

Text-to-speech enhanced eBooks for emerging literacy development

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Emerging literacy refers to the level of literacy of children who are only starting to read. In the South African context this specifically refers to the literacy skills of children in Grade R and Grade 1. Literacy skills are critical to academic success and survival in a modern, industrialised, knowledge-driven society. Unfortunately, low literacy levels of South African children are already apparent in the foundation phase, i.e. in the first three years of primary school.

Mobile technology and mobile development platforms provide a rich ecosystem within which language- and speech-related technologies can be developed. Specifically, text-to-speech (TTS) technology provides the opportunity for personalised and interactive reading of content as it converts written text into synthetic speech.

The aim of this study was to develop and test the effects of using a mobile application addressing aspects of emerging literacy using TTS technology in a South African context. Although similar commercial mobile applications that are geared towards literacy development are available, none are available in the 11 South African languages and none have had content developed specifically for the South African environment.

The application consists of an eBook, including a story and various activities, which is enhanced with TTS, and it runs on the Android mobile platform. It was designed to improve early literacy skills of children in Grade R and 1 and aims to address the problem of poor literacy teaching skills, poor access to supplementary reading material and poor access to literacy development support at home.

A study based on an Afrikaans eBook application has been completed, while a similar study with an isiXhosa version is under way. The studies measure the efficacy of the eBook application to improve the vocabulary and word recognition skills in an Afrikaans and an isiXhosa speaking group, respectively, of lower socio-economic status of 6- to 7-year old children with poor vocabulary.

An experimental group that receive an intervention is compared to a control group before the control group receives a delayed intervention. Both groups are reassessed, eight weeks after the interventions to assess the retention of their newly acquired skills. Results for the Afrikaans study have shown a significant improvement in recognition and vocabulary skills in the experimental group compared to their initial assessments, as well as compared to the control group. The intention is to compare these results to those of the isiXhosa study.