

THE RELATIVE CONTRIBUTION OF COGNITIVE AND MOTIVATIONAL VARIABLES TO SECONDARY SCHOOL STUDENTS' READING COMPREHENSION SKILLS, TAKING INTO ACCOUNT EDUCATIONAL TRACKS

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SSSR Conference - July 20th 2019 – 10h30

ADOLESCENTS & READING COMPREHENSION

WHY STUDYING ADOLESCENTS' READING COMPREHENSION?

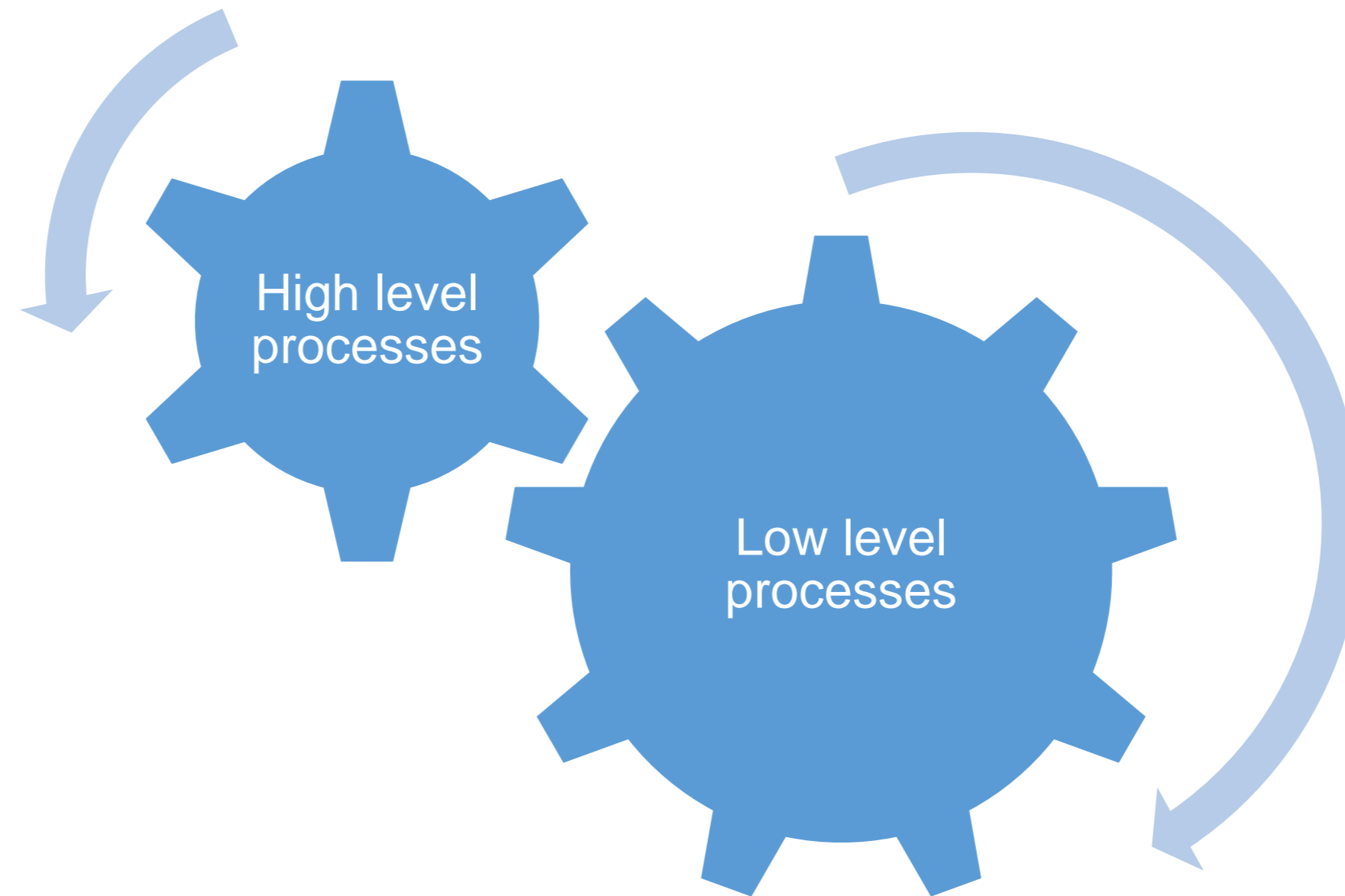
Reading
comprehension

Adolescents

European Commission (2006); Taboada, Tonks, Wigfield, & Guthrie (2009); Boardman, Klingner, Buckley, Annamma, & Lasser (2015); Wolters, Denton, Francis, & York (2014)

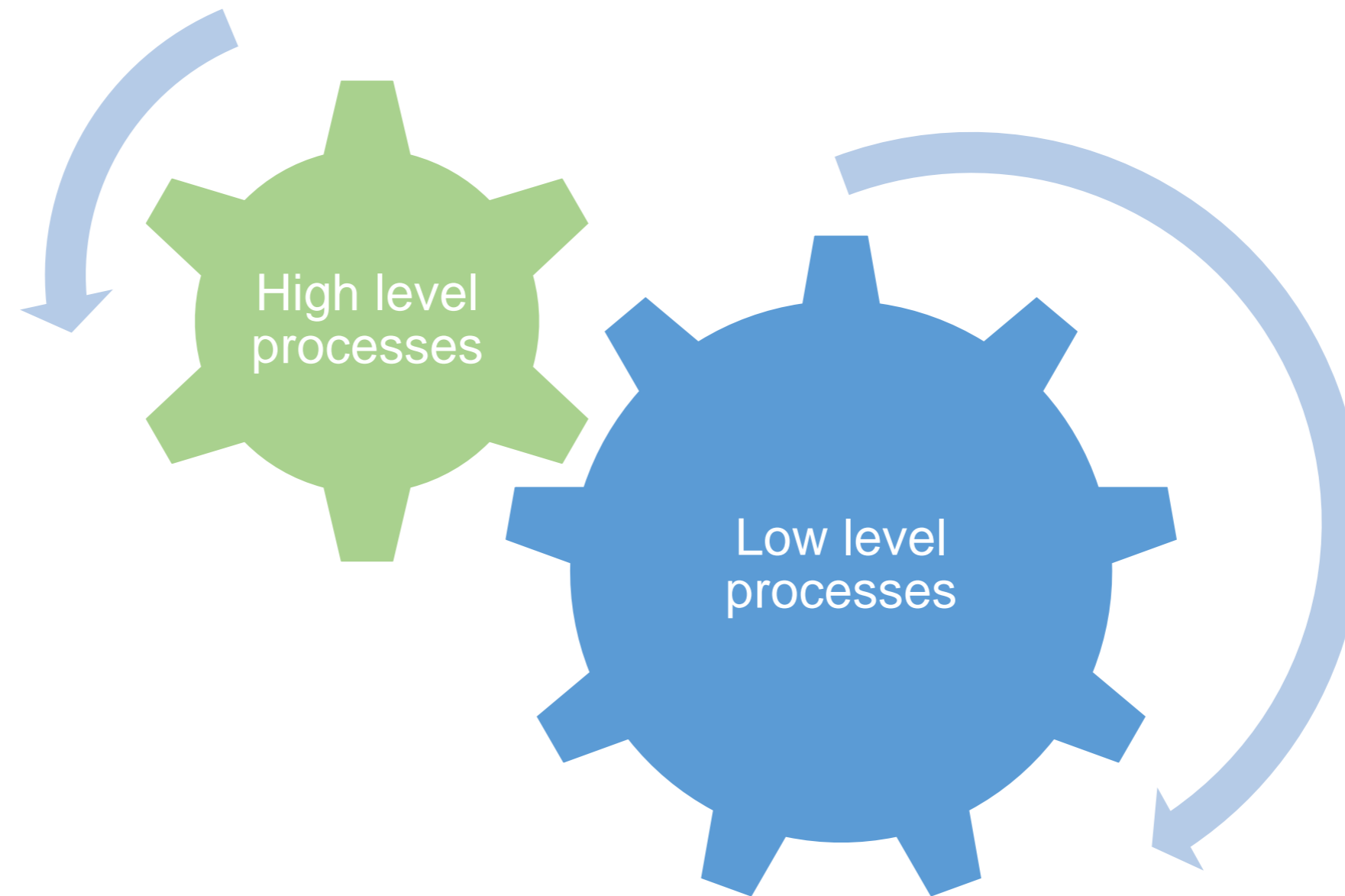
READING COMPREHENSION

= ability to gain meaning from what is read



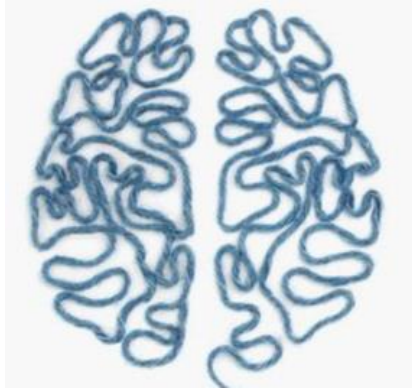
READING COMPREHENSION

= ability to gain meaning from what is read



SKILL OR WILL?

Contribution of



reading strategy use

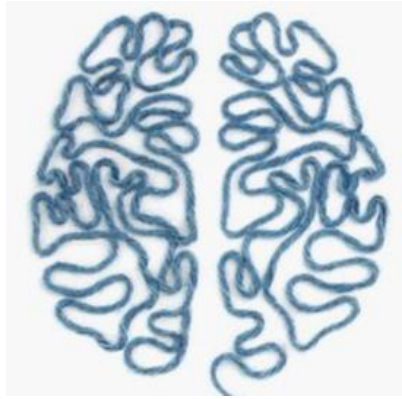


reading motivation
reading self-concept

to secondary school students' reading comprehension?

Differential relationships across educational tracks?

SKILL? READING STRATEGY USE



“Deliberate, goal-directed attempts to control and modify the reader’s efforts to decode text, understand words, and construct meaning of text” (Afflerbach, Pearson, & Paris, 2008, p. 368)

Using a repertoire of reading strategies (before, during and after reading) → better reading comprehension

(Artelt & Schneider, 2015; Cai & Zhu, 2017, Cox & Guthrie, 2001; Denton et al., 2015)

WILL? READING MOTIVATION



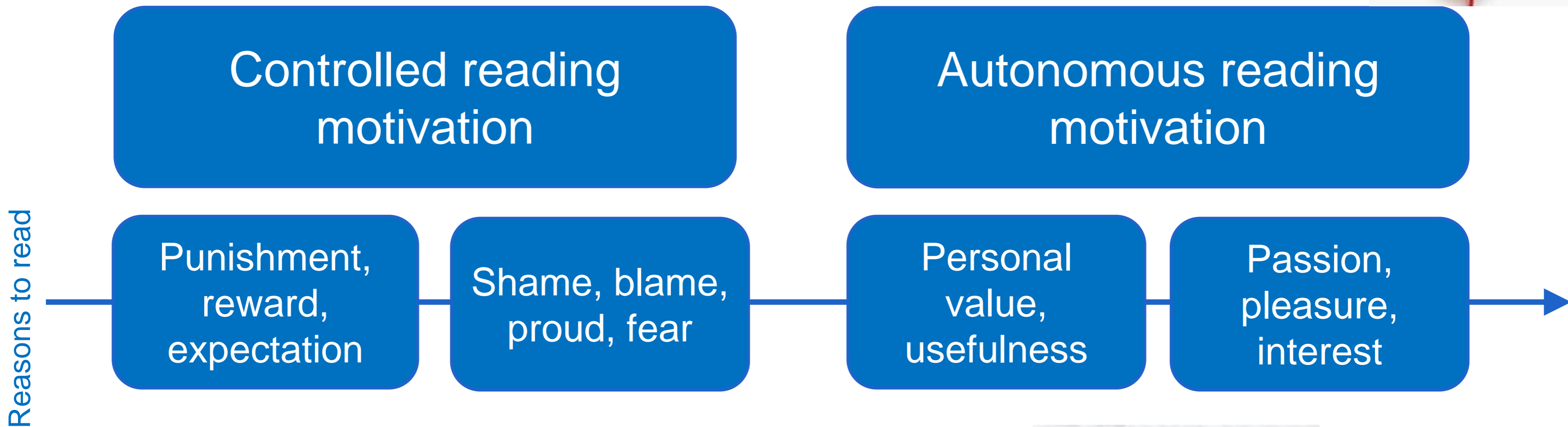
Self-determination theory

(Deci, Ryan, Vallerand, & Pelletier, 1991; Vansteenkiste, Zhou, Lens & Soenens, 2005)

Autonomous
reading
motivation

Controlled
reading
motivation

TYPES OF MOTIVATION



WILL? READING SELF-CONCEPT

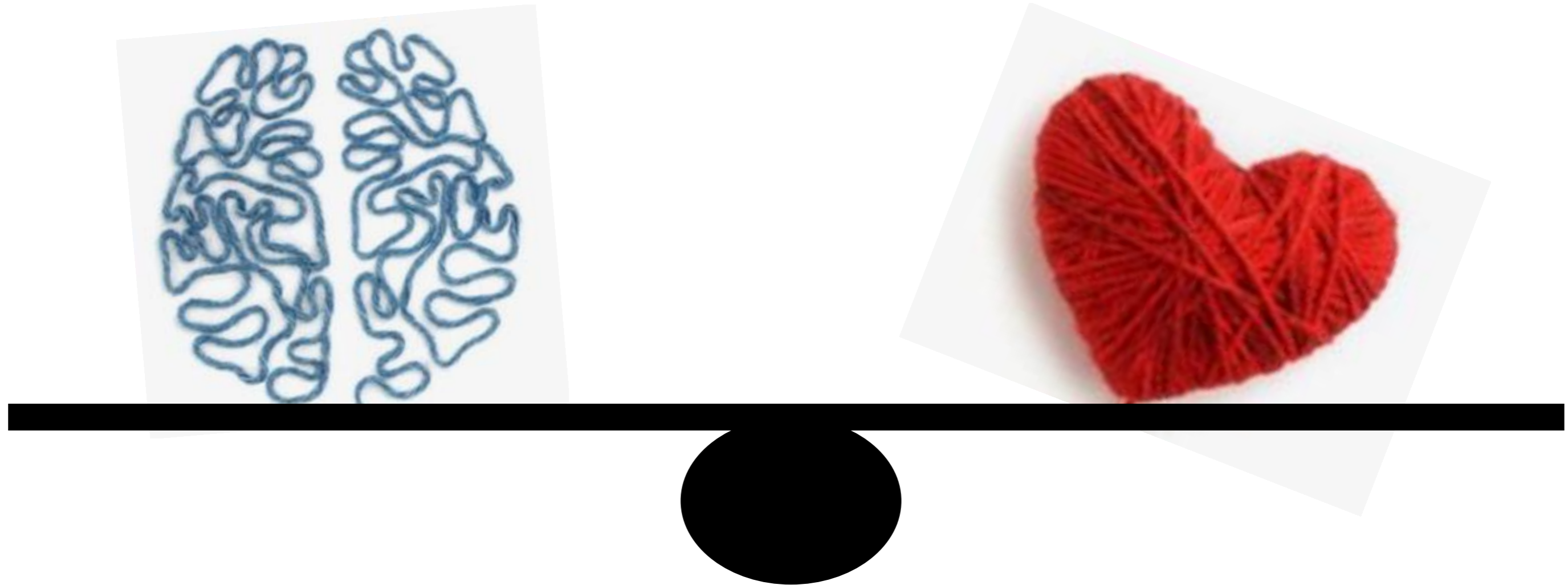


Reading self-concept (Martin, Mullis, & Kennedy, 2007)

= students' perception of their own reading competency

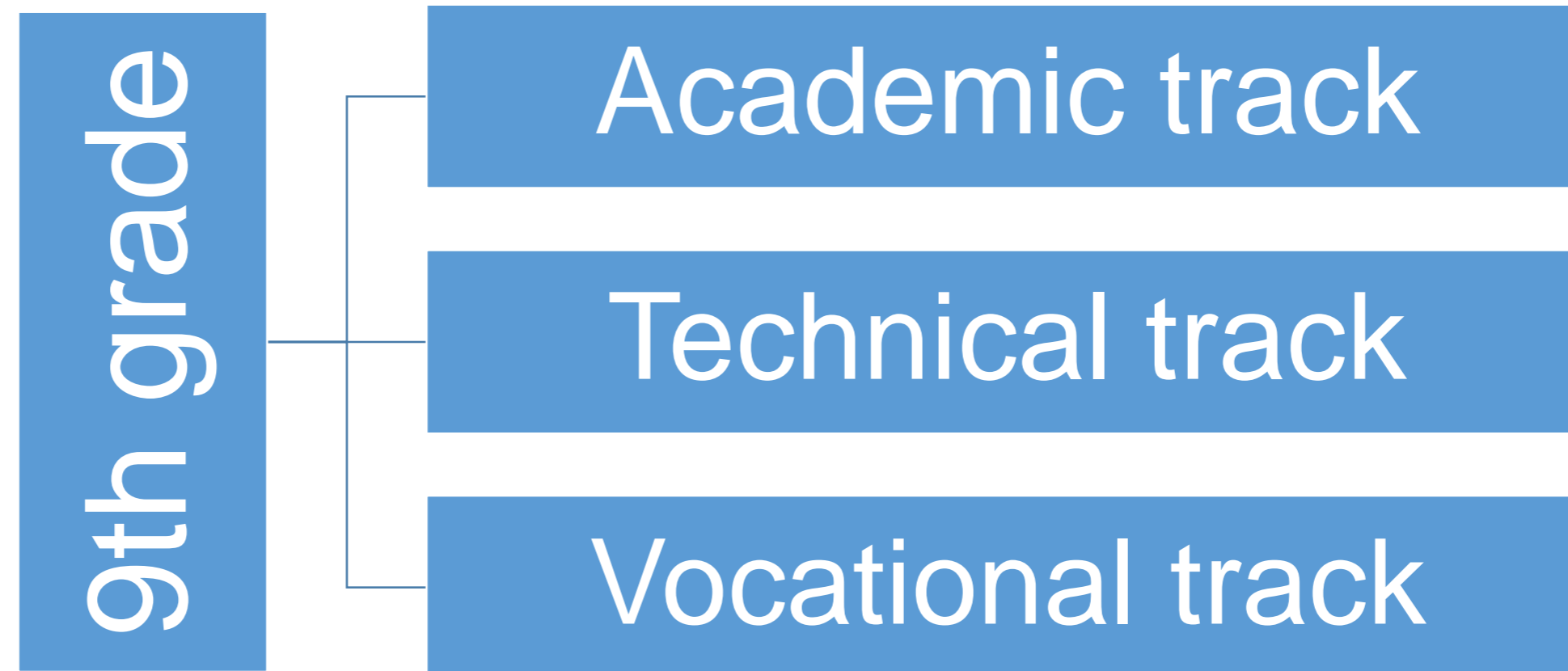
Higher reading self-concept → better reading
comprehension (e.g. Taboada et al, 2009)

SKILL OR WILL?



EDUCATIONAL TRACKS

EDUCATIONAL TRACKS IN FLANDERS (BELGIUM)



WHY?

Lower reading comprehension for students in technical and vocational tracks

(De Maeyer, Rymenans, Daems, Van Petegem, & Van Den Bergh, 2003; Departement Onderwijs en Vorming, 2009)

Differential contributions of reading strategy knowledge to reading achievement Kozminsky & Kozminsky (2001)

METHODOLOGY

HOW?



29 schools
194 classes
2494 9th-grade students



Standardized reading comprehension test
Online student questionnaire

- MARSI reading strategy use (Mokhtari & Reichard, 2002)
- SRQ reading motivation (De Naeghel et al, 2012)
- Reading self-concept (Martin & Mullis, 2007)

READING COMPREHENSION

7 texts

46 multiple choice questions

e.g. "What is the main topic of this text?"

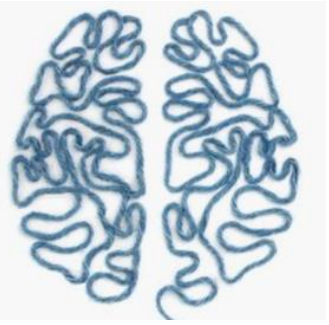


IRT analysis

Score between -3 and 3

Ordinal reliability: .79

READING STRATEGY USE – MARSI-R



Category	Number of items	Example	Internal consistency
Global reading strategy use	5	I have a purpose in mind when I read	.67
Support reading strategy use	5	I take notes while reading to help me understand what I read	.69
Problem solving reading strategy use	4	I try to guess the meaning of unknown words or phrases	.72

5-point Likert scale: 'I never or almost never do this – I always or almost always do this'

READING MOTIVATION – SRQ



Type	Number of items	Example	Internal consistency
Autonomous reading motivation	8	I enjoy reading I think reading is valuable	.95
Controlled reading motivation	9	I feel guilty when I do not read I will be punished when I do not read	.79

5-point Likert scale: 'I do not agree at all – I definitely agree'

READING SELF-CONCEPT



Variable	Number of items	Example	Internal consistency
Reading self-concept	5	Reading is harder for me than for many of my classmates	.74


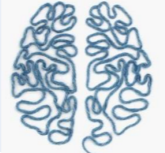
5-point Likert scale: 'I do not agree at all – I definitely agree'



Multilevel regression analysis (MLwiN)

RESULTS

Model	Coefficient	SE
Fixed		
Intercept	-0.358	0.073
Random		
Level 3: school	0.032	0.011
Level 2: class	0.037	0.007
Level 1: student	0.332	0.010

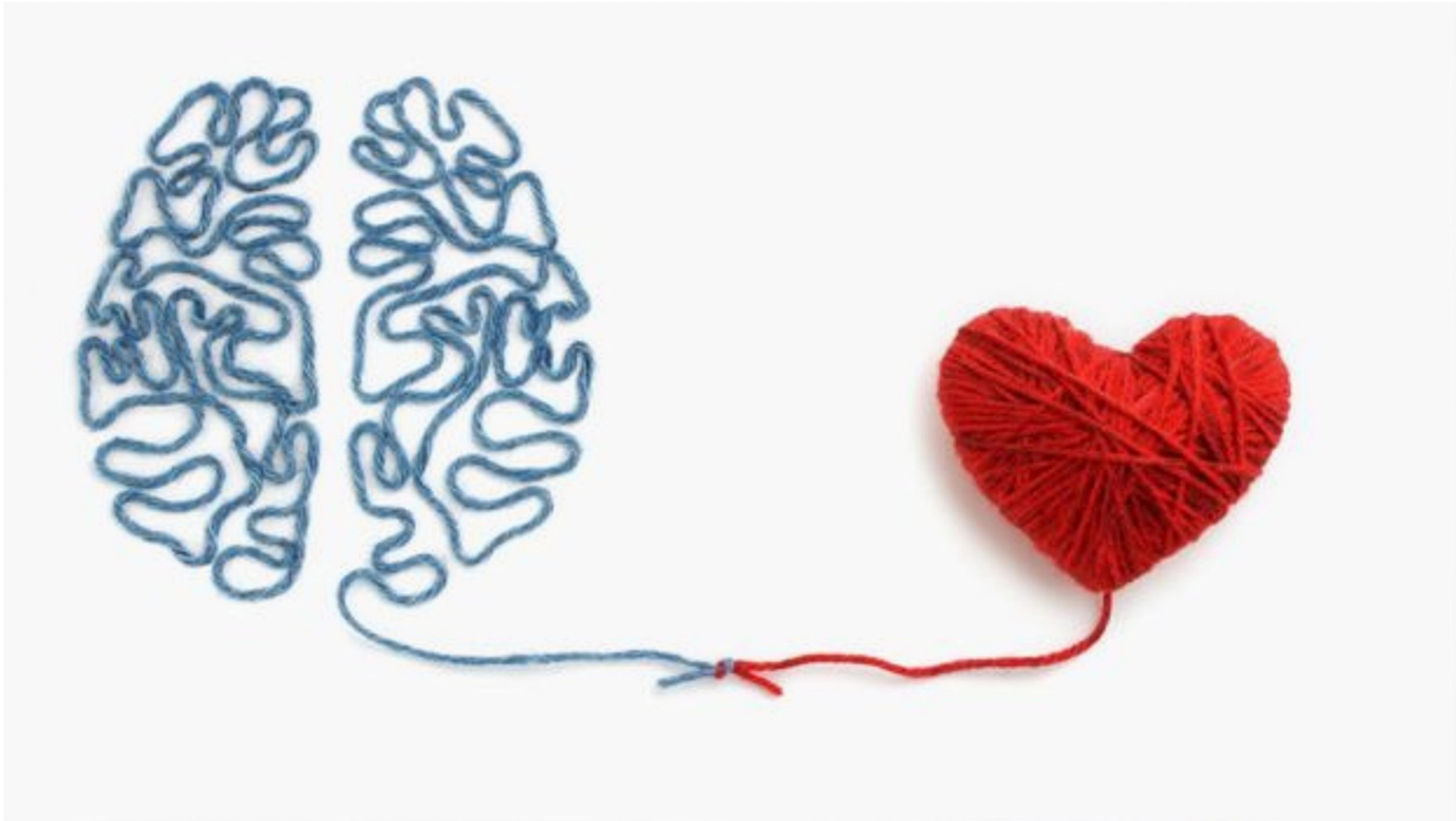
Model	Coefficient	SE
Reading motivation 		
Autonomous reading motivation	0.127**	0.015
Controlled reading motivation	-0.090**	0.026
Reading self-concept	0.309**	0.026
Reading strategy use 		
Global reading strategy use	0.027	0.026
Support reading strategy use	-0.075**	0.027
Problem-solving reading strategy use	0.094**	0.026

Model	Coefficient	SE
Interaction effects reading motivation		
Autonomous reading motivation * technical track	-0.022	0.026
Autonomous reading motivation * vocational track	-0.034	0.037
Controlled reading motivation * technical track	0.004	0.044
Autonomous reading motivation * vocational track	-0.027	0.050
Reading self-concept * technical track	-0.111**	0.033
Reading self-concept * vocational track	-0.269**	0.038

Model	Coefficient	SE
Interaction effects reading strategy use		
Global * technical track	-0.034	0.043
Global * vocational track	-0.019	0.051
Support * technical track	-0.060	0.043
Support * vocational track	-0.188**	0.051
Problem-solving * technical track	-0.014	0.043
Problem-solving * vocational track	-0.0013	0.050

SKILL OR WILL?

BOTH!



EDUCATIONAL TRACKS?

Vocational track:

- Larger negative contribution of support reading strategy use
- Non-significant contribution of reading self-concept

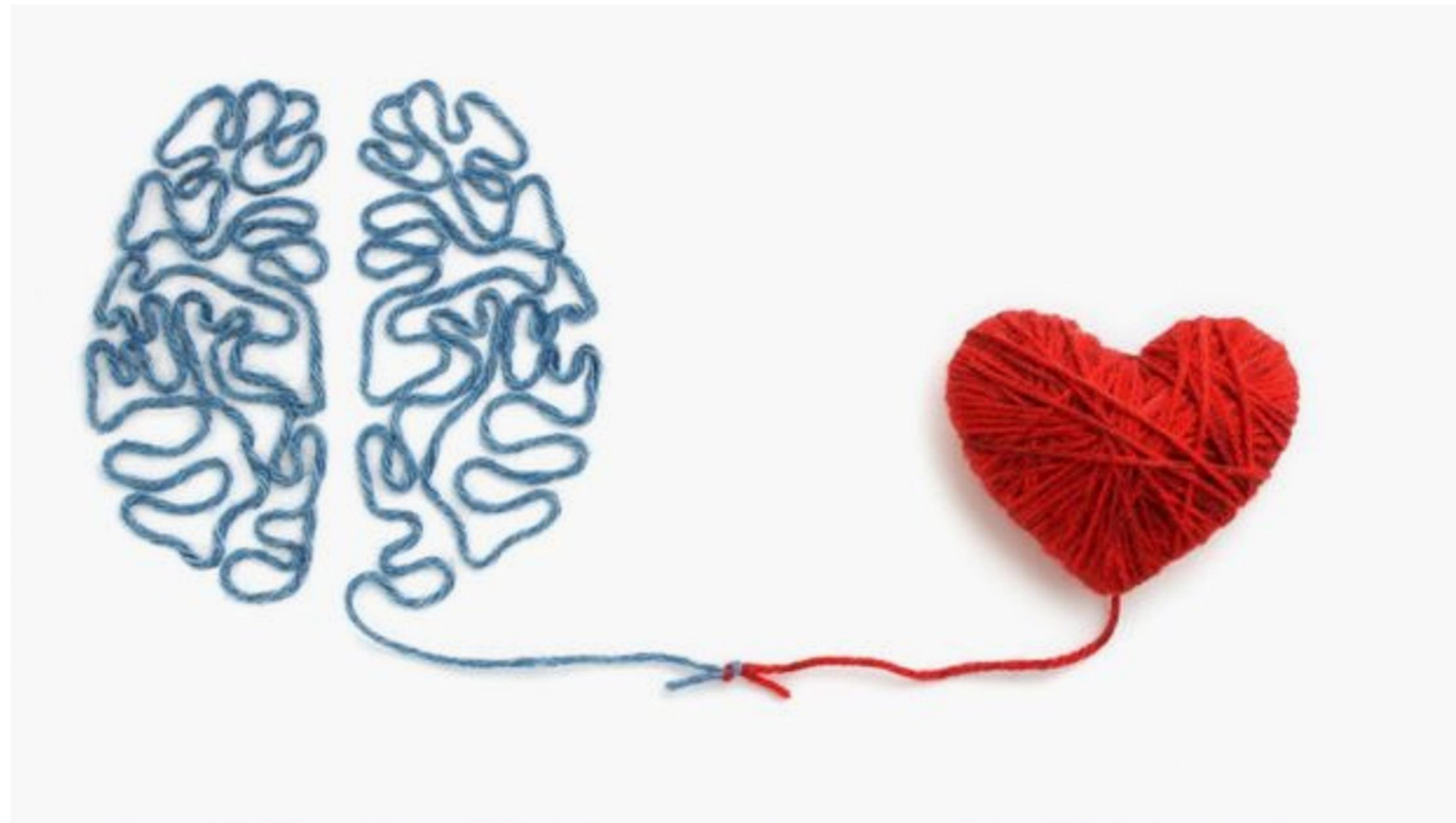
Technical track:

- Smaller positive contribution of reading self-concept

IMPLICATIONS?

IMPLICATIONS

Designing instruction/ interventions



PLANS FOR THE FUTURE

Vocational students

Autonomous reading motivation

Autonomy

Relatedness

Competence

THANK
YOU



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DESCRIPTIVES

Variable	Academic track	Technical track	Vocational track	Total
Reading comprehension	0.50 (0.73)	-0.32 (0.67)	-0.96 (0.62)	0.00 (0.90)
Global reading strategy use	2.93 (0.74)	2.76 (0.75)	2.61 (0.89)	2.82 (0.78)
Support reading strategy use	2.27 (0.73)	2.20 (0.78)	2.15 (0.91)	2.23 (0.78)
Problem solving reading strategy use	3.50 (0.73)	3.21 (0.78)	2.91 (0.95)	3.31 (0.82)
Autonomous reading motivation	2.90 (1.20)	2.23 (1.14)	2.12 (1.10)	2.56 (1.22)
Controlled reading motivation	1.73 (0.66)	1.66 (0.63)	1.81 (0.81)	1.72 (0.68)
Reading self-concept	3.22 (0.58)	3.01 (0.65)	2.91 (0.72)	3.10 (0.64)

Model	Coefficient	SE
Fixed		
Intercept	-0.993	0.094
Reading motivation 		
Autonomous reading motivation	0.127**	0.015
Controlled reading motivation	-0.085**	0.043
Reading self-concept	0.041	0.034
Reading strategy use 		
Global reading strategy use	-0.027	0.026
Support reading strategy use	-0.264**	0.042
Problem-solving reading strategy use	0.107**	0.039

Model	Coefficient	SE
Interaction effects reading motivation		
Autonomous reading motivation * technical track	0.012	0.039
Controlled reading motivation * technical track	0.031	0.056
Reading self-concept * technical track	0.157**	0.039

Model	Coefficient	SE
Interaction effects reading strategy use		
Global * technical track	-0.053	0.055
Support * technical track	0.128*	0.054
Problem-solving * technical track	-0.027	0.051
Random		
Level 3: school	0.032	0.011
Level 2: class	0.037	0.007
Level 1: student	0.332	0.010
Model fit		
Deviance (-2log)	4487.439	

	1	2	3	4	5	6	7	8	9
1. Reading comprehension	-								
2. Reading self-concept	.34 **	-							
3. Autonomous reading motivation	.37 **	.26 **	-						
4. Controlled reading motivation	-.12 **	-.12 **	.21 **	-					
5. Reading engagement	.28 **	.28 **	.53 **	.11 **	-				
6. Reading frequency	.33 **	.24 **	.59 **	.03	.40 **	-			
7. Global reading strategies	.12 **	.08 **	.31 **	.21 **	.29 **	.20 **	-		
8. Support reading strategies	-.08 **	-.13 **	.19 **	.29 **	.16 **	.07 **	.45 **	-	
9. Problem-solving reading strategies	.25 **	.10 **	.40 **	.18 **	.37 **	.27 **	.49 **	.43 **	-

Model	Coefficient	SE
Fixed		
Intercept	0.286	0.045
Random		
Level 3: school	0.019	0.011
Level 2: class	0.050	0.015
Level 1: student	1.049	0.031

Model	Coefficient	SE
Reading motivation		
Controlled reading motivation	0.153**	0.045
Reading strategy use		
Global reading strategy use	0.286**	0.045
Support reading strategy use	-0.026	0.046
Problem solving reading strategy use	0.436**	0.042

Model	Coefficient	SE
Interaction effects		
Controlled reading motivation * technical track	0.131	0.075
Controlled reading motivation * vocational track	0.321 **	0.082
Global reading strategy use * technical track	-0.232 **	0.072
Global reading strategy use * vocational track	-0.004	0.084
Support reading strategy use * technical track	-0.037	0.075
Support reading strategy use * vocational track	-0.184 **	0.086
Problem solving reading strategy use * technical track	0.027	0.065
Problem solving reading strategy use * vocational track	-0.178 **	0.073

Model	Coefficient	SE
Fixed		
Intercept	0.884	0.061
Random		
Level 3: school	0.002	0.002
Level 2: class	0.011	0.004
Level 1: student	0.379	0.011

Model	Coefficient	SE
Reading motivation		
Autonomous reading motivation	0.045**	0.016
Reading strategy use		
Global reading strategy use	0.032	0.027
Support reading strategy use	0.197 **	0.027
Problem solving reading strategy use	0.046 *	0.026

Model	Coefficient	SE
Interaction effects		
Autonomous reading motivation * technical track	0.055 **	0.027
Autonomous reading motivation * vocational track	0.223 **	0.035
Global reading strategy use * technical track	0.046	0.043
Global reading strategy use * vocational track	-0.031	0.051
Support reading strategy use * technical track	-0.033	0.043
Support reading strategy use * vocational track	0.052	0.049
Problem solving reading strategy use * technical track	-0.055	0.040
Problem solving reading strategy use * vocational track	-0.101 **	0.045