

# GraphoGame Afrikaans as an Intervention Tool for Struggling Readers

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In this study, 77 struggling readers in Namibia were studied. Those who played GraphoGame increased their skills in letter sounds, phonological awareness, reading, and spelling to a greater extent than the control groups.

**Author: Pamela J. February**

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This study investigated the motivations and emotional and behavioural problems of struggling readers, together with the viability of using GraphoGame as a learning intervention tool. Participants were 77 learners in Namibia. Struggling readers who played GraphoGame increased their skills in letter sounds, phonological awareness, reading, and spelling to a greater extent than the control groups, whilst effect sizes were large.

- GraphoGame can play an important role in assisting children who are at risk of experiencing reading difficulties.

- GraphoGame is able to adapt to the individual learner's reading level (which is characteristic of scaffolding), whereby the learner is presented with an 80% opportunity of being correct as only 20% of the targeted skills are unknown.

### **What is the Strengths and Difficulties Questionnaire (SDQ)?**

- This is a screening tool for social, emotional, and behavioural attitudes consisting of five scales: emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial factors.

### **What is intrinsic motivation?**

- This refers to a combination of preferences for challenging tasks, learning determined by interest, and striving for mastery and competence.

### **What is the self-concept of the learner?**

- This refers to the child's perception of themselves in a specific domain. The academic self-concept of struggling readers is typically lower than for other domains.

### **What is GraphoGame?**

- The game is an adaptive computer-based tool to support reading instruction.
- Letter-sounds are at the core of the training.
- The child plays the game by listening to letter sounds and words and then responds by clicking on the correct letter or word.
- The game monitors each child's progress; thus, it can ensure that the game is played at the correct literacy level for each child.



## The study

The aim of this study was to investigate the effectiveness of extended use of GraphoGame Afrikaans in intervening with learners who continue to struggle despite having had initial GraphoGame exposure in grade 1.

Research questions:

- *Is GraphoGame an effective intervention tool for struggling readers?*
- *What is the motivation level of struggling readers?*

**Participants** were 77 students in Namibia. Learners selected for the GraphoGame group were the lowest scoring 20 learners from a previous study who had failed to demonstrate substantial improvement, despite having previously played GraphoGame Afrikaans. In addition, two further control groups were included: one of 30 learners who had played GraphoMath, and another of 30 learners receiving teaching as usual.

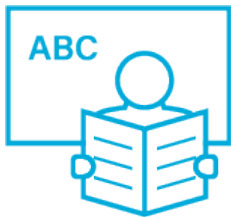


## Findings

- The mean differences between gain scores for the GraphoGame group and both control groups were significant in all assessment tests.
- Struggling readers who played GraphoGame increased their skills in letter sounds, phonological awareness, reading, and spelling more than the control groups, with

large effect sizes.

- Struggling readers showed signs of hyperactivity and impulsivity. They were easily distracted, and struggled to complete assignments due to a reduced attention span.
- They did not have emotional, conduct, or peer problems.



## Implications

- Playing the computer-assisted GraphoGame increased children's skills to a greater extent than regular teaching.
- The GraphoGame is an effective tool for struggling readers by contributing to improving their reading and spelling skills.
- Children with dyslexia or other reading difficulties need more time playing with the GraphoGame to improve their reading acquisition.
- The GraphoGame may be a way to provide individualised teaching to learners in class of large sizes in Namibia, thus providing support to teachers and improving children's skills.

## How to teach reading

- Teacher students should learn scaffolding techniques appropriate for use in large classes, and teachers should monitor progress to ensure that students have mastered the skills.
- New teachers should have mentors for teaching reading instruction.

- Teachers' knowledge of the language should be increased.
- Teachers should direct their teaching toward the individual learner and teach within the zone of proximal development. Thus, the teacher needs to know each learner, their level of progress, and ensure regular assessment.