GraphoGame as a Reading Acquisition Tool in Namibian Classrooms

In this study, 202 grade 1 students were divided to three groups: a GraphoGame group, A GraphoMath group, and a control group with teaching as usual. Those playing computer-based games (especially GraphoGame) improved their reading skills to a greater extent than those in the control group.

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In this study, the effectiveness of a digital reading tool called GraphoGame Afrikaans that could be used as one of the solutions to poor reading results in Namibia was investigated. Participants were 202 grade 1 students divided to three groups: a GraphoGame group, a GraphoMath group, and a control group with teaching as usual. Those playing computer-based games (especially GraphoGame) improved their skills to a greater extent than those in the control group.

- Becoming a skilled reader with the ability to decode and comprehend written language is an important prerequisite

for full participation in modern society.

- National and international reading assessment scores indicate that Namibia's learners are not faring as well as expected.
- Letter knowledge and phonological awareness are strong predictors of reading and spelling skills.

What is phonological awareness?

- This refers to a child's language sensitivity at a phonological level and their ability to discriminate and manipulate sounds in a spoken language;
- the ability to detect letter sounds; and
- phonological awareness that can predict reading and spelling skills.

What is letter knowledge?

- This refers to the ability to recognise and name the letters of the alphabet.
- Children may find upper case letters easier than lower case letters.
- Letter knowledge predicts reading and spelling skills.

What is GraphoGame?

- This is an adaptive computer-based tool to support reading and reading instruction.
- Letters and sounds are at the core of the training.
- The child plays the game by listening to letter-sounds and syllables and then responding by clicking on the correct letter or syllable.
- This is a serious, research-based learning game.

How do children become skilled decoders? Five developmental phases by Ehri 1989:

- *Pre-alphabetic phase*: children begin to participate in a literacy environment, by acquiring oral language skills, and identifying printed signs from their environment.
- *Partial-alphabetic phase*: children start attending to some letter-sound relationships to aid word recognition.
- *Full-alphabetic phase*: child can use complete connections between letters and sounds they see in words; they can also decode unfamiliar words.
- *Consolidated-alphabetic phase*: children begin to operate with multi-letter units in words, such as affixes, onsets, or syllables, whilst storing the orthography and spelling patterns of words in their memory.
- *Automatic phase*: words and text are read proficiently with high automaticity and speed.

The study

The aim of this study was to investigate the effectiveness of the GraphoGame Afrikaans game in supporting grade 1 learners' reading acquisition in a regular classroom.

Research questions:

- *Is GraphoGame an effective reading acquisition tool in Namibian classrooms?*
- *Does the effectiveness of reading with a computer-assisted game transfer to other computer-assisted games that are not related to reading?*

Participants The study included 202 grade 1 students in

Namibia divided into 3 groups: one group played the GraphoGame (n = 82), a control group had class as usual (n = 40), and the third group played the GraphoMath game (n = 80), a computer-assisted mathematics game.

Findings

- Mean assessment scores for all three groups increased after the intervention, except for phonological awareness in the control group.
- Learners improved their skills in letter sounds, reading, spelling, and mathematics during the study period (September to November 2013).
- The gain scores for the GraphoGame group were higher than the two other groups, meaning that their skills improved by the greatest extent.
- There were no differences between the GraphoGame group and the GraphoMath group in terms of improvement in spelling and mathematics skills; however, the GraphoGame group did differ in terms of phonological awareness and reading. It also differed from the control group in terms of improvement in all skills.
- The GraphoMath group also had higher gain scores than the control group in all assessment tests, except for word reading.
- These results suggest that playing a computer game was beneficial to the development of these skills.
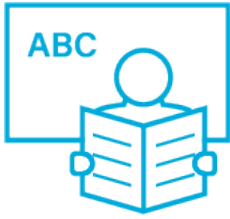
Implications Playing computer-assisted games increased children's skills more than regular teaching. This was especially evident when they played GraphoGame. Thus, GraphoGame may be a way to provide individualised teaching to learners in large sized classes in Namibia, helping support teachers in their work and improving the children's skills.