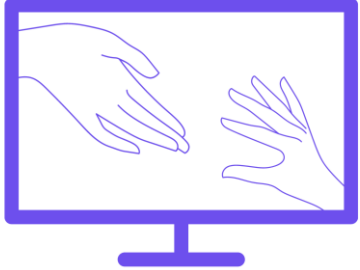


KEEP



Socio-economic impact and the effects of the COVID-19 crisis on children

Prof. Dr. Kristof De Witte

Leuven Economics of Education Research, KU Leuven

www.feb.kuleuven.be/LEER -  @DeWitteK

KEEP & GATE projects – 25/02/2023

Remember...



Remember...



Length of school closures

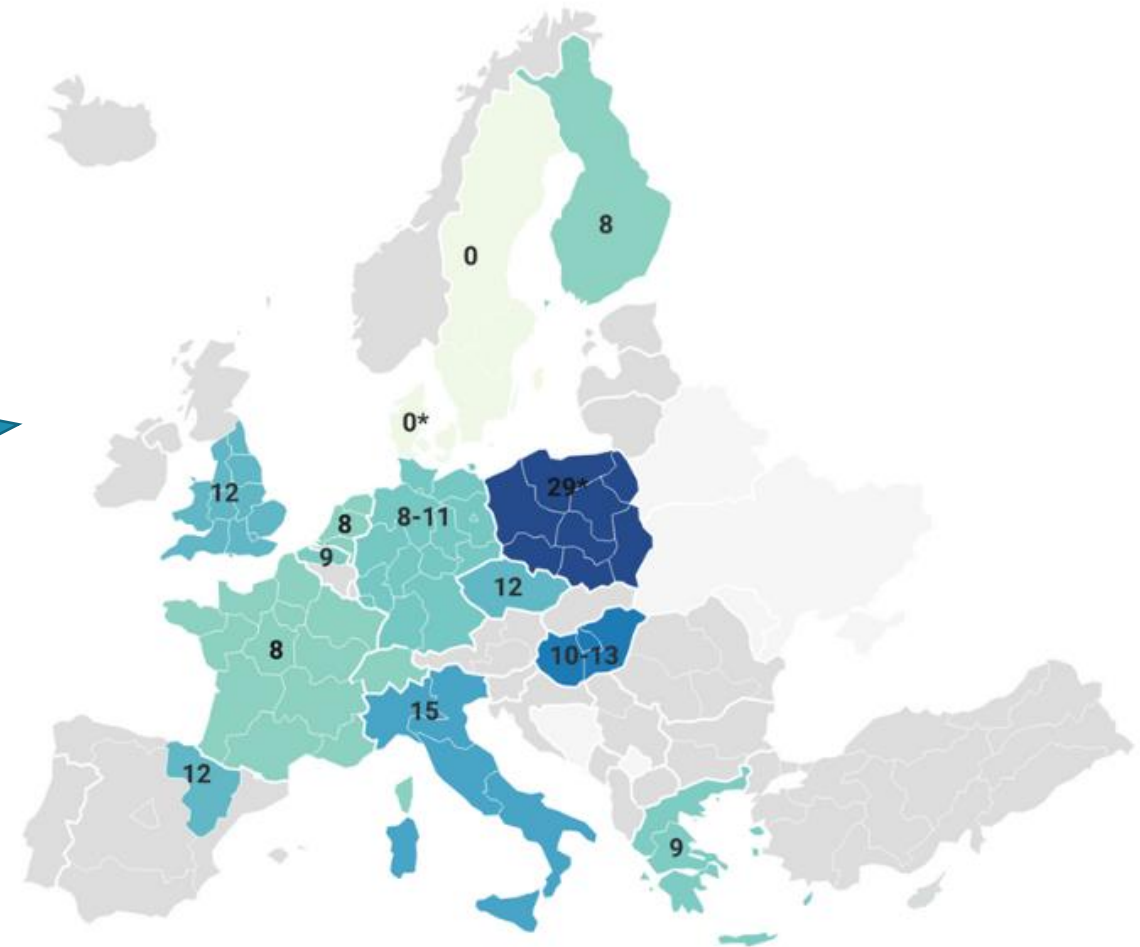
Important variations across EU members states, England and Switzerland

* 9 weeks \approx 1/3 of a school year

* Later also part-time teaching at school, face masks, extra holiday weeks, quarantines

Figure 1. Map of the total weeks of school closure, 2019-2020

Weeks of school closure
0 29



Created with Datawrapper

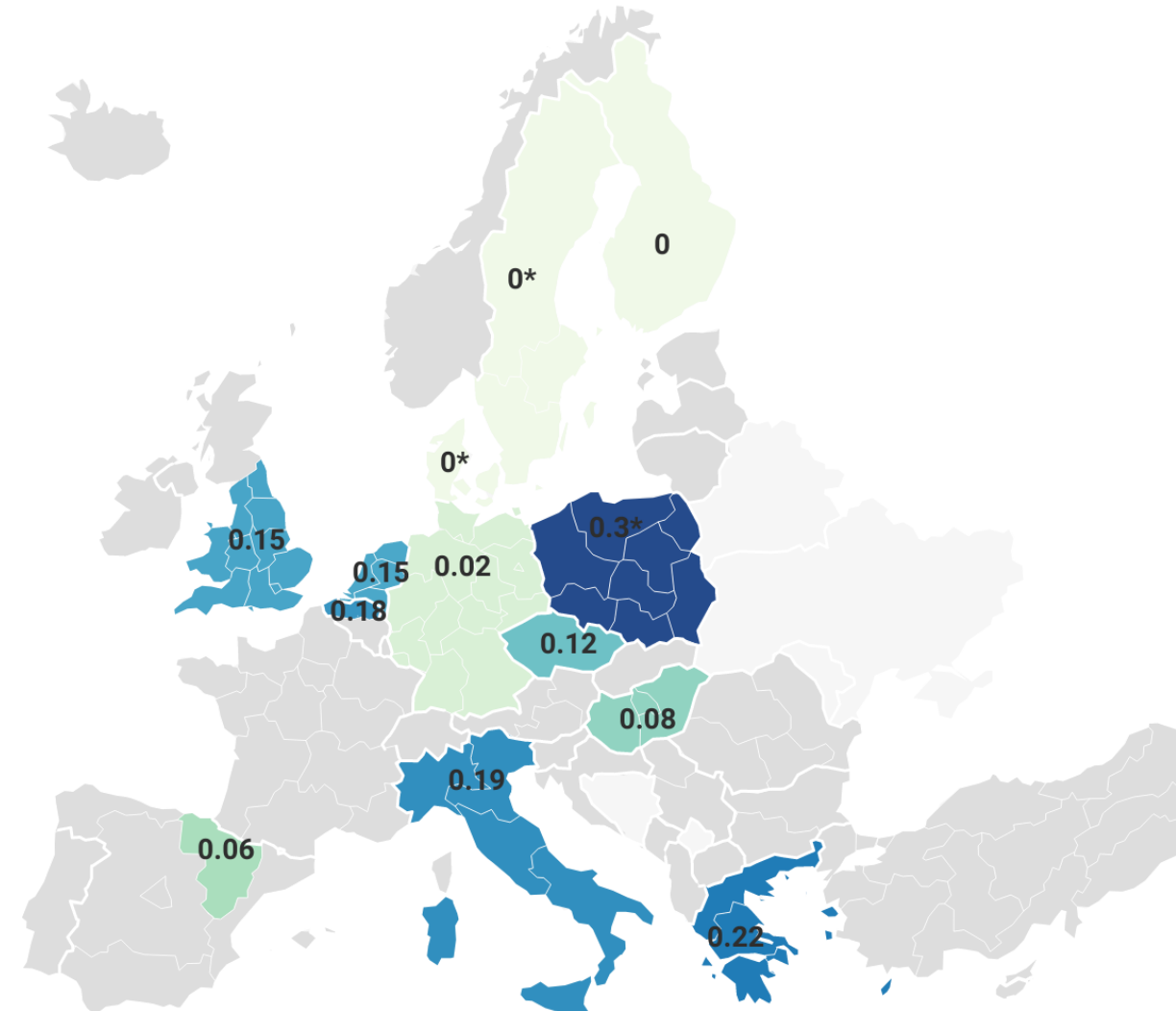
Impact on learning outcomes

Variations of the learning deficits between no effect at all (Nordic countries) and -0.22 to -0.3 SD (equivalent of half a school year deficit)

On average: learning deficit of 0.11 SD (equivalent learning deficit of quarter of a school year)

Figure 2. Maps of the average learning deficit in standard deviation 2019-2020

Weeks of school closure
0 0.3



Source: De Witte and François (2022). Learning deficits due to the COVID-19 analysis – A literature review (2020-2022). EENEE report.

Potential implications

- ↓ test outcomes → ↓ human capital formation → long-term challenges.
- Human capital formation associated with:
 - Annual lifetime earnings (Chetty et al., 2014);
 - Future earnings (Psacharopoulos & Patrinos, 2018);
 - Employment (Currie & Thomas, 2001);
 - General prosperity (Hanushek & Woessmann, 2020).

An attainment deficit of 0.1 standard deviations can have negative long-run effects:

→ A decrease in future income by 1.3% (*Chetty et al., 2014*)

→ A decrease of 0.43% in the probability to find a job (*Curry & Thomas, 2001*)

...Only hold in the absence of student resilience and to the extent that the attainment deficits are not caught-up.

Resiliency of school outcomes

- Poorer levels of knowledge and skills might accumulate over time (e.g., Agostinelli et al., 2020)
 - Learning deficits and inequality increase;
- Long term impacts of earlier disruptions of schooling (Belot & Webbink, 2010; Jaume & Willen, 2019)
 - School outcomes are not as resilient
- Heterogeneous psychological impact on students
 - May lead to hampered learning in the year after the school closures (Iterbeke & De Witte, 2020).

-
- Significant policy attention and investments (EENEE report by De Witte & Smet, 2021)
 - Some of the mechanisms vanished as school reopened
 - Teachers/ schools better prepared for remote teaching

Resiliency one year after the pandemic

Immediately after the pandemic versus one year later

In math

In language

FIGURE 6a. Average learning deficit in math 2020 and 2021 in Standard Deviation

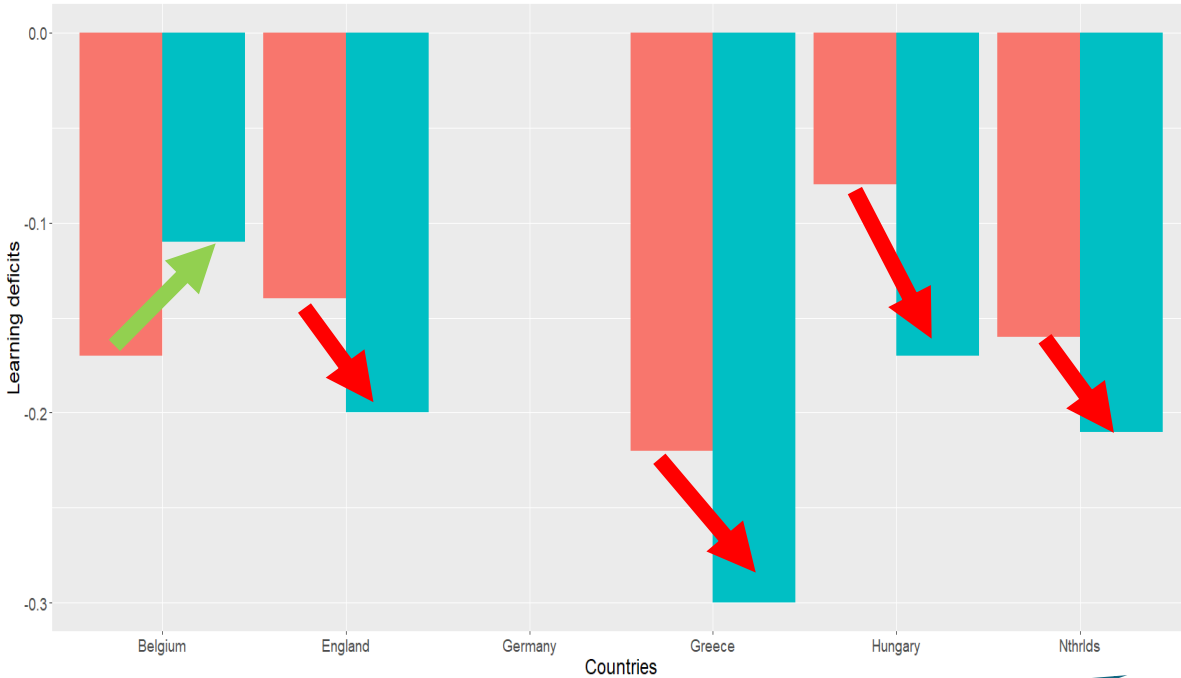
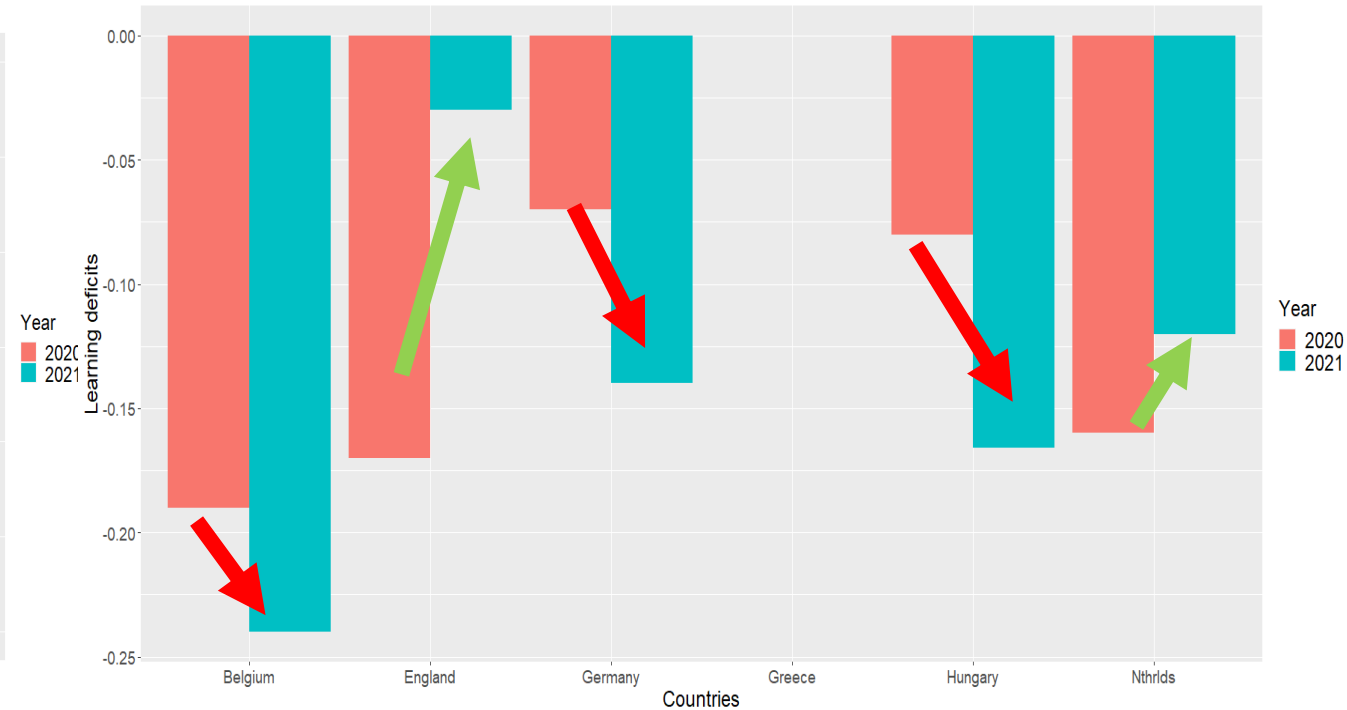


FIGURE 6b. Average learning deficit in language 2020 and 2021 in Standard Deviation



Mixed evidence depending on the countries and on the subjects
→ Despite unclear future trend, the literature suggests long lasting impact

3 years after COVID-19

The example of Flanders



Setting in Flanders

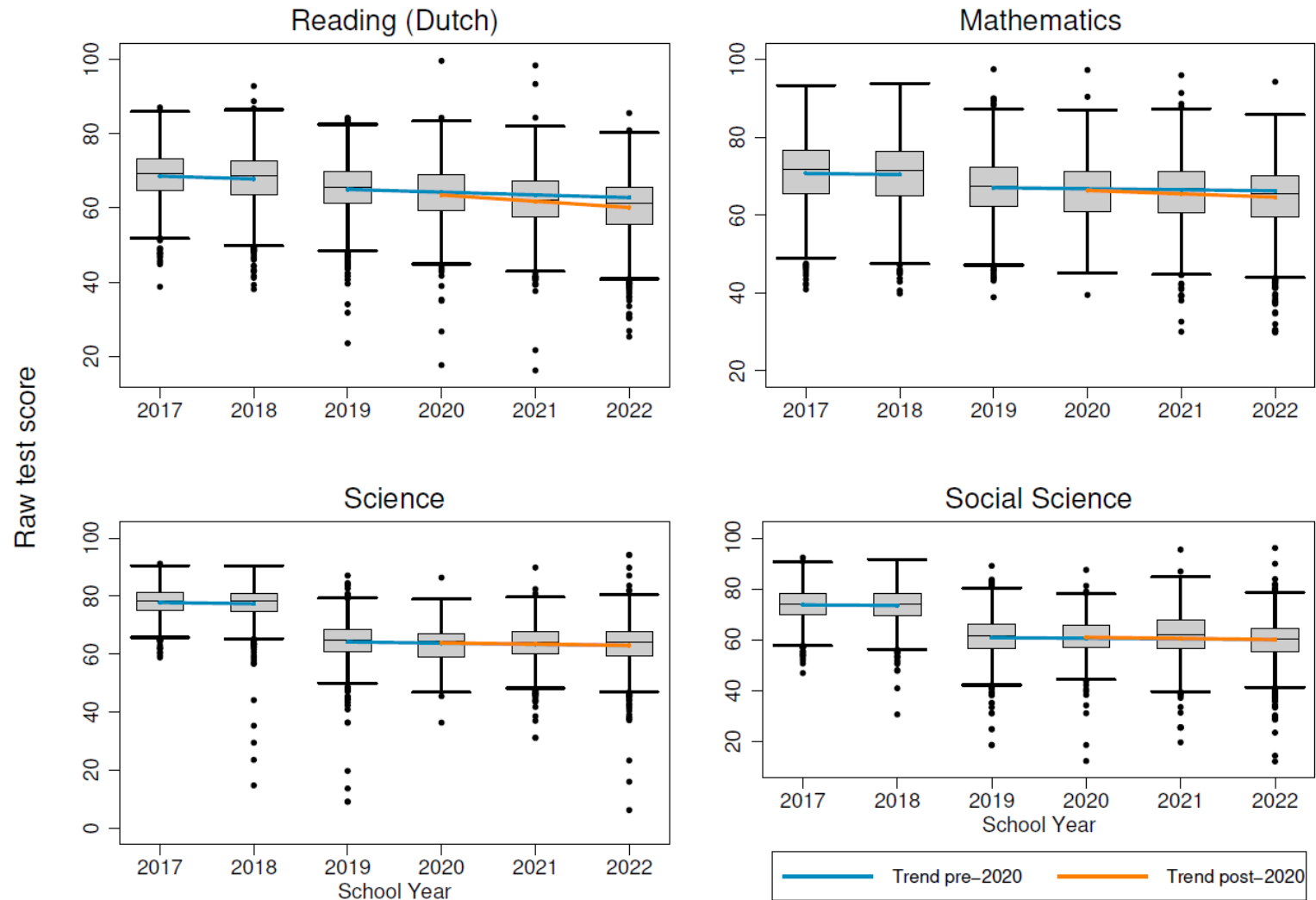
Timeline		
School closure	March 16 2020	Schools in Belgium unexpectedly closed – Schools were NOT ready
	March 16 – April 3	Distance teaching to practice previously taught material
	April 4 – April 19	Easter holidays
	April 20 – May 18	Distance ‘pre-teaching’ to preview new material
Partial re-opening	May 18 2020	Part-time reopening for grade 1, 2 and 6 in primary education (i.e. max 2 full days / week; max 14 students / class)
Full re-opening	June 8 2020	Full time re-opening of primary school (although not all schools immediately re-opened)
Extra holidays	2021-2022	Two extra weeks of holidays before Eastern and Christmas holiday
Disruptions	2021-2022	Due to face masks, quarantines, ...

Results - Graphical exploration of the trend

Overall decline in test scores at end of primary education

- As downward trend in every subject before 2020 (blue line)

The COVID-19 crisis accelerated the decline for Dutch language, math, foreign language and sciences



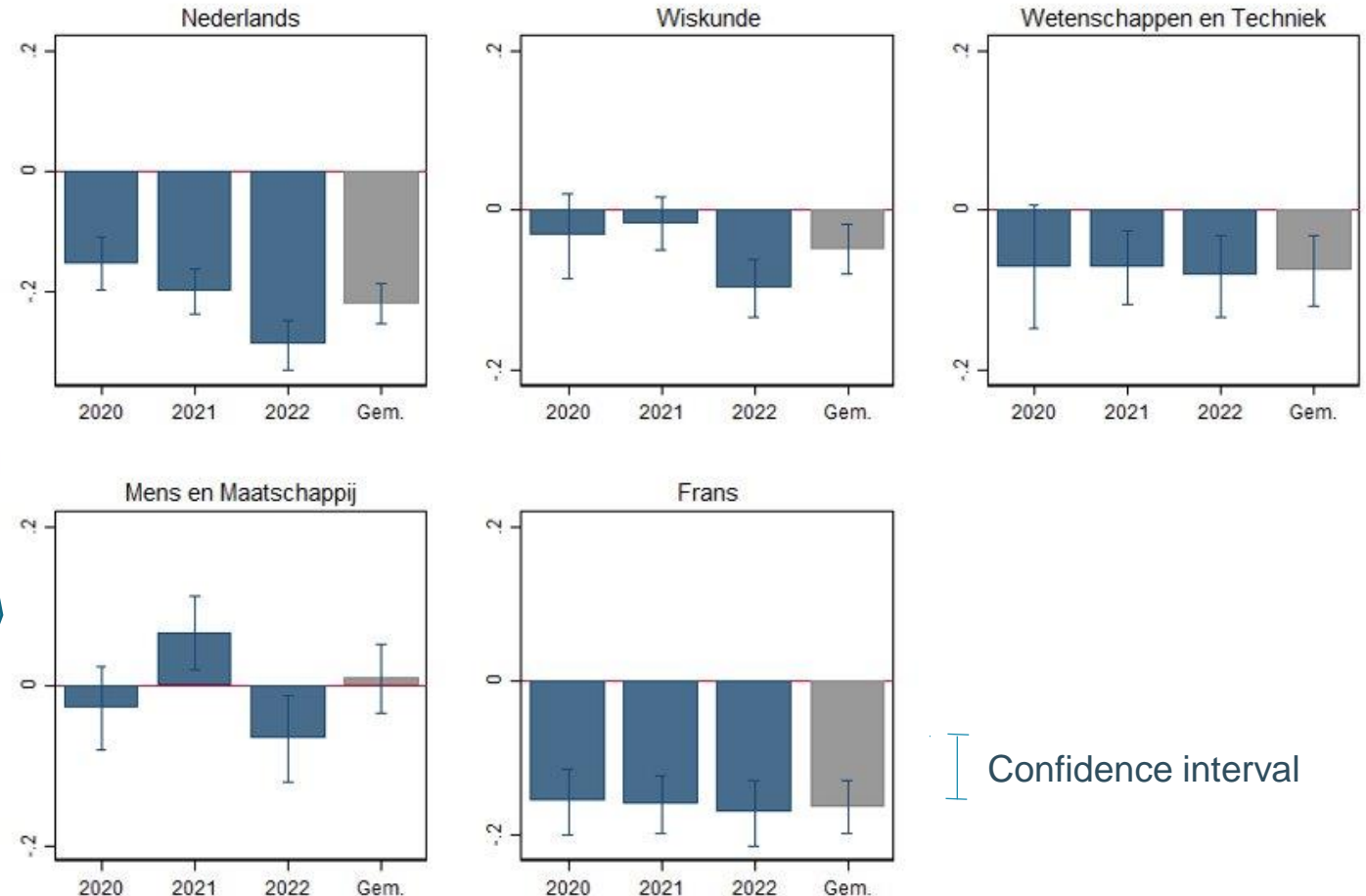
Learning outcomes relative to 2019

'Net effects' after control for time varying and time constant variables

Stronger decline in learning attainments in 2022:

- **Dutch:** -0,29 SD in 2022 relative to 2019
 - Learning deficit of 15 weeks
- **French:** learning deficit of 9 weeks relative to 2019
- **Math:** after little change in 2021, strong decline in 2022 to -5 weeks relative to 2019
- **Sciences:** 4 weeks learning deficit relative to 2019

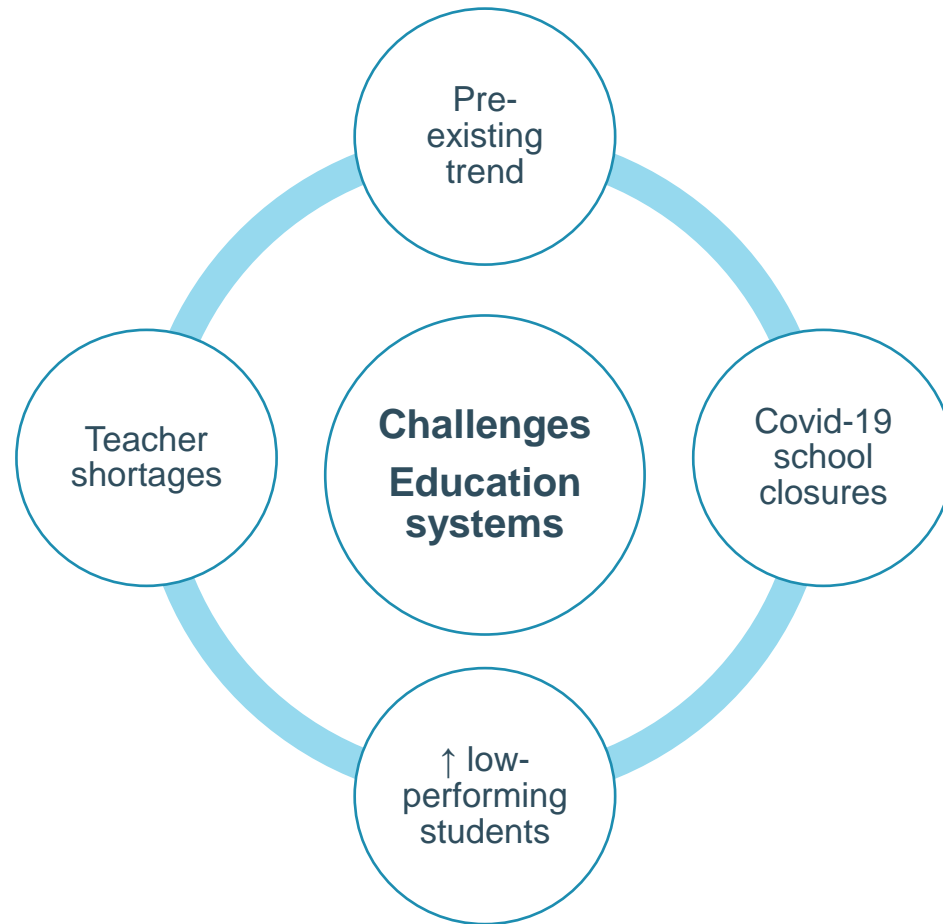
Combined effect of COVID-19, declining trend, teacher shortages, shrinking top performers



Confidence interval



Other challenges



School closures exacerbated pre-existing weaknesses in education systems (François & De Witte, 2022; Gambi & De Witte, 2021; Moscoviz & Evans, 2022; Patrinos et al., 2022).

Mechanisms





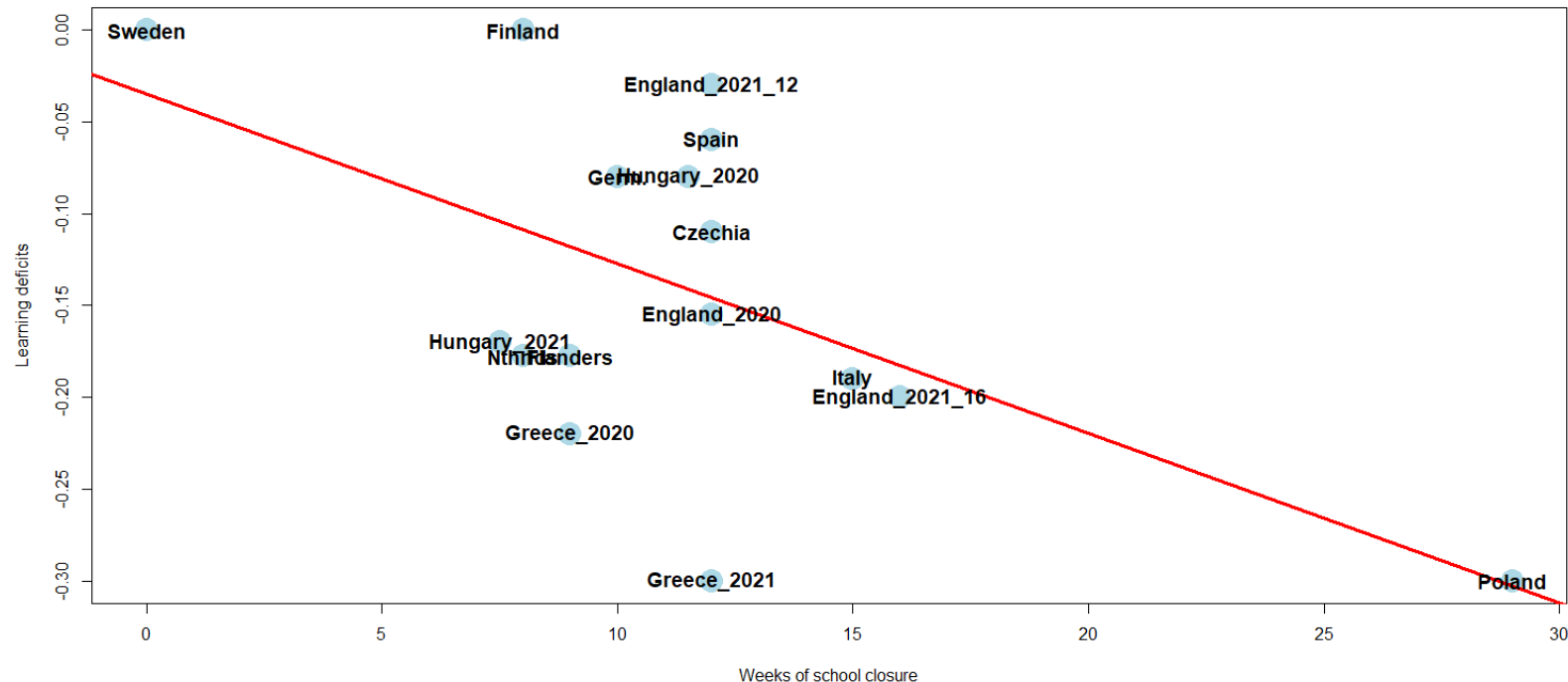
The longer
the school
closures

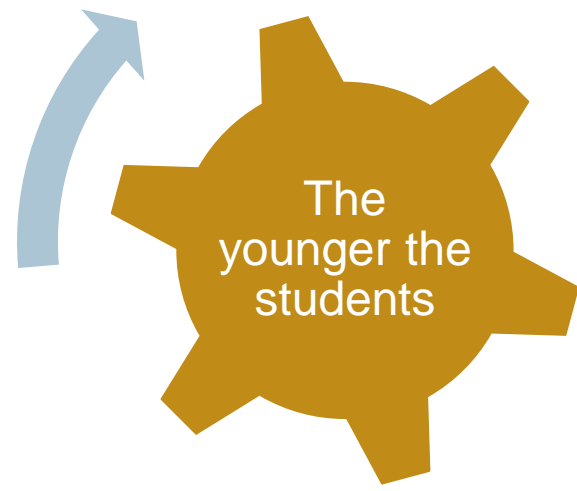


Mechanisms – Length of school closure

- The longer the school closure, the larger the learning deficit
 - Lost instruction time; lost automatisms; less effective instruction methods
- Correlation of -0.615
- One week longer school closures, higher learning deficit of 0.007 SD (insignificantly due to power)

FIGURE 4. Link between length of school closures and learning deficits





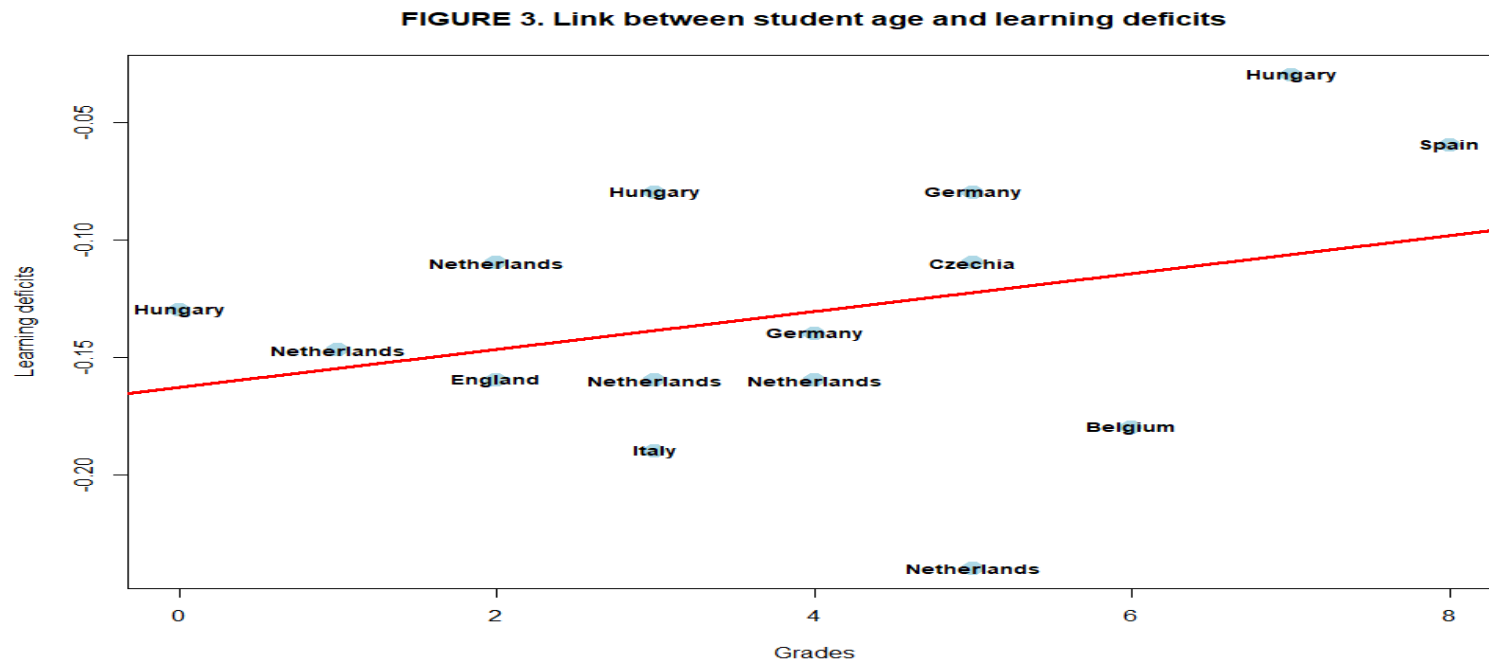
Mechanisms - Age

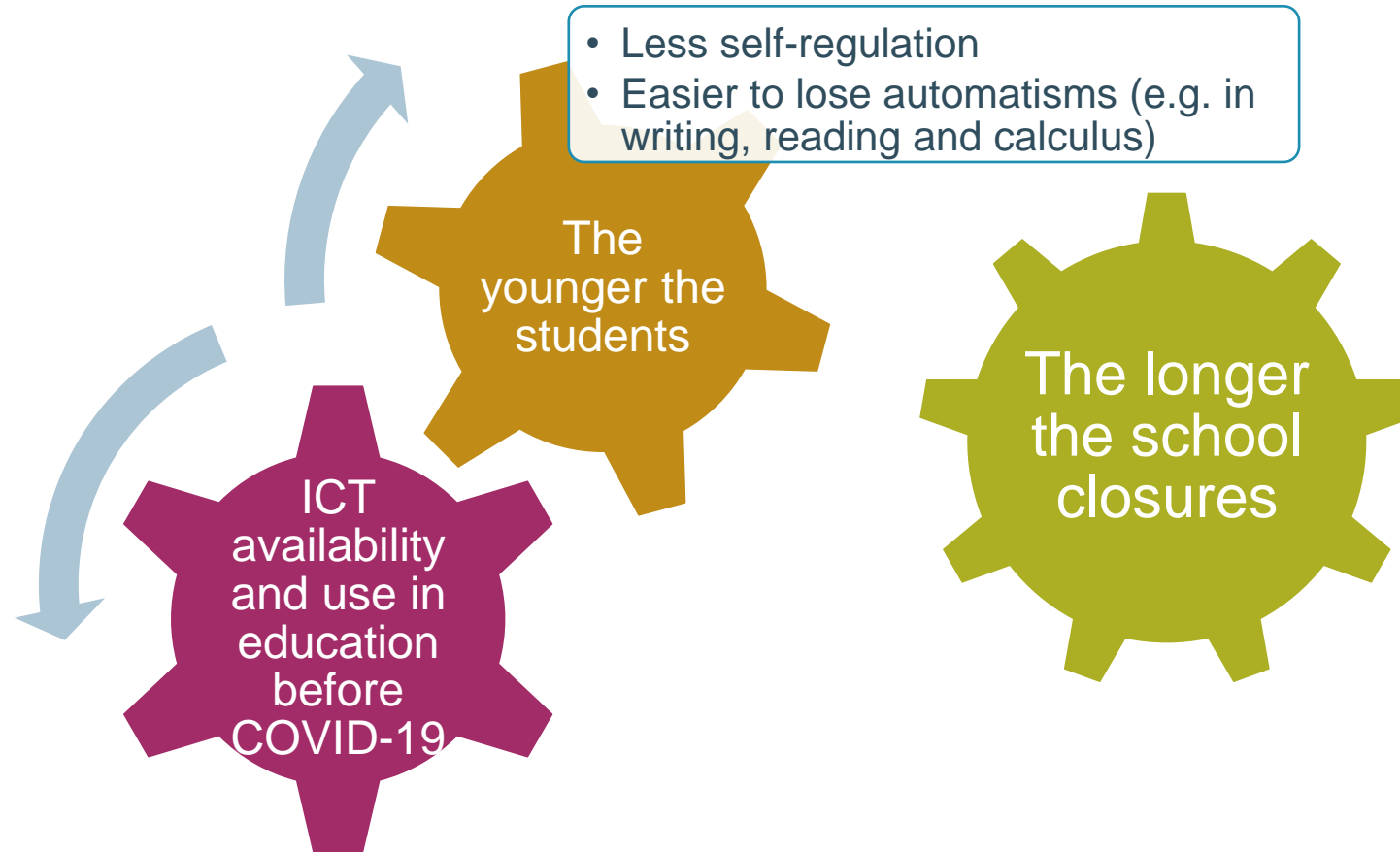
The younger the students, the larger the learning deficits

→ Correlation of 0.32

→ One year older student, -0.005 SD learning deficit (due to low power, insignificantly)

- Difficulty of young pupils to self-regulate their work during the school closures
- Lost automatisms and forgetting learning content (cf. summer loss: -0.18 SD)
- But also longer school closure length for older pupils





Mechanisms - ICT

My Account Users My Classes

AP English - Class 2

Springfield High School
September 3, 2014 to January 30, 2015

Invite students
Go to student view
Edit class details

Students (35) Add/Remove Students

All Students Sep 3, 2014 to Oct 29, 2014

Summary Activity by List **Activity by Word**

All Words ▾
window

Trouble

18

Having Trouble **18**

Level 1/2/3 **8 / 4 / 6**

Mastery

95%

Average Mastery **95%**

Students Mastered **33**

Students Started **34**

Word Stats

Look up this word

Word Difficulty	710
Percent Correct	75%
Questions Correct	465
Questions Answered	621

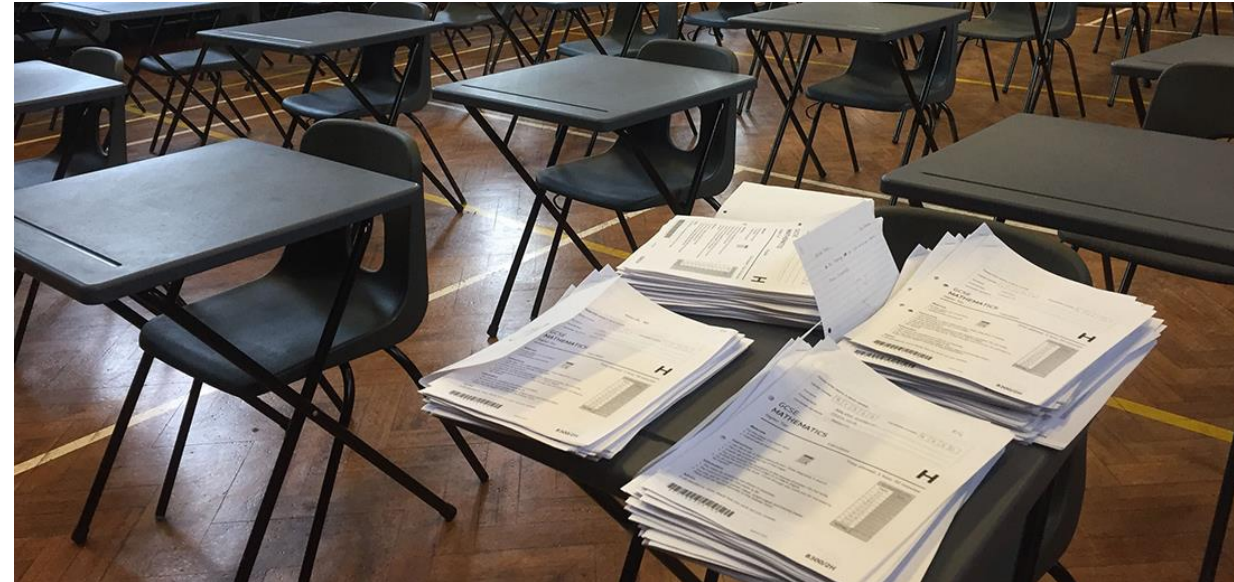
Top Trouble Questions

710 difficulty
48 incorrect of 111 answers

57%	select desirable parts from a group or list
10%	prove to be false or incorrect
11%	become wider
23%	make ineffective by counterbalancing the effect of

Student	Mastered %
All Students	95%
Andrew, Christopher	100%
Arthur, Jonathan	100%
Chiu, Jenny	100%
Derman, Anne	100%
Dubowski, Michael	100%
Florence, Anthony	100%
Foner, Jonathan	100%
Haas, Dana	100%
Lacoste, Adele	100%
Lewis, Samantha	100%
Liddell, Carrie	100%
Limkin, Kyle	100%
Longi, Matthew	100%
Mack, Carl	100%
Malcolm, Kimberly	100%
Muis, Abdul	100%

versus



Mechanisms - ICT

The more a country was used to rely on ICT for educational purposes, the more resilient test scores

Advanced digitalisation is only a necessary condition for avoiding large learning deficits; a sufficient condition to reduce learning deficits is the intensive use of ICT in education prior to the pandemic

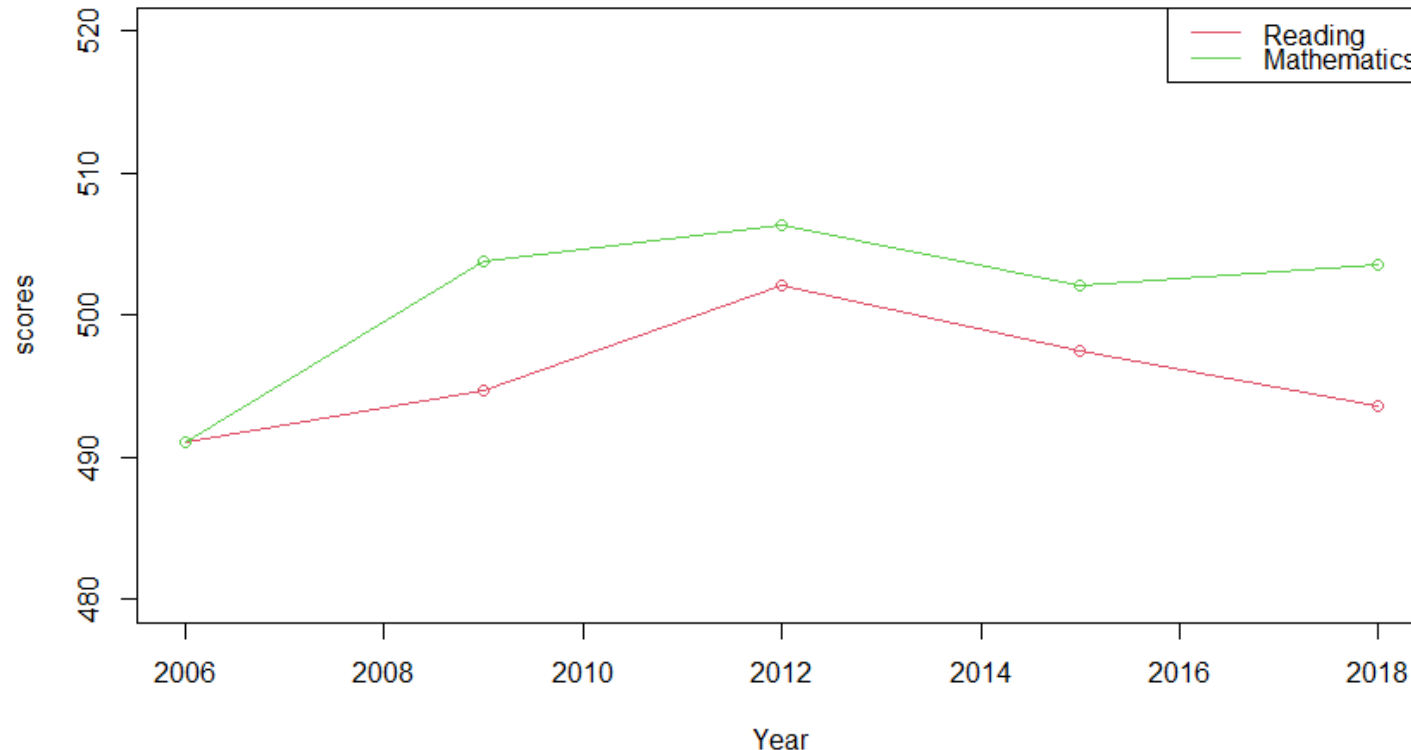
Examples:

- Denmark: ICT use at school index = 0.6, Digital Economy and Society Index (DESI) rank 4/28
→ No learning deficit in 2020-2021
- Belgium: ICT use at school index = -0.18, DESI rank 9/28
→ -0.18 SD average learning deficit in 2020-2021

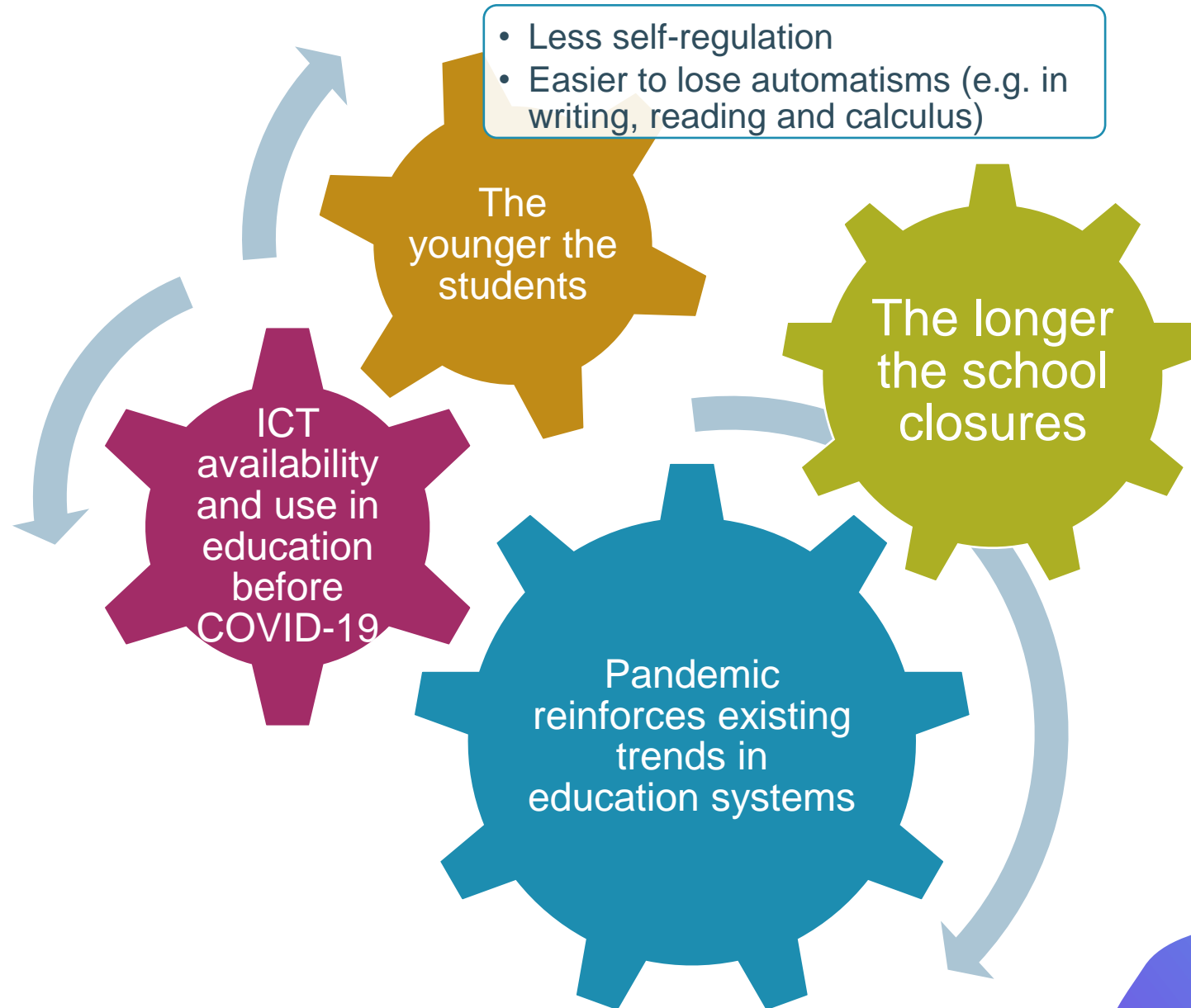
Mechanisms - Reinforces existing trends

- Decreasing trend in, e.g., PISA scores among EU Member States prior to the pandemic

FIGURE 5. Average PISA trend 2006-2018 in Europe



If not accounted for → the negative trend will be absorbed into the pandemic effect, leading to biased estimates (definitely for the more recent publications)



Heterogeneity

“The literature review identifies multiple subgroups where the learning deficits are more outspoken”

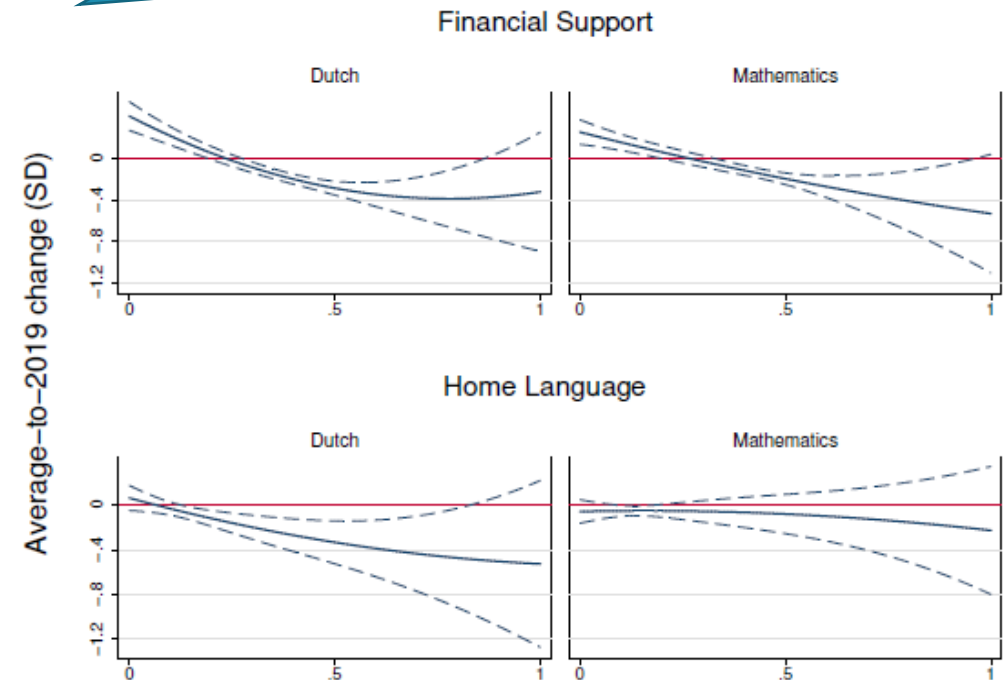
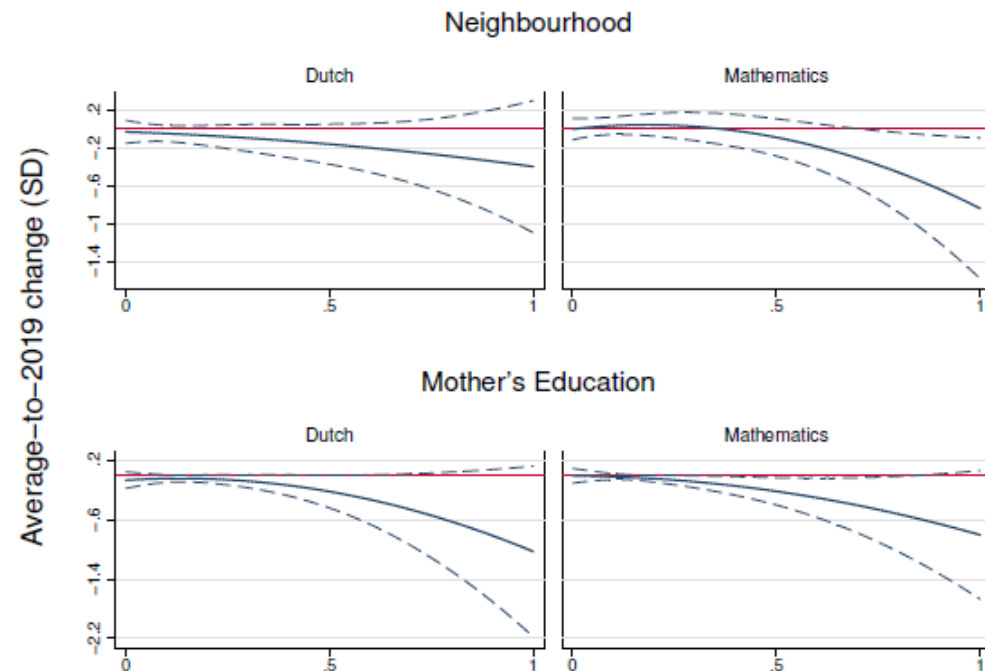


Heterogeneity

Strong evidence

- **SES:** twice larger learning deficits for low-SES students than for high-SES

For example, in Flanders: controlled for all observed and unobserved characteristics, the learning deficit in 2022 relative to 2019 is more outspoken in schools with more students with lowly educated mother, more financial support, and who do not speak Dutch at home



Heterogeneity

Strong evidence

- **SES**: twice larger learning deficits for low-SES students than for high-SES
- Increasing gap between **top and bottom-level students**

For example, in Flanders: immediately after the pandemic, inequality in test math and Dutch test scores increased by 7.6%.

→ This increased gap in inequality remained constant since the 2020 school closures

Reason: Low-SES students stayed in poor home environment consequently to school closure: e.g., quiet place to study; ICT availability; lower parental involvement

Heterogeneity

Mixed evidence

- **Gender gap**
 - Increasing gender gap for women in mathematics and in mental wellbeing from quantitative evidence
 - Increasing gender gap for men noticed in another study
 - Relation with SES: Low-SES girls experienced much lower levels of mental health compared to high SES

Heterogeneity

Mixed evidence

- **Migrants**

- No additional learning deficits for migrants' children from quantitative evidence
- Increasing difficulties to understand the home language
 - Due to remote teaching: Increasing language barriers, and less home language interactions for migrant students

- **Special education need students**

- Loss of access to specialized tools following the school closure
- Increasing mental pressure and stress for parents → affecting students' mental health
- Reinforcement of pre-COVID-19 trends: Loss of social interactions with peers → negative impact on mental health and difficulties to get effective learning support

Heterogeneity by personality traits

Quick Big Five

- **Extraverted** » Social, energetic, positive emotions
- **agreeableness** » Considerate, sympathetic, helpful, generally prosocial
- **Conscientiousness** » Goal-oriented, persistent, dutiful, organised
- **Neurotic** » Anxiety, uneasiness, and feelings of vulnerability
- **Openness** » Open-minded, creative, intellectually curious



Heterogeneity by personality traits

Extraverted students (Social, energetic, positive emotions)

+ 14,4% tensions at home, + 7,3% learning new skills,
+ 6,5% missing school live, expect a decrease in test scores

Intraverted students

- 6,6% ready to help others; decrease in stress (- 10,9%)

Conscientiousness (Goal-oriented, persistent, dutiful, organized)

- 7,5% tensions at home; + 12,7% good experiences with distance learning

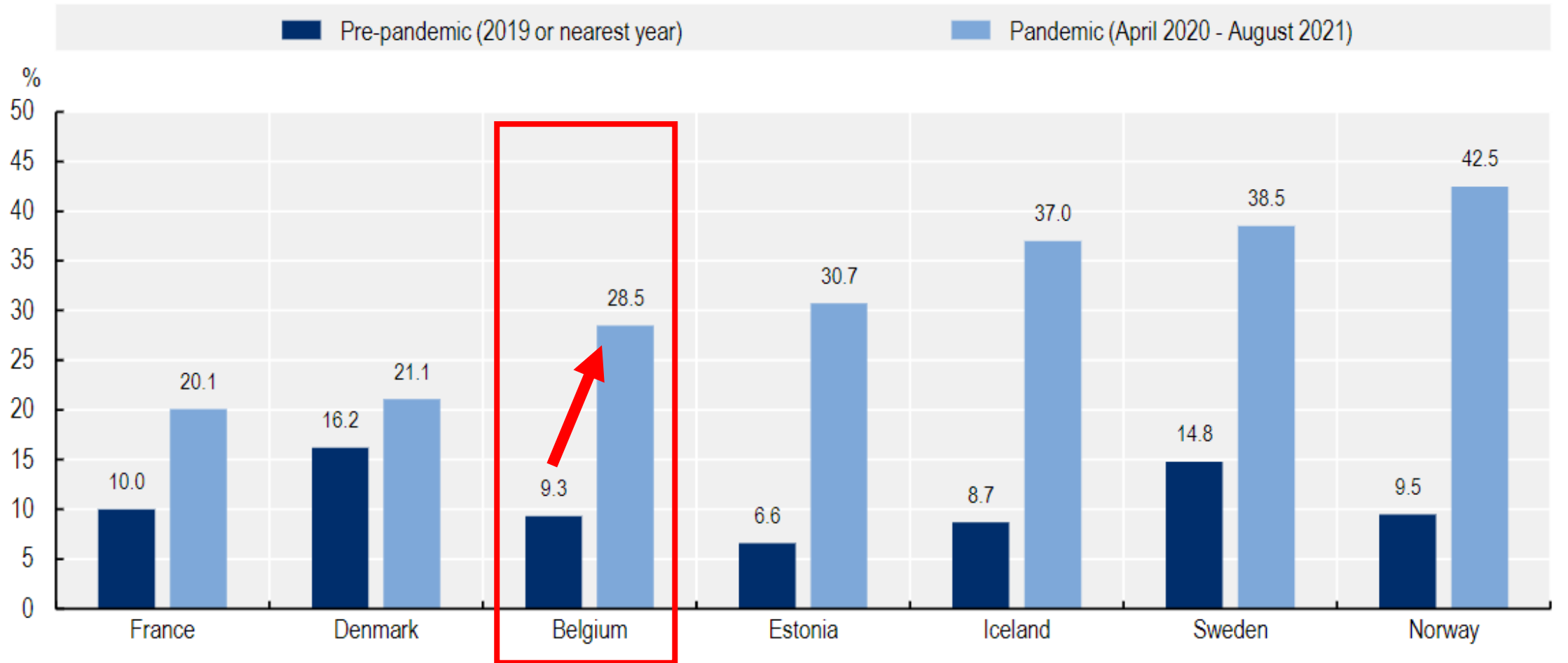
- 8,2% stress due to school closures
Expect an increase in school results

Neurotic (Anxiety, uneasiness, and feelings of vulnerability)

- 6,3% experience with distance learning
+ 15,5% stress due to school closures

Impact on mental health

Share of young people with symptoms of depression



Source: OECD/European Commission (2022). Health at a glance: Europe 2022. State of health in the EU cycle. OECD Publishing, Paris.

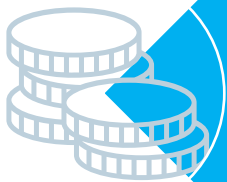
Impact on mental health



Increasing loneliness feelings, anxiety, depression, and suicidal behavior → influencing learning outcomes



BUT resiliency factors depending on personality traits:
School closures are experienced in a more positive way for
“conscientious” and “open” individuals



More negative impact on pupils reported from low-SES
parents than high-SES ones

Recommendations

Short run

1. Compensatory policies

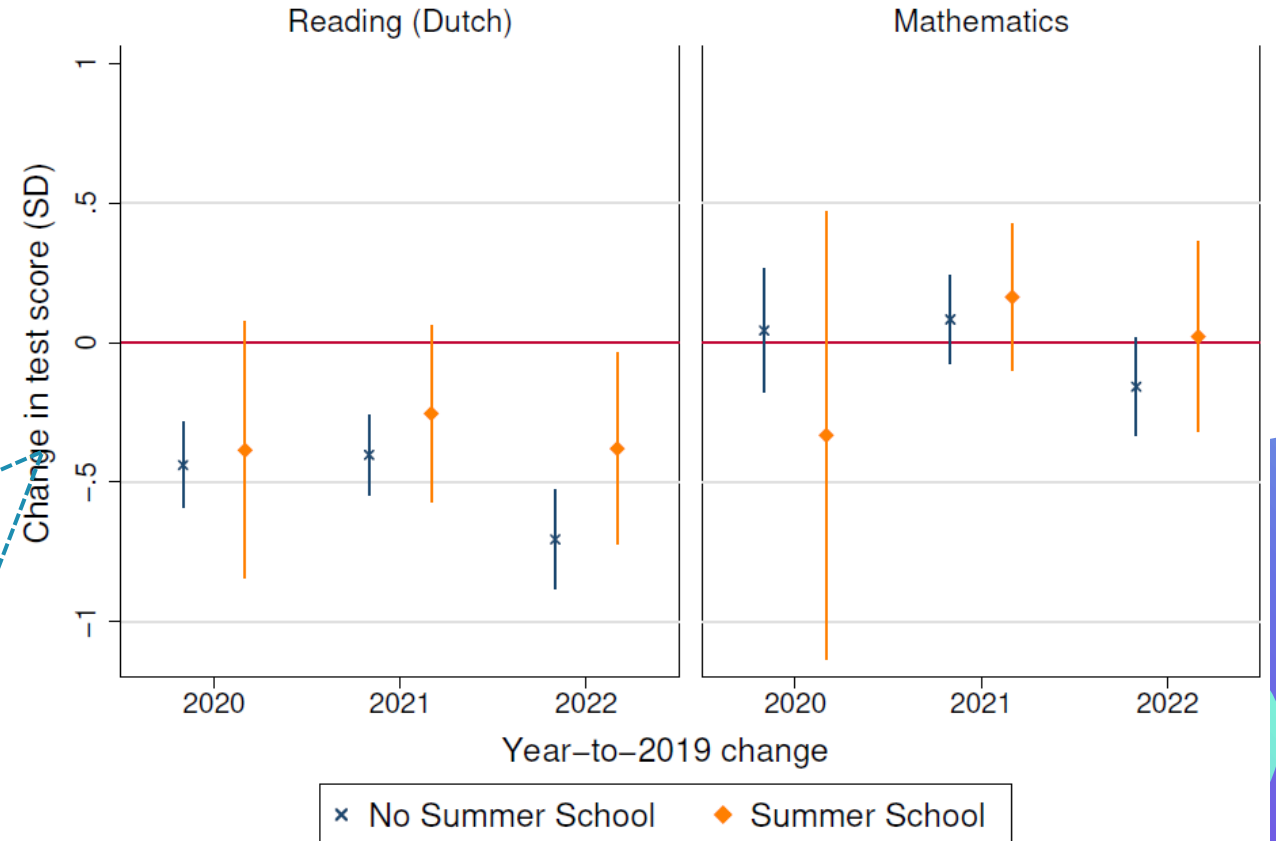
Cost-effectiveness of summer school programs, tutoring and additional tutoring to stop the learning deficits

Summer schools

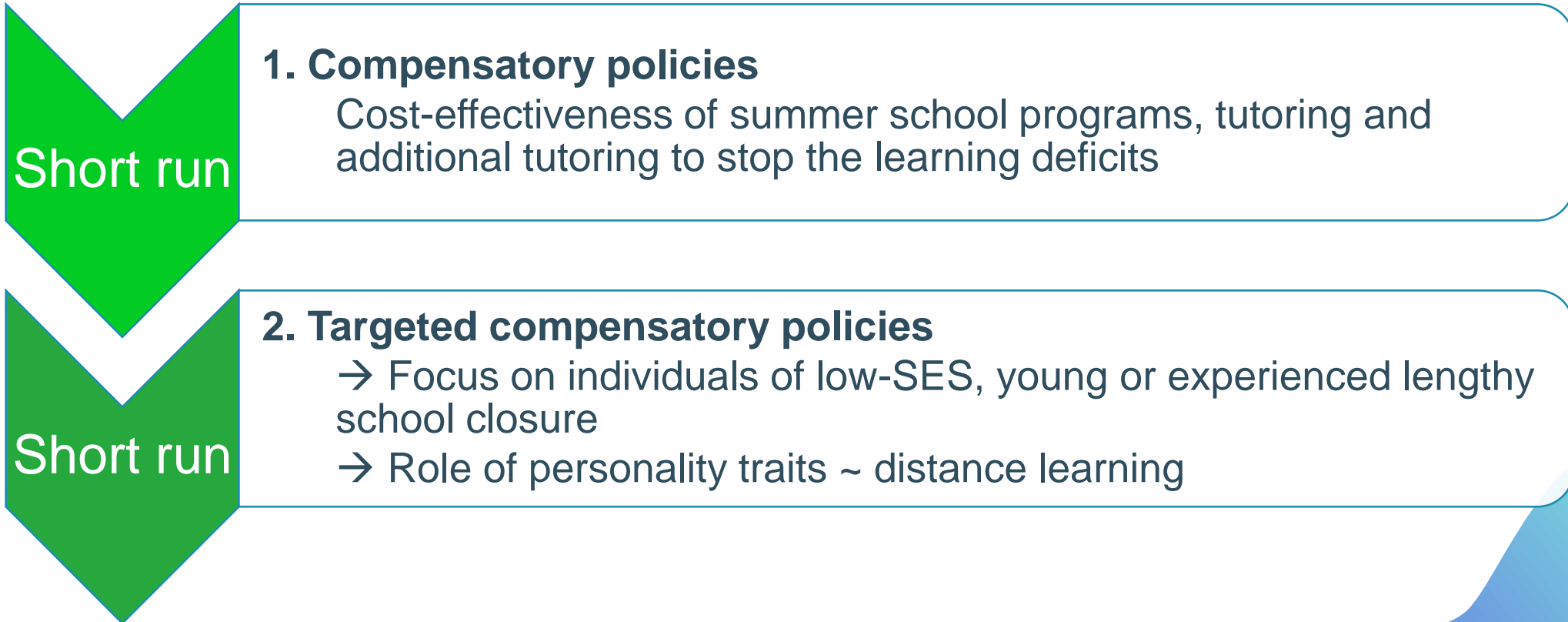
In schools / postcode areas with and without summer schools:

Positive influence of summer schools:

- Math: 2022 not longer lower than 2019
- Dutch: less pronounced decline in 2022.



Recommendations



Conclusion and recommendations

Short and long run

3. Evidence-based education

- Standardized tests to detect the needs
- Monitor the resiliency
- Evaluate cost-effectiveness of interventions

Long run

4. Adapt the curriculum

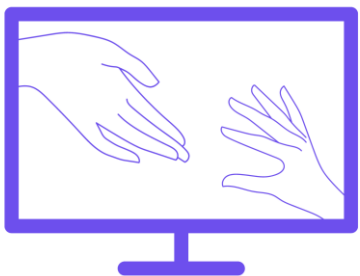
- Focusing on crucial skills
- Contrast with previous tendency of broadening the curriculum

Long run

5. Investment ~ EU 'Recovery and Resilience Facility'

- Better integrate ICT (hardware and software) in education
- Update school infrastructure
- Teachers and teacher professional development

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KEEP & GATE projects – 25/02/2023

JOINME2 CONFERENCE REGISTRATION IS OPEN!
[CLICK NOW TO REGISTER](#)

ABOUT JOINME2

About

The EU and its member states promote inclusion and participation, non-discrimination, equality and equity, transparency and accountability in education ensuring that no-one is left behind, wherever people live and regardless of ethnicity, **gender**, age, disability, religion or beliefs, sexual orientation and **gender identity**. When compared to the last 50 years, it is possible to see the change from monocultural to multicultural educational environments, which leads to some barriers both for instructors, students and institutions in terms of organizational and curricular issues. Classrooms of higher education are now filled with students, with different identities, which force the teachers to be more tolerant to new perspectives.

JoinMe2 Project aims at equipping Higher Education (HE) instructors with the necessary competence in equality and diversity so that they promote a learning environment that is conducive to learning. If a student feels uncomfortable, unsafe, or not respected, then their chances of success dramatically decrease. As a result, this situation hinders students' ability to fully participate in society as independent and responsible citizens.

JOINME2 CONFERENCE REGISTRATION IS OPEN!
CLICK NOW TO REGISTER

TRAINING

1 Onboarding



2 Disability



3 Sexual Orientation



4 Sex, Gender, Identity



5 Race Ethnicity and Culture



6 Offboarding





SEXUAL ORIENTATION VS. GENDER IDENTITY

IS THERE A DIFFERENCE?



Gender identity is “one's innermost concept of self as male, female, a blend of both or neither – how individuals perceive themselves and what they call themselves. One's gender identity can be the same or different from their sex assigned at birth”

Learning

Resources

Blog

Conference

HOMO'POLY

UNDERSTANDING AND ACCEPTANCE
OF DIVERSITY, ESPECIALLY HOMOSEXUALITY

Homo'poly seeks to promote understanding and
acceptance of diversity, especially homosexuality.



Didactical materials

Twelve didactical materials, designed to help teachers and their students explore LGBT. Click to find out more and access the lesson plans and teaching aids.



Homo''poly game

Are you ready to spin the wheel and work with your classmates to complete all 8 steps?



Opening the door

Students will watch videos of people talking about coming out and listen to their stories to help them understand. Q&A will be guided by the teacher to help students understand how and why some people might react differently.



Colourful families

Resource cards and a matching definition sheet. The resource cards are used twice to show more openness around different relationships. The matching resource is there as an aid to help students understanding of appropriate terminology.



Classroom debate

Reflect and learn about homosexuality through a proper classroom debate. Develop communication skills, analytical thinking and respect as you explore questions around LGBT.



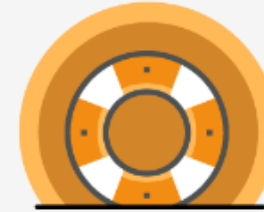
Game of life

Pupils think through specific situations and/or problems in the life of an LGBT person. What might be harder



Memory game

This good old memory game helps pupils explore LGBT and gender.



Lifeboat challenge

If you're looking for a challenge, this is for you. Pupils are asked to reflect on their own thoughts



Kitchen table diaries

How do the families of your pupils think about LGBT? What values do they pass on? Kitchen table diaries are kept at the kitchen table.



Spitchicken comic

One for the creatives! Words are not always enough. And pictures really can say more than words.



Who am I

The guessing game, revisited. Do you know who they are? Do you know about them?



Crossing bridges

Tug of war, in action. Pupils work together to make word clouds to visualise how they

Modules



Module 1: Gender & Homosexuality

This module introduces students to key concepts and issues relating to homosexuality. It covers some theoretical perspectives (on biology, sexual health, gender and sexual orientation) illustrated with relevant case studies and activities.

A summary of this module is available in all of the Homo'poly languages: [English](#), [Dutch](#), [German](#), [Hungarian](#), [Spanish](#), [Polish](#) and [Turkish](#).



Module 2: Homosexuality & Migration

This module explores how migration is affecting the experiences of LGB pupils, including – but not only - those from immigration groups. It considers what challenges increasingly diverse classrooms present to teachers and pupils, and how those challenges might be addressed to create safe spaces for all LGB pupils from all backgrounds. Lastly, the module points towards focal points and agencies that may prove useful for LGB immigrants or refugees in need of practical, psychological or legal advice.

A summary of this module is available in all of the Homo'poly languages: [English](#), [Dutch](#), [German](#), [Hungarian](#), [Spanish](#), [Polish](#) and [Turkish](#).



A

Development and identification of sexual identities

B

Self-perception and external perception

C


Sexual orientation and diversity in upbringing and supervising



INTRODUCTION

What are we talking about?

This section will look at sexual identity and sexual orientation. What do these terms mean, and how do we understand them today?



Building LGBT+ friendly schools across Europe

Project Summary

English	<p>All Inc! promotes inclusive education by bringing together pupils, (trainee) teachers and the wider school community to build LGBT+ friendly schools. All Inc! is active in Belgium, Germany, Greece, Hungary, Poland, the Netherlands, Spain and the United Kingdom.</p> <p>In each country, a university and secondary school will partner with pupils to co-create visions for LGBT+ friendly schools and supporting 'tools for schools'. A virtual 'human library' will be built to share LGBT+ stories with the wider school community, and with young people across Europe.</p>
Deutsch	
Castellano	
Ελληνικά	
Magyar	

Kristof De Witte, Oliver Holz,
Lotte Geunis (Eds.)

A Little Respect?

LGBT+ Perspectives on Education
From Across Europe

WAXMANN

Country specific study texts

Student questionnaire

Teacher questionnaire



Ages: 12+

Checklist

It provides an overview of things to think about if one wants to become an LGBT+ friendly school. It serves as an outline and provides the possibility of self-evaluation.



[More information](#)



Alter: 12+

Checkliste

Die Checkliste gibt einen Überblick über mögliche Schritte und Methoden, die man bedenken sollte, wenn man eine LGBT+ freundliche Schule werden will bzw. sein will. Es dient als Wegweiser und unterstützt die Möglichkeit der Selbstevaluation einer Schule.



[Weitere Informationen](#)



Ages: All

Just Be You

Introductory lesson to LGBTQI+ Inclusivity and Gender Identity.



[More information](#)



Ages: 11-16

Understanding people

A lesson on gender and how we can empathise with people.



[More information](#)

Testing, validation and evaluation of pedagogical materials

We test and validate the developed materials (“Tools for Schools”).



- Findings will allow All Inc! to adapt as needed, and the consortium will disseminate the final set of evidence-based ‘tools for schools’ in a later phase.

Conclusion

Course materials were well received by the students and teachers!

The course materials stimulated the kitchen table discussions with parents.

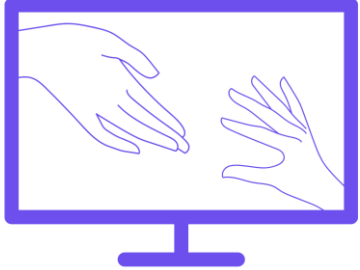
Differences between countries, but overall students realize that coming out is complex.

The course also made students realize how little they know about the topic LGBT+; but it increased their knowledge about sexual diversity.

KEEP up the good work!



KEEP



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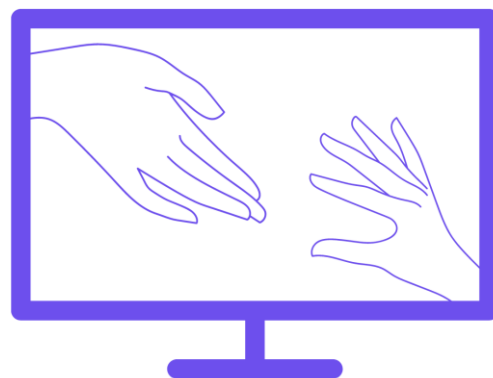
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