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Using a wordless picture book to explore children's narrative production in rural Kenya

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Background: Early language development is critical for literacy acquisition and academic success. However, children in rural Africa often face challenges such as limited access to literacy resources and minimal shared reading experiences at home, which can hinder their language skills. While wordless picture books (WPBs) are known to enhance narrative abilities, scant research has examined their effectiveness in rural African contexts.

Objectives: This study explored how WPBs support narrative development among preschool children in rural Kenya. It examined the relationship between home literacy environments, parental involvement, and children's storytelling abilities.

Method: A mixed-methods approach was used, combining qualitative thematic analysis of children's storytelling with quantitative data on family reading practices. Forty preschool children participated in WPB-based storytelling sessions, while parents completed structured interviews on home literacy practices. Data were analysed thematically and statistically to identify patterns in children's narrative responses.

Results: Children from homes with shared reading experiences produced longer and more detailed narratives than those without book access. Guided questioning further enhanced children's storytelling by encouraging richer descriptions. Children who were unfamiliar with books often listed objects rather than producing constructing coherent narratives.

Conclusion: Limited access to literacy resources contributes to disparities in early language development. Wordless picture books, combined with guided questioning, can be an effective tool to support emergent literacy in under-resourced communities.

Contribution: Our work provides insights into how WPBs can foster language skills in rural African settings, emphasising the value of WPBs for enhancing literacy and facilitating parental engagement in early education.

Keywords: wordless picture book; language development; early literacy; narrative skills; shared reading; parental involvement; preschool education; home literacy environment.

Introduction

Wordless picture storybooks have great potential for fostering the literacy skills of preschoolers. The use of wordless picture books (WPBs) has been shown to enhance children's word recognition, thinking abilities, conceptual thinking skills, and language proficiency (Delfi 2017). These books can offer a rich literary experience that positively influences spoken language development and comprehension of stories, particularly concerning literacy development. By viewing images, children can visually create stories in their mind, then develop their own narratives, using their own words (Rizqiyani & Azizah 2019). Previous research has indicated that the use of WPBs is particularly effective when children engage in storytelling, because it boosts their self-confidence and enhances their imagination and word production (Ebert & Pham 2017; Ellmann et al. 2022; Rizqiyani & Azizah 2019; Tang 2022), suggesting that wordless picture storybooks are a valuable tool in developing preschoolers' literacy skills and promoting interaction between children and caregivers. By allowing children to construct visual narratives, WPBs encourage spontaneous interaction between children and caregivers (Mulatsih et al. 2018). Additionally, they can contribute to the development of character values such as empathy and care (Lysaker 2006; Nurhasanah, Nadiroh & Nafiah 2019).

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When engaging with WPBs, children are encouraged to create their own narratives based on the visual cues they observe, fostering the development of their storytelling abilities (Conrad, Michalak & Winter 2021; Rizqiyani & Azizah 2019). Wordless picture storybooks serve not only to assess children's narrative abilities but also as an effective tool in promoting emergent literacy (Peña et al. 2006). A study conducted by Petri et al. (2023) demonstrated that the nature of parent-child conversations during shared storybook reading is different when using a wordless book compared to a text-based book. The study indicated that the wordless book generated much more child participation and more parental prompts and feedback compared to the text-filled book. However, when narration happened using a text-based book, the lexical variety and grammatical complexity of the parental language was higher (Petri et al. 2023). A study conducted by Gorman et al. (2011) also revealed that the creative and stylistic elements children incorporate when constructing narratives based on WPBs can be influenced by cultural factors as well. This highlights the significance of considering cultural diversity in interpreting and expressing WPB narratives.

Wordless picture books may be especially valuable in environments where books are scarce and family literacy levels are low. According to Morris (2007), WPBs have the potential to bridge the gap for parents who are illiterate, as they can construct narratives using contextual clues in visual storytelling. Although there is a clear relationship between poverty and language development (Evans & Kim 2012; Justice et al. 2019; Yeo et al. 2021), the reasons for this are complex. One reason why children living in disadvantaged conditions do not reach their full potential in terms of language development and emergent literacy may be because of a lack of linguistically engaging resources (Can & Ginsburg-Block 2016). Picture books with thoughtfully integrated text also play a vital role in bridging the realms of visual literacy, cultural literacy, and print literacy. The combination of both visual and textual components within picture books assists in conveying complex messages and captivating readers in a multifaceted way (Damayanti, Moeharam & Asyifa 2021). Visual texts within these books complement the narrative provided by textual content, thereby enhancing the overall experience of reading (O'Neil 2011). This harmonious combination serves as a powerful tool for nurturing and enhancing fundamental reading skills (Jalongo et al. 2002). However, very little research has been conducted on the use of WPBs in Africa, despite a wealth of evidence from the Global North of their importance in the development of literacy. It is surprising that these books are not utilised more extensively, considering that they fall within a genre that can be accessible to readers of different literacy levels and across multiple languages (Haese & Costandius 2021; Haese, Costandius & Oostendorp 2018). Despite the limited research on WPBs in Africa, they have been acknowledged as a medium that encourages storytelling, fosters a love of reading, and can be enjoyed by readers with varying literacy levels and language backgrounds (Ellmann et al. 2022; Haese & Costandius 2021).

The home environment significantly influences the range of literacy opportunities and challenges children experience. The availability of storybooks in the home, as well as the quantity and quality of parent-child reading activities, have consistently been associated with children's cognitive and language development, school readiness, and academic success (Park 2008; Raikes et al. 2006; Zauche et al. 2016). Studies in sub-Saharan Africa countries emphasise the importance of the home environment and pre-schooling in children's literacy development (Bayat & Madyibi 2022; Loye, Jansen van Rensburg & Ouedraogo 2022). Research in South Africa highlights the significance of promoting a reading culture through WPBs, showcasing their value in cultivating reading habits (Haese et al. 2018). Exposure to storybooks has a direct, positive, causal impact on children's vocabulary and language skills (Hargrave & Sénéchal 2000). However, many parents delegate this responsibility to teachers rather than engaging in shared reading activities themselves (Madima & Makananise 2021) potentially because they view reading primarily through the lens of its educational benefits (Tiemensma 2009). Consequently, many children miss out on the opportunity to engage in shared reading experiences with their parents prior to starting school, as they are unaware of the broader benefits of reading for their personal and academic development.

Despite widespread agreement among policymakers that access to books and parental involvement is crucial for child literacy development, a study by Sénéchal and LeFevre (2002) revealed that only 50% of African parents in their study had engaged in any cognitively stimulating activities with their young children in the previous three days, and 97% of these families had less than three children's books in their homes. However, for children to learn vocabulary and develop linguistic abilities to their full potential, they must be given opportunities to create and express ideas, receive feedback, and interact with caregivers in responsive and reciprocal interactions (Wasik & Hindman 2015).

Meaning-making through wordless picture books

Kiefer (2010:10) asserts that a 'true picture book tells a story mainly or entirely through pictures, with words playing a secondary role'. As a distinct art form, wordless picture books adhere to this principle by conveying meaning exclusively through images, using visual cues as the primary means of storytelling. Wordless picture storybooks are inherently visual, presenting readers with images that can be interpreted based on their individual backgrounds, cultural influences and social contexts. According to Nodelman (1988), children often verbalise the stories that the pictures evoke in them, transforming purely visual experiences into verbal ones. This indicates that WPBs tap into both verbal and aural mediums to construct a narrative text.

Wordless picture books elicit language that relies on shared visual experiences between the author and the reader. However, it is essential to acknowledge that the illustrations in these books require observation and interpretation, which may not always be immediately comprehensible (Houp 2003). The absence of an author's voice produces a unique experience for both the writer and the reader. The author relinquishes the guiding authority that printed words can have, and the reader takes on a major role in the process of meaning-making (Crawford & Hade 2000). According to Arizpe, Colomer and Martínez-Roldán (2014), the absence of text necessitates a greater level of engagement from readers. In this case, readers must recognise that there is a puzzle to solve in constructing a story from the illustrations (Nodelman 1988). As a result, reading and interpreting WPBs becomes an open-ended process which requires readers to search for clues and piece together seemingly unrelated fragments of visual information, drawing upon their own knowledge and experiences to complete the narrative (Nodelman 1988). Crawford and Hade (2000) emphasise that when engaging with WPBs, children construct meaning by tapping into their prior knowledge and experiences, paying attention to intertextual cues, adopting multiple perspectives, relying on story language and rituals, and actively engaging in playful behaviours as part of the reading process.

Further, Nodelman (1988) suggests that WPBs resemble conventional picture books, but they demand careful attention and a broad understanding of the visual conventions underlying the implied narratives within the images. These semiotic conventions include choices of medium, colour, and style, which communicate specific moods and atmospheres. Furthermore, implicit assumptions about spatial orientation (left and right) and causality enable readers to derive meaning from a sequence of pictures (Nodelman 1988). Wordless picture storybooks are widely regarded as an effective medium for the development of literacy and social skills. The genre can be argued to be more accessible to readers, especially those with low literacy levels, because modern children are more visually oriented (Goriot, Jongstra & Mensink 2024), the books don't require word decoding, there is no right or wrong interpretation, and there isn't a set language in which to read them (Goriot et al. 2024; Tang 2022).

Objectives

Our overarching aim was to explore the extent to which a WPB elicits narrative production and the extent to which narrative competencies are related to the home literacy environment of children living in rural areas around Nanyuki, Kenya. Additionally, we sought to explore the level of family involvement in utilising reading resources and to propose strategies for enhancing literacy and language development among preschool children in rural Kenya, drawing insights from the research findings.

Study context

Children in our sample came from rural, low socioeconomic status households near Nanyuki in Laikipia County, Kenya. All children were enrolled in preschool classes at one of two primary schools and purposive sampling was used to select participants. While some of our participants came from mixed ethnic backgrounds, the majority were Kikuyu speakers. The Kikuyu, currently Kenya's largest ethnic group, have a population of 8 148 668, accounting for 17.13% of the total population according to the 2019 census (Kenya National Bureau of Statistics 2019), and their language, which is part of the Bantu family, is widely spoken across the country. Traditionally, they have been small-scale farmers, cultivating maize, beans and other vegetables, and practising animal husbandry for their subsistence. In recent years, as trade and wage work have become increasingly important, a growing number of Kikuyu have entered Kenya's middle or upper class and have begun to have fewer children for economic reasons. Despite the trend towards smaller families, children typically grow up surrounded by siblings, cousins, and friends of various ages. Children enter preschool when they are around 4 years of age, and transition to primary school after 2 years. Outside school, children typically help with various tasks around the house, attend to younger siblings, and look after animals.

This study was conducted in two rural Kikuyu-speaking communities in Kenya. Kikuyu is the predominant home language, with Kiswahili introduced as a lingua franca through social interaction and formal schooling, and English typically introduced in school settings. Most children in these communities are exposed primarily to Kikuyu and Kiswahili at home. Depending on whether a household has access to television or radio, children may also hear some English. By the time they start school, most children speak Kiswahili fluently and know a few English words, but they are rarely able to read in any of the languages they speak.

Children's literacy exposure before school is minimal. The only written material commonly found in homes is the Bible, and other children's books are rarely available. As a result, children are generally unfamiliar with printed text and formal book-sharing activities prior to entering an Early Childhood Development Education (ECDE) centre or primary school. In this context, our use of WPBs provided an accessible and culturally adaptable way to elicit narratives. Wordless picture storybooks allowed children to draw on their oral storytelling traditions – often shaped by interactions with parents, grandparents, and older siblings without the barrier of written text.

These communities also maintain strong extended family networks, and older siblings or grandparents often play an active role in childcare. Traditional oral storytelling, which uses repetition, moral lessons, and local cultural references, remains common and influences how children interpret and describe visual narratives. This combination of multilingual exposure, limited access to print materials, and rich oral

traditions shaped the ways in which children engaged with the WPBs used in this study.

Methodology

Participant recruitment

The study was conducted in two rural villages near Nanyuki, Laikipia County, Kenya, areas where the research team had previously established relationships. Early Childhood Development Education teachers helped identify families with children aged 4–7 years old. Teachers explained the study to parents, and those who expressed interest were added to a pool of potential participants. From this pool, 40 families were randomly selected and invited to take part. A local assistant then contacted the selected families, provided more detailed information, and arranged data collection.

Data collection procedures

Data collection began in 2020 but was adapted because of the coronavirus disease 2019 (COVID-19) pandemic. Although there was no full lockdown in the study area, precautions were taken to minimise contact. All data were collected remotely via phone calls.

To assess children's narrative abilities, we used the WPB *A Growing-up Day*, sourced from the South African Mikhulu Trust (mikhulutrust.org). This book, unfamiliar to participants, was chosen for its rich visual content. Copies were sealed in envelopes and distributed by local teachers without direct visits.

At the time of the storytelling call, parents handed the sealed book and the phone to their child, and the research assistant began and recorded the session. The assistant first asked the child to open the envelope and describe what they had found inside. Children were then encouraged to go through the book page by page and explain what they saw. To capture the child's spontaneous language, assistants used only minimal prompts while guiding them through the images. Sessions typically began in Kiswahili; the official language of preschool and primary school but children were encouraged to switch to Kikuyu, their home language, if they felt more comfortable. After the storytelling session, children returned the phone to their parents, who were asked to return the book in the envelope. Since a follow-up session was planned for the following year, it was important to ensure uniform exposure to the book. Teachers were therefore asked to collect the books, and, in return, each child was given a different, unrelated book to keep.

In parallel, structured interviews were conducted with parents to collect quantitative data on home literacy practices and the availability of books (see Appendix 1). Books were later collected and exchanged with an unrelated one as a token of appreciation.

All audio recordings were transcribed and translated using ELAN[1] software by trained assistants. Only the English translations are quoted in this article. All transcripts were anonymised, and data were securely stored.

Data analysis

This study employed a mixed-methods approach. The qualitative component analysed children's storytelling responses, while the quantitative component assessed families' reading habits and literacy resources.

The first author conducted the thematic analysis in four stages. In the first stage, transcripts of children's narratives and parent interviews were coded using NVivo and descriptive codes to highlight key phrases and ideas. In the second stage, similar codes were grouped into categories and then refined into sub-themes and final themes, guided by the research questions. In analysing the quantitative data collected through structured parent interviews, we used descriptive statistics to summarise patterns in home literacy practices. Frequencies were calculated for key variables, such as the number of children's books in the home, frequency of shared reading, and who typically read with the child. Where relevant, cross-tabulations were used to explore relationships between book access, shared reading frequency, and children's narrative responses to the WPB. These quantitative patterns were interpreted alongside qualitative findings to provide a fuller understanding of how home literacy environments shaped children's storytelling.

Following this, the first author took a 3-week break to return to the data with fresh perspective. In the final stage, the themes were shared with the rest of the research team and refined collaboratively to ensure analytical rigour and validity. This process allowed for alternative interpretations and confirmed the coherence of the findings. Three key themes emerged from the analysis: (1) Availability of literacy resources in the home, (2) Familial involvement in literacy learning, and (3) The use of questioning techniques to explore children's ideas and thoughts.

Ethical considerations

This study formed part of a larger project examining the impact of children's mealtime experiences on language and nutritional outcomes in Kenya and Zambia (Zeidler et al. 2022). Ethical approval was obtained from all participating institutions, and a research license was granted by the Research Ethics Committee of the University of Eastern Africa, Baraton (Approval No. UEAB/REC/03/10/2020). To ensure informed consent and equitable participation, all procedures were explained to families in accessible formats. Participant information sheets were provided in print and read aloud by local research assistants to accommodate

1.ELAN (https://archive.mpi.nl/tla/elan), is a free software program developed by the Max Planck Institute for Psycholinguistics in Nijmegen for creating textual annotations on audio and video recordings. It allows users to build multiple layers of annotations such as sentences, words, translations, comments, or descriptions of other relevant features – making it possible to both transcribe and translate recordings with precision.

varying literacy levels. All families gave informed consent by initialing the appropriate forms. To maintain confidentiality, all data were anonymised, pseudonyms were assigned, and access was restricted to the research team.

Findings

Emerging themes

Analysis of the children's narratives and parent interviews revealed three key themes: availability of literacy resources in the home, familial involvement in literacy learning, and the use of questioning techniques to elicit children's ideas and thoughts. These themes highlight how the home environment and researcher interaction shaped children's engagement with the WPB.

Availability of literacy resources in homes

One of our most striking findings from the parent interviews was the lack of literacy materials in the homes of preschoolers. Sixteen of the 40 children who participated in the study did not have access to resource books[2] in their homes or access to any shared resources in the community. Furthermore, among the children who did have reading materials at home, the number of books was very low. Sixteen of these families reported that children had just one book in the home, six reported having two books, and only two children had three or four books each, indicating a limited range of reading materials throughout our sample. One potential reason that we observed such a low number of reading materials in these households is that family income was low, meaning they needed to prioritise essential needs such as food, clothing and school fees over purchasing books.

Such low levels of exposure to books in the home may explain why children appeared unfamiliar with storytelling from books. When children were initially given the wordless picture story book, most children did not intuitively connect the pictures to tell a story. Some children merely mentioned individual items from the illustrations, while others explained briefly what they thought was happening in the images. The children without books in their homes typically pointed out single images rather than piecing them together to form a story. For example, when the researcher asks, 'tell me what is happening', the children without books would say 'I see a boy', 'a tree', 'I see a plane […]'.

Importantly, children provided more details when prompted by the assistant, demonstrating that they were able to understand the images, but didn't spontaneously create a narrative. Box 1 presents an example (children's names have been pseudonymised).

This pattern appears connected to a lack of exposure to literacy materials in the home because children who mentioned having at least one book in their homes were more likely to produce short sentences to describe what was happening in the picture book. Although they were not able to narrate an entire story, their descriptions were more elaborate. Box 2 is an example.

While the children may not have been able to narrate the entire story, they clearly demonstrated the ability to describe what was happening in the picture book. Njeri, in particular, displayed this progress by describing various elements and actions within the images. She accurately identified a teacher

2.These are literacy materials specifically tailored to the age of children, encompassing resources suitable for both school and home environments.

BOX 1: Excerpt from participants' responses when exposed to books and prompted by an assistant about details of what they see.

Researcher:	Let's go to the next page and tell me what is happening.
Githinji [the child]:	I see a plane.
Researcher:	Enhe … [***a prompt for 'continue talking'***]
Githinji:	And a girl.
Researcher:	Enhe …
Githinji:	And a mother.
Researcher:	Enhe…
Githinji:	And a boy.
Researcher:	Enhe…
Githinji:	And a tree
Researcher:	Enhe…
Githinji:	And a baby.
Researcher:	What are they doing?
Githinji:	The baby is being carried.
Researcher:	Enhe […] what else?
Githinji:	Nothing
Researcher:	Nothing else you have forgotten?
Githinji: Researcher: Githinji:	There are houses. Enhe … And school.

BOX 2: Elaborated descriptions by children exposed to at least one book at home.

Njeri (the child):	I am seeing a teacher teaching the children.
Researcher:	Ok continue, what is she teaching them?
Njeri:	Showing them how to draw.
Researcher:	Enhe …
Njeri:	I am seeing a girl who has tied her hair. I am seeing a window, a classroom.
Researcher:	Is their teacher male or female?
Njeri:	Female
Researcher:	I see […] are the children sitting or standing?
Njeri:	They are sitting. I see, they are listening to their teacher.
Researcher:	Ok, continue, what else can you see?
Njeri:	I am seeing a child pulling the table.
Researcher:	Ok, continue.
Njeri:	I am seeing children drawing.
Researcher:	Is it the teacher who is teaching them?
Njeri:	Yes.
Researcher:	Are they drawing?
Njeri:	They are not drawing at that time.

showing learners how to draw, and a child pulling a table. Additionally, she noticed details such as a girl with tied hair, a classroom setting, the children's sitting position, and their engagement in listening to their teacher.

Given that the same children were able to engage in lengthy conversations with the same research assistant during free narratives, it suggests that the shortness of their responses was not a result of shyness. Instead, it is more likely attributable to their limited exposure and unfamiliarity with storybooks. For example, during a chat (Box 3) Waithera provided detailed instructions on how to cook ugali,[3] indicating her ability to communicate effectively in other contexts.

Familial involvement in literacy practices

Shared reading experiences emerged when questioning parents about the home literacy environment. Seven out of the 40 children in our study had regular experience reading with their siblings, three children read with their mothers, and one child reading with their grandmother. These findings highlight that shared reading does occur in a rural African context. However, it is notable that 29 families reported no shared reading at all in their homes.

For families that engaged in shared reading, a pattern emerged regarding the timing of reading to the child. Out of the 11 children who mentioned shared reading, four reported reading every day after school, demonstrating a consistent commitment to literacy within the family routine. Additionally, four children mentioned reading on weekends, providing valuable time for family members to engage in shared reading activities outside of school hours. The remaining three families indicated shared reading with the child on rare occasions.

Overall, we observed a link between familial involvement in shared reading and the children's responses to the WPB. Children whose parents or siblings involved them in reading activities appeared to produce richer and longer responses to the picture book. Out of the 11 children who reported shared reading at home, only two children showed the typical pattern of mentioning items from the illustrations without connecting them. The remaining nine children were able to provide detailed descriptions and explanations of the WPB. In contrast, children without books in their homes and who lacking shared reading experiences struggled to engage with the WPB and merely mentioned things without constructing a coherent narrative. Qualitative analysis further supports this trend. For example, Njeri, a child from a home with shared reading experiences, described a classroom scene by stating, 'I am seeing a teacher teaching the children … she is showing them how to draw', demonstrating an ability to interpret and contextualise the images. In contrast, children without books at home tended to list isolated objects. Githinji, for instance, simply named elements such as 'a plane', 'a tree', and 'a boy', without forming a coherent narrative. The disparity between children with and without experience of shared reading in the home is consistent with evidence that familial involvement and access to books is important for language and literacy development.

3.Ugali is a type of corn meal made from maize or corn flour, popular in several African countries.

The use of questioning techniques to explore children's ideas and thoughts

A third theme emerged which was the effectiveness of researchers' guiding questions in eliciting more information about the picture book from the children. Whenever these questions were used, children used more words and phrases to describe the messages in the picture book. Box 4 is an example.

The dialogue in Box 4 demonstrates how questioning techniques were used to facilitate a conversation with Kamau. The researcher started with a general question about the children in the picture book playing and gradually asked more specific questions to prompt Kamau to provide additional details. This method allowed Kamau to expand his responses and describe the activities happening in the pictures more comprehensively. This approach elicited richer responses from children who initially struggled to provide detailed descriptions. Thus, the use of guided

BOX 3: Conversation with one of participants illustrating her ability to communicate.

Researcher: [*T*]each me how to cook ugali.
Waithera: This is how […] you boil some water in a pot.
Researcher: Enhe…
Waithera: Then you add some flour, you stir.
Researcher: Enhe…
Waithera: Then you add some flour again you stir, and you stir […] Now you know it's ready to be served. What else do you want me to teach you? Rice?

BOX 4: Example of guided questioning techniques used to elicit richer narrative responses from a child during a WPB session.

Kamau (the child): They are playing.
Researcher: What are they playing?
Kamau: They are playing football.
Researcher: Who are those playing?
Kamau: Pupils.
Researcher: Which game are they playing?
Kamau: Football.
Researcher: Enhe […] what else are they playing apart from football?
Kamau: Others are swinging.
Researcher: Enhe […] Kamau: The pupils are going back to their classrooms.
Kamau: The teacher has told them to go back to their classroom.
Researcher: I want the same on every page.
Kamau: Yes.
Researcher: To tell me everything happening on that particular page.

questions can help children move beyond superficial observations and develop a richer narrative description of the story, characters, and events depicted in the pictures.

Overall, we found that when children were asked questions about the WPBs, they generated more words and phrases. This suggests that the questioning techniques used by the researcher helped children express their language skills and vocabulary. In addition, by engaging in dialogue and responding to specific questions, children began to mention more words related to the story, characters, and items depicted in the images.

Discussion

This study provided a characterisation of children's language and literacy practices at home in a rural African community. By eliciting narratives from these children and utilising a WPB as a facilitative tool, the study sought to gain deeper insights into their language development, while questionnaire-based interviews with parents provided insights into children's reading experiences. The study highlights the impact of the home environment on early literacy experiences. Children who had access to age-appropriate literacy resources and/or experience of shared reading in their homes elicited richer narratives when describing the WPB. This may reflect the influence of access to books and learning materials on the development of language skills, reading comprehension abilities, and the ability to connect elements within a story (Bulut & Yildrim-Erbasli 2022; Decroos et al. 1997; Merga 2015). It also indicates that without access to age-appropriate books, children won't recognise the association between a book and a narrative. Since story books are so fundamental to initial education (Goriot et al. 2024), this understanding is key to a positive transition to school. A lack of literacy resources therefore perpetuates educational inequalities from an early age. This study emphasises the urgent need to address the scarcity of literacy resources in the communities of these preschoolers, as this may significantly impact their early learning opportunities and potential for academic success.

Conversely, children who had at least one book in their homes showed notably increased language and literacy skills and elicited more narrative responses to the content of picture books. This suggests that exposure to learning materials at home significantly contributes to language and literacy development, enabling children to better interpret and engage with written and visual information (Bingham et al. 2017; Hammer, Miccio & Wagstaff 2003). It underscores the critical role of the home environment in early literacy experiences and stresses the importance of providing access to books and fostering a language-rich atmosphere to support equal literacy development among children (Forte & Salamah 2022). By working together with these communities, and using our findings to highlight the needs, it would be possible to explore ways to enable more families to access resources that support their child's literacy.

The study's findings are also consistent with theories of the role of familial involvement in shaping the learning experiences of preschoolers and highlight the importance of shared reading experiences and the role that immediate and extended family members play in promoting literacy. Forte and Salamah (2022) observed that children who engage in shared reading with their families and have books in their homes exhibit enhanced language skills and comprehension abilities. This is consistent with previous research indicating that children whose parents are involved in shared reading show significant improvements in language and literacy development (Cheng & Tsai 2016; Lucas & Norbury 2018; Preece & Levy 2020; Torppa et al. 2007; Wang et al. 2022; Zhang et al. 2019). The findings also highlight the need to provide resources and support for families lacking access to books and literacy-related activities. Importantly, some families reported having access to children's books and practised regular shared reading, demonstrating that these existing positive practices could potentially be shared among the community (Zeidler et al. 2022).

The study also found that guided questioning was beneficial in encouraging children to provide more detailed descriptions and elicited some narrative components, even in children who initially just labelled items. This finding echoes previous research that has demonstrated the effectiveness of engaging in comprehension questions to enhance the quality of children's narratives (Grolig et al. 2020; Silva, Strasser & Cain 2014; Silva & Cain 2019). By using specific prompts, guided questioning can scaffold children's thinking and encourage effective expression of ideas (Bailey et al. 2018). Guided questioning can increase children's vocabulary production and promote meaningful dialogues while also giving children confidence to speak and share their ideas. It is important to note that these dialogues are not about providing 'correct' answers but about facilitating the children's own thought process and connecting visual and linguistic experiences. This technique empowers children to become active learners, supports their language and literacy skills, fosters curiosity, and encourages them to develop their own perspectives (Hsiao, Sosnovsky & Brusilovsky 2010; Muhonen et al. 2016).

The findings of this study carry important implications for educational practice and policy, particularly in the context of Kenya's ECDE framework, national literacy goals, and language-in-education policy (Kenya Institute of Curriculum Development 2017; Republic of Kenya 2012, 2017). First, the link we found between home literacy environments, shared reading, and children's narrative development supports the need for ECDE policies that encourage family involvement and provide structured guidance for promoting early language and literacy at home. Second, the effectiveness of WPBs in fostering children's storytelling especially when combined with guided questioning, suggests their potential as inclusive, low-cost resources that align with Kenya's national literacy policy goals. Wordless picture storybooks can be integrated into pre-primary curricula, shared with families and used in teacher training programmes to support emergent literacy, particularly in under-resourced and multilingual settings.

Furthermore, these findings speak directly to Kenya's language-in-education policy, which emphasises the use of mother tongue in early learning. The use of WPBs allows children to narrate in their home languages, offering a culturally responsive tool that supports multilingual learning without relying on written text. This flexibility is especially relevant in linguistically diverse classrooms, where standardised printed materials may not be available in all local languages. Finally, we recommend targeted interventions such as the local production of culturally relevant WPBs, training for ECDE teachers and caregivers in dialogic reading strategies, and the development of community-based book-sharing schemes. These initiatives would help address early literacy inequities and align with broader national strategies to improve foundational learning outcomes in rural and marginalised contexts.

Recommendations

Increasing awareness and availability of WPBs is vital for facilitating early literacy development in rural Kenya. We recommend targeted, practical initiatives to promote their use across both home and school environments. First, public awareness campaigns could be embedded within existing community forums such as chief's barazas, church gatherings, or local health outreach programmes, where parents and caregivers regularly meet. These platforms can be used to demonstrate how to use WPBs during shared reading, explain their benefits in local languages, and distribute sample materials.

Second, ECDE centres and local primary schools could take the lead in organising storytelling days, parent-child reading sessions, or 'book bag' lending schemes, where a few WPBs can be rotated between households each week. These activities can be supported by ECDE teachers trained in dialogic reading and guided questioning techniques. Schools could also work with parents to identify local stories that could be adapted into wordless formats, encouraging culturally relevant content creation.

Third, we recommend strengthening peer-learning models within villages, where families already practising shared reading can mentor others. For example, older siblings who read to younger children could be celebrated in school meetings, while mothers or grandmothers could share their storytelling approaches in parent support groups or chamas (local women's groups). These informal models create culturally resonant spaces for building a reading culture.

In terms of distribution, WPBs could be stocked in community libraries, early childhood centres, and faith-based organisations, or included in county-level ECDE resource kits provided by education officers. Local publishing partnerships can also support the development of context-specific WPBs in indigenous languages, aligned with the language-in-education policy that promotes mother tongue instruction in early learning.

Finally, both parents and educators should be encouraged to use open-ended questions during storytelling to help children make meaning from pictures, build vocabulary, and develop narrative structure. These low-cost, high-impact techniques can be incorporated into daily routines such as mealtime discussions, or classroom picture walks and scaled through teacher training and parental workshops run by the Ministry of Education or non-governmental organisations working in early literacy.

Together, these strategies could offer a feasible, community-embedded pathway for improving early literacy outcomes in line with Kenya's ECDE policy frameworks, particularly in underserved rural settings.

Conclusion

This study demonstrates the value of WPBs as culturally adaptable tools for supporting early literacy development in rural Kenyan settings, where children often begin school with minimal exposure to printed materials. In contexts where Kikuyu and Kiswahili dominate home language use and oral storytelling traditions are deeply rooted, WPBs provide an accessible platform for children to construct and share narratives in familiar languages. By removing the barrier of written text, they enable children to draw on their oral traditions and lived experiences, fostering creativity, vocabulary growth, and narrative skills.

The findings underscore the influence of home literacy environments, family involvement, and broader cultural-linguistic factors on how children engage with visual narratives. Limited availability of books due to both economic constraints and the scarcity of locally relevant children's materials means that most children encounter storybooks for the first time in school. Nevertheless, despite these challenges we observed that some families have developed effective literacy practices, such as sibling-led reading and shared storytelling. Building on such positive practices offers a promising way forward for improving literacy outcomes in similar rural contexts.

In alignment with Kenya's ECDE and language-in-education policies, the integration of WPBs into early learning programmes, alongside targeted community engagement strategies, could extend the benefits observed in this study. Practical approaches such as community book-lending schemes, peer mentoring between families, and school- or church-based storytelling events offer low-cost, scalable ways to expand access to literacy resources. Future research should explore oral narration within the home alongside book-based storytelling, to gain a more comprehensive understanding of narrative development and to inform interventions that respect and build upon the rich oral traditions present in rural Kenyan communities.

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Authors' contributions

R.A., performed initial data analysis and wrote the first draft of the manuscript with support from H.Z., who also compiled the data collected. All authors, R.A., H.Z., C.F., L.S., B.S., H.M., and J.M., provided critical feedback and helped shape the final article.

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Data availability

The data which support the findings of this study will be openly available in the UK Data Archive (http://reshare.ukdataservice.ac.uk).

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Appendix 1 starts on the next page →

Appendix 1
Reading questionnaire

Child's name:		
Child's ID:		
Person answering questions (mother, father, etc.):		
Date of interview:		
1	**How many books do you have in your home?**	
1a	How many of these books are children's / picture books?	
1b	*Is one of them the book we recently gave to your child?*	
1c	How often does your child look at any of these books?	
3	**Does anyone in your home ever read to your child?**	
3a	If yes, who reads to your child?	
3b	Which book(s)?	
3c	In which language(s)?	
3d	How often / on which occasions?	
4	**Do you ever read yourself?** *How many hours per week or day?*	
4a	Are children usually present when you read?	I only read when I am by myself Children are sometimes present Children are mostly present Children are always present
4b	What do you read? *Newspapers, books – which ones?*	
4c	In which language(s) do you usually read?	
5	**How many hours per day / week does your child watch TV?**	
5a	Which channels / programs does your child watch?	
5b	In which language(s) are these programs?	
6	**How many hours per day / week does your child listen to the radio?**	
6a	Which channels / programs does your child listen to?	
6b	In which language(s) are these programs?	
7	**How many hours per day / week does your child use a smart phone?**	
7a	What does your child do with the smart phone?	
8	**How many hours per week does your child spend in church?**	
8a	Which language(s) are used in church?	