Influence of phoneme awareness on the game-based training of letter-speech sound correspondences in pre-readers

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Rationale

• Integration of letters and speech sounds essential in learning to read
  → inspiration for development serious game Kosmos Klikker

Aim study: examine the efficacy of this game in pre-readers

Hypotheses

• Kosmos Klikker improves L-SS knowledge
• Motoric version leads to stronger gains
• Dynamic reciprocal relationship between phoneme awareness and L-SS growth

Method

1) Effect of game on L-SS knowledge
   • No differences in baseline measures between conditions
   • ANCOVA to check for differences in L-SS at T1 while controlling for T0
     ➢ Significant effect of Condition: F(2,141) = 4.60, p = .012
     ➢ Driven by difference between KK and Control condition (p < .01)

2) No effect of motoric version
   • No significant difference with original version or control condition (p < .14)

Pretest

Kosmosklikker (only audiovisual)  
Kosmosklikker (audiovisual + motoric)  
Control condition (Rekentuin)

N = 145, 66 boys  
Mage = 63.6 months (SD = 4.47)

Posttest

- Letter-speech sound knowledge
- Phoneme awareness
- Reading accuracy

Results

1) Effect of game on L-SS knowledge
   • Multiple regression analysis showed significant contribution of PA at T0 on L-SS at T1 (above predictive value of L-SS at T0; t(140) = 3.07, p < .01)

2) No effect of motoric version
   • PA at T1 was only significantly predicted by PA at T0 (t(140) = 11.69, p < .001) and not by L-SS at T1 (t(140) = 1.71, p = .09)

Discussion

• Children that played Kosmos Klikker increased in L-SS knowledge
• Contrary to hypothesis: motoric version of Kosmos Klikker did not lead to better L-SS knowledge compared to the original version
  ➢ Intervention too short to find effect?
  ➢ Lost necessary play time due to writing exercise
  ➢ Fine motor skills not yet completely developed in prereaders
• Phoneme awareness at T0 contributed to L-SS knowledge growth
• L-SS growth did not lead to growth in phoneme awareness
  ➢ Moderated by reading?

References


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