

Challenges Associated with Reading Acquisition in Sub-Saharan Africa: Promotion of Literacy in Multilingual Contexts

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Authors: Heikki Lyytinen, Emma Ojanen, Jacqueline Jere-Folotiya, Stella Damaris Ngorosho, Francis Sampa, Pamela February, Flora Malasi, Jonathan Munachaka, Christopher Yalukanda, Kenneth Pugh & Robert Serpel

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Of the 650 million children of primary school age worldwide, at least 250 million are not learning basic skills in reading and mathematics. Of these children, approximately 130 million had attended school for several years. In 17 sub-Saharan countries, fewer than half of all children are learning the basics. For instance, in 2007, 44% of Grade 6 learners in Zambia were assessed as functionally illiterate. Among the key reasons for this are the inadequate number of trained teachers and the high child-to-teacher ratios in schools. Further, because of differences in the orthography of languages, choice of language in early literacy instruction can have a considerable effect on learning outcomes. In the following, the present situation in Africa is illustrated and how new technology could be used to support literacy learning is discussed.

Effects of language policy in literacy instruction

- Africa is the only continent in which children start school in a foreign language of which their teachers may not have a competent command.
- Use of familiar languages is an important factor for human rights and preservation of cultural values. Moreover, it promotes inclusiveness in education, as it allows children to use the language they commonly speak.
- It is likely that lack of awareness of the strong impact of language on the ability to learn to read has affected education policy.
- In 1996, a new policy was announced (implemented in 2000), introducing literacy in first grade in one of seven indigenous African languages, followed by a gradual transition to English in later primary grades.
- The new curriculum combined two major technical advantages for ease of initial learning: local language familiarity and orthographic transparency.

- Initial pilot projects in two rural districts comparing the new curriculum with the pre-existing English-medium immersion scheme yielded very encouraging results. However, implementation of the policy nationwide has failed to maintain this finding.
- It is important that teachers receive adequate and effective training in the correct use phonics-based instruction methods and in how to support learners in building literacy skills, from letter-sound knowledge to reading fluency.
- Many teachers, despite receiving orientation training on the new Primary Literacy Programme, still continue to use 'look and say' literacy instruction recalled from their own English language literacy instruction, instead of using the phonics-based approach more suited to local Zambian languages. This may be because they receive inadequate training in the local language phonics.
- English letter names and the correct local language phonemes are pronounced in inconsistent ways. This can slow down learning for all children and pose a particular risk for children who have learning difficulties.

The impact of orthography in learning to read

- The challenge for education in many countries in sub-Saharan Africa is that the most common languages of instruction (for example, English) also happen to have some of the most difficult alphabetic orthographies in which to learn to read and write.
- These prove a considerable challenge even for native speakers, let alone for children who have been only minimally exposed to these languages before school entry.
- The complexity of English orthography makes the English language problematic as a universal model for reading instruction and may be misleading for literacy

instruction in other languages.

- Literacy instruction should take place in a familiar language with transparent orthography.
- Children should not be required to transfer to second-language instruction before they are fully literate and academically fluent readers in their first language. This level is often not reached before Grade 6.
- Effective methods for teaching reading fluency in early grades are needed, because only sufficient reading speed makes comprehension of the written material possible.
- A requirement in addition to appropriate instruction is that appropriate learning material is available; this should be material that draws young learners into the world of written information.
- Schools that lack learning materials and proficient speakers of local languages cannot comply with language policy.
- Educating teachers about the impact of language in literacy instruction while they are still at college could help to promote the use of local languages.
- Teachers' choices of language are often affected by the opinions of the community around them.
- If parents are unaware of the impact of language on learning to read, they believe that education in a foreign language is preferable to the use of local languages.

Mobile learning games can improve literacy

- In present-day Africa, mobile phones offer an affordable and easy-to-use gateway to reading material, and access to the Internet gives a person more reading material than in any physical library.
- Educational games can provide users with new opportunities to learn basic scholastic skills and access to new learning materials through which to acquire full literacy.

- GraphoGame (GG) was designed based on the findings from the Jyväskylä Longitudinal Dyslexia (JLD) study.
- A key finding of the study was that the degree of early letter knowledge was the best predictor of later learning difficulties in reading.
- The most efficient way to support children with reading difficulties in transparent writing environments is to provide them with practice in letter-sound (not letter name) knowledge.
- In GG, over 20 language adaptations currently exist.
- By adapting to players' performance, GG allows each player to receive individualised learning content during the game.
- The game can be used on multiple platforms, including desktop computers and smartphones/tablets.
- Pedagogically, GG teaches children grapheme–phoneme connections (sounds, syllables, and word formation) based on synthetic and analytic phonics instruction by constantly adapting to the particular player's skill level.
- The aim of such adaptability is to keep the training optimally challenging for the child concerned and to ensure that the child receives mostly positive feedback.
- Because of the similarity between the orthography of the Finnish language and many local languages in Africa, GG could be well suited for use in providing additional support for learning basic reading skills.
- A study by Jere-Folotiya et al. (2014) documented how the greatest effects of playing GG were attained when both the Grade 1 teachers and their learners in the urban areas of Lusaka were exposed to the game.
- It was observed that teachers could use the game to improve their letter–sound knowledge in the local language, knowledge essential to imparting basic literacy skills to early grade learners.

Children with learning difficulties need additional support

- While children of relatively high general cognitive ability are often able to learn to read with minimal instruction, for average and lower-ability learners, successful mastery of the basic grapheme–phoneme code may depend more heavily on a combination of several cognitive factors.
- Familiarity with the spoken language used as a medium of instruction undoubtedly makes initial literacy learning easier by allowing the learner to retrieve meaning from the text as soon as it is decoded.
- The orthography of some languages is much less transparent than others, so that even first-language speakers of English require significantly longer on average to master initial literacy than first-language speakers of languages such as Finnish.
- Identifying children who need additional support requires some form of literacy skills assessment.
- At an individual level, games such as GG can facilitate dynamic assessment.
- The number of children who are struggling to learn to read for environmental reasons (language, poor instruction methods, and lack of reading materials) is so large that little attention has been given to children who have specific learning difficulties.

Education policy needs to be based on research

- The lack of text books and the shortage of trained teachers using the languages are among the biggest obstacles to using local languages in the classroom.
- Short school hours and high teacher–student ratios severely compromise teachers' abilities to give enough attention to struggling readers.
- Mobile technology could be one way to provide additional support.
- It should be acknowledged that because of the effect orthography has in reading acquisition, policy on

language instruction has much wider implications than has previously been acknowledged.

- Children can learn early literacy skills relatively quickly and easily if instruction is in their mother tongue, or if the orthography in question is consistent with their mother tongue or a familiar language.
- Using local African languages and training teachers to use phonics-based reading instruction methods could improve literacy rates across the continent and decrease the risk of children dropping out of school.