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INSTRUCTIONAL AIDS AND STANDARD ONE READING PROFICIENCY IN PUBLIC PRIMARY SCHOOLS: EVIDENCE FROM KYELA DISTRICT, TANZANIA

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ABSTRACT :

This study examined the impact of instructional aids on Standard One reading proficiency in public primary schools in Kyela District, Tanzania. Guided by Vygotsky's Sociocultural Theory, a mixed-methods approach with a cross-sectional design was employed. Data were collected from 95 respondents including 19 Standard One teachers, 68 Standard One pupils, six head teachers, and two District Education Officers through questionnaires, Early Grade Reading Assessment tests, classroom observation checklists, and semi-structured interviews. Descriptive statistics, Pearson correlation, and regression analysis were used to analyse quantitative data, while qualitative data were analysed thematically. Findings revealed that instructional aids were severely inadequate: only 68.4% of schools had alphabet charts, 36.8% had flashcards, and storybooks were absent in 68.4% of schools. Audio materials and digital aids were nearly completely unavailable. Reading proficiency among Standard One pupils was critically low, with an overall mean EGRA score of 19.3 out of 40 (48.3%). Only 58.8% of pupils met the expected level in letter recognition, dropping sharply to 47.1% in phonics, 32.4% in word reading, and 22.1% in sentence comprehension. Pearson correlation revealed a significant positive relationship between instructional aid use and reading proficiency ($r = 0.67$, $p < 0.001$), with the regression model explaining 44.9% of variance in reading outcomes. The study concludes that inadequate instructional aids are significantly associated with low reading proficiency and recommends systematic provision of reading materials, practical teacher training, and regular early grade reading assessment.

Keywords: *Instructional aids, reading proficiency, Standard One pupils, early literacy, Kyela District.*

1.0 Introduction

Reading proficiency is universally recognized as the foundational skill upon which all subsequent academic learning depends. UNESCO (2023) identifies early reading ability as essential because pupils who fail to develop literacy skills in the first years of formal schooling experience cascading difficulties across all subject areas throughout their education. The World Bank (2020) reports that many children worldwide experience "learning poverty" an inability to read and understand simple texts by the age of ten representing one of the most critical failures of modern education systems. In Sub-Saharan Africa, this challenge is deeply entrenched, with many pupils completing several years of primary schooling without acquiring foundational literacy skills due to inadequate teaching materials, undertrained teachers, overcrowded classrooms, and limited access to print-rich learning environments.

Globally, research consistently demonstrates that instructional aids including alphabet charts, phonics flashcards, storybooks, word cards, pictures, audio materials, and digital tools significantly improve early reading outcomes when they are available and effectively used (OECD, 2020; RTI International, 2020). In East Africa, the Tusome early grade reading program in Kenya demonstrated that provision of instructional materials combined with teacher training produced measurable improvements in pupils' reading fluency across thousands of classrooms (Piper, Schroeder & Trudell, 2019). In Tanzania, the competency-based curriculum emphasizes learner-centred instruction supported by teaching and learning materials, yet national assessment data continue to show that many Standard One pupils struggle with basic reading skills, particularly in rural districts where resource availability is most constrained (NECTA, 2021; MoEST, 2021).

In Kyela District, located in Mbeya Region, public primary schools are expected to implement the national curriculum while operating in conditions characterized by material shortages, large class sizes, and limited professional development for teachers. Despite the clear relationship between instructional resources and reading outcomes documented in national and international literature, district-level empirical evidence on how instructional aid availability and use specifically affects Standard One reading proficiency in Kyela remains largely absent, making it difficult for education officers, head teachers, and teachers to design informed local interventions.

This study was guided by Vygotsky's Sociocultural Theory, which emphasizes that children learn through guided interaction with more knowledgeable others and through the use of cultural and educational tools as mediating resources. In the early reading classroom, instructional aids serve as the mediating tools that enable teachers to scaffold pupils' progression from simple letter recognition toward meaningful sentence reading and comprehension within their Zone of Proximal Development. The study pursued three specific objectives: to explore the types of instructional aids used in teaching reading in Standard One classes; to assess the level of reading proficiency among Standard One pupils; and to determine the relationship between the use of instructional aids and reading proficiency among Standard One pupils in Kyela District.

2.0 Methodology

2.1 Study Area

The study was conducted in Kyela District, located in Mbeya Region in southern Tanzania. The district is predominantly rural and agricultural, with many public primary schools experiencing shortages of teaching and learning materials and large class sizes. The district was selected because these conditions make it representative of many rural educational settings across Tanzania where reading proficiency challenges and instructional aid deficiencies intersect, and where locally grounded evidence can most directly inform intervention design.

2.2 Research Approach and Design

The study adopted a mixed-methods approach combining quantitative and qualitative data to obtain both numerical measurements and contextual explanations. A cross-sectional research design was employed, enabling collection of data at a single point in time from multiple schools, comparison of classrooms across different levels of instructional aid availability, and measurement of statistical relationships between instructional aid use and reading proficiency without requiring longitudinal follow-up (Kothari, 2004; Creswell, 2014).

2.3 Sampling Procedure and Sample Size

The study population comprised Standard One pupils, Standard One teachers, head teachers, and District Education Officers in public primary schools in Kyela District. Using Yamane's (1967) formula, a sample size of 100 respondents was determined. Simple random sampling was used to select Standard One pupils and teachers from ten selected public primary schools, while purposive sampling was applied to select head teachers and District Education Officers because of their administrative knowledge of instructional resource management and reading programme oversight. A total of 95 respondents participated and provided complete data, representing an overall response rate of 95%, which exceeds the minimum 70% threshold considered adequate for social science research (Mugenda & Mugenda, 2003).

2.4 Data Collection Methods

Four data collection instruments were employed. Structured questionnaires with closed-ended and open-ended items were administered to the 19 Standard One teachers, covering instructional aid availability, frequency of use, and perceived challenges. An Early Grade Reading Assessment (EGRA) test was administered individually to the 68 Standard One pupils, assessing four reading sub-skills letter recognition, sound recognition (phonics), word reading, and sentence reading with comprehension each scored out of 10 marks for a maximum total of 40 marks. A classroom observation checklist was used during visits to six schools to record the presence and use of instructional aids and to assess pupil engagement on a 1 to 5 scale. Semi-structured interviews were conducted with teachers, head teachers, and District Education Officers to gather qualitative explanations of instructional aid use, challenges, and their observed effects on reading. Validity was ensured through expert review and a pilot study conducted in one school outside the sample, following which three questionnaire items were simplified and the EGRA instructions were rewritten in clearer language.

2.5 Data Analysis

Quantitative data were analysed using descriptive statistics including frequencies, percentages, means, and standard deviations. Pearson Product-Moment Correlation Coefficient was computed to examine the strength and direction of the relationship between instructional aid use scores and EGRA reading proficiency scores. Simple linear regression was conducted with instructional aid use score as the predictor variable and overall EGRA score as the outcome variable. Teachers received a composite instructional aid use score based on questionnaire responses about frequency of use across seven aid types, with 3 assigned for frequently used, 2 for sometimes used, and 1 for not used, yielding a maximum composite score of 21. Qualitative data from interviews were analysed thematically by coding responses and developing themes aligned with the three study objectives.

3.0 Results

3.1 Background Characteristics of Respondents

Among the 19 Standard One teacher respondents, 12 (63.2%) were female and 7 (36.8%) were male. The largest age group was 25 to 34 years (47.4%). Regarding qualifications, the majority held a Certificate in Education (52.6%), while 36.8% held a Diploma and only 10.6% held a Bachelor's Degree. Teaching experience was moderate, with 47.4% having between 5 and 10 years and 36.8% having fewer than 5 years. Only 15.8% had more than 10 years of experience. Critically, 57.9% of teachers had received some form of training in early grade reading instruction, while 42.1% had never received such training, and most described their training as limited to one-to-three-day workshops rather than structured literacy programmes.

3.2 Types of Instructional Aids Used in Standard One Classes

Table 1 presents the availability and frequency of use of instructional aids across the ten sampled schools.

Table 1: Availability and Frequency of Use of Instructional Aids in Standard One Classes (n=19)

Type of Instructional Aid	Available (%)	Frequently Used (%)	Sometimes Used (%)	Not Used (%)
Alphabet Charts	68.4	57.9	31.6	10.5
Pictures / Drawings	52.6	31.6	47.4	21.1
Flashcards	36.8	26.3	36.8	36.8
Storybooks / Reading Books	31.6	15.8	21.1	63.2
Letter Cut-outs / Letter Blocks	21.1	10.5	10.5	78.9
Audio Materials (songs/recordings)	15.8	5.3	10.5	84.2
Digital Aids (tablets/phones/projectors)	10.5	5.3	5.3	89.5

Source: Field Data (2026)

The findings reveal that reading instruction in Kyela District Standard One classrooms is built almost entirely around a single instructional aid the alphabet chart. The further one moves from simple, static, low-cost visual materials toward interactive, print-rich, or multisensory tools, the more severe the absence becomes. Storybooks, despite being identified in the global literature as the most powerful tool for developing vocabulary and comprehension, were absent in 68.4% of schools and not used at all in 63.2% of classrooms. Audio materials and digital aids were functionally nonexistent across the district. No school in the sample regardless of its overall resource level had storybooks, a finding confirmed by classroom observations in all six visited schools.

Shortage of instructional materials was the most commonly reported challenge (89.5%), followed by lack of training on effective aid use (63.2%), large class sizes (57.9%), rapid material deterioration without replacement (47.4%), lack of storage space (31.6%), and pupils mishandling materials (26.3%). Classroom observations confirmed that schools where instructional aids were present and actively used showed measurably higher pupil engagement levels and higher average EGRA scores. School D, with both alphabet charts and flashcards actively used, showed the highest engagement (4/5) and highest average EGRA score (24.3/40). Schools E and F, with no instructional aids at all, showed the lowest engagement (2/5 and 1/5) and lowest average EGRA scores (14.8 and 13.6 respectively).

3.3 Level of Reading Proficiency Among Standard One Pupils

Table 2 presents a summary of EGRA results across all four reading sub-skills.

Table 2: Summary of EGRA Results Across All Four Reading Sub-Skills (n=68)

Reading Sub-Skill	At/Above Expected Level n (%)	Below Expected Level n (%)	Mean Score (/10)
Letter Recognition	40 (58.8%)	28 (41.2%)	5.9
Sound Recognition (Phonics)	32 (47.1%)	36 (52.9%)	5.3
Word Reading	22 (32.4%)	46 (67.6%)	4.4
Sentence Reading / Comprehension	15 (22.1%)	53 (77.9%)	3.7
Overall EGRA Score (out of 40)	24 (35.3%)	44 (64.7%)	19.3

Source: Field Data (2026)

The data reveal a consistent and deeply concerning progressive decline across the four reading sub-skills. The mean score falls sharply from 5.9 in letter recognition to 3.7 in sentence comprehension. Only 24 pupils (35.3%) achieved overall EGRA scores at or above the expected competency level of 24 out of 40, while 44 pupils (64.7%) scored below. The overall mean EGRA score of 19.3 out of 40 represents 48.3% substantially below the minimum expected competency threshold of 60% established by MoEST (2021) for Standard One. The weakest performance was in sentence reading and comprehension, where 77.9% of pupils scored below the expected level and 42.6% scored extremely low between 0 and 3 marks out of 10.

Teacher perceptions strongly confirmed and reinforced the EGRA findings. Between 73.7% and 89.4% of teachers disagreed or strongly disagreed that most pupils in their class had reached the expected reading level across the four sub-skills. However, 89.5% of teachers agreed or strongly agreed that pupils understand more when instructional aids are used the single highest agreement figure recorded across the entire teacher questionnaire, highlighting teachers' clear awareness of the value of materials they are unable to access consistently.

3.4 Relationship Between Instructional Aid Use and Reading Proficiency

Table 3 presents the Pearson correlation coefficients between teachers' composite instructional aid use scores and pupils' EGRA reading sub-skill scores.

Table 3: Pearson Correlation Between Instructional Aid Use and EGRA Reading Sub-Skills (n=19 teachers, 68 pupils)

Reading Sub-Skill	Pearson r	p-value	Interpretation
Letter Recognition	0.59	0.003	Moderate Positive
Sound Recognition (Phonics)	0.63	0.001	Moderate Positive
Word Reading	0.71	< 0.001	Strong Positive
Sentence Reading / Comprehension	0.67	0.001	Moderate-Strong Positive
Overall EGRA Score	0.67	< 0.001	Moderate-Strong Positive

Source: Field Data (2026)

All five correlation coefficients were positive and statistically significant at $p < 0.05$. The strongest relationship was observed for word reading ($r = 0.71$), and the overall EGRA score relationship was $r = 0.67$, indicating a moderate-to-strong positive association between instructional aid use frequency and reading proficiency. The regression analysis confirmed that instructional aid use was a significant predictor of reading outcomes ($F = 52.3$, $p < 0.001$), with $R^2 = 0.449$ showing that 44.9% of variance in overall reading proficiency could be explained by how frequently and diversely teachers used instructional aids. The regression coefficient $B = 1.63$ means that for every one-unit increase in a teacher's composite instructional aid use score, the average pupil EGRA score increased by approximately 1.63 marks.

4.0 Discussion

4.1 Types of Instructional Aids Used in Standard One Classes

The finding that Standard One reading instruction in Kyela District depends almost entirely on alphabet charts while more interactive, print-rich, and multisensory materials are severely limited or absent is consistent with documented patterns of resource deprivation in rural primary schools across Sub-Saharan Africa. UNESCO (2021) observed that inadequate teaching and learning resources reduce pupils' exposure to print-rich environments and fundamentally weaken early literacy development. The World Bank (2020) similarly linked poor foundational literacy in developing countries to inadequate classroom resources and limited access to appropriate reading materials. The near-complete absence of storybooks in 68.4% of schools is particularly significant given the global evidence base confirming that storybooks are among the highest-impact instructional resources for developing comprehension and vocabulary among early grade learners (Piper et al., 2019; RTI International, 2020).

From the perspective of Vygotsky's Sociocultural Theory, instructional aids function as mediating tools that enable teachers to scaffold pupils' reading development through the Zone of Proximal Development the space between what learners can do independently and what they can achieve with support. The severe limitation of reading aids in Kyela District directly weakens this scaffolding function. A teacher working with only an alphabet chart can scaffold letter recognition but lacks the tools to scaffold phonics, word decoding, or reading comprehension, creating a systematic gap between what reading instruction could achieve and what it actually delivers. RTI International (2020) confirmed that early literacy interventions become substantially more effective when instructional materials are combined with teacher training and consistent classroom support, and the present study's challenge data showing that 63.2% of teachers also lacked training in how to use aids effectively indicates that both dimensions of this requirement are simultaneously deficient in Kyela District.

4.2 Level of Reading Proficiency Among Standard One Pupils

The finding that 64.7% of Standard One pupils scored below the expected overall reading proficiency level, with a mean EGRA score of 48.3% against the 60% minimum competency standard, confirms the existence of a severe early literacy crisis in Kyela District that is consistent with national and regional assessments. NECTA (2021) documented persistent challenges in early literacy achievement in Tanzanian primary schools, particularly in rural districts. Uwezo (2021) similarly found that many pupils in lower primary grades could not read basic texts despite attending school regularly. UNESCO

(2023) and the World Bank (2020) identify this pattern as characteristic of learning poverty conditions common across Sub-Saharan Africa, where school access has improved substantially but learning quality has not kept pace.

The progressive decline in performance from letter recognition (mean 5.9) through phonics (5.3) and word reading (4.4) to sentence comprehension (3.7) has an important pedagogical explanation grounded in Vygotsky's theory. The relatively stronger performance in letter recognition reflects the one area where an instructional aid the alphabet chart is consistently available and used. However, the absence of phonics aids, word cards, and storybooks means there is no scaffolding support for the subsequent stages of reading development. Pupils accumulate some letter knowledge but are not guided through the progressive steps of connecting letters to sounds, blending sounds into words, and reading words within meaningful sentences. This creates the staircase decline pattern visible in the EGRA data, which mirrors what Mkumbo (2020) and other Tanzanian literacy researchers have described as the mechanical reading trap where pupils learn to name letters without developing the ability to use them for actual reading.

4.3 Relationship Between Instructional Aid Use and Reading Proficiency

The statistically significant positive relationship between instructional aid use and reading proficiency ($r = 0.67$, $p < 0.001$; $R^2 = 0.449$) provides quantitative confirmation of what Vygotsky's Sociocultural Theory predicts and what the early literacy intervention literature has consistently documented. The finding that instructional aid use explains nearly 45% of variance in reading outcomes is substantial and practically important: it means that the single classroom-level factor of how frequently and diversely teachers use instructional aids predicts almost half of the variation in what pupils achieve in reading. Piper et al. (2019) found comparable effect sizes in East African early reading programs, and RTI International (2020) established that structured material provision combined with teacher support produced measurable reading improvements across diverse Sub-Saharan African contexts.

The particularly strong correlation between instructional aid use and word reading ($r = 0.71$) is theoretically coherent. Word reading is the hinge skill connecting phonics knowledge to text comprehension, and it requires repeated practice with concrete visual materials flashcards, word cards, syllable strips that allow pupils to rehearse decoding repeatedly until letter-sound-word connections become automatic. Where these materials are absent, word reading depends entirely on the teacher's verbal modelling, which cannot replicate the individualized, repetitive, and multisensory practice that visual and interactive aids enable. The classroom observation data directly demonstrated this relationship: School D, the school with the highest aid availability and use, achieved the highest mean EGRA score (24.3), while Schools E and F, with no aids, achieved the lowest (14.8 and 13.6). The cross-sectional design means causal conclusions must be drawn with appropriate caution, as other variables including class size, teacher experience, and home literacy environments also influence reading outcomes. Nevertheless, the consistency of the relationship across correlation, regression, and observation evidence provides strong grounds for treating instructional aid provision and effective use as a primary actionable lever for early reading improvement in Kyela District.

5.0 Conclusion and Recommendations

This study examined the impact of instructional aids on Standard One reading proficiency in public primary schools in Kyela District, Tanzania. The findings establish three converging conclusions. First, instructional aids in Standard One classrooms in Kyela District are critically inadequate in variety, quantity, and durability. Reading instruction depends almost entirely on alphabet charts, while phonics materials, flashcards, storybooks, and any form of audio or digital reading support are absent in the majority of schools. This restriction of the instructional aid environment to a single type of simple visual material means that reading lessons cannot provide the multistage scaffolding required for full early literacy development. Second, reading proficiency among Standard One pupils is severely below the expected competency level, with an overall mean EGRA score of 48.3% against the 60% minimum standard. Performance declines sharply and consistently across the four reading sub-skills, with the most acute crisis in sentence reading and comprehension where 77.9% of pupils score below expectation. Third, a statistically significant positive relationship exists between instructional aid use and reading proficiency across all measured sub-skills, with 44.9% of variance in reading outcomes explained by instructional aid use frequency. The relationship is practically meaningful and consistent across quantitative and observational evidence.

Based on these conclusions, the study makes the following recommendations. The Ministry of Education, Science and Technology should increase annual budget allocations for teaching and learning materials in public primary schools and define a minimum standard package for every Standard One classroom including alphabet charts, phonics flashcards, decodable word cards, and at least five storybooks per classroom, to be reviewed and replenished every three years. MoEST should also revise the pre-service teacher education curriculum to include assessed practical training in instructional aid preparation and use for early grade reading. The Kyela District Education Authority should conduct a comprehensive needs assessment of instructional materials in all public primary schools and use results to develop a three-year targeted material provision plan. The district should also organize at least two practical in-service training workshops annually for Standard One teachers focused specifically on matching instructional aids to reading sub-skills, and should include instructional aid use as a standard and mandatory item in all school inspection checklists. Head teachers should prioritize Standard One classrooms in internal resource allocation, organize monthly school-level sharing sessions where teachers exchange instructional aid preparation strategies, and conduct monthly classroom observation visits specifically focused on instructional aid use quality. Standard One teachers should commit to using at least one instructional aid in every reading lesson, conduct monthly quick individual reading assessments to identify struggling pupils early, and create print-rich reading corners within their classrooms using both provided and teacher-made materials. Development partners and NGOs should prioritize storybooks and phonics-based materials in resource provision programs, ensure all material provision is accompanied by structured teacher training, and invest in local capacity for sustainable instructional aid production.

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