

Abstract Master Thesis AisforAPP

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Reading is of great importance in our literate society. However, many students struggle with learning to read. Given the significance of reading, it is appropriate to remediate reading difficulties in a timely manner. Educational technology, including apps, offers opportunities to promote reading. Research in this area has some shortcomings. For instance, the focus is mainly on educational technology to support decoding skills. There is little research on the impact of educational technology on reading fluency. Moreover, there is a lack of attention to the potential influence of educational technology on learners' motivation. Additionally, there is limited research on the relationship between individual characteristics—such as gender, home language, socioeconomic status, and cognitive ability—and the effectiveness of educational technology. Finally, internal game elements of an app are rarely considered. This master's thesis aims to address these gaps.

This study answers four research questions:

1. What is the effect of the reading game *Karaton* on the reading fluency of struggling readers in the fourth grade?
2. Do individual characteristics influence the effect of *Karaton* on reading fluency?
3. What is the relationship between the number of practiced words per minigame and progress in reading fluency?
4. Is there a difference in average enjoyment scores between playing with the app and performing the control activity?

To investigate these questions, 76 struggling readers from the fourth grade were randomly assigned to either a control or experimental condition. Over three months, students practiced three times a week for 20 minutes. The experimental group spent 15 minutes on reading exercises within *Karaton* and 5 minutes on the game's play element. The control group engaged in 20 minutes of business-as-usual reading activities. Each student underwent a pre- and post-test. During both tests, all students completed the same word, pseudoword, and sentence reading assessments. In the post-test, the Standard Progressive Matrices were also administered to assess general cognitive ability. Students completed a qualitative evaluation of their reading activity to measure motivation. Additionally, parents filled out a questionnaire to gather information on individual characteristics (home language, socioeconomic status based on parental education level, and gender).

The results of this thesis indicate that *Karaton* is as effective as business-as-usual reading activities. Both conditions showed equal progress in reading fluency. Individual characteristics did not contribute to differences in reading fluency progress. A weak positive correlation was found between progress in word reading fluency and the number of practiced words in the minigames “recognizing” and “splitting”. Students in the experimental group generally experienced more enjoyment when playing with the *Karaton* app compared to children in the control group who evaluated their business-as-usual activity. We can therefore conclude that similar progress can be achieved with *Karaton*, but with greater enjoyment.