



TARTU ÜLIKOOL

# Promoting students' text comprehension and vocabulary by teaching comprehension strategies

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# Introduction



- Text comprehension (TC) is a complex multidimensional process to create a coherent whole, a mental representation of a text.
- Inference making is essential to form a representation from a text.
  - Bridging vs. Elaborated inferences
  - Automatic vs. Controlled (strategic) inferences
- Three-dimensional model of TC: Literal, Inferential and Evaluative comprehension levels.
- Controlled inferences are partly constructed via different strategies.

(Angosto et al., 2013; Basabara, et al., 2013; Cain & Oakhill, 2009; Graesser, 2007; Kibui 2012; Kintsch, 1988, 1998; NAEP 2008; Pejak, Podlesek, & Pirc, 2011)

# Research problem



- Problems in understanding texts is persistent and world-wide.
- Poor comprehension causes a failure in different subjects, drop out the school.
- Assessments may not consider the multi-dimensionality of comprehension – national assessments impact teachers' choice of what to concentrate on.
- Teachers tend to assess comprehension rather than teach it.

(Berliner, 2011; Best, Miller, & Jones, 2009; Fischer & Daley, 2007; Kärbla, Uibu, & Männamaa, 2017; National Center for Educational Statistics, 2005; Tire et al., 2016; Vestheim & Lyngsnes, 2016)



# Aim of the study

The aim of the study was to develop an instructional intervention and evaluate its effectiveness.

1. How teaching comprehension strategies can improve students' vocabulary and text comprehension at literal, inferential, and evaluative levels?
2. Which subgroups of students with different vocabulary and comprehension skills at the literal, inferential, and evaluative comprehension levels appeared in the experimental and control groups?
3. How do the results among students with different profiles in vocabulary and comprehension skills change after three-month period?



# Sample

- 10 Estonian schools
  - Experimental condition: 7 schools
  - Control condition: 3 schools
- 257 sixth-grade students
  - 148 girls
  - 109 boys
- Average age: 12.3 years (SD = .47)
- Experimental and Control group
  - Experimental group: 153 students (87 girls, 66 boys)
  - Control group: 104 students (61 girls, 43 boys)
- With parental approval



# Intervention design

- Pre-test/post-test design with experimental and control groups
- Teacher-led in authentic classroom conditions
- Training course for experimental-group teachers
  - Simulation of each lesson scenario
  - Teachers' independent work with scenarios
  - Discussions about the scenarios
- 3-month period of intervention
  - Twice a week 45 minutes (18 hours in total)
  - Control-group students continued regular reading classes twice a week
- Constant support for teachers during the intervention period
- After the post-test control-group teachers were provided all materials.



# Measures

- Text comprehension test
  - Literal items (n = 13) - explicitly stated information
  - Inferential items (n = 9) - implicit meanings from texts
  - Evaluative items (n = 9) - forming a conclusion and a moral of a story
- Vocabulary test
  - List of 38 synonyms and 38 antonyms
  - Right match from four alternatives
- Coded dichotomously



# Intervention

Intervention included 2 major parts.

**1. Explicit strategy teaching** (modeling, co-practicing, independent practice) – 7 lessons

- Six strategies:
  - SKIM
  - Vocabulary expansion
  - Monitoring
  - Questioning, answering questions
  - Main idea
  - Summary

**2. Practicing the strategies**

- To systemize, reinforce, and consolidate strategy use
- Implementation of learned strategies using with three different texts



# Students' cards

## PEAMÖTTE LEIDMINE JA KOKKUVÖTETE TEGEMINE



Need tegevused aitavad Sul meelde jätta, mida lugesid, ja õpetavad, kuidas

1. läbi töötada suurt hulka infot,
2. vähendada tekstihulka väikesteks peamõteteks,
3. eristada kõige olulisemaid ideid tekstis,
4. ignoreerida mitteolulist infot.



Mõistlik on alustada tööd lõikudega, sest lõik sisaldab vähem infot kui kogu tekst. Igas lõigus on tavaliselt vähemalt üks mõte, mida autor on pidanud vajalikuks lugejale edastada.

Seega saab lõikudega töötades kogu teksti olulise info läbi töötada.

## PEAMÖTTE LEIDMINE JA KOKKUVÖTETE TEGEMINE LOIGUS (1)



Kokkuvõttes peab välja tulema kõige olulisem info lõigu kohta.



Tegevuse punktid:

1. Vasta KES, MIDA, MILLAL, KUS, MIKS küsimustele, jooni oluline info alla:
  - **KES (MIS)** on selle lõigu tegelased, kes (mis) peategelane? *See on alati inimene, koht, loom, asi vms.*
  - **MIDA** peategelane teeb? Leia tegevustest kõige olulisem (selleks pead teadma, mis loos edasi juhtub või mis eelnevalt juhtus, milline tegevus on seotud ülejäänud looga).
  - **MILLAL** tegevus toimub?
  - **KUS** tegevus toimub?
  - **MIKS** tegevus toimub?
2. Moodusta vastuste põhjal **kahelauseline kokkuvõte**. Kirjuta see lõigu kõrvale!
3. Koosta lõigule **pealkiri**. Kirjuta see lõigu kõrvale!



# Lesson scenario

IV tund

## ARUSAAMISE JÄLGIMISE STRATEEGIA

Materjalid:

- Tekst „Ronk ja vares“ igale õpilasele
- Arusaamise jälgimise strateegia leht igale õpilasele (lk 5)

Kui tunnete, et õpilased enam ei suuda käsil oleva tekstiga töötada, vahetage teksti.

**Sissejuhatus (7 min)**

- **KLASSIDISKUSSIOON.** Paluge õpilastel ülevaatlilikult meelde tuletada, milliseid strateegiaid eelmistes tundides õpiti.
- **LOENG.**
  - Selgitage õpilastele, et tänases tunnis tegelete sellise tegevusega, mis aitab neil mõista oma tekstist arusaamist.
  - Soovi korral ütlege, et seda tegevust nimetatakse monitoorimiseks ehk oma tekstist arusaamise jälgimiseks.
- **ISESEISEV TÖÖ.** Paluge õpilastel lugeda läbi strateegia lehe esimene kastike („Arusaamise jälgimine“).
- **KLASSIDISKUSSIOON**
  - Paluge õpilastel selgitada, miks on arusaamise jälgimine oluline.



# Data analysis

- Variable- and person-oriented methods
- Repeated measures ANOVA - changes in vocabulary and text comprehension at the literal, inferential, and evaluative levels
- Latent profile analysis (LPA) - subgroups of students with different vocabulary and text comprehension level profiles

# Changes at group level



## Control-group students

- significantly higher results only in literal comprehension:  $F(1, 103) = 7.07, p = .01, \eta^2 = .06$

## Experimental-group students

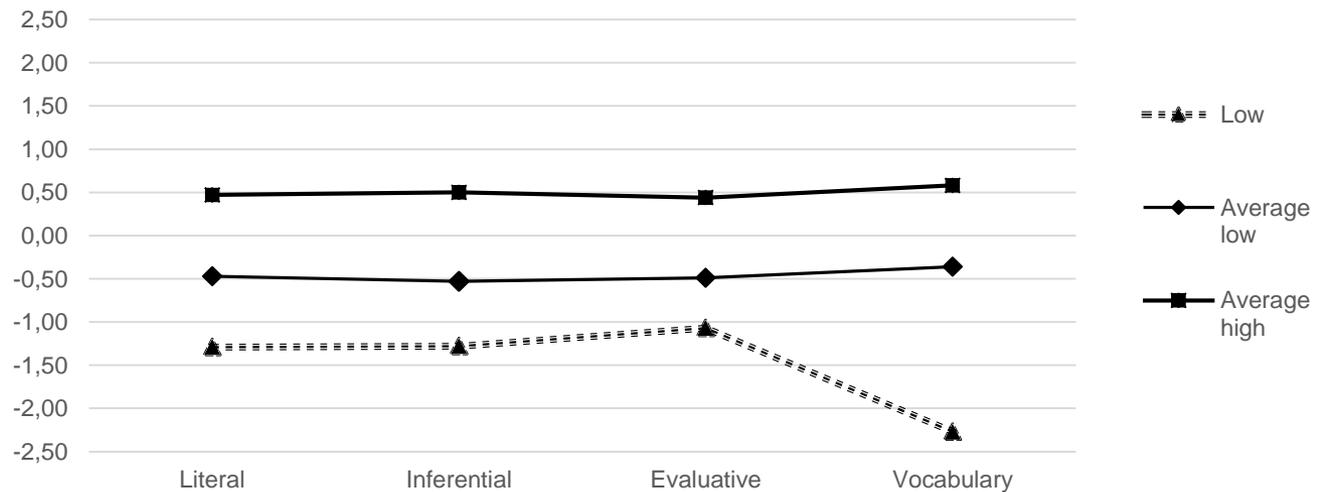
- significantly higher in every skill
  - Literal:  $F(1, 152) = 16.7, p < .001, \eta^2 = .10$
  - Inferential:  $F(1, 152) = 11.05, p < .001, \eta^2 = .07$
  - Evaluative:  $F(1, 152) = 9.38, p = .003, \eta^2 = .06$
  - Vocabulary:  $F(1, 152) = 10.22, p = .002, \eta^2 = .06$



# Students' profiles

## Three subgroups of students

- 60% of students – Average high profile group
- 30% of students – Average low profile group
- 10% of students – Low profile





# Changes in profile groups

Control-group students' statistical improvements in

- *Average low profile*

- Literal comprehension  $F(1, 32) = 9.72, p = .004, \eta^2 = .23$

Experimental-group students' stat. improvements in

- *Low profile*

- Literal comprehension  $F(1, 16) = 4.46, p = .05, \eta^2 = .22$
- Vocabulary  $F(1, 16) = 11.33, p = .004, \eta^2 = .42$

- *Average low profile*

- Literal  $F(1, 43) = 7.08, p = .01, \eta^2 = .14,$
- Inferential  $F(1, 43) = 10.03, p = .003, \eta^2 = .19$
- Evaluative  $F(1, 43) = 8.44, p = .01, \eta^2 = .16$

- *Average high profile*

- Literal  $F(1, 91) = 5.51, p = .02, \eta^2 = .06$
- Tendency in inferential  $F(1, 91) = 2.83, p = .09, \eta^2 = .03$



# Discussion

- Explicit strategy teaching significantly promoted students' vocabulary growth and text comprehension at all levels.
  - Improves students' metacognitive awareness – ability to monitor understanding
  - More strategic readers
  - Knowledge of how and when to make necessary inferences
  - Skills to improve vocabulary and comprehension
- Reading lessons without specific strategy teaching improved only literal comprehension
  - May imply that focus in lessons is mostly on supporting lower level skills
  - Teachers tend to assess rather than teach comprehension

(McNamara & Kendeou, 2011; Randi et al., 2005; Schünemann et al., 2013)



## Discussion (2)

Experimental-group students with average results in all skills benefited the most from this intervention

- Improvements in the zone of proximal development
- Less-skilled readers increased their literal comprehension and vocabulary
- Better readers improved also inferential and evaluative comprehension
- What about more proficient readers?
  - Distracted attention?
  - Disrupting existing system?
  - Saturation?
  - Decreasing interest?



## Discussion (3)

Control group students with average results promoted their literal comprehension

- Teachers tend to promote mostly lower-level skills
- National tests may direct what comprehension skills should be taught
- Higher-level skills are complex to teach – lack of preparation to teach them
- Most work with average students
- Knowing students' individual peculiarities and explicitly teaching them comprehension strategies can improve their vocabulary and comprehension at different levels.



ONCE YOU LEARN TO READ, YOU  
WILL BE FOREVER FREE

Frederick Douglas

