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The rural and urban divide in early literacy acquisition in Tanzania: the mediating roles of home and school contexts

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ABSTRACT

Recently most sub-Saharan countries have successfully broadened access to basic education. However, empirical and educational reports from this region have consistently documented children not acquiring the foundational literacy skills. This study examined the differences in the level of literacy acquisition between pupils from urban and rural backgrounds in Tanzania. A mixed-method research approach under the concurrent mixed design was employed. A total of 200 early grade children, 120 parents, 20 teachers were recruited. The data were collected by the Early Grades Reading Assessment, semi-structured interviews, parent questionnaires, and documentary analyses. Findings indicated that urban children outperformed rural children when it came to every literacy aspect tested, except reading comprehension. In both areas, girls outperformed boys, although rural boys were generally over-aged. The home learning environments for children from rural areas were found to be limited with less support than even for those from the poor urban areas. Regardless of urbanicity, poor and extremely limited teaching and learning facilities, large class sizes, and curriculum issues were pointed out as the main hindrances for children to acquiring literacy skills. These findings have implications for policymakers, teachers, parents, and other stakeholders in this region calling for joint reform efforts to improve early literacy acquisition.

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Early literacy; home learning environment; word reading; family socioeconomic status; Tanzania

Introduction

In recent years, the question of literacy acquisition has gained the attention of many educational stakeholders in developing countries (RTI International 2014; SACMEQ 2017; UIS 2019). Literacy is defined as one's: ability to read; critical awareness; and understanding of various forms of communication, which in most cases includes verbal language, written text, and televised and digital media (Koltay 2014; Livingstone 2004). In its *Aspects of Literacy Assessment* paper, UNESCO (2005) defined literacy as the ability to classify, appreciate, be aware, produce, connect and figure out by using written and printed resources connected to a variety of settings. Literacy acquisition sometimes involves opportunities to depict things via innovative routes such as through drawing, songs, and play (Mmasa and Anney 2016). However, the most recent and widely accepted definition by UNESCO (2018) defines literacy as the child's ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts.

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Furthermore, literacy also ensures that children have the skills to read stories, play based on their role in a story, to be able to present a specific characteristic, which thus enhances both their cognitive and emotional scope (Mmasa and Anney 2016; UNESCO 2005).

Mmasa and Anney (2016) and Koltay (2014) established that schooling leads to the acquisition of literacy as is defined above and is therefore one of the indicators of any progression for childhood development and learning. Previous research has established that early literacy: greatly increases the level of intellect and performance in working environments (Koltay 2014); creates personal autonomy; is a catalyst for learning; and contributes to, and even guarantees, the child's learning and adoption of socially accepted manners (Zahra et al. 2016). In the context of developing countries such as Tanzania, a poor literacy foundation may result in the threat of children dropping out of official systems of education (Rawle 2015; Uwezo 2017), and hinders the likelihood of success in different societies (Alcock and Ngorosho 2007).

In their early years of education, children's low self-esteem is partly due to having the lowest level of competency in their writing skills (Kremer and Holla 2009) and poor social outcomes in education (Kafle and Jolliffe 2015). In developing countries, children's learning and development are influenced by existing educational policies, guidelines and laws, the communities of which they live, and their families (Hanushek and Woessmann 2008; UNESCO 2007, 2017). In general, developing countries have a poor economy, and specific cultural phenomena alongside a lack of print materials in certain social contexts further contribute as additional factors that hinder children in achieving their developmental potential, which includes literacy skills (Black et al. 2017). In particular, home environments and opportunities to practice what they have learned in school proved to be the most determining factors that may influence children's literacy development (Kafle and Jolliffe 2015; Kremer and Holla 2009). In fact, the rural-urban early literacy divides are due to differences in the level of exposure they have to supportive resources such as print materials, TVs and parental involvement, which then stimulate their mental abilities (Hanushek and Woessmann 2008; Kremer and Holla 2009).

The current education context and practices of Tanzania

Education at all levels in Tanzania is provided in partnership between the government and the private sector. While the Ministry for Education oversees policy issues, that of the President's office, Regional and Local Government Authorities [PO-RLAG] manage schools and the employment of teachers. The provision of education at all system levels is guided by the 2014 Education and Training Policy (ETP) (United Republic of Tanzania [URT] 2014). The policy instructs that each primary school should have a pre-primary class attached (ibid.). The overall purpose of the policy is to ensure that all children had pre-primary learning experiences before they start grade one.

Broadening access to primary education in Tanzania has been a focus of various stakeholders since the 1960s, when the country attained its political independence from the British (Sifuna 2007). The implementation of the Universal Primary Education [UPE] policy in the 1970s then increased the number of children enrolled in grade one. This was largely aided by the country's villagisation policy, which mandated that each village (for rural areas) and each street (in the case of urban areas) had to set up at least one primary school for that area (Ndiujye and Rao 2018). However, it seems that the expansion of primary education was not carefully planned, as it was accompanied by teachers who did not have the adequate skills to cater to the rapidly increasing numbers of pupils in both new¹ and old schools, and by issues regarding the construction of enough classrooms, teacher houses, libraries, and toilets. This adversely affected the quality of primary education provided (Sifuna 2007).

Major changes in the provision of basic education in Tanzania came after 1995, as a result of the initiation of the ETP and Primary Education Development Plan – Phase I [PEDP–I]. The most significant underlying principles of the PEDP–I were those of broadening access, equity, and quality of services for all children regardless of background, skin colour or gender (Ndiujye and Rao 2018; Sifuna 2007). In the process of implementation, key policy decisions were made intending to ensure and maintain equity and access. Among them were: the abolition of school fees and other mandatory contributions;

construction of more schools or classrooms; recruitment of more teachers; and, the construction of teachers' houses (Sifuna 2007). By the end of the PEDP-I, overall enrolment at grade one increased by 156%. In rural Tanzania, gross enrolment ratio had grown from 35% to 217% (MoEST 2020).

Rural-urban divides in literacy acquisition in Tanzania

Recently, Tanzania has successfully implemented its barrier-breaking 2014 Education and Training Policy (URT 2014). This policy broadened access to basic education by alleviating most of the societal and institutional barriers which had previously limited access to educational opportunities for children from minority, disadvantaged, rural and impoverished backgrounds (Ministry of Education, Science and Technology [MoEST] 2020; Ndijuye and Rao 2018, 2019).

In Tanzania, consistent results of the Primary School Education Leaving Examinations [PSELE] and the 2015 final report for the Big Results Now initiative indicate that, in the past ten years, a huge number of primary school leavers completed their primary education without acquiring the appropriate knowledge, skills and attitudes required to pass the grade seven examination and/or attain the intended learning outcomes (Rawle 2015; MoEST 2020; Uwezo 2017). In addition to this, findings of independent empirical studies, carried out by Sumra and Katabaro (2014), Kafle and Jolliffe (2015), Ndijuye (2022b), Rawle (2015), RTI International (2014), Uwezo (2010, 2012, 2015), and the national report on education sector analysis by the NECTA (2020) have all shown that literacy learning outcomes among primary school-aged pupils do not meet Tanzania's needs for the twenty-first century.

Home and school learning environments, family SES and reading acquisition

Studies from developing countries have consistently indicated that learning attainments of children from low socioeconomic status [SES] families are poorer compared to children from high SES level families (Kapinga 2014; Ndijuye and Rao 2019). The poor performance is largely attributed to differences in the quality and quantity of support within the home learning environments (Aboud and Hosain 2010; Reardon 2010) and literacy acquisition is no exception to such a factor (Uwezo 2017).

Early experiences and exposure to print materials, especially during pre-primary and early grades of schooling have a particularly critical role on children's acquisition and development of literacy skills (Rawle 2015; Ndijuye and Rao 2018). The available empirical data indicates that early years education, especially when carried out during the pupil's childhood, yields significant and long-lasting performance on future school results (Aboud and Hosain 2010), and even on successes in their adult life (Kiernan and Mensah 2011). This provides a rationale for alleviating schooling inequalities which are particularly unfair to children from impoverished rural areas in Tanzania (Ndijuye and Rao 2018).

In a context of poor home learning environments and widespread family poverty, supportive school environments, which are able to offer adequate teaching and learning materials, physical infrastructure and quality of teachers, can help bridge this learning gap (Ndijuye and Rao 2019). Within a school context, teacher quality is the single most important variable that influences children's learning achievements (Ndijuye 2020; Manning et al. 2017). Poor teacher quality² during these early years can be detrimental to the development of children of all backgrounds, especially if they do not equalise early disparities and disadvantages that children may have faced during their early developmental stages. Such disparities may be present in the children's cognitive, physical, and social-emotional development (National Institute of Child Health and Human Development Early Child Care Research Network 2005; Weiland and Yoshikawa 2013).

The existing empirical evidence from both developed and developing countries has consistently indicated that high quality school environments are more likely to support optimal socio-emotional and cognitive childhood development (Weiland and Yoshikawa 2013), as does school preparedness (Ndijuye and Rao 2018) and improved learning attainments during the early grades (Manning et al. 2017). These positive developmental and socio-emotional experiences, such as developing individual and group conflict resolution skills, getting along with others, and being able to form friendships,

are commonly associated with subsequent improvements in academic achievements in such areas as early reading and mathematics (Burchinal et al. 2011).

Despite increased enrolment, more than half of the children have been reported as having completed their basic education with limited basic literacy skills necessary for the elementary level, especially in rural areas (Rawle 2015; Mmasa and Anney 2016; Uwezo 2015, 2017). This is contrary to the existing Education and Training Policy of 2014 (URT 2014), which instructs that after completing grade seven, pupils are expected to have acquired basic literacy skills, especially when in their ability to read, write, and solve simple arithmetic problems. While data indicates that in Tanzania, more children are attending school than ever before (MoEST 2020; UNESCO 2015) and that literacy rates have been improving day by day (Ndiujye and Rao 2018; Ndiujye 2022a), Tanzanian schools have arguably some of the lowest literacy rates in the East and South African region (UNESCO Institute of Statistics [UIS] 2019), and primary curriculum expectations for early grades reading across the country are not being met (Ndiujye and Rao 2019).

Findings by various international and national literacy and early grades reading assessments, in which pupils from Tanzania have participated, have consistently indicated declining literacy in Tanzania (Rawle 2015; RTI International 2014; Uwezo 2010, 2012, 2015). Specifically, while mainland Tanzania performed relatively well on the SACMEQ than other countries in the region, this has been exemplified by the RTI (2014) through a literacy attainment assessment conducted as part of the School Quality Assessment for Education and Water, Sanitation, and Hygiene [WASH] project. In this project, carried out in the Mbeya, Iringa, and Njombe regions with a sample of 961 grade two pupils, about one-quarter of them (24%) were unable to correctly read a word from the Oral Reading Fluency [ORF] passage (Brombacher et al. 2015; RTI-International 2014). As a result, most of the pupils were moving through the grades, sometimes graduating from primary schools altogether, without acquiring basic literacy skills.

Despite the known rural and urban divide in literacy attainments in the sub-Saharan region, the situation in Tanzania specifically is relatively less known. Furthermore, to our best knowledge, there is no single study that has examined the rural and urban divide in literacy acquisition by exclusively focusing on existing education policy, home learning environments and school contexts. This study thus aimed to bridge this knowledge gap by examining policy, school, and home contexts.

Objectives of the study

The study has specifically aimed to achieve the following objectives:

- (1) Examine the differences in literacy acquisition between pupils (in grades one and two) from urban and rural backgrounds in Tanzania,
- (2) Assess how school learning environments influence literacy acquisition of grade one and two pupils from rural and urban contexts in Tanzania,
- (3) Explore the hindrances for literacy teaching and learning in grades one and two in both urban and rural primary schools in the Dodoma region of Tanzania.

Methods

Research design

This study employed a concurrent mixed method approach to enable researchers to converge or merge quantitative and qualitative data to give comprehensive analyses of the research problem (Creswell 2009). Specifically, in this study, the concurrent design helped to investigate the magnitude or size of the problem of literacy acquisitions in schools located in rural and urban contexts and the explanations behind the numbers.

Location of the study

Given the nature and scope of this study, Dodoma City and Chamwino District were purposively selected. Dodoma City was selected to represent the urban areas, while Chamwino District was chosen for its rural areas. Located in central Tanzania, Dodoma City is estimated to have a population of about 810,956 while Chamwino District has a population of 530,543 (National Bureau of Statistics, 2020). Before Dodoma City was elevated to its municipality status, the two districts functioned as one. As such, they used to have a significant amount in common geographically, economically and educationally. However, given its current status as a new capital of the country, the researchers had every reason to believe that more educational resources would be directed to Dodoma City above any other area of the country (MoEST 2020).

Sampling procedure and sample size

This study used stratified sampling to select schools, categorised into urbanicity – meaning rural and urban contexts. In total, four representative state schools, two from each urbanicity, were selected. Please note that in Tanzania, state schools, regardless of urbanicity, mostly serve children from poor to relatively poor families. For the purpose of providing every member an equal opportunity to be selected and to ensure the ability to generalise, the study used a simple random sampling method to select the pupils. About 200 early grade (grade one and two) pupils were selected – 100 from each urbanicity; with 50 children selected from each school, of whom 25 were boys and 25 were girls. To understand the classroom and school contexts, four school principals (one from each school) and 16 early grades teachers (four from each school aged between 25 and 55 years) were intentionally selected by the virtue of their positions. To obtain an understanding of the children’s home learning environments, 120 parents (30 sets of parents from each school) were selected and invited to participate in this study based on the following criteria: they must (i) have an early grade child participating in this study, (ii) permanently reside in that specific urbanicity – to exclude those with duo urbanicities, and to control social desirability, selected parents were those who were not, at the time, (iii) serving in the Parent-School Committee.

Data collection methods and tools

This study used both primary and secondary data collection methods. The methods and tools used include the EGRA Toolkit, parent questionnaire, semi-structured interview protocols and a documentary review. Specific details for each data collection method/ measure used are as follows:

Early Grade Reading Assessment [EGRA] Toolkit

The EGRA Toolkit is a simple, effective, and low-cost resource to measure student learning outcomes (Abadzi 2006). This study used EGRA because of its direct link to advances in both reading and cognitive development (Ndijuye and Tandika 2022). Furthermore, the administration procedures of EGRA are child-centred which thus increase the child’s comfort levels and therefore the validity of the results. Equally important, the EGRA Toolkit is available in Kiswahili – the official language of instruction in Tanzania. Assessors begun by establishing a rapport with the children, describing what was happening during the assessment to help the child understand that the assessment was a safe and supportive interaction.

The child was prompted at pre-determined intervals (3–5 s) to attempt the next item. This ensured that all the children were exposed to an equal number of items that would then determine their score. In the course of testing, children had to identify letters in various sounds, read simple meaningless words out loud, and demonstrate comprehension of sentences and paragraphs. The

EGRA test was used to gauge differences in literacy levels between children of rural and urban contexts. The calculated Cronbach's alpha value of internal consistency for EGRA was $\alpha = 0.90$.

Semi-structured interviews

In this study, semi-structured interviews were used to gather information about the classroom and school resources available to aid the rural and urban children in acquiring literacy skills. The rationale for using this method was to allow researchers to obtain detailed information, personal feelings, and the perceptions held among early grades teachers and school principals regarding the children's acquisition of literacy skills. Furthermore, this methodology also allowed the researchers to ask follow-up, probing questions for clarification or more detailed information. Conducted by the second author, the process involved a face-to-face interview in which researchers asked open-ended questions and recorded the respondents' answers via tape-recorders, which were supplemented with field notebooks. The 45-minute interviews normally took place in the respondents' offices.

Parent questionnaire

A modified version of the parent questionnaire, developed by Rao et al. (2013), was used in this study as it has been used in other contexts in developing countries (Aboud and Hosain 2010; Rao et al. 2013). The questionnaire protocol focused on key indicators of the family's socioeconomic status and home learning environments such as: demographic information; the availability and frequency of the use of print materials and teaching and learning resources at home; parental education; and family wealth.

Documentary analyses

Important documents relating to early grades and literacy development were analysed. In this study, the targeted documents included the existing early grades education policy briefs, curriculum documents, and teachers' work arrangements and lesson plans. Researchers used this method as the targeted documents could be secured quickly and easily and covered a wider geographical area and longer reference periods with less costs (Creswell 2009; Punch 2005). Furthermore, the policy documents and briefs were selected based on the following criteria: (i) they are government-issued documents released for official or academic use; (ii) they address the early grades level or issues related to this level; and (iii) the selected documents provided information about current status of early grades in general as well as literacy development, specifically in grades one and two.

Ethical considerations

Ethical issues were observed by obtaining ethical clearance and permission from the University of Dodoma. Permission to conduct research in the Dodoma region, including an introduction letter, was obtained from the relevant local government officials. Given that the children involved in this study were under 18 years of age, parental consent was acquired, and children were individually requested to participate in the study. In addition to this, the information collected from each participant was assigned a pseudonym to conceal the participants' identities. Confidentiality was observed and unauthorised persons had no access to the collected data.

Data analyses

To determine differences, preliminary tests were conducted focusing on demographic information such as the children's age, grade, gender and learning attainments. To identify covariates for the final analyses, frequencies, means, and correlations among the variables were calculated. Final analyses examined the differences in the EGRA mean score among the rural and urban children, using

analyses of variance (ANOVA). With controlling the age, gender, and family SES within the study, the hierarchical linear regression analyses were conducted to understand the association between urbanicity and literacy attainments, i.e. the EGRA mean scores.

The content analyses approach of Miles and Hubberman (1994) was used to analyse the qualitative data. To develop themes and sub-themes, the data were transcribed, back translated from Kiswahili into English, and then reduced, coded, and described. The collected data were subjected to interpretational analyses which involved a systematic set of procedures by coding and classifying them, ensuring that important constructs, themes, sub-themes, and patterns could freely emerge. Specifically, the collected qualitative raw data were coded by the authors to highlight the relevant texts, repeating ideas, themes, theoretical constructs, research concerns and theoretical narratives. From the repeating ideas, themes and sub-themes were further developed. Thereafter, themes were organised into specific theoretical constructs or abstract ideas which were later developed into theoretical narratives to bridge the gap between the focus of the authors and the participants' subjective and lived experiences, in their own words.

To analyse the collected documents, two issues guided the development of the themes: (a) the extent of emphasis in the specific document or how the information is presented, and (b) literacy status in the existing policy brief/resolution/by-law/decision/curriculum document/scheme of work. The collected education policy briefs, curriculum documents, and teachers' work schemes and lesson plans were jointly analysed by the authors. To maximise objectivity, communicability, transparency, and coherence, certain techniques were utilised (Auerbach and Silverstein 2003; Patton 2002). Specifically, in the process of data analyses, the authors triangulated data sources, data collection tools, and deliberately bracketed all their previous beliefs, understandings, and assumptions (Creswell 2009; Onwuegbuzie, Leech, and Collins 2012).

Findings

Children's age and gender by urbanicity

The researchers were interested in the distribution of children by age and gender across urbanicity – mainly because they were to be used as the controlling variables for the analyses. Results indicated that in rural areas, about 47.3% of children were aged 7, while 52.7% were aged between 8 and 9 years. From Dodoma City, 61% of pupils were aged between 6.5–7 years, while those aged between 8 and above accounted for 39%. As such, it became clear that rural children started school much later than urban children. This may have implications regarding how older children acquire literacy skills. Overall, 52% of the study participants were girls, while 48% were boys. In the urban area, girls and boys were equally divided. However, among the rural population, the boys made up 56%, while girls were 44%. More findings are provided below (Table 1).

The analyses of variance (ANOVA) as measured by the EGRA Toolkit, with the children's urbanicity and gender serving as between subject-variables, indicated a significant interaction effect. During analyses, children were divided into two groups as per their respective urbanicity (Group 1: Chamwino = Boys and Girls; Group 2: Dodoma = Boys and Girls). The interaction effect between urbanicity (urban and rural) and gender (being a boy or girl) was found to be statistically significant, $F(2, 196) = 4.463$, $p = 0.013$. The gender of each specific child (being a rural or urban boy/girl) influenced their literacy acquisitions. There was a statistically significant main effect for urbanicity (rural and urban), $F(2, 196) = 9.61$, $p = 0.002$; however, the effect size was small (partial eta squared = 0.047). Follow-up

Table 1. Literacy mean scores by gender and urbanicity.

Gender	Urban district		Rural district	
	Mean	SD	Mean	SD
Boys	104	6.207	48	8.031
Girls	133	7.275	83	7.324

tests indicated that the mean literacy scores for urban children were significantly higher ($M = 119, SD = 7.30$) than for rural children ($M = 66, SD = 8.20$). Girls generally, regardless of urbanicity, had significantly higher literacy acquisition ($M = 108, SD = 6.32$) than boys ($M = 76, SD = 7.15$). Literacy mean score for urban girls ($M = 133, SD = 7.30$) was almost three times of that of rural boys ($M = 48, SD = 8.03$).

Urbanicity and literacy acquisition

A two-block hierarchical regression was conducted with EGRA mean score to determine which variables that would predict children's literacy acquisition across urbanicities. Gender and urbanicity were entered at Block 1, explaining 39.6% of the variance. After entry of the family SES at Step 2, the total variance explained by the model was increased by 29.8%, $F(4, 196) = 48.58, p < .01$. The two control measures explained an additional 10.2% of the variance in literacy acquisitions, after controlling for Gender and urbanicity desirable responding, R squared change = .102, F change (2, 196) = 19.959, $p < .01$. In the final model, only the three control measures were statistically significant, with the family SES recording a beta value (beta = .75, $p < .01$ and Urbanicity (beta = .66). $p < .01$). In the final model, the three variables together accounted for 79.6% of the variance in children's literacy acquisition (Table 2).

Rural–urban divides in home learning environments and children's literacy acquisition

The results from the parents' questionnaire showed that 71.2% of families in rural areas do not have access to newspapers while in the urban area 77% do have access. The results showed that 61% of households in rural areas do not own nor use mobile phones, while in urban areas about 98% use

Table 2. Home learning environments and family SES measured by family wealth and assets.

		Household access internet		Total	
		No	Yes		
Rural	Frequency	58	1	59	106
	%	98.3%	1.7%	100.0%	
Urban	Frequency	42	5	47	
	%	89.4%	10.6%	100.0%	
		Household access Newspapers		Total	
Response		No	Yes		
Rural	Frequency	42	17	59	106
	%	71.2%	28.9%	100.0%	
Urban	Frequency	11	36	47	
	%	23.4%	76.6%	100.0%	
		Household use Mobile Phone		Total	
Response		No	Yes		
Rural	Frequency	36	23	59	106
	%	61.0%	39.0%	100.0%	
Urban	Frequency	1	46	47	
	%	2.1%	97.9%	100.0%	
		Household own Television		Total	
Response		No	Yes		
Rural	Frequency	37	22	59	106
	%	62.7%	37.3%	100.0%	
Urban	Frequency	6	41	47	
	%	12.8%	87.2%	100.0%	
		Household own Motorbike		Total	
Response		No	Yes		
Rural	Frequency	52	7	59	106
	%	88.1%	11.9%	100.0%	
Urban	Frequency	32	15	47	
	%	68.1%	31.9%	100.0%	

Source: Field data.

and/or own mobile phones. Furthermore, the researchers were interested in whether owning or watching television impacted literacy acquisition. The results showed that 63% of households in rural areas did not own or watch television. In the urban area, 87.2% of households owned or watched television regularly. More findings are as shown in [Table 3](#).

Hindrances for literacy teaching and learning among pupils in Dodoma primary schools

Lack of adequate teaching and learning facilities

By using the current early grades quality guidelines as a baseline (MoEST 2016), this study found that inadequate teaching and learning facilities was one of several hindrances impacting effective literacy acquisition among pupils in Dodoma City. Most of the teachers (93%) and school principals (87%) revealed that the available books do not sustain standard book-child ratio of 1:2. Teachers admitted to using books that were designed to cater for the previous curriculum, rather than books intended for the current curriculum.

In addition to this, the study revealed that there is a significant difference in the availability of physical infrastructure among rural and urban primary schools in the Dodoma region. In rural areas, one primary school principal revealed to have an average of five to seven classrooms to accommodate grades one to seven – over 800 children. On the other hand, in the urban area, no such scarcity was reported, even though the classrooms were relatively overcrowded. One school principal revealed that her school had about fifteen to seventeen classrooms to accommodate about 1,500 pupils.

An overcrowded classroom

The research revealed that an overcrowded classroom was seen as one of the challenges limiting pupils’ literacy acquisition, regardless of urbanicity. This challenge was pointed out by teachers and school principals from both urbanicities. Most of the school principals (78%) associated this challenge with the introduced fee-free basic education policy. Despite the advantages of a fee-free education policy, this creates a problem of overcrowded classrooms in almost all public primary schools. One school principal from the urban area described the problem as such:

An overcrowded classroom is a challenge that hinders the process of learning, that is, one class has 120 pupils, and we have two streams A and B in the same class.

Difficulties associated with implementing the new curriculum

Findings from the interview data revealed that there was a poor understanding of how to implement the new 2015 early grades curriculum. Teachers revealed that they had a limited understanding of the implementation of the competence-based early grades curriculum – this was five years after the

Table 3. Hierarchical regression model analyses for literacy attainments across urbanicities.

Predictor	Predictor data			Model data		
	<i>B</i>	β	R^2	ΔR^2	ΔF	<i>T</i>
Early reading predictive scores						
Block 1: Demographic variables						
Age	3.78	0.35**	0.396	0.396	7.58	3.44
Gender	0.415	0.046**				3.44
Block 2: Family SES variable						
Parents Education	4.94	0.183*	69.4	0.269	14.58	2.97
Family wealth	1.328	0.087**	3.40			3.50
Block 3: Final model						
Urbanicity	6.651	0.769**	0.796	0.102	15.11	6.49

* $p < 0.05$.

** $p < 0.01$.

curriculum was introduced in 2016 (MoEST 2016). They reported a lack of in-service training, which would have introduced and exposed them to the new curriculum. All school principals and teachers advised curriculum planners and developers to review the current curriculum and make possible improvements.

Discussion of findings

This study: examined the differences in the level of literacy acquisition between pupils from urban and rural backgrounds; assessed home learning environments that influenced the children's literacy acquisitions; and explored the obstacles facing the teaching and learning of early literacy in public primary schools in both rural and urban contexts in Tanzania.

Differences in literacy acquisition between children from urban and rural backgrounds

The study revealed that, compared to urban children, pupils from rural public primary schools lagged behind in the level of their literacy acquisition. These findings concur with those of Brombacher et al. (2015) and the observation report in the Education Sector Development Plan (2016/17–2020/21) by the URT (2018) which found that 24% of grade two pupils in rural Tanzania were unable to correctly read a word from the ORF passage. Despite recent increase in primary school enrolment in Tanzania, most of the pupils have been graduating from primary schools without acquiring basic literacy skills (Mmasa and Anney 2016; Rawle 2015; Uwezo 2010; 2012; 2015; 2017). This is contrary to existing policy and curriculum briefs that stipulate that after completing standard grade two, pupils are expected to have achieved basic literacy skills, particularly the ability to read, write, and solve simple arithmetic problems (URT 2014). These findings are not uncommon in sub-Saharan Africa (Livingstone 2004; SACMEQ 2017). In this region, most of the early grade children cannot manage taking on the roles of characters in stories they have read, thus struggling to identify both their cognitive and affective dimensions (Koltay 2014).

Low literacy levels among rural children may be attributed to relatively poor and unsupportive home learning environments (Ndijuje and Tandika 2022). This could be down to the rampant poverty closely associated with low parental education in rural areas (Aboud and Hosain 2010; Ndijuje and Rao 2019). For example, in these areas, most of the households did not have access to mass media such as televisions, radio sets and newspapers. The role of such media in children's cognitive, language and literacy development are well-known and established in the existing empirical evidence (Black et al. 2017; Rao et al. 2013).

This study found significant gender differences in literacy acquisition, regardless of urbanicity. Girls from urban and rural schools outperformed boys, and girls living in urban areas specifically had the highest mean score than any other group. The difference was more visible when it came to the scores related to reading the alphabet and paragraphs, in which girls seemed to be clearer and faster than boys. Though the reason for this is still not well-established among researchers, girls outperforming boys in early literacy acquisition is a well-known phenomenon (Ndijuje 2022b; Uwezo 2010; 2012). Some researchers have associated this difference with the academic culture of reading among boys and girls (Houtte 2004). At pre-primary and early grade levels, especially during unstructured play, girls are said to be more interested in learning activities that potentially promote early language development (Meland and Kaltvedt 2019; Brekke Stangeland, Lundetræ, and Reikerås 2018). Given the focus of the current curriculum in Tanzania – play based at pre-primary level, and academic instructions at grade one – this may affect school readiness and grade one development of reading skills differently among girls and boys.

This study also revealed that older rural children performed poorly when it came to literacy acquisition than younger urban children. This may be attributed to the fact that rural children have limited access to modern technology and social amenities such as mobile phones, televisions, radios, computers and the basic needs that stimulate a child's engagement in literacy activities. This finding is

similar to that of Lindsjö (2018) who found that such staggering disparities, in terms of the surrounding home learning environments and social amenities, do affect children's learning attainments.

Compared to the urban context, it was found that a majority of rural parents have limited parenting education and interests when it came to engaging the child in learning activities. Parenting education has been found to be instrumental in guiding children, in following up on the children's schooling, and their motivation (Kano 2019). However, urban parents were found to have acquired some form of parenting education which may have implications regarding urban children's higher literacy acquisition. These findings are similar to those by Drajea (2015) who revealed that parenting education enlightened parents on the best ways to raise their children, which thus improves their learning outcomes, including literacy acquisition. Importantly, these findings converge with those of Boyle (2014) who reports that parents who understand the important role they play as educators to their children create key experiences for their children, which then helps them succeed.

Role of home learning environments on children's literacy acquisitions

This study found that having a less supportive home learning environment was the prime obstacle facing children's literacy acquisition across urbanities. Most of the households did not own literacy-supportive modern technology such as internet access, newspapers, computers and/or tablets, televisions, and radios. Limited ownership and poor access to such resources was considered to be an indication of household poverty associated with low family SES (see Ip et al., 2015; Melhuish et al. 2008; Ndijuye 2022b). The children's home learning environments have also been found to be critical in influencing pupils' acquisition and mastery of reading skills in various ways (Ndijuye and Rao 2019; Ndijuye 2022a). This has been corroborated by Goodman (2001) as well, in that child who grow up in homes with family members who have at least a college/university level education, and who are computer programmers, will have vastly different experiences than children who grow up in homes where only the bible is read or writing is used occasionally.

The typical rural home learning environment was characterised by minimal access to the internet, newspapers, mobile phones, computers, and household facilities. Given that parents function as their child's first teacher, the importance of a supportive home learning environment cannot be ignored (Melhuish et al. 2008). Similarly, Han (2008) revealed that young children from supportive home learning environments demonstrated a higher literacy level than those who lived in less supportive home learning environments.

Home learning environments can be understood as the interactions between family members, the physical environment, and their learning at home (Matafwali and Nunsaka 2011; Mwaura, Sylva, and MalMBERG 2008; Ndijuye 2022b). Through interactions in family contexts, children observe, learn and gain understandings of the real world around them, which then ultimately shape their behaviour and attitudes (Ndijuye and Rao 2019). Home learning environments improve their learning ability and social benefits that can lead to changes in their life situations (Smees and Samson 2012). It was also found that supportive home learning environments predict the higher level of spelling various letters, express vocabularies, emergent literacy in younger children, and how children develop and control reading ability (Melhuish et al. 2008).

The home environment creates a significant gap in the average of enrolment and graduation rates of children (of school age) from the rural and urban populations (MoEST 2017). Given the findings of this study, this implies that the educational disparity between rural and urban areas of the country is broadening (Ndijuye and Tandika 2022; Sumra and Katabaro 2014). This can be traced to factors concerning the home learning environment, including such aspects as family possessions, parental reading attitudes, availability of reading materials, and more literacy interactions in the home which significantly improve children's literacy abilities (Chansa-Kabali 2014).

Due to the importance of the home environment in literacy acquisition and development, the creation and assurance of children's opportunities to engage in literacy experiences should be a priority as a majority of families tend to be busy with demanding schedules and a variety of commitments

(Boyle 2014). As well as this, families should endeavour to create consistent routines in which they reserve time for literacy learning and development (Boyle 2014). Paying less attention to literacy activities for children results in the observation made by Kuo et al. (2004) in that the 'odds of daily reading are lower for full-time working parents than for non-working parents ...'.

Nonetheless, it is important to note that quantifying home learning environments in a predominantly informal economy context is a very complex task (Kafle and Jolliffe 2015). The task is then made even more difficult for a study which involved rural areas with the participation of parents with limited or no formal education. This may help to explain why most of the parents in rural areas provided little or no support regarding their children's learning and academic development (Malmberg, Mwaura, and Sylva 2011; Melhuish et al. 2008).

Hindrances for literacy teaching and learning in rural and urban contexts in Tanzania

Lack of teaching and learning facilities

Findings revealed that, compared to schools in urban areas, rural schools had a limited number of classrooms. For example, one school reported to have five classrooms to cater for grades one to seven. Given the shortage of classrooms, there were some sessional rotations across grades. This resulted in teachers' prolonged and tiresome working schedules from mornings to evenings. Physical infrastructure, including classrooms, play a role in children's learning and development (Sumra and Katabaro 2014; Uwezo 2015).

Moreover, this study revealed that there was an acute shortage of desks for early grades children in rural areas. As a result, pupils had to either sit on the floor or many of them would have to share one desk. The available evidence indicates that children learn basic literacy skills when in supportive and enabling environments (Saracho 2017). High levels of literacy increase academic and occupational success, improve self-esteem and enhances the motivation to learn, participate in and be a committed to their education, as well as helping the children to understand what socially acceptable behaviour is (Zahra et al. 2016). The distribution of school supplies and materials remains a critical issue. Urban schools tend to receive these supplies first and rural and remote schools thus receive them last (MoEST 2020).

Overcrowded classrooms

It was revealed that overcrowded classrooms presented another challenge that hinders teaching and the learning process in both urban and rural areas. It is an established fact that an overcrowded classroom is an obstacle not only for literacy acquisition, but also for the entire teaching and learning process (UNESCO 2015). This is in line with Hoy and Miskel (2008), who describe that the quality of what is produced depends on the interplay between the input, the process, and the output. An inadequate learning environment, impacted by the quality of teachers, inadequate literacy teaching skills, overcrowded classes, and lack of financial resources, leads to difficulties in ensuring that poor pupils are also given the opportunities to master reading, writing and numeracy skills in school (Mmasa and Anney 2016).

Conclusion and recommendations

Based on the findings, it can be concluded that there are variations across rural and urban areas in Tanzania regarding early literacy acquisition because of less supportive home and school learning environments. While Tanzania is successfully working towards achieving Sustainable Development Goals, especially goal number 4.1, which states that 'by 2030, [it will be] ensure[d] that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes', the fact that all children are in school does not guarantee that they are actually learning. Joint efforts by policymakers, practitioners and parents are critically important

in ensuring the establishment of solid literacy development for the future learning achievements and outcomes of all children.

Especially in a context with extremely limited educational resources, as is the case for most countries in the sub-Saharan region (UNESCO 2018), it is equally and critically important to monitor and ensure that all children, regardless of gender, family and ethnic background or skin colour do acquire and develop at least sufficient early literacy skills during the early years of their formal education. To achieve this goal on a broad scale, close family-school engagement must play a mediating role. As such, more studies are required to understand which educational policies work in specific contexts, what the appropriate and workable strategies are in order to forge this partnership, and which specific programmes and evaluation approaches are best suited to the research.

Intervention programmes related to literacy acquisition and development should be initiated in rural Tanzania. These programmes may, for example, focus on understanding different sounds within the alphabet and how to write those sounds. It is further recommended that intervention programmes include the parents alongside both in-service and pre-service teachers. Projects on 3Rs may be conducted in those areas which have severe problems of poor literacy.

Notes

1. Gross Enrolment Ratio (GER) refers to total enrolment within a country in a specific level of education, regardless of age. It is expressed as a percentage of the population in the official age group corresponding to this level of education.
2. Teacher quality is defined by their qualifications, training, pathway to professional development, and experiences.
3. Department of Pedagogy, Religion, and Social Studies

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