Optimizing the 3R study strategy to learn from texts

Pauline Reijners, Liesbeth Kester, Gino Camp, Paul A. Kirschner

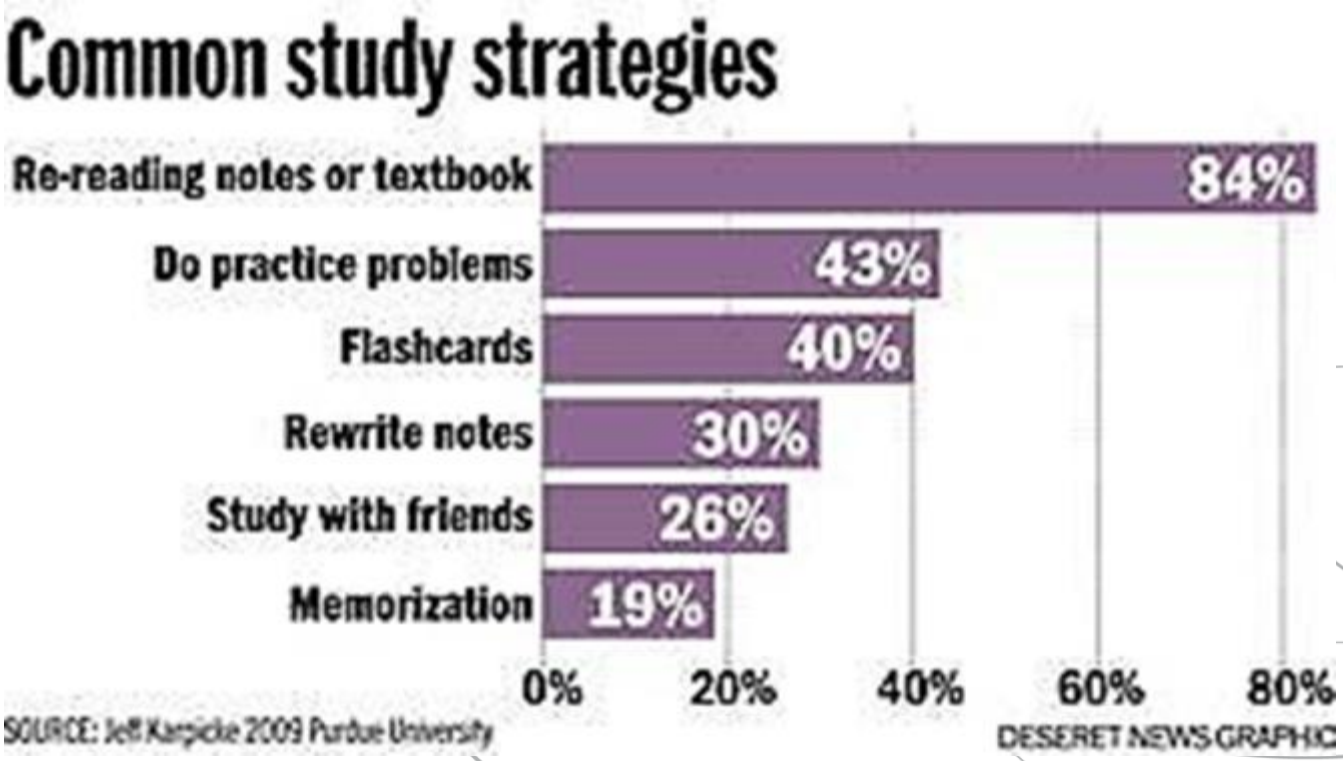
Welten-instituut
Onderzoekscentrum voor leren, doceren en technologie

Open Universiteit
welten-instituut.ou.nl

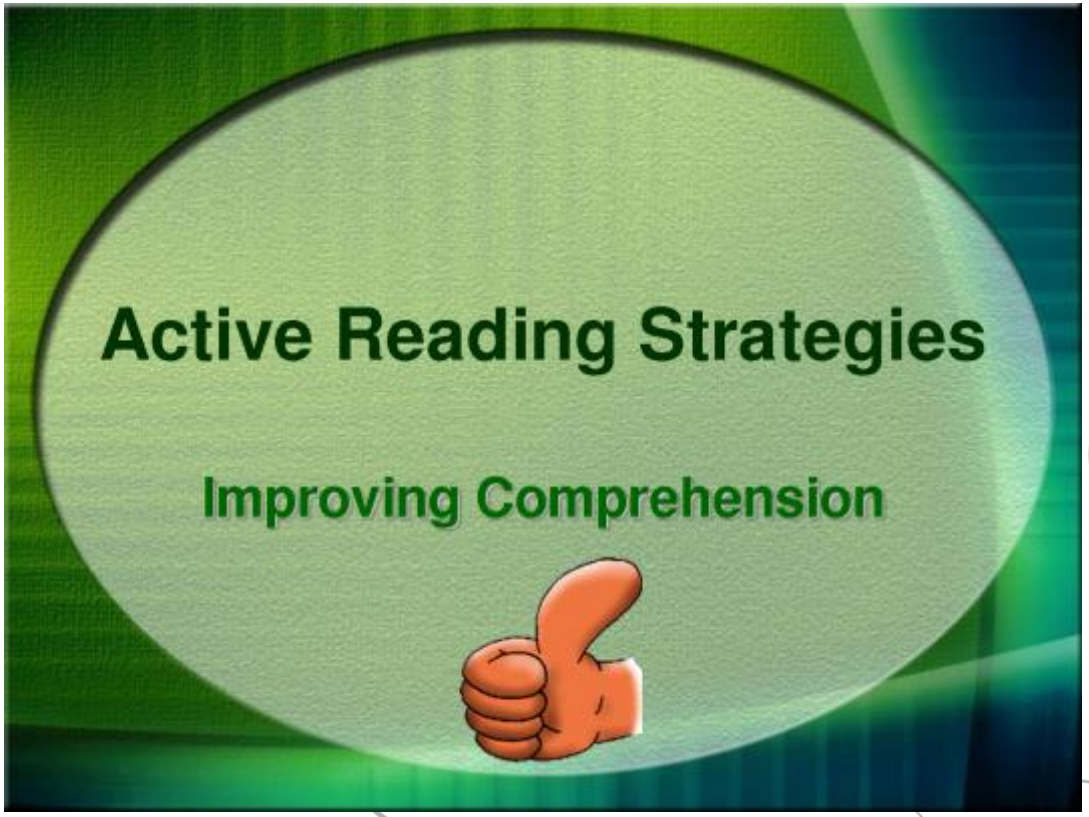
Overview

- Theoretical background
- First study at Scholengemeenschap Groenewald
- Second study at KU Leuven
- Third study at Bernardinuscollege
- Plans for the last study

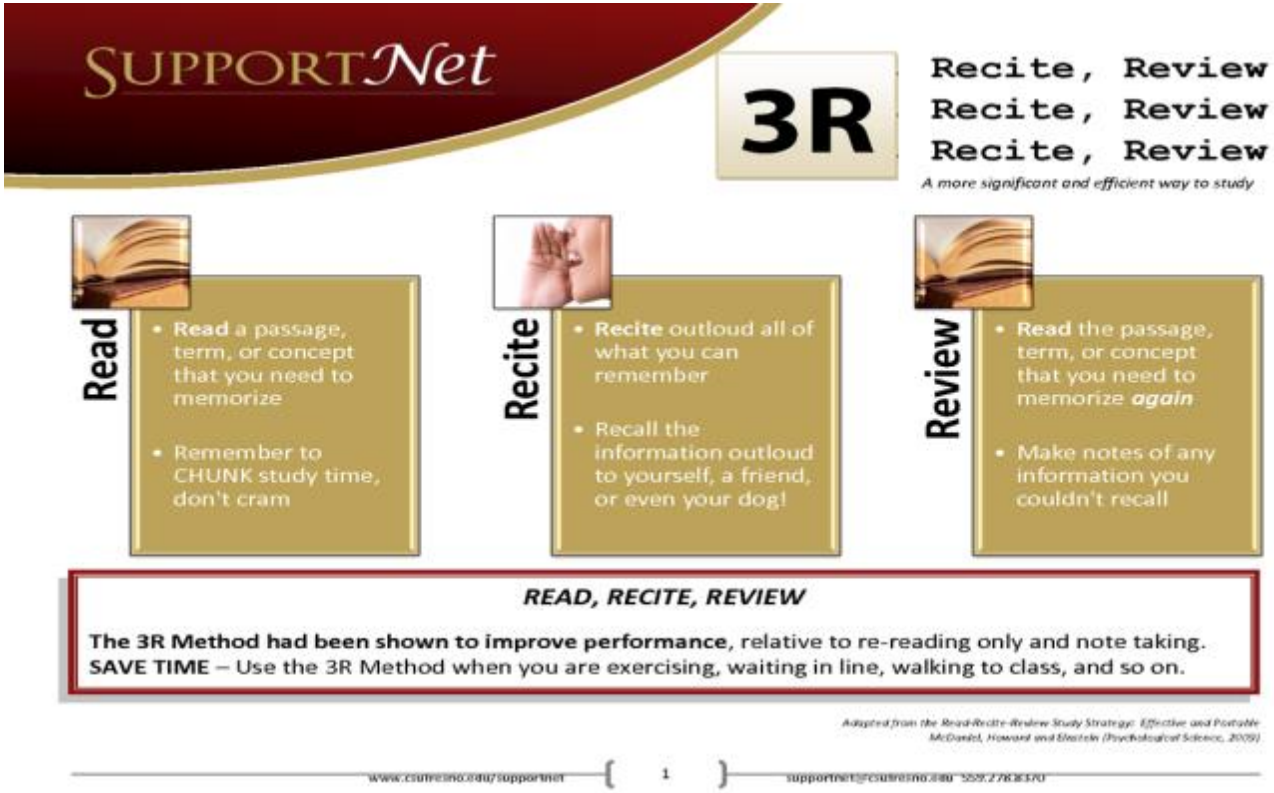
Theoretical Background - Common study strategies



Theoretical background - What works



Theoretical background - 3R study strategy



Optimizing the 3R Study-Strategy for Text Learning (1)

Optimizing the 3R Study-Strategy for Text Learning (2)

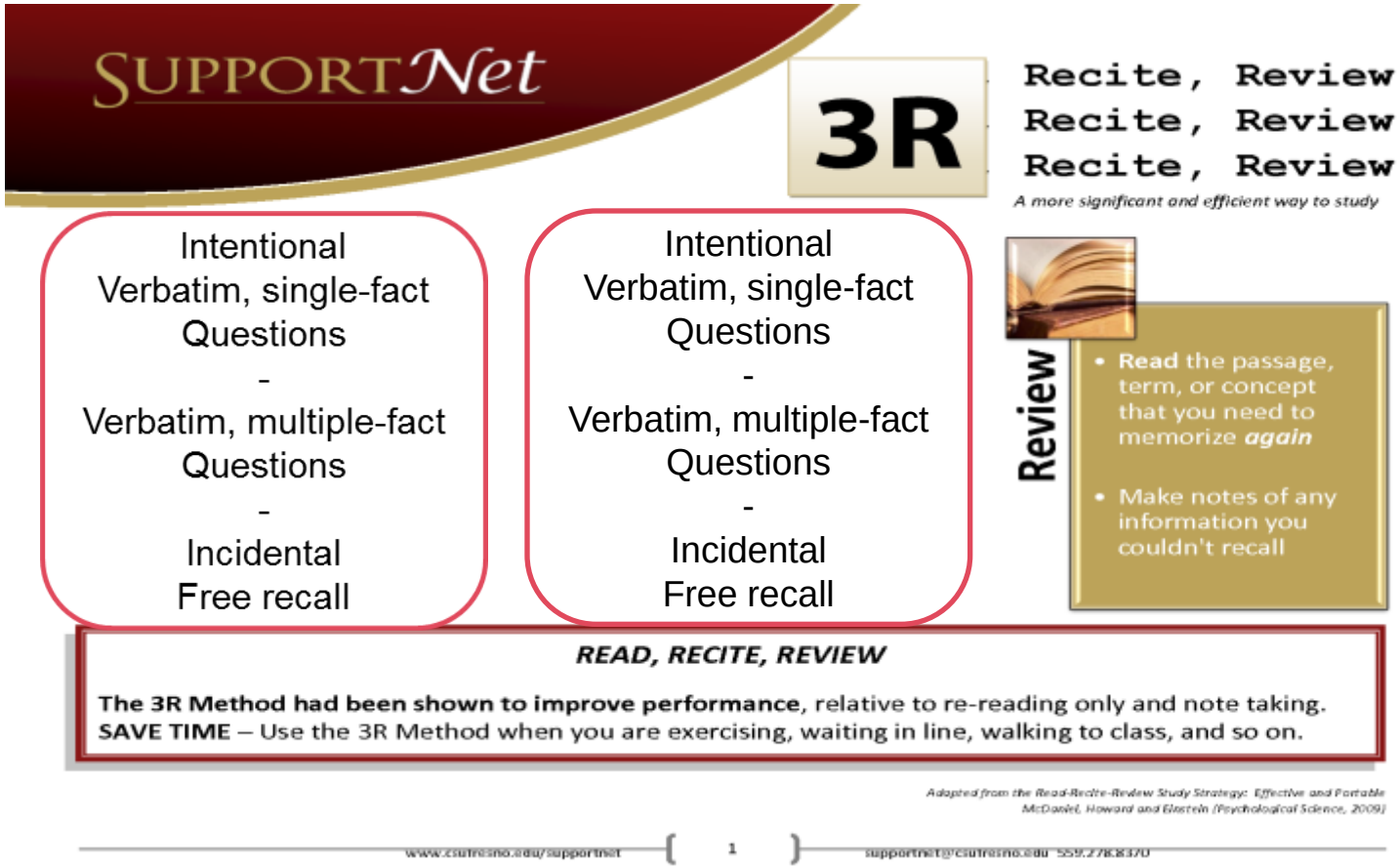
- Q1: Answering verbatim, multiple-fact questions in the recite phase →better performance on the **same multiple-fact questions** after a one week delay as compared to performing free recall and rereading the text?
- Q2: Retrieval of information in the recite phase by answering verbatim, multiple-fact questions or free recall → better performance on **single-fact questions** in the final test after a one week delay as compared to rereading the text?
- Q3: Retrieval of information in the recite phase by answering verbatim, multiple-fact questions or free recall → better performance on **transfer questions** in the final test after a one week delay as compared to rereading the text?

Optimizing the 3R Study-Strategy for Text Learning (3)

- Results: for our research questions we did not find significant results.

- Conclusion: survey on ‘deep approaches to learning’ shows that learners often do not apply deep learning strategies, which seems to correspond with our findings and findings of other researchers among university students (Karpicke, Butler, & Roediger, 2009) and secondary school students (Dirkx, 2014).

Retrieval by Verbatim Multiple-Fact Questions or Free Recall (1)



Retrieval by Verbatim Multiple-Fact Questions or Free Recall (2)

- Q1: Answering single-fact or multiple-fact post-questions during reading → enhances the immediate retention of the questioned information?
- Q2: Alignment between answering single-fact or multiple-fact post-questions during reading and answering single-fact or multiple-fact questions after reading respectively → enhances the delayed retention of the questioned information?
- Q3: Question-based guidance → enhances the delayed retrieval of non-questioned information?

Retrieval by Verbatim Multiple-Fact Questions or Free Recall (3)

After reading:

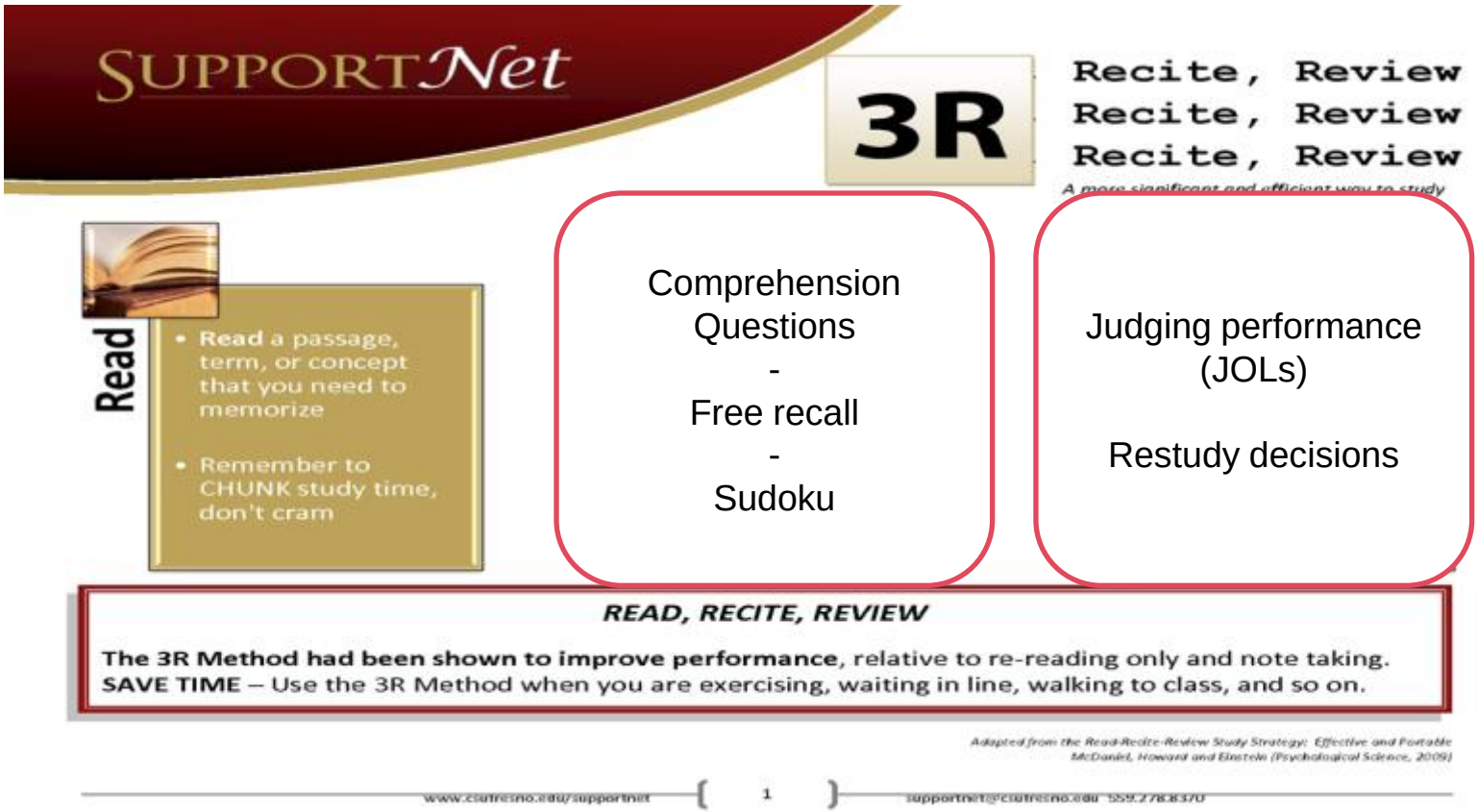
- Answering verbatim, single-fact questions (SS condition) or verbatim, multiple-fact questions (MM condition) in the read phase → significantly better recall of idea units on the same single-fact or multiple fact questions in the recite phase as compared to the other conditions
- Participants in the free recall condition retrieved more non-questioned information as compared to participants in the other conditions

Retrieval by Verbatim Multiple-Fact Questions or Free Recall (4)

Final test:

- Answering single-fact or multiple-fact questions in the read and recite phases → better retrieval of the idea units for **repeated** questions on the final test compared to answering different types of questions in the read phase and the recite phase or performing free recall in the recite phase
- No significant main effect of condition on retrieved idea units for completely new information (not earlier retrieved during the recite phase) belonging to the subset of **new verbatim, single-fact questions** in the final test
- A significant main effect of condition on retrieved idea units for completely new information (not earlier retrieved during the recite phase) belonging to the subset of **new verbatim, multiple-fact questions** in the final test.

The Effect of Different Study-Strategies on the Monitoring Accuracy of Text Learning (1)



The Effect of Different Study-Strategies on the Monitoring Accuracy of Text Learning (2)

- Judgments:
  - How do you think you will perform on a test if questions on text text section <title> are offered?
- Restudy decisions:
  - Which text sections do you want to restudy?
- Next steps:
  - Calculating correspondence between judgments and test performance
  - Calculating correspondence between judgments and restudy decisions
  - ANOVA's to investigate the differences between the three conditions
  - Investigating how much information is retrieved during the recite phase and final test

Last Study

- Content depends on our findings of the study conducted at Bernardinus college
- Possible examples:
  - Altering study strategies? Offering more or less guidance?
  - Creating expectancies: if you know you have to teach a student after studying, does this change your performance and judgments?
  - …

Questions?

Thank you for your attention!

pauline.reijners@ou.nl