

International Comparisons at the Transition to Adulthood

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Universalization and Standardization of the Modern School

Worldwide standardization of schooling in terms of time structure, social organization and content intensifies *competition and accountability.*

Latest Generation of International Educational Assessments

- Strong theoretical framework
- Alignment to internationally shared standards
- High quality of test items; no decontextualized technical items
- Proficiency scaling with a broad array of items illustrating competence levels

Strengths of International Studies

- Benchmarks of what can realistically be achieved in compulsory schooling
- Monitoring of system development
- Identifying at-risk populations in terms of what students are expected to be able to do but cannot do
- Comparison of inequality structures in educational outcomes
- Providing insight where immigrants succeed

Limits and Weaknesses of International Comparisons

The explanatory gap:

- Misleading conclusions on the basis of limited analyses
- No theoretically based multivariate modeling due to small sample sizes on country level

Compensation of Weaknesses

Embedding international cross-sectional surveys into a broader analytic research program on teaching and learning

- The TIMSS Video component in a longitudinal framework:

Surface structure of classroom interaction and the logic of learning mathematics

Compensation of Weaknesses

Embedding international cross-sectional surveys into a broader analytic research program on teaching and learning

- Expanding the PISA 2003 study to a longitudinal design with a focus on teacher expertise

Types of Content Knowledge

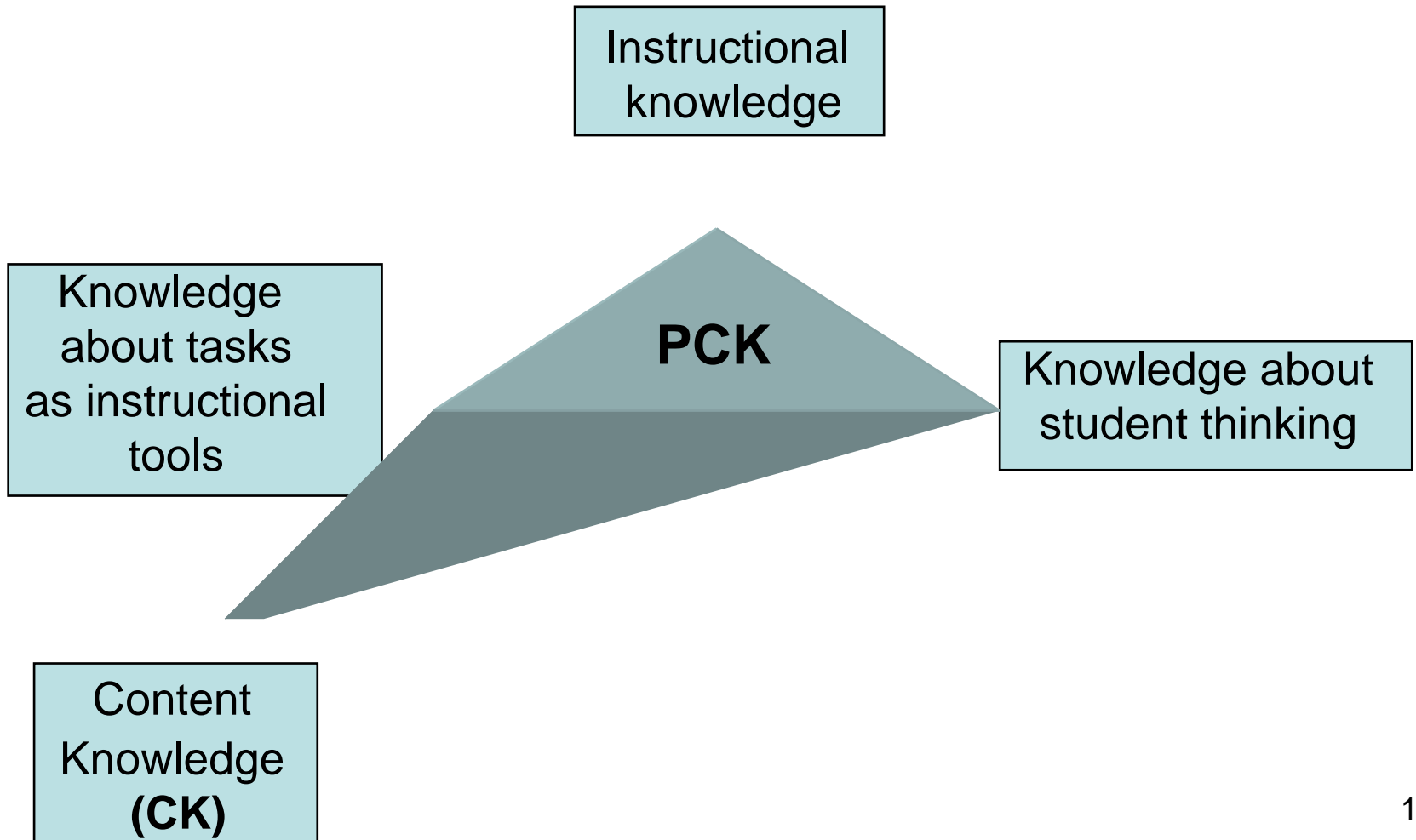
- Every-day knowledge of mathematics
- Student knowledge taught at school
- Professional content knowledge:
Deep understanding of mathematics taught at school
- Academic knowledge taught at universities

Pedagogical Content Knowledge

Pedagogical content knowledge is professional knowledge about

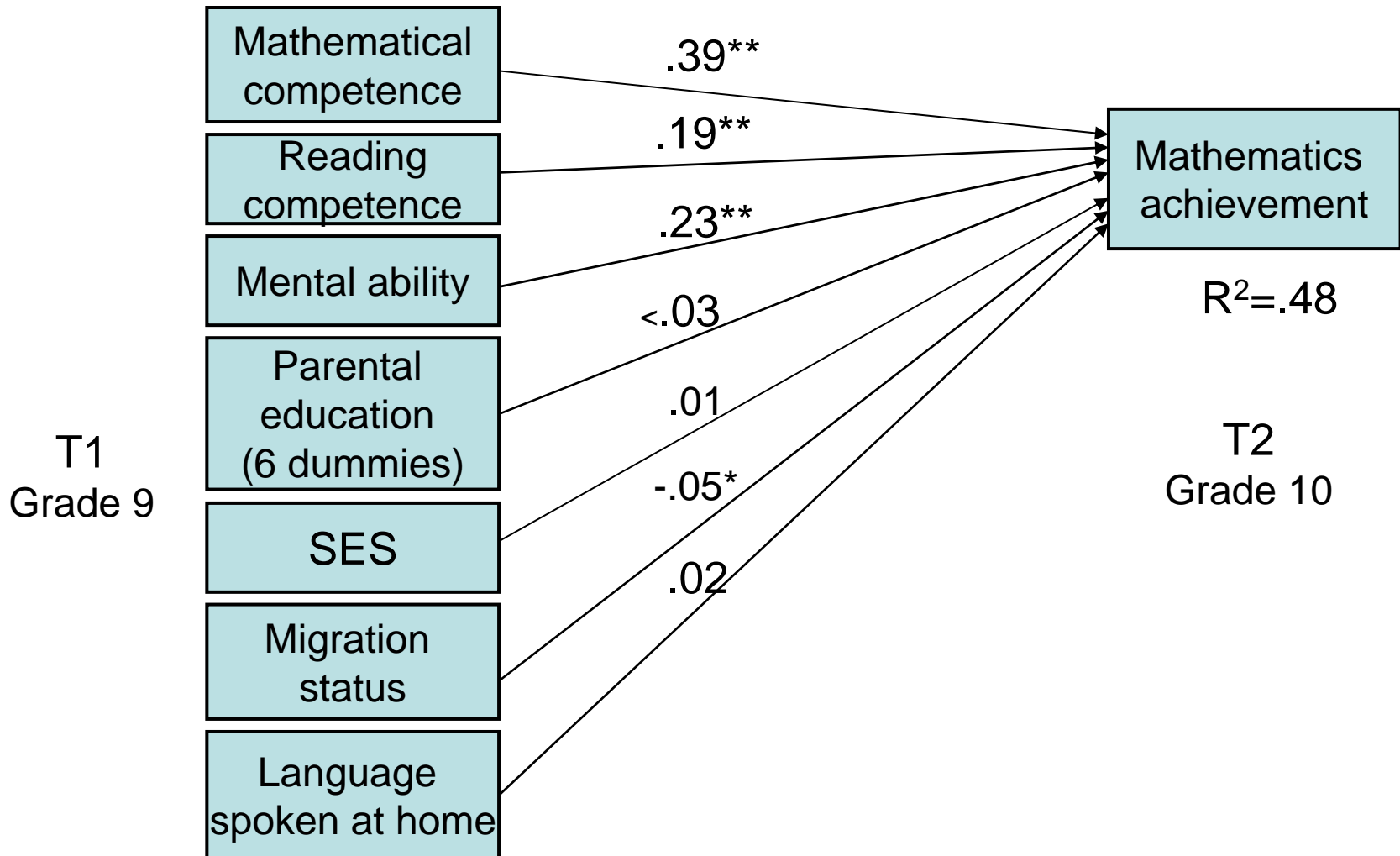
... how to make mathematics accessible to students.

Content Knowledge and Pedagogical Content Knowledge

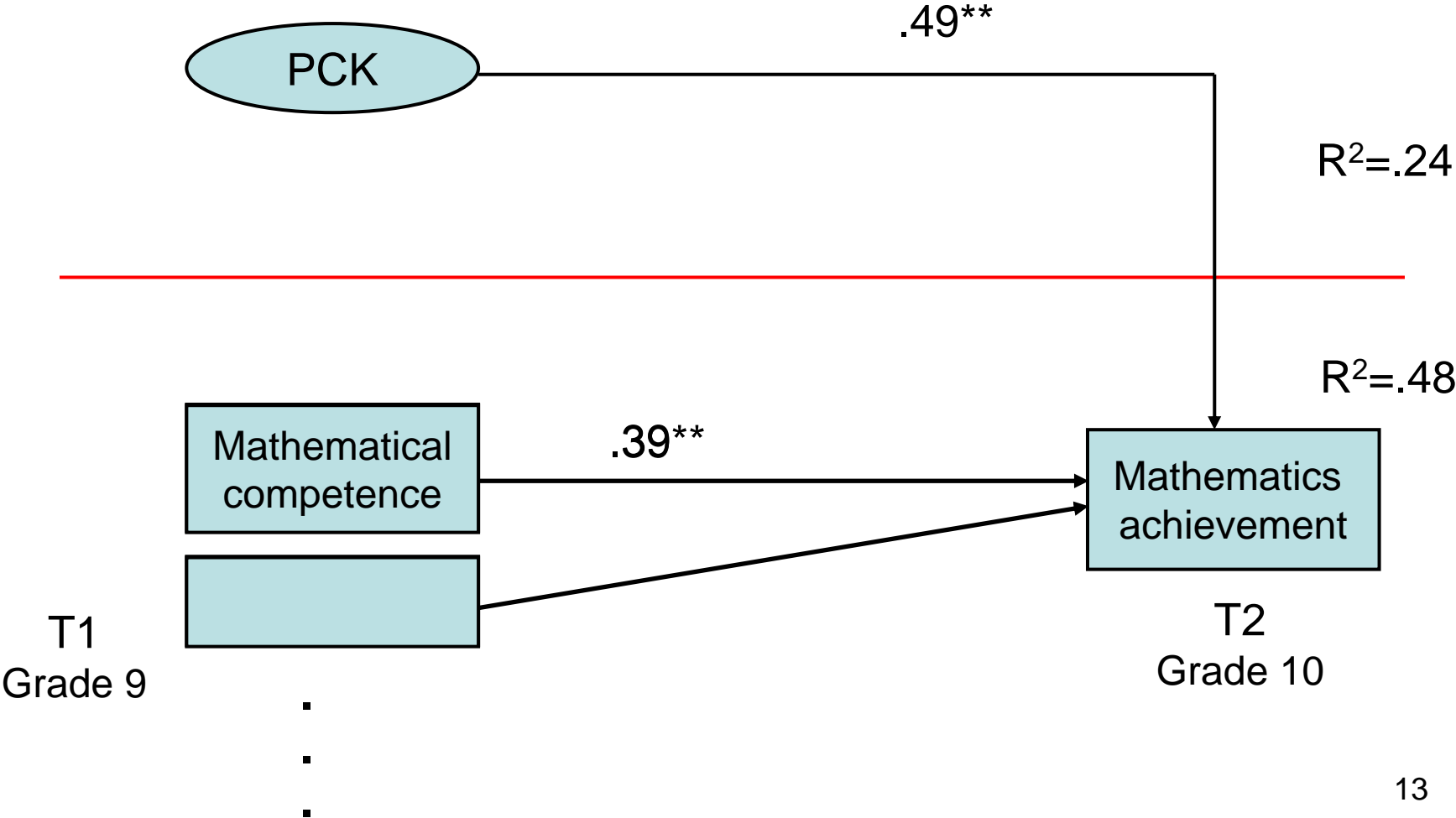


Does Pedagogical Content Knowledge Contribute to Student Learning?

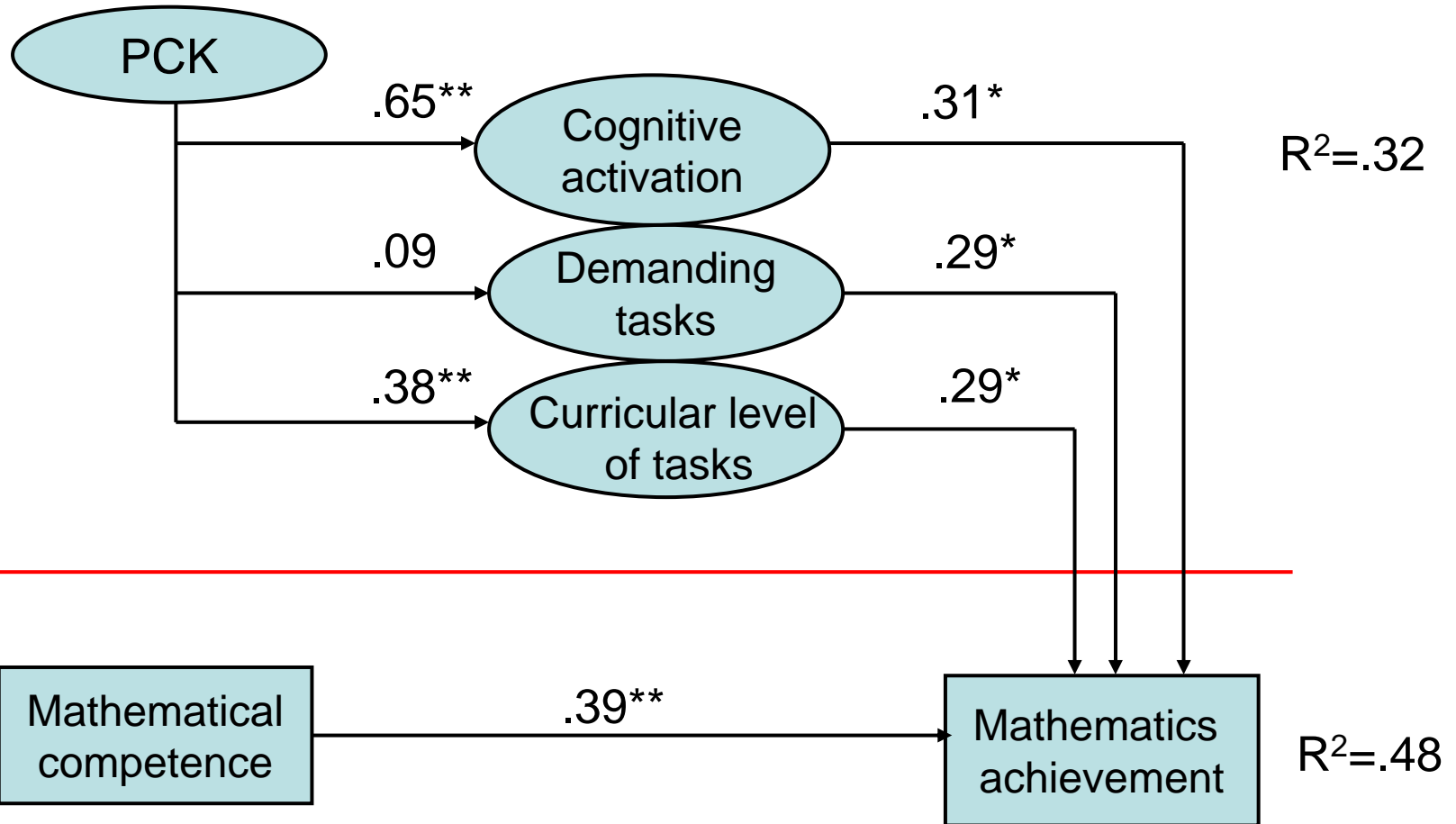
Individual Model within Classes



Black Box Model (Two-Level Model)



Mediation Model

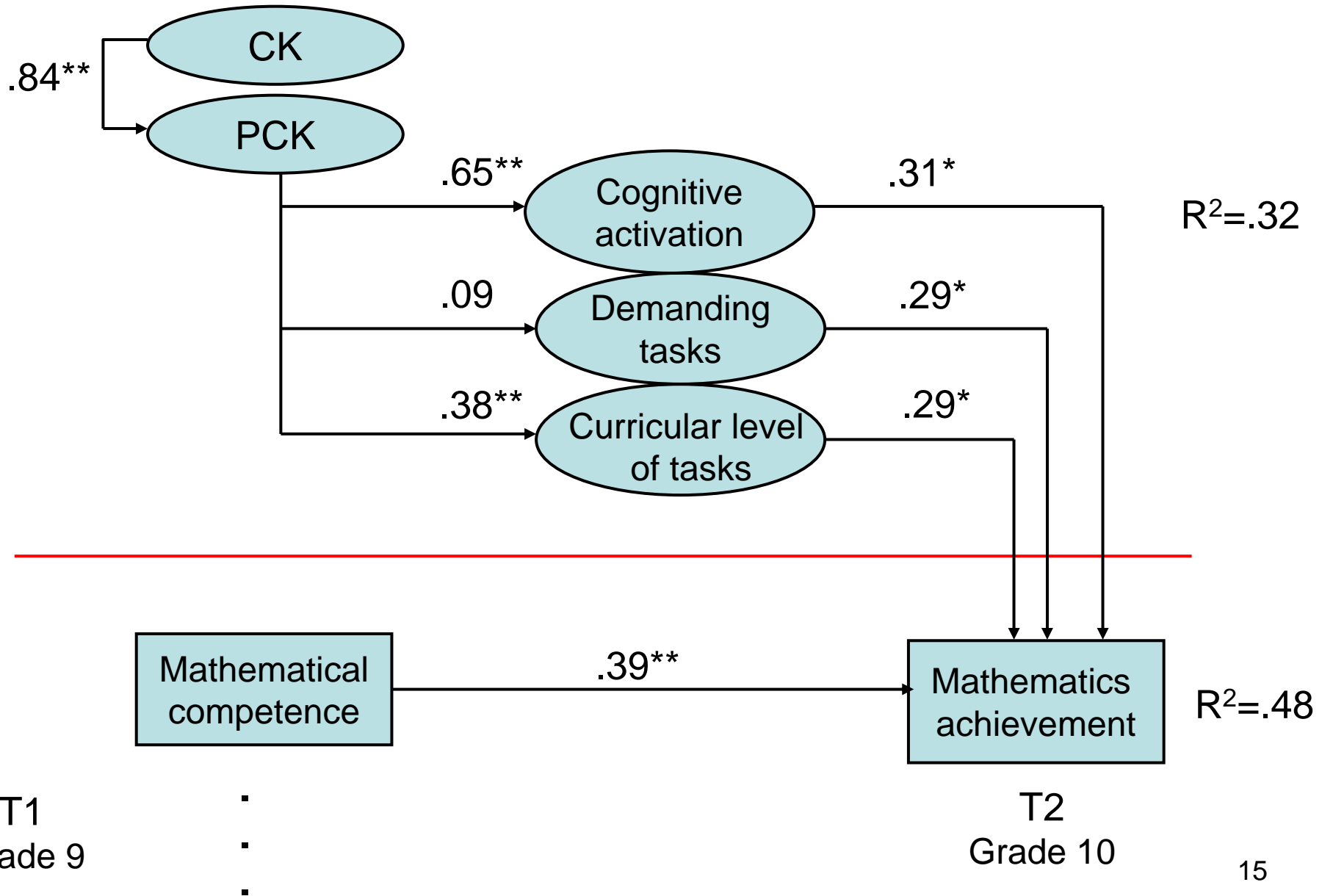


T1
Grade 9

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T2
Grade 10

Final Mediation Model

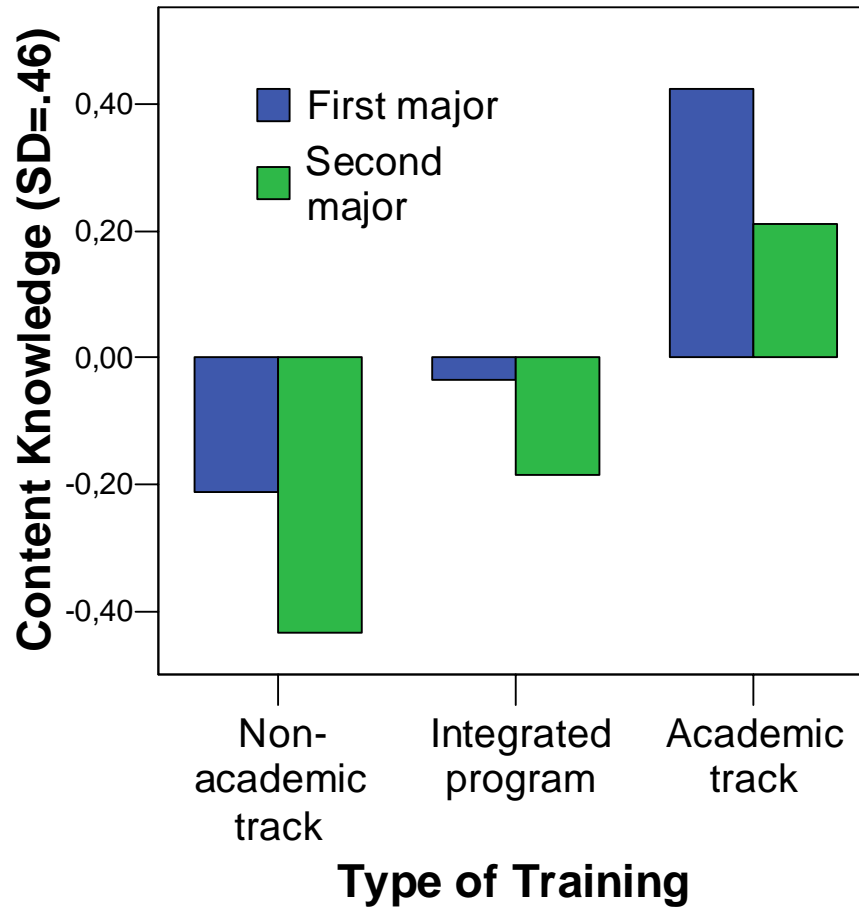


One Way of Promoting our Knowledge about Excellence in Teaching and Assessment

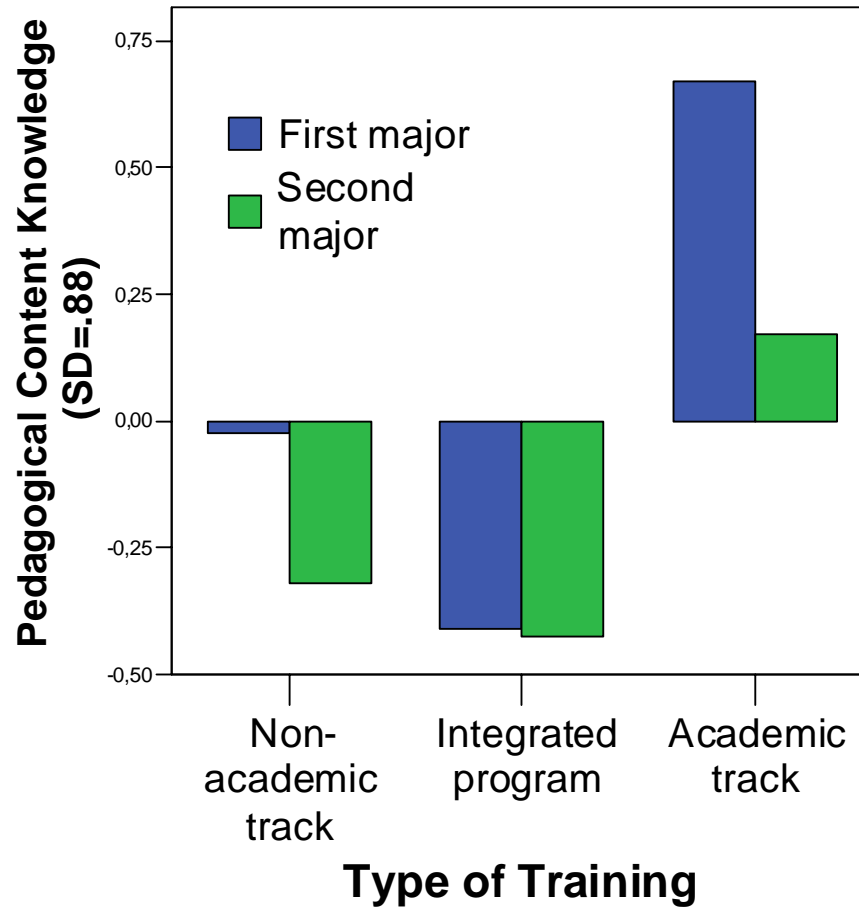
- Capitalize on international large-scale assessments
- Make use of qualitative research knowledge
- Incorporate large-scale assessments into a research program focused on teaching and learning

Thank you for your attention

Level of Content Knowledge by Training and Major



Level of Pedagogical Content Knowledge by Training and Major



Level of Pedagogical Content Knowledge by Training after controlling for Content Knowledge

