

READING SKILLS ACQUISITION IN PRIMARY SCHOOL PUPILS: DOES GENDER PROVIDE A BETTER ACCOUNT?

Innocent Nasson Messo
Open University of Tanzania
innocent.messo@out.ac.tz

ABSTRACT

The existence of gender disparities in cognitive abilities has been a persistent focus of educational research. This quantitative study investigated whether such disparities are evident in the acquisition of reading skills among grade four pupils in public primary schools in Tanzania's Manyara region. Using purposive sampling method, the study was conducted across 17 schools selected from six wards. A total of 340 pupils were recruited through stratified and simple random sampling techniques. Data were collected via paper-based questionnaires and

analyzed using SPSS. An independent samples t-test was employed to compare mean reading scores between boys and girls. The results revealed no statistically significant difference in reading acquisition based on gender. The study therefore concludes that gender is not a determinative factor in the development of reading skills in this specific cohort, suggesting that educational interventions should focus on other variables to improve literacy outcomes.

Key Words: Gender Differences, Kiswahili, Public Primary Schools, Reading Acquisition.

PURPOSE OF THE STUDY

The primary goal of education is to equip children with the knowledge and skills necessary to thrive. Among these, reading ability is fundamental, as effective reading comprehension is critical for retaining content across all academic subjects (Marinak & Gambrell, 2010). This study investigates the differences in the acquisition of this crucial skill between boys and girls in public primary schools.

OBJECTIVE OF THE STUDY

This study aimed to deepen the understanding of gender disparities in academic achievement by

analyzing the gender gap in reading skills acquisition among grade four pupils in Tanzanian public primary schools. Specifically, it investigated whether a pupil's gender is a significant predictor of their reading proficiency.

LITERATURE REVIEW

The question of whether boys and girls differ in cognitive abilities has been the focus of considerable research. A consensus indicates that while no significant gender gap exists in general intelligence (Halpern, 2000), differences are often observed in specific domains such as visual-

spatial processing (Voyer, Voyer, & Bryden, 1995) and language acquisition (Miller & Halpern, 2014).

The findings aforementioned make the effect of gender on reading skills a particularly critical area of study. In contemporary coeducational environments, prevalent discussions of "boys' underachievement" and "girls' verbal superiority" (Miller & Halpern, 2014) have garnered significant attention from educators and researchers alike. This highlights a pressing need for targeted investigations to pinpoint the precise nature and causes of these observed disparities in reading acquisition.

Gender is a prominent analytical lens in reading research (Logan & Johnston, 2010). A robust body of literature indicates significant gender-based differences across multiple dimensions of reading.

Compared to boys, girls consistently demonstrate more positive engagement with reading; on average, they read more frequently, hold more positive attitudes, and exhibit higher levels of motivation (Baker & Wigfield, 1999; Coles & Hall, 2002; McKenna, Kear & Ellsworth, 1995).

Furthermore, girls tend to express greater competency beliefs in their reading skills and place a higher value on reading itself (Durik, Vida & Eccles, 2006; Eccles, Wigfield, Harold & Blumenfeld, 1993; Wigfield *et al.*, 1997). These factors are reflected in performance outcomes, with girls often demonstrating superior reading

abilities (Ming Chui & McBride-Chang, 2006; Mullis, Martin, Kennedy & Foy, 2007).

Research on the role of gender in reading skills presents a complex picture, though a trend of female advantage is evident in large-scale studies. While some investigations report no significant differences between male and female learners (e.g., Fahim & Barjesteh, 2012; Sotoudenama & Asadian, 2011), others consistently find that females outperform males in reading comprehension (e.g., Brantmeier, 2004; Chiu & McBride-Chang, 2006).

This female advantage is prominently illustrated in major assessments. For instance, in the largest study of its kind, Hedges and Nowell (1995) analyzed nationally representative U.S. data and found girls significantly outscored boys in reading proficiency each year, with stable effect sizes ($d = .18$ to $.30$), and noted greater performance variability among boys.

This pattern appears cross-culturally; analyses of the multinational Programme for International Learner Assessment (PISA) confirm appreciable gender differences in reading across member and partner nations, a finding consistent across multiple assessment waves (Lynn & Mikk, 2009; Reilly, 2012).

Gender disparities in educational outcomes remain a pervasive global concern (World Bank, 2017). While gaps in reading do not always exist, a common trend emerges when they do: girls often

outperform boys in literacy, while boys may excel in numeracy (Bertrand & Pan, 2013).

The explanations for this disparity in reading skills and broader educational achievement are multifaceted, encompassing: i) biological differences in cognitive processing (Levine et al., 2005); ii) parents' gender-specific expectations and investments (Baker & Milligan, 2013; Bertrand & Pan, 2013); iii) social and cultural influences (Guiso *et al.*, 2008; Nollenberger *et al.*, 2014); iv) differences in the acquisition of social and behavioral skills (DiPrete & Jennings, 2012); and v) gender-specific educational practices, including teacher bias (Dee, 2007; Lavy & Sand, 2015).

Much of the existing research, particularly in developing regions like Sub-Saharan Africa, has historically focused on closing the gender gap in *access* to schooling. A historical overview of East Africa, for instance, shows phases of post-independence expansion, subsequent erosion of gains, and recent re-introduction of Free Primary Education.

Consequently, while many Low- and Middle-Income Countries (LMICs) have successfully equalized access, significant disparities in *educational achievement* now present a major challenge (World Bank, 2012; Saito, 2011). This shift in focus from access to quality and outcomes underscores the critical need to investigate the underlying causes of performance gaps, such as those in reading acquisition.

Ouko's (2015) study of Class One literacy skills, based on teacher ratings, found a statistically significant advantage for girls over boys. However, the reliance on non-standardized assessments across different schools presents a potential limitation, as varying rating criteria may have influenced the results.

THEORETICAL FRAMEWORK

This study is grounded in Lev Vygotsky's (1978) sociocultural theory, which posits that learning is a social process. Vygotsky argued that children acquire complex skills, like language, through guided interactions with more knowledgeable others (e.g., teachers, parents) within their Zone of Proximal Development (ZPD).

Through structured activities and sophisticated verbal guidance, such as questioning and modeling, adults can scaffold a child's understanding and skill acquisition (Anderson *et al.*, 2010). Applied to literacy, this theory suggests that interactions centered on print and reading are fundamental for helping children learn how to read in their early school years.

RESEARCH METHODOLOGY

This section focuses on the research design, sample size and sampling techniques. The section also discusses data collection instructions and data analysis procedures.

RESEARCH DESIGN

This study employed a quantitative approach using a correlational research design. The study was conducted in Babati Town Council, located in

the Manyara Region of Tanzania. The region was purposively selected based on data from the Uwezo (2017) national assessment, which revealed that Manyara Region performed below the national average in reading proficiency. Specifically, only 39% of children aged 9-13 in the region met the literacy benchmark, compared to a national average of 40%.

SAMPLE SIZE AND SAMPLING TECHNIQUES

A multi-stage sampling strategy was utilized. Babati Town Council was purposively selected from the seven district councils in Manyara Region. This decision was made in consultation with the Regional Education Office to identify an area where Kiswahili is the predominant language of communication, thereby minimizing the potential confounding influence of local mother tongues prevalent in more rural districts.

Babati Town Council is administratively divided into 8 wards. Six of these wards were selected for the study, with the number of primary schools in each ward serving as a key selection criterion to ensure representation.

From these six wards, a total of 17 public primary schools were selected to form the research units. The selection was stratified by ward to ensure a dispersed and representative sample of the council's diverse school locations.

Ward EE, being the largest, contributed the most schools (n=6), while the remaining wards contributed between two and three schools each. Private schools were excluded from the sampling

frame as the study aims to reflect the national education system, in which Kiswahili is the mandatory medium of instruction in public primary schools.

The study population consisted of all grade four pupils in public primary schools within the study area. A stratified random sampling technique was employed. From each of the 17 selected schools, 20 pupils (10 boys and 10 girls) were recruited, resulting in a total sample of 340 pupils. This sample size represents over 10% of the pupils per class, ensuring adequate representation.

Within each school, pupils were stratified by gender. A simple random sampling procedure without replacement was then used to select the participants. For each gender group in a classroom, numbered cards were prepared. Each pupil drew one card, and only those who selected a card numbered one through ten were included in the study.

DATA COLLECTION INSTRUMENT

An age-appropriate reading skills assessment tool was developed by the researcher, aligned with the Grade Four National Curriculum. The tool was designed for 10-year-olds, though some age variation was present in the sample. It assessed the following five domains:

Vocabulary Mastery: Pupils matched a target vocabulary word with its correct synonym from a list of five options.

1. Word Recognition: Pupils read 15 words aloud. The researcher scored each word on a scale of 'quickly and correct', 'slow but correct', or 'incorrect' based on speed and accuracy.
2. Listening Comprehension: A teacher read the story "Why Anansi Has Eight Thin Legs?" aloud. Pupils then answered written comprehension questions based on the story.
3. Silent Reading Comprehension: Pupils read the story "Mama Pweza (Mother Octopus)" silently and subsequently answered written comprehension questions.
4. Oral Reading Fluency (Loud Reading): Pupils read a story aloud. The researcher recorded the number of words read quickly and correctly, correctly but slowly, and incorrectly. Proficiency was determined by a high score in the "quick and correct" category.

DATA COLLECTION PROCEDURE

The assessment was administered to all 340 selected pupils. All content and contexts were derived from the standard grade four syllabus and textbooks to ensure validity and cultural appropriateness.

DATA ANALYSIS

Data were collected using paper-based assessments and entered into SPSS software for cleaning and analysis. The dependent variable was

the pupils' reading ability, represented by a composite score derived from assessments in vocabulary, comprehension, word identification, silent reading, and oral reading fluency. The independent variable was gender (boy/girl).

Scoring for the reading assessment was skill-specific. Vocabulary and Comprehension items were scored dichotomously (1 = correct, 0 = incorrect). Word Identification, Silent Reading, and Oral Reading Fluency were scored on a 3-point scale (0 = incorrect/no response, 1 = correct but slow, 2 = correct and fast).

An independent samples t-test was employed to determine if there was a statistically significant difference in the mean reading scores between boys and girls. To improve the validity of the comparison, the analysis controlled for potential intervening variables, including socio-economic background, parental education, attitude toward school, and mental health.

RESULTS AND DISCUSSION

A total of 340 pupils were initially recruited for this study, with an intended equal distribution of 170 boys and 170 girls. However, data cleaning prior to analysis revealed a final sample of 163 boys (47.9%) and 177 girls (52.1%).

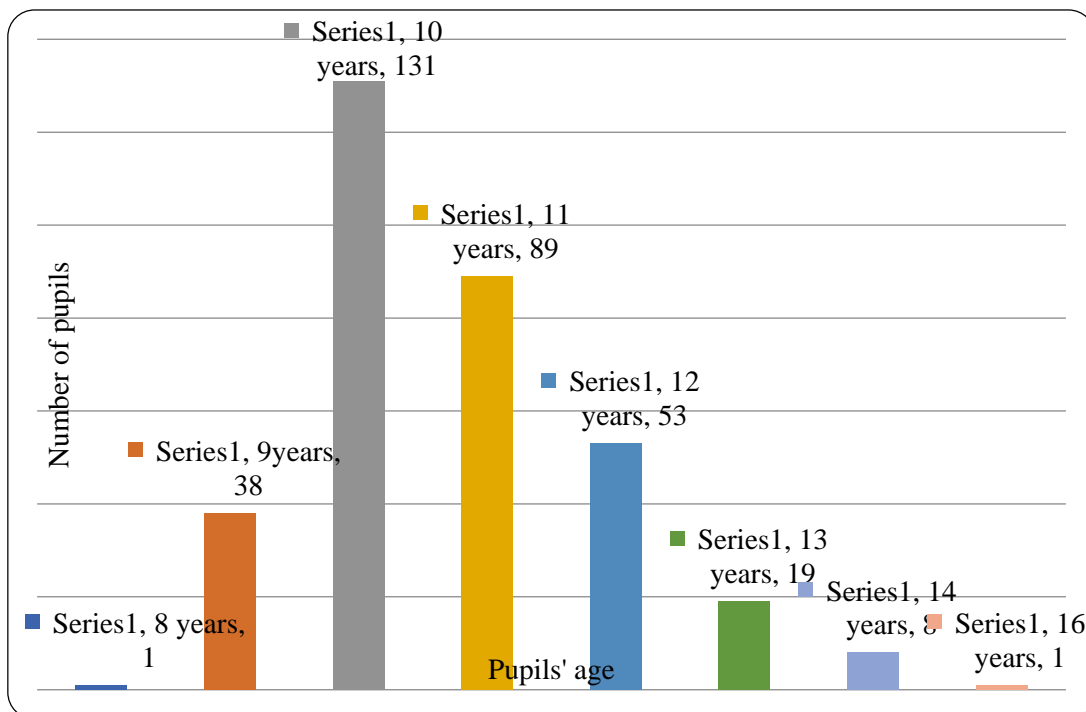
The discrepancy in sampling was likely due to errors in self-reported gender on the assessment tools, where some boys may have incorrectly marked 'KE' (the code for girl) instead of 'ME' (the code for boy). The background characteristics of

the final participant sample are summarized in Figure 1.

Figure 1 indicates that a plurality of Grade Four pupils (131, or 38.5%) were ten years old, which is consistent with the Tanzanian Education and Training Policy (ETP) guideline for starting primary school by age seven.

A significant number of older pupils was however also observed, including 89 eleven-year-olds and others aged 12 to 16, reflecting the policy's flexibility which allows enrollment between ages four and six based on a child's developmental readiness.

Figure 1
Background Information of the Sampled Pupils



ANALYSIS OF GENDER DIFFERENCES IN READING SKILLS ACQUISITION

To determine whether gender impacts the acquisition of reading skills, an independent samples t-test was conducted. This test compared the means of two independent groups—boys and girls—to evaluate whether observed differences were statistically significant, under the

assumption that the null hypothesis (no difference between groups) was true.

The results revealed a nuanced pattern. While some skills showed no statistically significant gender differences, others indicated variation. For instance, in matching vocabulary, girls (M = 0.75) scored higher than boys (M = 0.65), though this difference was not statistically significant (p = 0.055).

Conversely, in "correct and fast" word identification, girls (M = 12.08) significantly outperformed boys (M = 11.33, $p = 0.009$). Conversely, boys (M = 2.82) scored higher than girls (M = 1.83) in "slow but correct" word identification, though this result was not

statistically significant ($p = 0.077$). These mixed findings suggest that gender may influence specific subskills of reading differently, rather than overall reading acquisition in a uniform manner. These findings are presented in Table 1.

Table 1
Differences in Reading Skills between Boys and Girls

	Variables	Boys			Girls			p-value
		N	Mean	Std Dev	N	Mean	Std Dev	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Vocabulary</i>	return	163	0.3252	0.4699	177	0.3220	0.4686	0.9512
	far	163	0.8650	0.3427	177	0.8983	0.3031	0.3429
	table	163	0.6503	0.4783	177	0.7458	0.4367	0.0552
	swim	163	0.6319	0.4838	177	0.7006	0.4593	0.1804
	leave	163	0.9018	0.2984	177	0.9096	0.2876	0.8072
	laugh	163	0.5337	0.5004	177	0.5028	0.5014	0.5700
	happiness	163	0.8957	0.3066	177	0.8531	0.3550	0.2390
	stand up	163	0.7055	0.4572	177	0.7740	0.4194	0.1506
	remove	163	0.5521	0.4988	177	0.6102	0.4891	0.2798
Take out	163	0.8589	0.3492	177	0.7910	0.4078	0.1013	
<i>Word identification</i>	Fast and correct	163	11.3313	2.7421	177	12.0791	2.4828	0.0087
	Slow but correct	163	2.8160	7.1976	177	1.8305	1.6288	0.0771
	Not correct	162	1.4136	2.0601	177	1.1695	2.1962	0.2932
<i>Listening comprehension</i>	Question 1	163	0.3742	0.4854	177	0.3277	0.4707	0.3701
	Question 2	163	0.8405	0.3673	177	0.7458	0.4367	0.0319
	Question 3	163	0.9080	0.2900	177	0.8757	0.3309	0.3413
	Question 4	163	0.9080	0.2900	177	0.8249	0.3812	0.0252
	Question 5	163	0.6380	0.4820	177	0.6102	0.4891	0.5975
<i>Silent reading</i>	Question 1	163	0.8896	0.3144	177	0.8701	0.3372	0.5823
	Question 2	163	0.8528	0.3554	177	0.8192	0.3859	0.4062
	Question 3	163	0.3374	0.4743	177	0.3333	0.4727	0.9366
<i>Loud reading</i>	Correct and fast	163	62.1779	14.6607	177	64.4463	11.8991	0.1169
	Slow but correct	162	9.3642	7.4648	177	7.7740	5.4288	0.0247
	Wrongly read	163	9.4663	13.4570	177	8.8418	10.9299	0.6378

Table 1 presents the results of independent samples t-tests comparing the mean scores of boys and girls across various reading skills. Column (1) lists the specific reading skill assessed. For each skill, descriptive statistics are provided separately for boys [Columns (2) to (4): number of observations, mean, and standard deviation] and

girls [Columns (5) to (7): number of observations, mean, and standard deviation].

Column (8) reports the p-value for the test of the null hypothesis that the mean scores for boys and girls are equal. Contrary to a predominant body of Western and American literature which often reports significant gender differences in reading,

the findings of this study are largely inconsistent with that narrative.

Instead, the results in Table 1 align with other Western studies that have reported mixed or minimal gender differences in reading performance (Meece & Miller, 1999; Wigfield & Guthrie, 1997; Durik et al., 2006; Logan & Johnston, 2009).

The findings suggest that while gender can be a useful analytical category in education, it is not a deterministic predictor of reading ability and should not obscure the considerable individual variation that exists within each gender. Recognizing that significant differences are not universal is crucial for developing a more nuanced understanding of the complex factors influencing reading acquisition.

The findings align more closely with research from Low- and Middle-Income Countries (LMICs). For example, a study by Buhl-Wiggers et al. (2021) on gender differences in learning across Kenya, Tanzania, and Uganda (2010–2015) found that girls consistently outperformed boys in both numeracy and literacy.

The gender gap ranged from 0.03 to 0.05 standard deviations in numeracy and 0.06 to 0.09 standard deviations in literacy, persisting robustly across age groups and remaining significant even after controlling for grade progression.

Conversely, other studies in African contexts report more nuanced patterns. While early-grade

reading assessments often show low absolute performance for all children, significant contextual variations exist. UNESCO (2016) highlights that disparities in reading skills can vary within countries: in Ethiopia, girls outperformed boys in urban schools, while boys performed better in rural settings.

In Kenya, however, girls outperformed boys in both urban and rural areas. These findings underscore the importance of local context in shaping educational outcomes, though the specific drivers of these differences remain underexplored.

Research in various linguistic and regional contexts further illustrates the complexity of gender disparities in reading. In Mali's Songhoi language, 89% of girls could not read compared to 78% of boys. A similar pattern emerged in Uganda's Lango language, where 85% of girls versus 78% of boys failed to meet reading benchmarks (UNESCO, 2016).

The UNESCO (2016) report also highlighted contrasting results in other regions: boys outperformed girls in Ethiopia's Oromiya and Benishangul-Gumuz regions, while girls performed better in Guyana and Liberia. Despite these variations, no significant overall gender differences in reading skills were found across the studied grades.

Further supporting this nuanced view, Cekiso (2016) examined Grade Three rural learners in South Africa and found that girls (mean score = 37.81) slightly outperformed boys (mean score =

33.18) in IsiXhosa reading comprehension. However, this difference was not practically significant.

Cekiso (2016) suggests that the minimal gap may be due to the shared mother tongue of both genders, resulting in nearly equivalent linguistic foundations and reducing gender-based disparities in reading comprehension.

Several factors may account for the mixed findings of this study. A primary challenge in gender difference research stems from methodological limitations, including sampling approaches and the potential for selection bias. Since it is rarely feasible to include every individual in a target population, researchers must rely on samples from which they infer broader patterns.

Demographic variables—such as socioeconomic status, ethnicity, and geographic location (rural vs. urban)—are known to significantly influence cognitive and academic outcomes (Fernald, Marchman, & Weisleder, 2013; Hanscombe *et al.*, 2012). If a sample does not adequately represent this diversity, the generalizability of results may be limited.

In the current study, the sample exhibited relatively homogeneous characteristics. To mitigate this limitation and enhance representativeness, a larger sample was deliberately recruited to reflect variability in gender, socioeconomic background, ethnicity, and geographical location. This strategy aimed to

improve the validity and generalizability of conclusions regarding gender-specific differences in reading acquisition.

Another potential source of the mixed results is selection bias, particularly in studies of gender differences in reading. Research suggests that boys are more frequently identified by schools as having reading difficulties compared to girls. However, community-based epidemiological studies often find nearly equal rates of reading impairment across genders (Shaywitz *et al.*, 1990).

This discrepancy implies a possible referral bias, where boys are over-identified and girls under-identified within institutional settings. To adequately test such claims, large, representative samples assessed with standardized tools are essential. In this study, however, further sample expansion was avoided to minimize the risk of introducing false-positive results.

The inconsistent findings highlight the broader methodological challenge of isolating the mechanisms behind gender differences in reading. As noted by Lavy and Sand (2015), it is inherently difficult to disentangle biological, environmental, and sociocultural factors—such as stereotypes and prejudices—and to empirically test their distinct contributions. This complexity underscores why clear, consistent patterns in gender-based reading disparities remain elusive.

CONCLUSION

Reading is a fundamental receptive skill that underpins learning across all academic subjects. Recent research has increasingly focused on how individual differences, including gender, influence reading development.

While the present study suggests that gender may have a modest effect on reading skills at the primary level, this effect was not statistically significant. Consequently, the findings indicate that gender may not be a primary factor in reading acquisition and mastery among primary school children.

These results should, however, be interpreted with caution due to limitations in sample size, geographic scope (restricted to Babati Town¹, Council), and assessment methods. Future studies incorporating larger, more diverse samples,² multiple regional contexts, and a variety of validated reading measures would help clarify the role of gender and enhance the generalizability of findings.

RECOMMENDATIONS BASED ON FINDINGS OF THE STUDY

The study's core finding—that gender was not a statistically significant predictor of reading acquisition—suggests that interventions should move beyond broad gender-based assumptions and focus on individualized support and systemic quality improvements. Based on the findings of the study, the following recommendations are made:

For Policy

Move Beyond Gender-Targeted Programs:

Given the mixed and non-significant results, education policy should avoid prescribing universal, gender-segregated reading interventions. Resources are better allocated to improving the overall quality of reading instruction for *all* pupils.

Invest in Diagnostic, Formative Assessment:

Policy should mandate and fund the development and implementation of early-grade reading assessments (EGRAs) or similar tools. These diagnostics help identify struggling readers *early*, based on their individual skill deficits rather than their gender.

Standardize Teacher Training on Data-Driven Instruction:

Policy should prioritize in-service teacher training that focuses on how to interpret assessment data to identify specific reading gaps (e.g., in phonemic awareness, vocabulary, fluency) and how to tailor instruction accordingly to meet individual learner needs.

3. Promote Equity through Resource Allocation:

4. Direct policy and resources toward schools in socio-economically disadvantaged and rural areas, where the study and others (e.g., UNESCO, 2016) suggest contextual factors like poverty and location can have a more significant impact on outcomes than gender.

For Practice (Classroom Instruction)

1. Differentiate Instruction, Don't Segregate by Gender: Teachers should be trained in differentiated instruction strategies. This means grouping pupils flexibly based on their current reading proficiency and specific needs (e.g., a group working on phonics, another on comprehension), rather than assuming all boys or all girls learn the same way.
2. Cultivate a Positive Reading Culture for All: Actively combat stereotypes that "reading is for girls" or that "boys are naturally better at math." Showcase diverse reading role models and provide reading materials that appeal to a wide range of interests to engage every child.
3. Focus on Foundational Skills for Struggling Readers: Since the problem is not unique to one gender, interventions should target the foundational skills of all struggling readers. This includes explicit instruction in phonics, vocabulary development, and reading fluency practices.
4. Engage Parents and Caregivers: Provide parents with strategies to support reading at home for all their children, emphasizing the importance of reading together, discussing stories, and creating a literacy-rich environment regardless of the child's gender.

For Programming (Curriculum and Design of Intervention)

1. Design Programs Based on Need, Not Gender: Reading intervention programs (e.g., after-school tutoring, reading camps) should be designed to address specific skill gaps identified through assessment. Enrollment should be based on those diagnosed needs, not on the pupil's gender.
2. Develop Context-Specific Teaching and Learning Materials: Rather than creating "for boys" or "for girls" materials, programs should focus on developing materials that are culturally relevant, in the appropriate language of instruction, and aligned with the curriculum for the specific region (e.g., Babati, other Tanzanian councils).
3. Integrate Social-Emotional Learning (SEL): Since factors like motivation, self-confidence, and behavior (which can vary individually within genders) impact learning, integrate SEL into reading programs to help all pupils develop perseverance, a growth mindset, and a positive identity as a reader.
4. Prioritize Mother Tongue Instruction: The study by Cekiso (2016) cited in the research suggests that mother tongue instruction can minimize gender gaps. Strengthen programs that build foundational reading skills in a pupil's first language before transitioning to additional languages.

In summary, the key recommendation is a paradigm shift: from a focus on gender as a primary categorization for reading intervention to a focus on individual assessment and responsive, high-quality instruction for all children. This approach is more equitable, efficient, and supported by the nuanced findings of this study.

LIMITATIONS OF THE STUDY AND FUTURE DIRECTIONS

The findings of this study are based on data collected from urban public primary schools. Consequently, they cannot be generalized to private schools or to rural educational contexts within the Manyara region. To develop a more comprehensive understanding of reading acquisition across the region's diverse educational landscape, future research should include both public and private schools from rural and urban settings.

Furthermore, as this study was conducted in a relatively homogeneous context, we recommend a large-scale investigation that examines the impact of varying socio-economic environments—such as agricultural, pastoralist, business, industrial, and fishing communities—on reading skills development. Such a study would help clarify whether differences in reading acquisition are influenced by parental socio-economic status and community livelihood activities, thereby offering valuable insights for more targeted and effective educational policies and interventions.

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