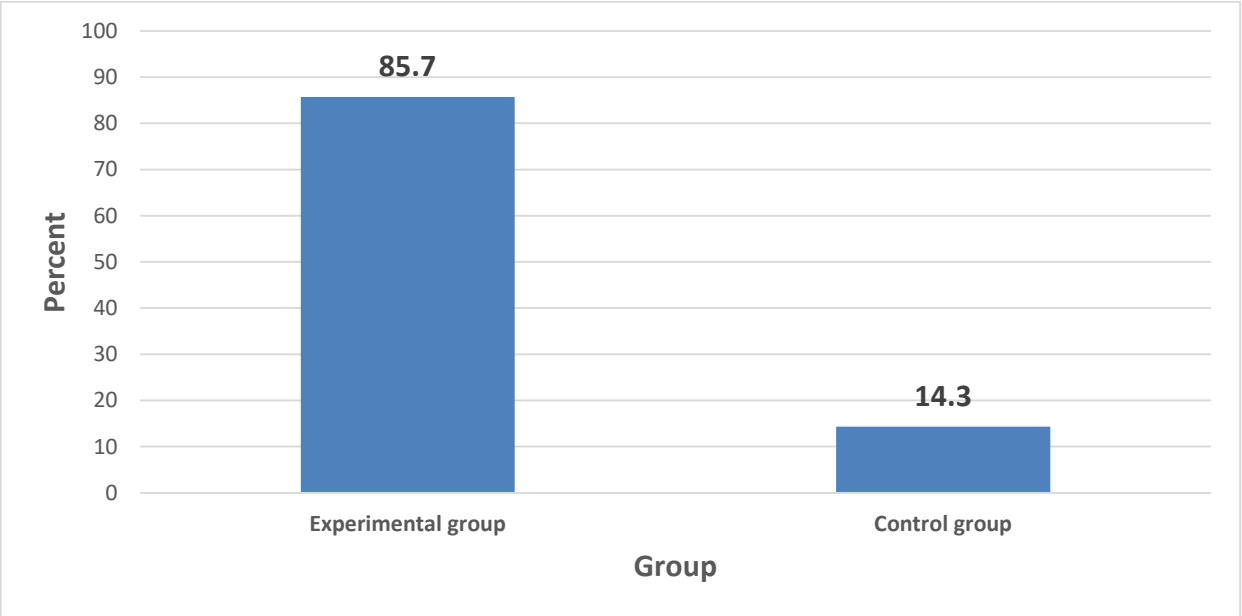

Figure 3: level of progression comparing the effect of drill and practice

The results showed a significant increase in the reading ability of the learners in the experimental group after using drill and practice and evaluating them. Cramer's V test indicates that more (85.7%) children from the experimental group made progress after the posttest compared to (14.3%) for the control group. This difference was statistically significant at the 95% confident level. Cramer's V further proved that progress was significant within the group sat V=0.866; P=0.001. The members of the experimental group recorded a significant improvement in the development of their phonemic awareness, reading comprehension and reading fluently skills. While those who were in the control group on whom the intervention was not made, they also recorded an increase, however theirs was not as significant as those in the experimental.

Findings of Research objective two: Guided modelled reading (guided practice) on the development of reading skills in learners with dyslexia.

Comparing between the experimental and the controlled groups, it could be observed that the experimental group performed better than the controlled group in both the pre-test and post-test. The Kolmogorov-Smirnov-Z test further proved the difference in the post-test was higher and significant due to the intervention received by the experimental group. Post-test results also showed that 85.7% of the experimental group improved as against 14.3% for the controlled group. The increase in score calculated by the Wilcoxon Signed Ranked test shows clearly that the experimental group improved significantly ($P<0.05$) than the controlled group after the intervention detail below.

Table 2: Comparing the effect of Guided modelled reading (guided practice) on the development of reading skills by different groups of children with dyslexia

Group		Pre-test	Post-test	Mean difference	Wilcoxon Signed Ranks Test
Experimental group	Mean	1.71	5.43	3.72	Z=-2.207 P=0.027
	Std. Error of Mean	0.565	0.922		
	Minimum	0	2		
	Maximum	4	9		
	Std. Deviation	1.496	2.440		
Control group	Mean	1.14	1.14	0.0	Z=0.00 P=1.00
	Std. Error of Mean	0.404	0.404		
	Minimum	0	0		
	Maximum	3	3		
	Std. Deviation	1.069	1.069		
	Kolmogorov-Smirnov-Z test	**Z=0.535 P=0.938**	**Z=1.512 P=0.021**		

The Wilcoxon Signed Ranks Test clearly shows that for the experimental group where the guided practice approach was used, the children performed better in the post-test, as their mean difference was higher, compared to that of the control group. The guided practice approach has just proved to be a significant factor in the development of phonemic awareness, reading comprehension and fluency reading skills in children with dyslexia. Comparing the tests between the groups, the Kolmogorov-Smirnov-Z test showed evidence that there was no significant difference in the scores earned by children in the pre-test (Kolmogorov-Smirnov-Z test; Z=0.535, P=0.938). However, for the post-test after the guided practice approach was used on the experimental group, the group performed better and the difference was statistically significant (Kolmogorov-Smirnov-Z test; Z=1.512, P=0.0.021).

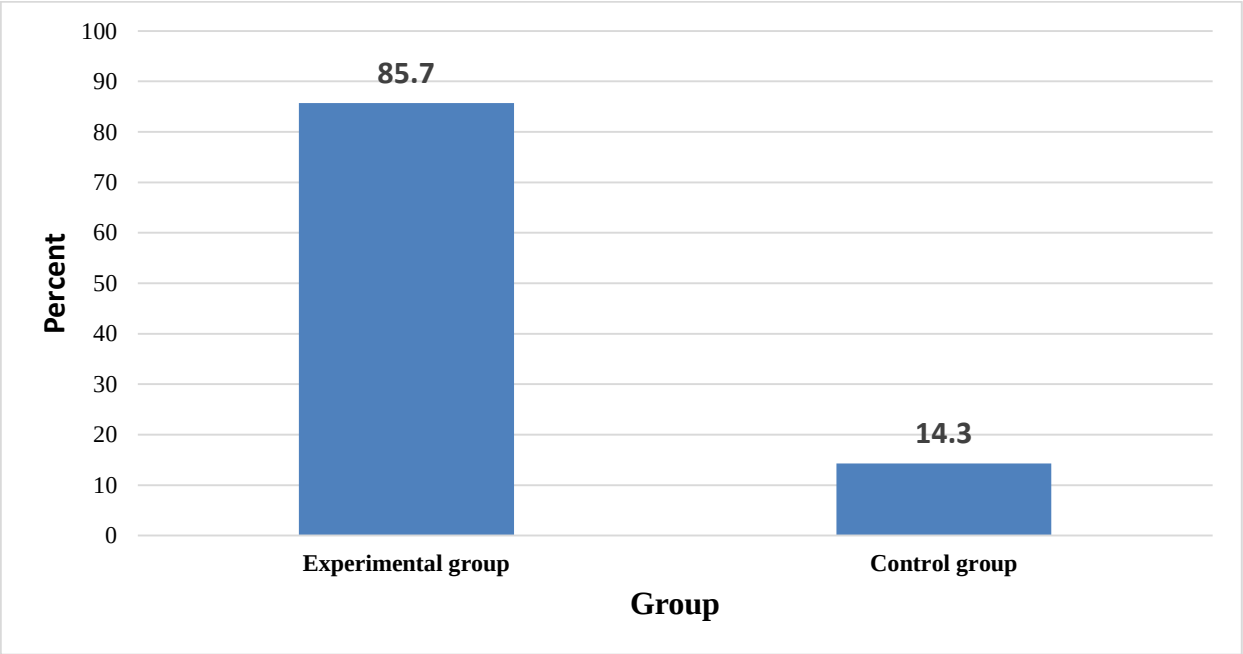

Figure 2: level of progression comparing the effect of Guided practice

In evaluating the progression made across the two groups the Cramer's V test indicates that more (85.7%) children from the experimental group made progress after the posttest compared to (14.3%) for the control group. This difference was statistically significant at the 95% confident level. Cramer's V further proved that progress was significant within the groupsatV=0.714; P=0.008.The members of the experimental group recorded a significant improvement in the development of their phonemic awareness, reading comprehension and reading fluently skills. While those who were in the control group on whom the intervention was not made, they also recorded an increase, however theirs was not as significant as those in the experimental.

Explicit instruction is an essential and highly effective teaching strategy for improving the reading abilities of students with dyslexia. By providing clear, structured, and systematic instruction in critical areas like phonics, decoding, and comprehension, explicit instruction helps dyslexic students overcome their reading difficulties. This approach allows for personalized learning, promotes active engagement, and supports the development of foundational reading skills necessary for academic success. It is therefore evident that the two interventions, "Drill and practice" and "guided practice" had equal levels of effect on the development of reading skills among children with dyslexia.

Discussion of the Results

The main aim of this work was to find out the effect of explicit instruction on the development of reading skills for pupils with dyslexia. This section dealt with an analytical discussion of the research results supporting it by literature and theories. Based on the analysis, some conclusions based on reasoned argument and evidence were arrived at and recommendations were made.

Systematic phonics instruction (drill-practice) on the development of reading skills in learners with dyslexia

From the results of the study, it was realized that drill and practice had a significant effect on the development of reading skills for pupils with dyslexia. This was evident as there was progress in reading skills as the proportion of learners in the experimental group who had the skill increased from pre-test to posttest. This only confirms the fact that drill-practice techniques has long been

recognized as one of the most effective methods for enhancing reading skills, particularly for pupils with learning difficulties such as dyslexia. Torgesen et al. (2006) found that dyslexic children who received intensive, systematic phonics instruction through repeated practice showed substantial gains in word-level reading skills. Similarly, Ehri et al. (2001) conducted a meta-analysis that found systematic phonics instruction, which inherently includes repeated practice, to be particularly effective for students with reading difficulties, including those with dyslexia. Drill and practice help students develop automaticity in reading, which is crucial for dyslexic pupils who may struggle with fluency and decoding (Torgesen, 2004). Repeated exposure to words and sounds allows these students to internalize letter-sound associations and progressively overcome difficulties associated with word recognition (Ehri, 2005). When students engage in repetitive exercises, such as reading the same set of words or phrases multiple times, they strengthen their neural pathways related to word processing, thus enhancing their reading fluency over time (Rayner et al., 2001).

Drill and practice in fluency training also contribute significantly to reading development. Repeated reading strategies, which involve students reading the same text multiple times, have been shown to increase reading speed and accuracy. According to Therrien (2004), repeated reading improves both fluency and comprehension in students with reading disabilities. Moreover, programs designed for dyslexic learners, such as the Orton-Gillingham approach, incorporate extensive drill and practice. These programs have demonstrated positive outcomes in various studies. Ritchey and Goeke (2006) reviewed Orton-Gillingham-based programs and concluded that they are effective in improving phonological awareness and decoding skills through repetitive and structured instruction. Additionally, Al Otaiba and Fuchs (2006) showed that consistent, targeted drill in sight word recognition significantly increased the fluency and reading performance of dyslexic students. This study is in line with Vygotsky (1978) as stated by Bruner, Wood and Ross (1976) who affirm that children are most likely to experience success when challenging tasks are scaffolded and modeled to them.

Furthermore, the method provides structured repetition, which is beneficial for dyslexic learners who may need more time and practice to master certain concepts. The incremental nature of drill and practice can offer continuous reinforcement and support, catering to the specific needs of each student (Gillingham & Stillman, 1997). It is important to note, however, that while drill and practice are effective, they must be tailored to the individual needs of students and should be paired with other strategies, such as multisensory approaches, to address the complex nature of dyslexia (Birsh, 2018).Despite its effectiveness, drill and practice is not without limitations. Some critics argue that the repetitive nature of the method can lead to boredom and disengagement, especially when students are not provided with sufficient variation in tasks or motivation (Snowling, 2000). Moreover, drill and practice do not always directly address the underlying cognitive processes of dyslexia, such as working memory or auditory processing deficits (Gathercole & Baddeley, 1993). As such, it is crucial that educators integrate drill and practice with other, more holistic approaches to reading instruction to ensure that all aspects of dyslexia are addressed.

It is therefore obvious that drill and practice can be a highly effective strategy for improving the reading abilities of students with dyslexia, particularly when it is applied in conjunction with other supportive and individualized strategies. It helps dyslexic students build reading fluency, enhances word recognition, and contributes to their overall reading development. However, careful consideration must be given to how these practices are implemented to prevent disengagement and ensure that they align with the specific needs of each learner.

Guided modelled reading (guided practice) on the development of reading skills in learners with dyslexia

From the findings of the study, it was evidently seen that guided practice had a significant effect on the development of reading skills for pupils with dyslexia as it was proven by the incremental difference between the post test results of the experimental group and that of the control group. This study too is in line with Chall's(1983, 1996)theory which states that reading should be taught through systematically and organized instruction and that reading is a staged and ongoing process (Weaver, 2012). Guided practice, a teaching method in which the teacher actively supports and instructs students during practice tasks, has been shown to be an effective strategy for improving the reading abilities of students with dyslexia. Guided practice offers structured support, which can help dyslexic learners overcome these challenges by focusing on building foundational reading skills, such as phonemic awareness, decoding, and fluency. According to Vaughn et al. (2000), students who engaged in guided oral reading with feedback showed stronger fluency gains compared to those who practiced reading independently. Also, Swanson and Deshler (2003) demonstrated that strategic guided reading, which includes teacher modeling and questioning, improved comprehension outcomes for students with learning disabilities, including dyslexia.

One of the primary benefits of guided practice for dyslexic students is that it provides an individualized and scaffolded approach to learning. During guided practice sessions, teachers can provide real-time feedback, monitor progress, and adjust instruction according to the student's specific needs (Lewis, (2013). This tailored support is particularly crucial for dyslexic learners, who often require more explicit and direct instruction compared to their peers. Research has demonstrated that guided practice can lead to improvements in word recognition, decoding, and fluency, which are critical areas of difficulty for dyslexic pupils (Torgesen et al., 2006).

When students engage in guided practice, they learn how to apply strategies to decode unfamiliar words, monitor their understanding, and adjust their reading behaviors (Pressley, 2006). This process not only helps students build confidence in their reading abilities but also empowers them to approach reading tasks with greater autonomy over time. For example, a teacher may guide a dyslexic student through a text, prompting them to break words down into syllables or to use context clues to figure out the meaning of a word (Ehri, 2005). Over time, the student internalizes these strategies and becomes more capable of applying them independently. Moreover, the interactive nature of guided practice makes it more engaging for dyslexic students compared to traditional methods like drill and practice. While repetition is crucial, students with dyslexia may become disengaged if they do not receive adequate support or if the learning activities lack variation (Snowling, 2000). In contrast, guided practice offers a more dynamic and supportive learning environment. By actively involving the student in the learning process, teachers can maintain the student's attention and motivation, which is vital for ensuring long-term progress. Mohammed, (2015). found that guided practice embedded in structured, evidence-based interventions produced long-term gains in reading accuracy and comprehension among dyslexic learners, particularly when combined with regular feedback and progress monitoring.

The effectiveness of guided practice has been further supported by research in structured reading interventions. Torgesen et al. (2001) found that dyslexic students who participated in guided reading programs that focused on phonics, word recognition, and fluency showed significant improvements in reading skills. These interventions, which often involve small groups or one-on-one instruction, allow for more frequent and focused practice under the guidance of an expert teacher. Similarly, studies have shown that guided practice, when combined with explicit instruction in phonological awareness and decoding, can lead to improved reading outcomes for students with dyslexia (Bowers & Newby, 2012).However, while guided practice has proven to

be beneficial, it is important that it is integrated within a comprehensive and individualized literacy program. Dyslexic students often require ongoing, intensive intervention in multiple areas of reading, including phonological awareness, decoding, fluency, and comprehension (Vellutino et al., 2004). Guided practice alone may not be sufficient to address the diverse needs of dyslexic learners, and it must be combined with other strategies, such as multisensory instruction or the use of assistive technology, to provide holistic support (Birsh, 2018).It could therefore be concluded that guided practice is a powerful tool for enhancing the reading abilities of students with dyslexia. By providing individualized, scaffolded support, teachers can help dyslexic students develop crucial reading skills, including decoding, fluency, and word recognition. Additionally, guided practice fosters metacognitive skills that promote independent reading. However, for optimal results, it is important that guided practice is part of a broader, tailored intervention plan that includes other complementary strategies.

Explicit instruction is widely regarded as one of the most effective teaching strategies for enhancing the reading abilities of students with dyslexia. Dyslexia is a specific learning disability that primarily affects reading skills, particularly word decoding, fluency, and spelling (Shaywitz, 2003). Given the challenges dyslexic pupils face with automatic word recognition and decoding, explicit instruction provides a systematic and structured approach to teaching, ensuring that students receive clear, direct, and detailed instruction to help them overcome these difficulties. It involves the teacher providing clear and direct explanations of concepts, modeling tasks, guiding students through practice, and offering immediate feedback (Archer & Hughes, 2011). This instructional approach is particularly beneficial for dyslexic learners, who may struggle with implicit learning and require more overt and repetitive teaching techniques to grasp reading concepts (Torgesen et al., 2006). By breaking down complex reading tasks into smaller, more manageable components and presenting them in a clear and systematic manner, explicit instruction helps dyslexic students understand and master the foundational skills needed for reading.

One of the key elements of explicit instruction is its focus on phonological awareness and phonics, which are critical areas of difficulty for dyslexic students. Phonological awareness refers to the ability to recognize and manipulate sounds in spoken language, while phonics involves the relationship between letters and their corresponding sounds (Ehri, 2005). Research has consistently shown that explicit instruction in these areas significantly improves the reading abilities of dyslexic students. For example, Torgesen et al. (2001) found that dyslexic students who received explicit instruction in phonemic awareness and phonics made substantial gains in word recognition, spelling, and reading fluency. Explicit teaching of letter-sound correspondence helps these students decode words more efficiently, which is crucial for reading fluency. Furthermore, explicit instruction provides ample opportunities for practice, which is essential for dyslexic students who may need more time and repetition to master reading skills (Snowling, 2000). Teachers can use various methods to reinforce learning, such as providing structured practice activities, offering guided reading sessions, and encouraging frequent feedback. This repetition, coupled with clear and direct guidance, helps dyslexic students solidify their understanding of reading concepts and gain confidence in their abilities. According to the National Reading Panel (2000), explicit instruction that emphasizes phonics, fluency, and comprehension can significantly enhance the reading skills of students with reading difficulties, including those with dyslexia.

Explicit instruction also has the advantage of being highly adaptable to individual students' needs. Teachers can tailor lessons to focus on the specific difficulties a student faces, such as decoding or comprehension, ensuring that instruction is personalized and targeted. This individualized approach is essential for dyslexic learners, as their challenges may vary significantly in terms of severity and specific reading skills (Vellutino et al., 2004). For example,

a student struggling with decoding may benefit from more intensive, one-on-one phonics instruction, while a student who has mastered decoding but struggles with comprehension may need focused instruction on strategies for understanding and retaining information from texts. In addition to phonics and decoding, explicit instruction also helps dyslexic students develop reading comprehension skills. When teachers explicitly model strategies for understanding and analyzing texts, such as predicting, summarizing, and inferring meaning from context, dyslexic students are better equipped to understand and engage with what they are reading. This is important because while decoding is crucial, comprehension is the goal of reading. Explicit instruction in comprehension strategies helps students with dyslexia make sense of the text, build vocabulary, and connect information to their existing knowledge base (Torgesen, 2004). However, while explicit instruction is highly effective, it is important to recognize that it needs to be part of a broader, multi-faceted approach to reading instruction for dyslexic learners. A combination of strategies, such as multisensory instruction, technology, and supportive classroom environments, enhances the benefits of explicit instruction (Birsh, 2018). For example, integrating visual, auditory, and kinesthetic methods with explicit phonics instruction can further strengthen the learning process for dyslexic students.

Explicit instruction is an essential and highly effective teaching strategy for improving the reading abilities of students with dyslexia. By providing clear, structured, and systematic instruction in critical areas like phonics, decoding, and comprehension, explicit instruction helps dyslexic students overcome their reading difficulties. This approach allows for personalized learning, promotes active engagement, and supports the development of foundational reading skills necessary for academic success. While explicit instruction is powerful on its own, combining it with other supportive strategies will maximize its effectiveness and ensure that dyslexic learners receive a comprehensive education.

Conclusion and Recommendations

Explicit instruction comprising systematic phonics instruction (drill-practice) and guided modelled reading (guided practice) has been shown to be highly effective in developing reading skills among primary school pupils with dyslexia. This structured approach is particularly beneficial as it provides clear, systematic guidance that enhances their ability to decode and comprehend text. The key components of the above-mentioned explicit teaching strategies are modeling where the teacher demonstrates the specific reading skill or strategies, breaking down complex tasks into manageable steps which help the students understand the reading process. Guided practice where the learner practices the newly introduced skills with teacher support allowing for immediate feedback and correction. This collaborative phase reinforces learning and builds confidence. Independent practice where the learner applies the skills independently promoting mastery and the ability to transfer these skills to new reading context. On these and other empirical bases the following recommendations were made:

- School systems, ministries of education should adopt curricula that emphasise explicit systematic instruction in phonic and reading strategies
- Provide professional development for effective training of teachers on explicit instruction techniques to ensure consistent and effective delivery.
- Teachers should focus on high frequency words via the use of flash cards or digital apps for sight words drills helping learners recognise words automatically. And can also used timed drills which are brief, timed sessions to improve fluency without overwhelming the learner.

A combination of both guided practice and drill and practice will reinforce and enable the learners to internalize their reading skills, thus, schools should provide home practice kits such flashcards, phonic charts, and instructions to continue drills and guided reading at home.

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