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EMPOWERING SCHOOLS

EVIDENCE - INFORMED POLICIES FOR QUALITY EDUCATION

EENEE and NESET II Conference - Brussels, 23 November 2017



Education
and Culture

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Economics of education and skills

Daniel Münich, EENEE and CERGE-EI

- **Attracting suitable people into teaching**
- **Innovative schooling for an innovative world**
- **Opportunities and limits of research**
- **Examples of research evidence**
- **Need for autonomy and activated stakeholders**

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Attracting suitable people into teaching (2016)

- **E**nter into the teaching profession
- **Q**uality of initial teacher education (ITE)
- **E**ffectiveness of continuing professional development (CPD)
- **R**etention of good teachers (career system)



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Innovative schooling for an innovative world

- **I**nnovations are the driving force behind economic growth - what about innovations in education?
- **I**mproving innovative capacity in the economy requires innovation within the educational sector
- **V**arious kinds of skills that education provides can improve the economy's innovation capacity
- **N**ew technologies and innovations in the education system are often thought of as drivers for better educational outcomes.
- **I**ndispensable role of R&D in social sciences fostering evidence-based policy making



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Example: E-learning, digital and online teaching

- **Cross-sectional correlations** (ITC use → educational outcomes)
 - Positive associations with educational outcomes like cognitive skills, school enrolment and graduation rates, but likely biases by omitting student and family background
 - e.g. Attewell and Battle, 1999; Fairlie, 2005; Schmitt and Wadsworth, 2006; Beltran et al., 2010; Fiorini, 2010
- **Different e-learning applications within-student between-subject (TIMSS)**
 - positive effects on achievement when used for *looking up ideas and information* but negative when used to *practice skills and procedures* → role of available alternatives including the effectiveness of traditional teaching methods. (Falck, Mang and Woessmann, 2014)
- **Variation induced by government programs**
 - 50k computers given to schools in Israel: No positive effects on student achievement. Possible crowding out of more effective teaching methods. Angrist and Lavy (2002).
 - Increase in ICT investments in selected British primary schools: a positive effect on student achievement for English and science, but not for mathematics. Maybe the schools that benefitted the most from the strategy change were schools that had initially been the most effective schools. Machin et al. (2007).
- **Field experiments**
 - US students provided instructional computer program for pre-algebra and algebra: positive effect on achievement tests; effects larger for students from larger classes. (Barrow et al. 2009)

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Opportunities and limits of research evidence

- **Technology is changing quickly:** outdated findings
- ITC use affects a range of other outcomes that are not measured
- Many spurious associations, identification of any causal impacts is rare
- Scope for greater utilization of proper identification methods
 - policy changes
 - quasi experiments
 - randomized (controlled) field experiments
- **More attention to be given to:** crowding out of resources and of other methods; student distraction; non-random treatments, alternatives.
- **Effects are situation specific** → generalizations could be misleading → research needed in each country.



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Need for autonomy and activating important stakeholders to foster innovative capacity of the education sector

- **Teachers:** Selection, retention and quality of ITE & CPD
- **Schools:** Incentives, accountability and skills for innovations
- **Policymakers:** Support for in-time research; understanding the potential, limits, and use of findings
- **Academic research:** Use of modern methodologies, use of credible identification strategies; competitive research
- **Parents:** when parents involved with schools, pupils developed more positive behaviour and attitudes. Test scores did not improve. Randomized experiment in 6th grades in Paris, Avvisati et al. (2014)
- **Employers:** Important feedback concerning relevance of skills learned (but short vs. long-term goals)

