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Educational Research
and Educational Information

PISA 2009 in Germany

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Structure

1. Educational structure and assessments in Germany
2. PISA results since 2000
3. Summing up after a decade
 - Context factors of education
 - Educational policy and change
 - Perspectives

Basic structure of the German educational system

- Federal educational systems (16 federal states)
- Four to six years of comprehensive primary school
- Tracked system from grade 5 (or 7)
- 15year olds mostly in grades 9 and 10 (PISA sample)





Basic structure of the German educational system

	Tertiary Education					
13					19	Secondary level II
12	Dual System of vocational education	Full-time vocational schools	Berufs-oberschule	Gymnasiale Oberstufe	18	
11					17	
10					16	
<p>Realschule leaving certificate after 10 years First general education qualification (Hauptschule leaving certificate) after 9 years</p>						
10	10th grade	Realschule	Gesamtschule	Gymnasium	16	Secondary level I
9	Hauptschule				15	
8					14	
7		13				
6	Orientation phase				11	
5					10	
4	Elementary school				9	Primary education
3					8	
2					7	
1					6	
grade	Kindergarten /preschool				age	

For more information: www.kmk.org

Assessments in Germany

International assessments

- Since 1995 *Trends in International Mathematics and Science Study (TIMSS)*,
- Since 2000 *Programme for International Student Assessment (PISA)*
- In 2001 and 2006 *Progress in International Reading Literacy Study (PIRLS)*

National assessments

- Since 2003 National educational standards assessed every three years in different domains.
 - National tests in grade 3 (primary school, tests in mathematics and German) and grade 8 (secondary I, tests in mathematics, German and first foreign language) focusing on educational standards, including feedback for teachers
- Important components of national system monitoring in Germany.



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2. PISA results in Germany since 2000

PISA results since 2000

PISA 2000

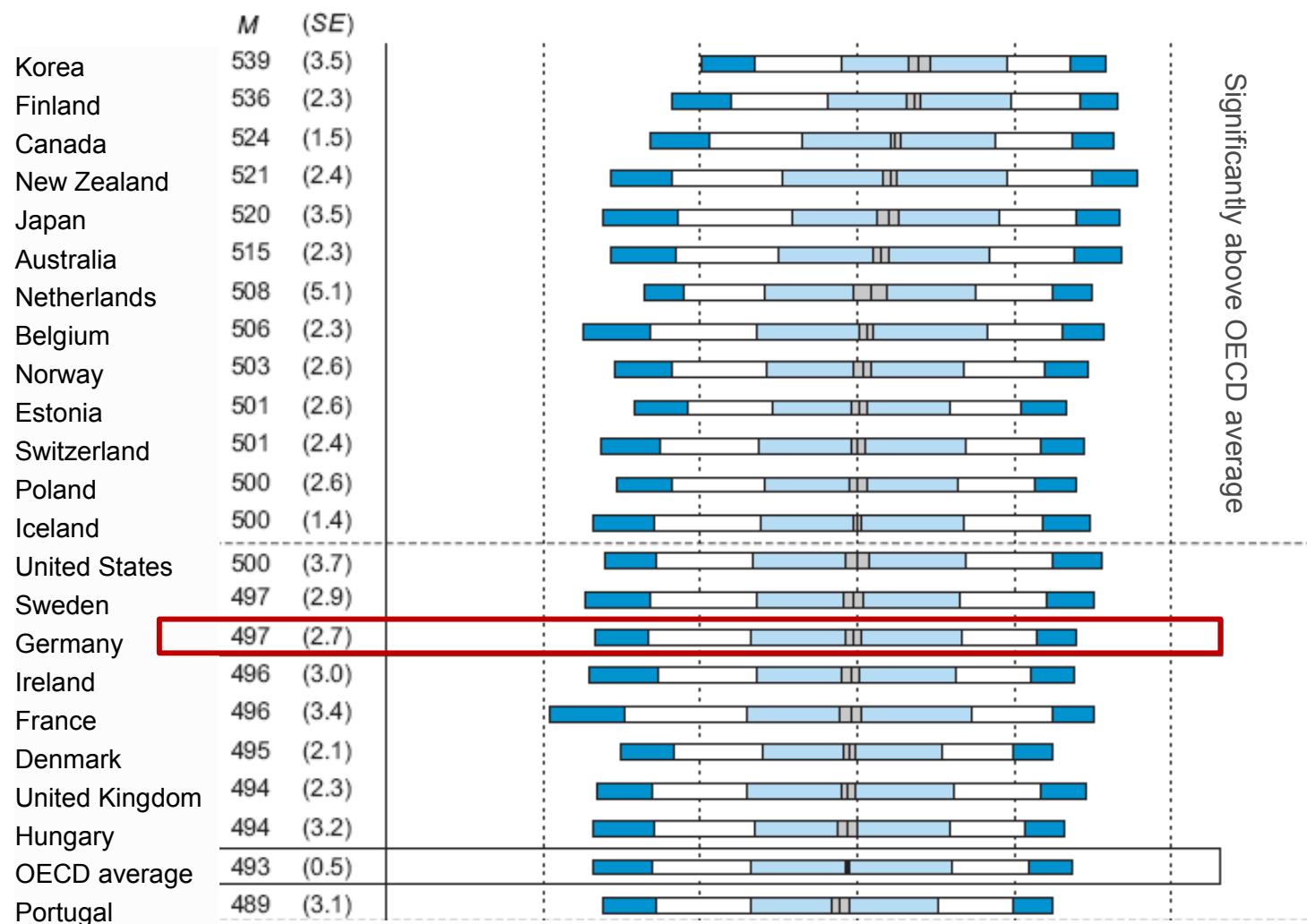
- „Shocking“ results:
 - Performance in reading, math and science below the OECD average.
 - Large group of low performers.
 - Strong impact of socioeconomic and immigration background.

PISA 2003 and 2006

- Positive development:
 - Improvement in mathematics and science (now at/ above OECD average).
 - Declining impact of students socioeconomic background.

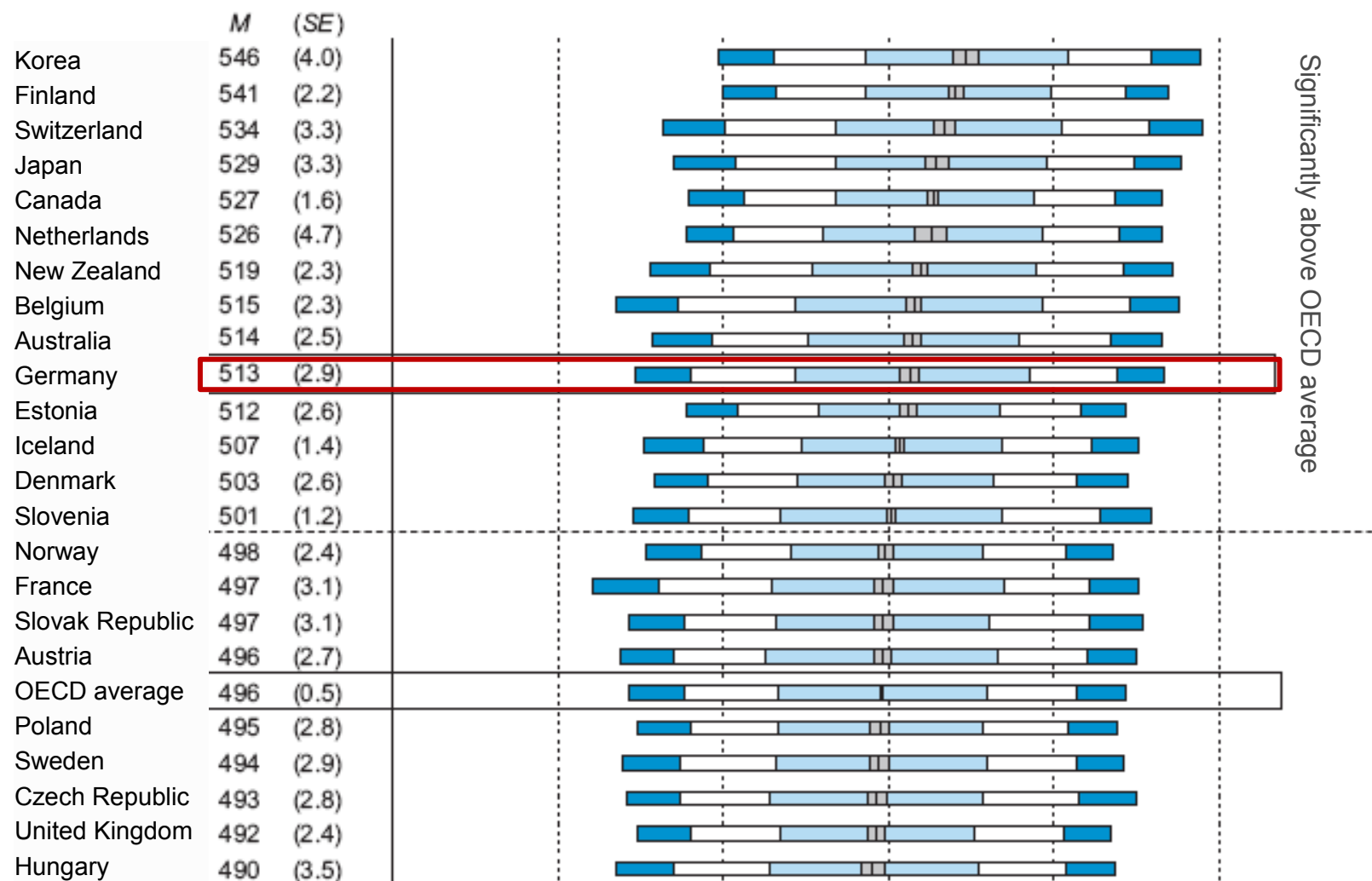


Reading 2009



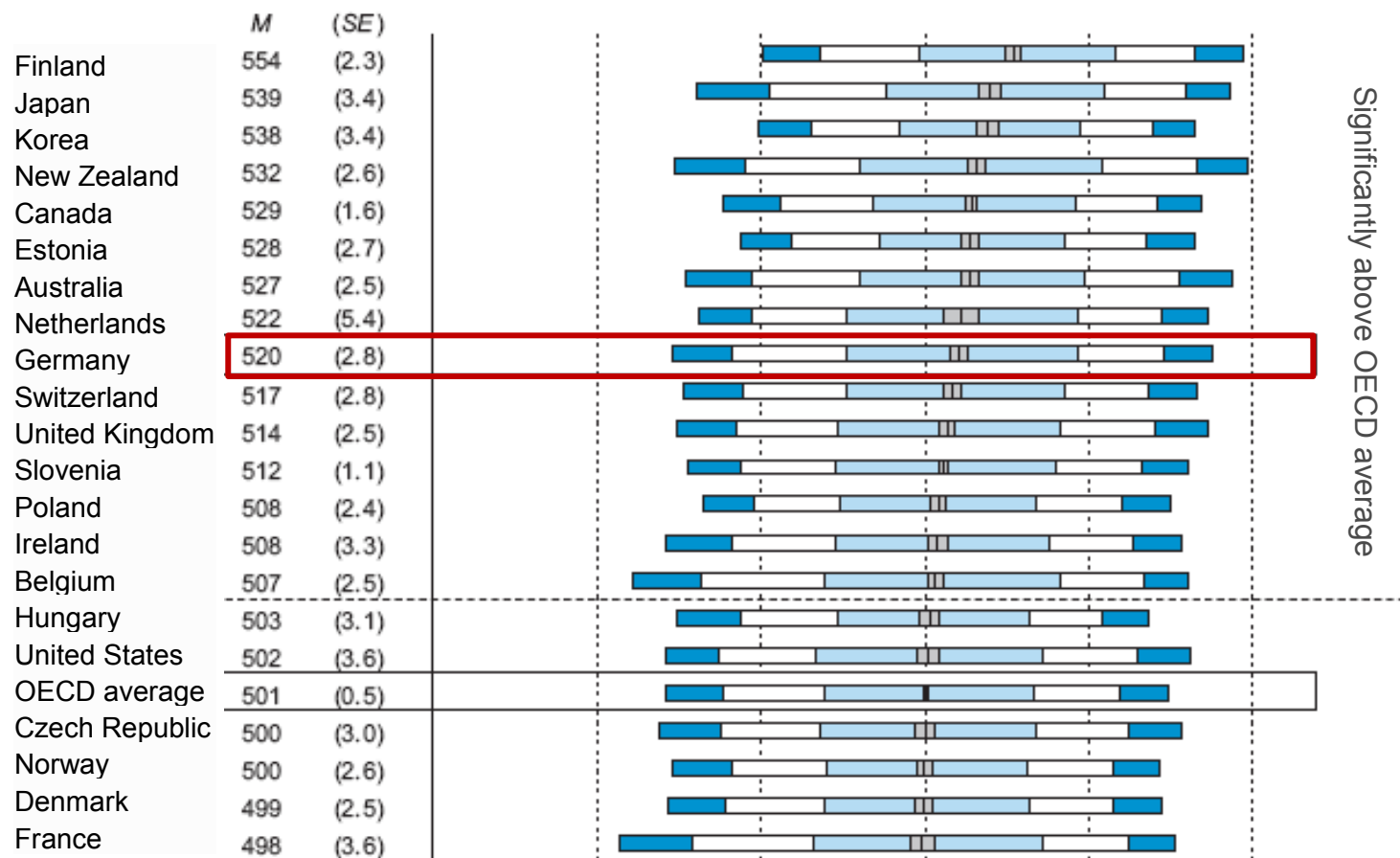


Mathematics 2009



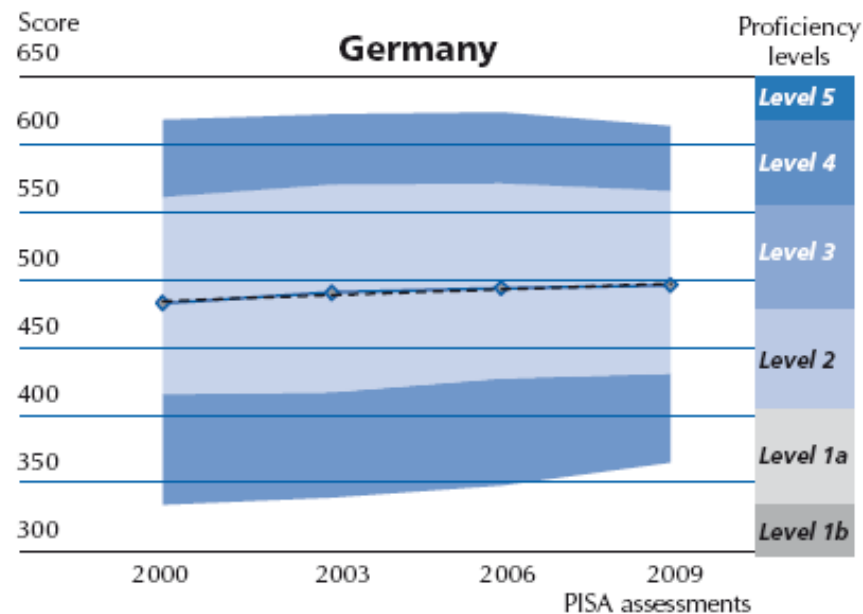


Science 2009



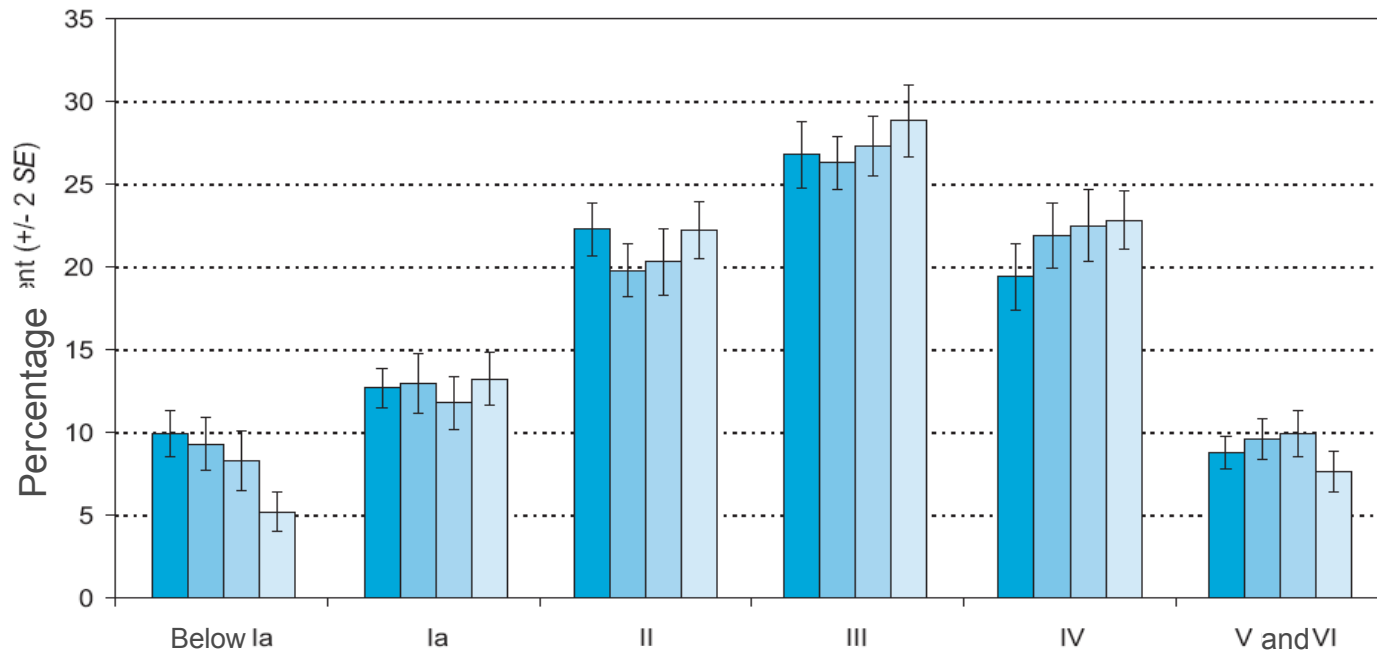
Results in PISA 2009

- Positive development in all three domains:
 - Mathematics and science above OECD average
 - Reading within OECD average
- Especially for reading, this trend is continuously positive.



Source: OECD PISA 2009

Group of low performers is getting smaller

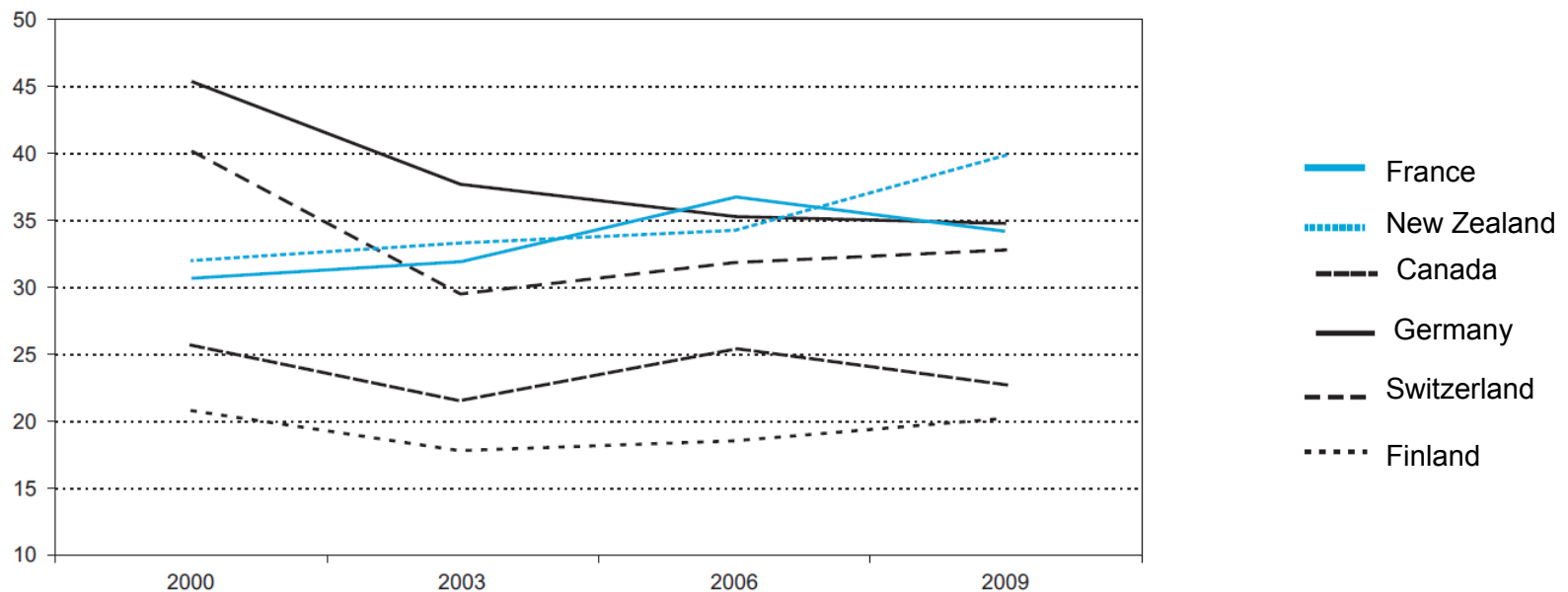


	Levels of competence											
	Below Ia	(SE)	Ia	(SE)	II	(SE)	III	(SE)	IV	(SE)	V and VI	(SE)
2000	9.9	(0.7)	12.7	(0.6)	22.3	(0.8)	26.8	(1.0)	19.4	(1.0)	8.8	(0.5)
2003	9.3	(0.8)	13.0	(0.9)	19.8	(0.8)	26.3	(0.8)	21.9	(1.0)	9.6	(0.6)
2006	8.3	(0.9)	11.8	(0.8)	20.3	(1.0)	27.3	(0.9)	22.5	(1.1)	9.9	(0.7)
2009	5.2	(0.6)	13.3	(0.8)	22.2	(0.9)	28.8	(1.1)	22.8	(0.9)	7.6	(0.6)

Change in competence levels for reading competence 2000 – 2009

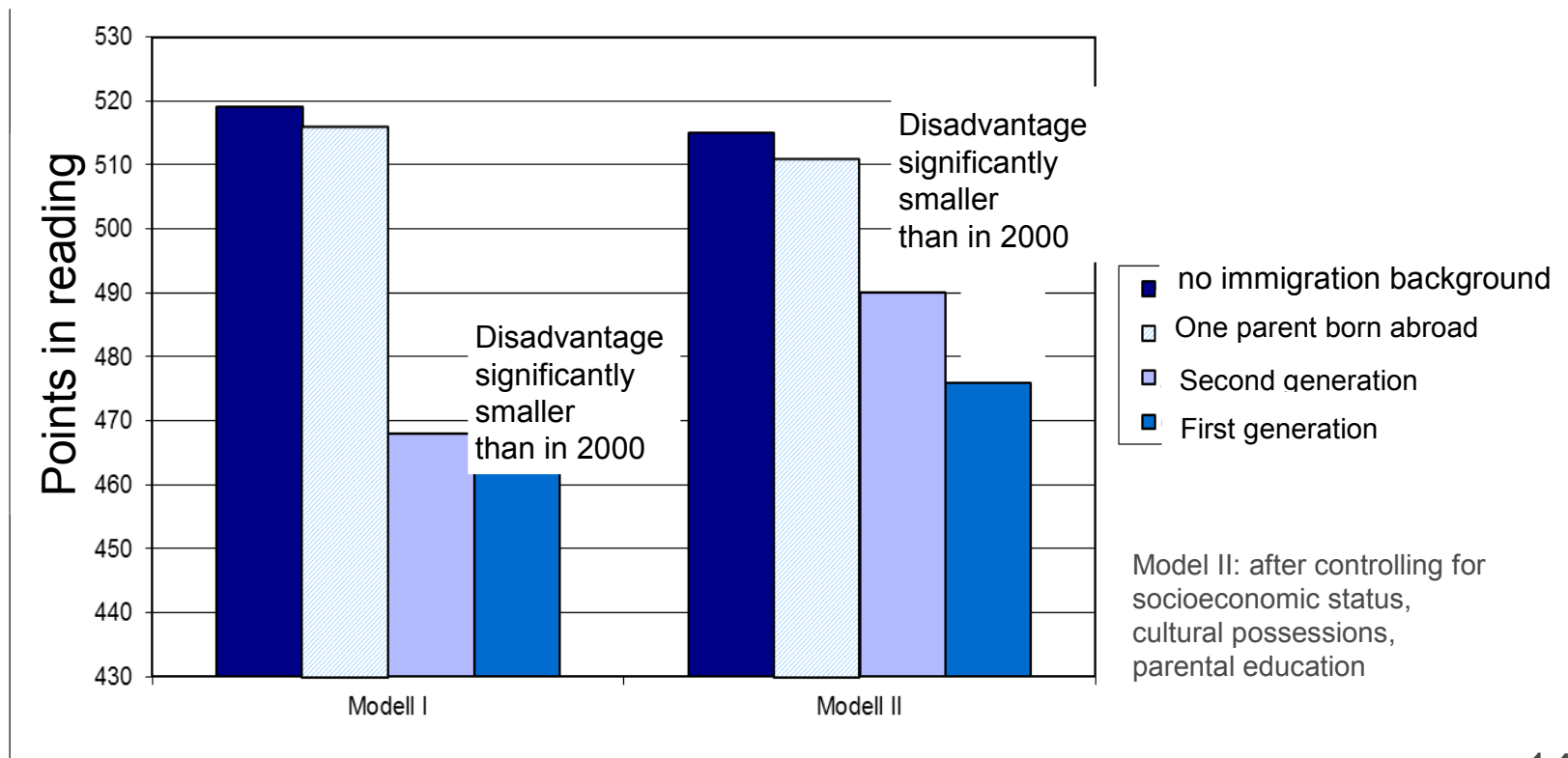
Socioeconomic background

- The interrelation between reading competence and socioeconomic background is declining since 2000.
- From strongest association of all OECD countries in 2000 to average in 2009.



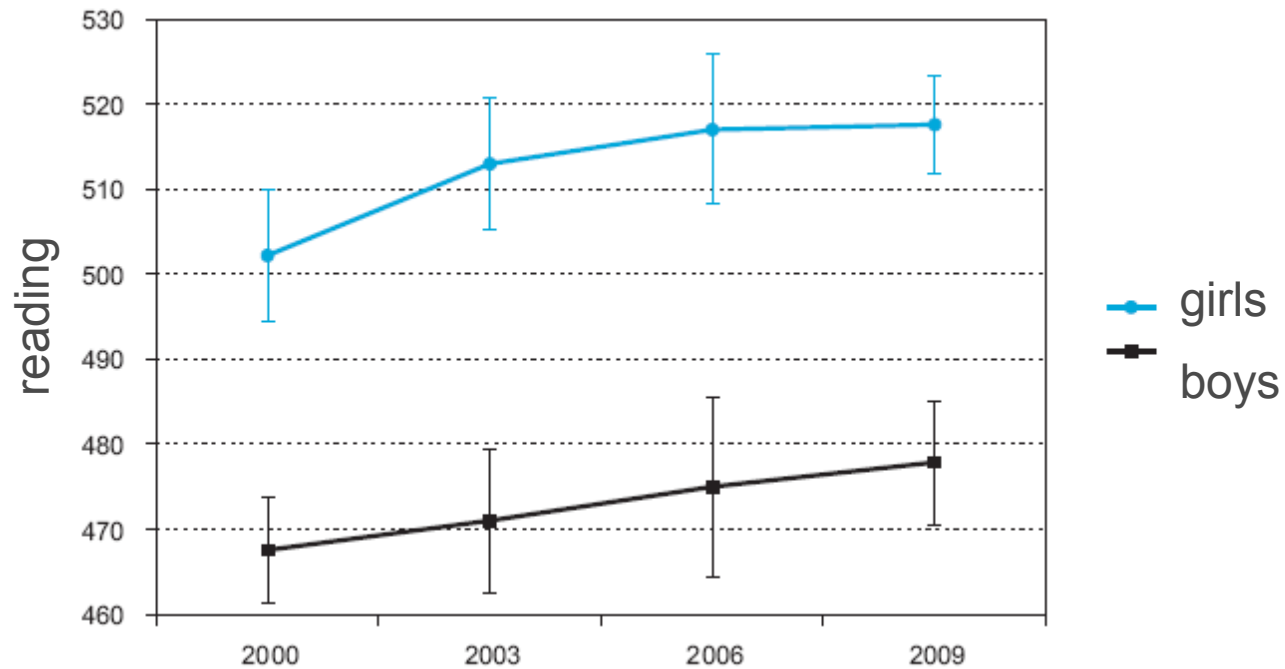
Immigration background

- Students with immigration background improved 26 points on the reading scale since PISA 2000.



Gender gap

- Girls outperform boys in reading





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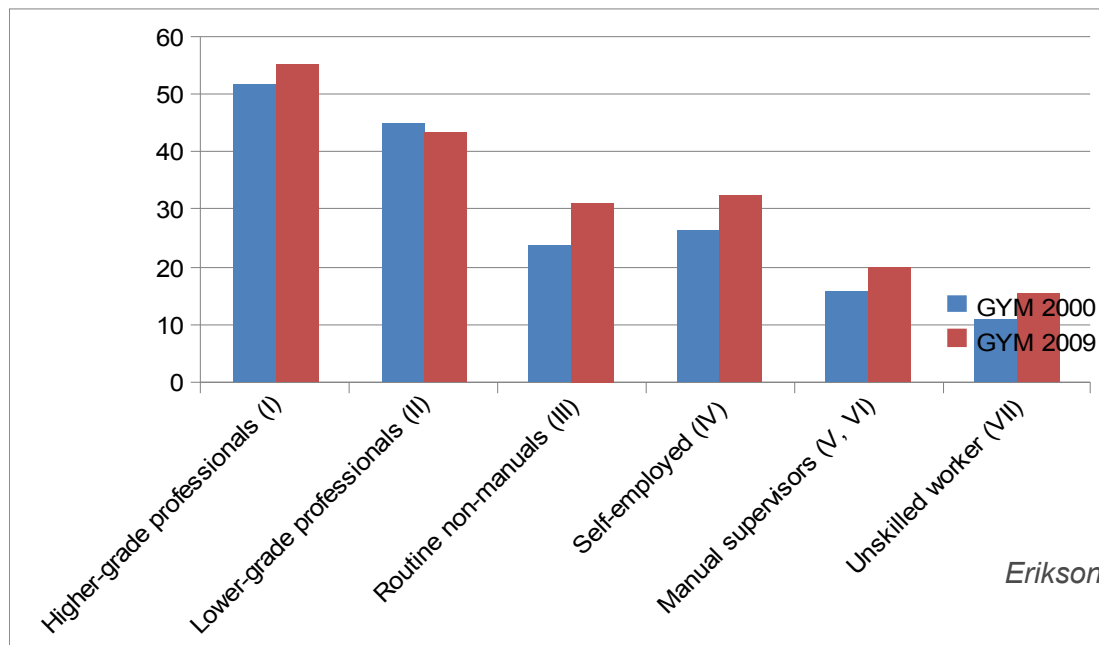
3. Summing up after a decade

- Context factors of education
- Educational policy and change
- Perspectives

Context factors of education

- **Equity**

- Higher competencies of students with immigration background
- Smaller social gradient
- Access to higher educational tracks



Context factors of education

- Conditions of education
 - Student population decreased by 10% since 2000 (census)*
 - Students with immigrant background increased from 22% to 26%, mostly second generation (born in Germany)
 - No changes in
 - Language spoken at home
 - Overall socioeconomic conditions (PISA + census)*

**national census data*

Context factors of education

- Students attitudes
 - Higher reading enjoyment than in PISA 2000
 - Contentment with school and job situation rising (Shell Youth Survey)*
 - Commitment to performance (Shell Youth Survey) *
 - Usage of remedial lessons increasing
 - More usage of computers and internet

**Shell Youth Survey data*

Context factors of education

- Educational pathways
 - More time spend in kindergarten (National educational report*)
 - Twice as much students starting school before they turn 6 years old
 - Fewer students start late with school
 - Fewer grade repetitions
 - Fewer students in lower educational tracks

**National educational report*

Context factors of education

- **System level changes** (school statistics):
 - More than twice as much schools now offering all-day schooling
 - Graduation after grade 12 (not 13) in many federal states
- **Ressources:**
 - More time for language lessons
 - Usage of standard-based assessments and tests increased
 - Better school climate and more discipline in the classrooms

Quality of learning environment

- Governance can only be effective through actions in schools
- Principals and teacher have to implement changes in schools and classrooms, professional development of teachers is needed
- Relevant factors:
 - Disciplinary climate
 - Teacher-student relations
 - Challenge/cognitive activation

Fend, H. (2006). *Neue Theorie der Schule*. Wiesbaden: VS Verlag für Sozialwissenschaften.

Meyer, H. (2004). *Was ist guter Unterricht?* Berlin: Cornelsen.

Quality of learning environment

- In PISA 2009, quality of learning environment was assessed in the student questionnaire
- Teacher-student relations can be compared between 2000 and 2009

	Germany 2000	Germany 2009	Germany difference 2000-2009	OECD difference 2000-2009
Most of my teachers really listen to what I have to say	50,9 %	68,8 %	17,9 %	2,9 %
If I need extra help, I will receive it from my teachers	58,6 %	70,5 %	11,9 %	4,6 %

Educational policy and change

- PISA is neither a longitudinal assessment, nor an interventional study
 - Little is known about how educational systems change or develop over time
 - Context factors in schools and society are manifold
 - Some of them can be influenced by policy, like starting age for schooling or grade repetition, others cannot.
- Therefore, PISA trends in Germany cannot easily be explained
- Many interacting factors have to be taken into account

Educational policy and change

Educational policy reacted to TIMSS 1995 (published 1997) by establishing a system for educational monitoring, including

- Implementation and evaluation of educational standards
- Standard-based testing
- School evaluation
- National reporting
- Strengthening responsibility of schools

Educational policy and change

In 2001, the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany issued recommendations for seven areas:

1. Improvement of language competence
2. Promoting disadvantaged students
3. Professional teaching
4. Quality assurance and evaluation
5. Extension of all-day schooling
6. Improvement of primary school education
7. Linkage between preschool and primary education

Educational policy and change

Following these recommendations, many projects have been implemented:

- Most of them focusing on educational and pedagogical settings
- on individual support and promoting in the area of language competence
- on disadvantaged students,
- as well as teacher training and instructional settings for math and science.
- Embedded in complex programs on federal, regional or local levels.

Educational policy and change

However, there is no empirical proof that any of these programs caused an increase in student achievement, because

- large scale assessments do not allow for causal inference
 - program evaluations were usually limited to aspects of implementation, process quality, and stakeholder perspectives, rather than student outcomes.
 - Exception: high quality all-day-education has a small, but significant positive effect on student grades, motivation and well-being
- Therefore, we do not yet know which programs did have an influence and how.

Educational policy and change

Most probably, the change in student outcomes has been triggered by a mix of broad factors, including

- a growing awareness of educational needs and issues among all stakeholders (policy makers, professionals, researchers, parents, general public)
- the implementation of evaluation and accountability instruments, including student assessments on a regular basis, and school inspectorates,
- an increase in achievement expectations in society and on all levels of the school system

Educational policy and change

As well as a broad set of national, regional and local initiatives, which were diverse in nature, but aligned to the core policy goals of 2001:

- focus on teaching and curriculum
- reading/language learning, math, and science as core areas
- targeting children at risk (e.,g., german language learners and low SES students)

Perspectives

What is still left to do?

- Although reading competence has increased, the proportion of students on lower competence levels is still high
- Girls outperform boys in reading, boys are doing better in mathematics
- Still, immigrant students are performing at low levels compared to non-immigrant students → Need for evidence-based pedagogical programs
- Improvement of high performers should not be neglected
- Need for high level teacher education and recruitment

Perspectives

Policy use of PISA in the future

- Description of context factors, input, processes and output of schools
- International benchmarking
- Follow trends and developments over time
- Feedback for educational policy and public
- Database for in-depth analysis (sociology, economics)

To further explain trends, we do need

- longitudinal studies on the individual and school level
- intervention studies (design experiments, quasi-experiments, randomized studies)
- Information about class context, not only school level data



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PISA 2009

Bilanz nach einem Jahrzehnt



WAXMANN

Download the national report
www.pisa2009.de