

# Early Childhood Education and Care (ECEC) & The Welfare of Nations

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# Why Focus on Early Childhood?

“ If the race is already halfway run even before children begin school, then we clearly need to examine what happens in the earliest years.” (Esping-Andersen, 2005)

“ Like it or not, the most important mental and behavioural patterns, once established, are difficult to change once children enter school.” (Heckman & Wax, 2004).

The impact of social origins upon well-being is persistent.

Early experience is critical in this link.

Two arguments for investing in early childhood.

1. Moral – moral duty to optimise wellbeing where we can.
2. Economic – we all benefit in the long-term

Europe 2050: working population will decrease by 50 million while elderly grow by 50%.

Economic sustainability will require maximizing the capacity of the workforce.

Skills for good outcomes are rising & changing, and there is still great inequality of opportunity.

Both cognitive and non-cognitive skills are critical. How can these be improved?

OECD 2012: Across OECD, 20% do not achieve basic minimum skills. The problem is twice as great for disadvantaged groups.

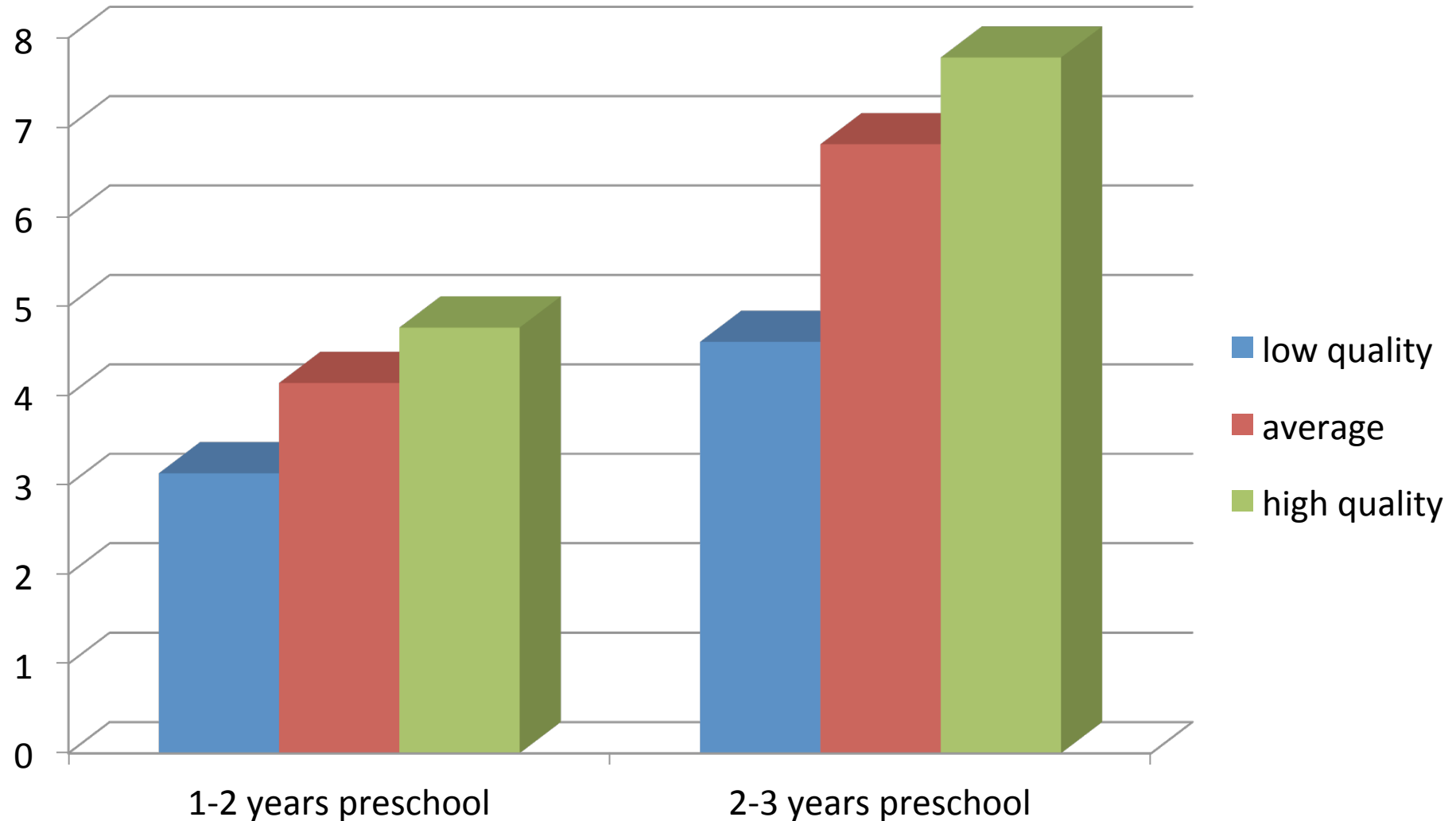
Disadvantaged groups have greater risk:

- for poor health
- Social, emotional, behavioural problems
- Attention, cognitive and language problems
- Affects educational progress, literacy, numeracy, social skills, employability, health, adjustment and criminality.

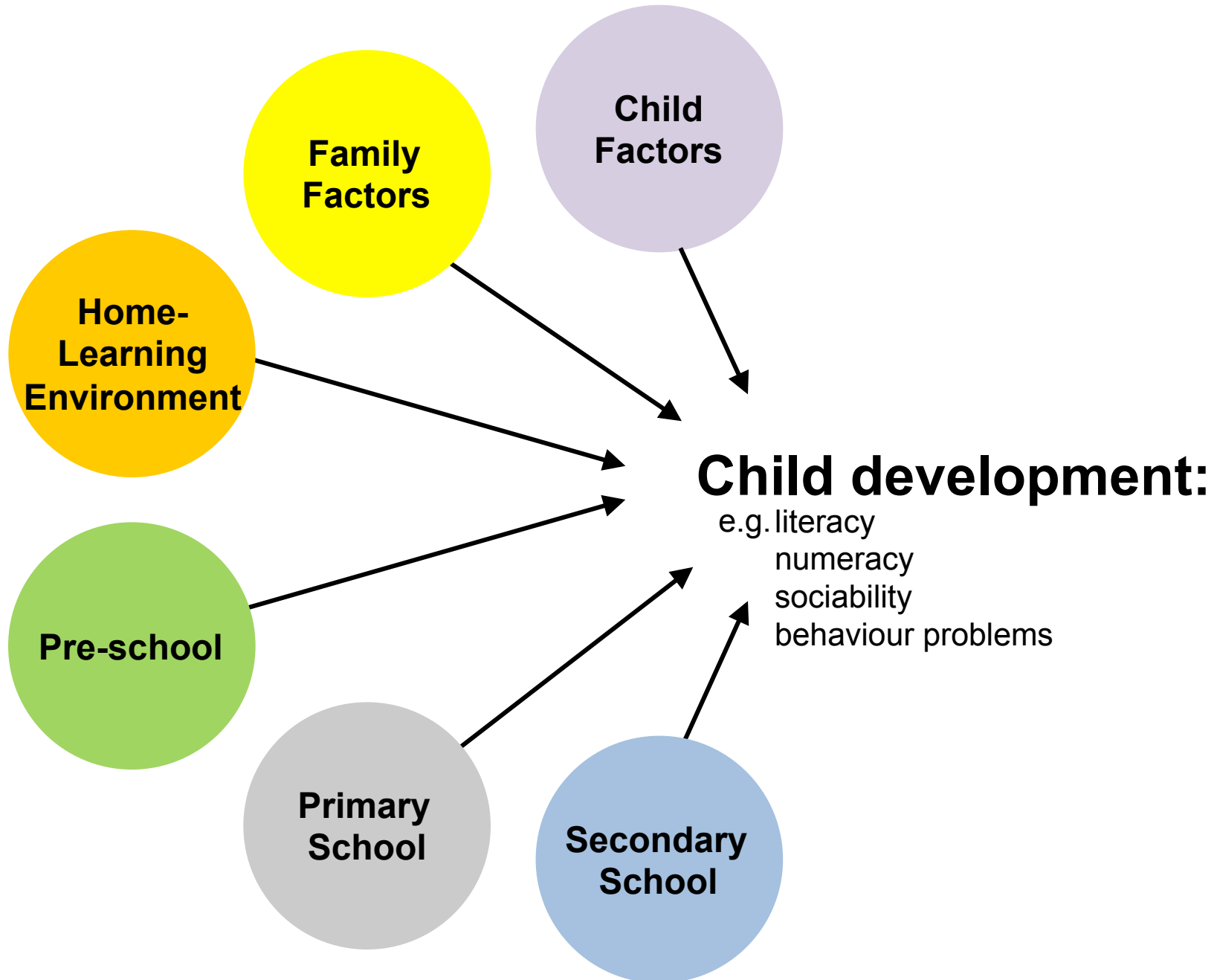
# ENGLAND - EPPSE longitudinal study - 3000+ children

## Quality and Duration matter

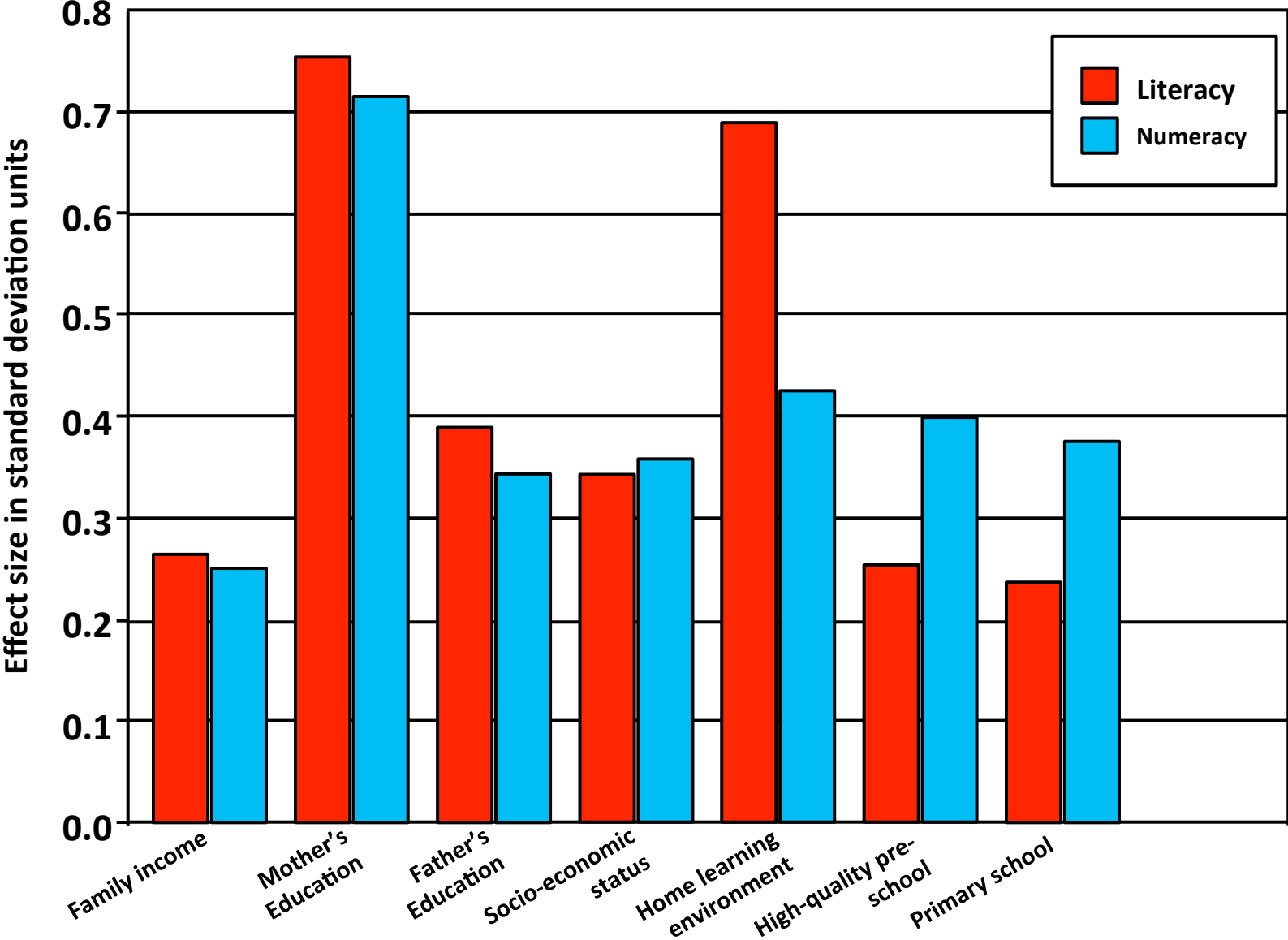
months of developmental advantage on literacy – 5 year olds



# Modelling later outcomes

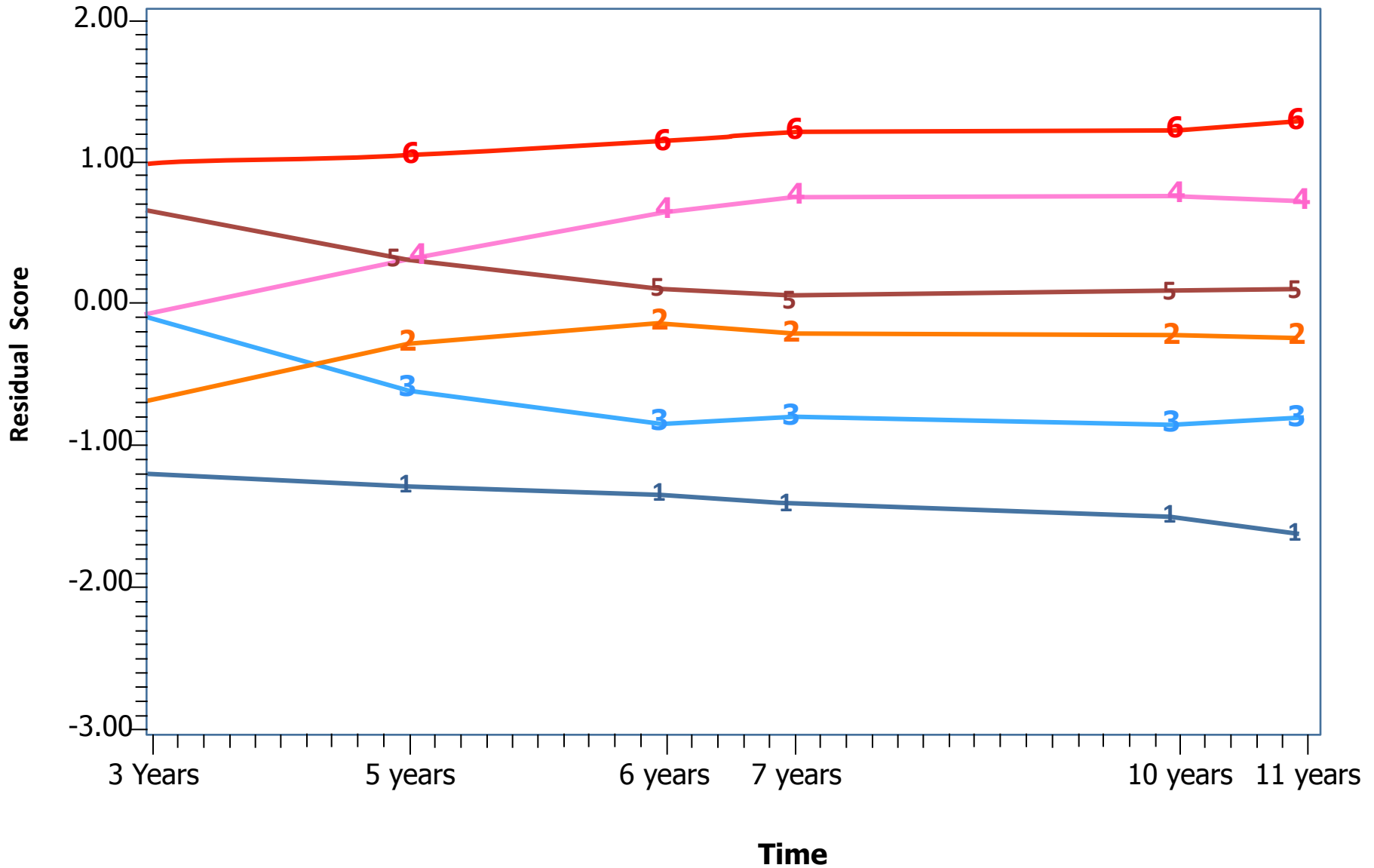


# Effects at Age 11; literacy and numeracy





# Trajectories for Numeracy



Group %

~~1~~~~1~~~~1~~ 8.2%

~~2~~~~2~~~~2~~ 19.6%

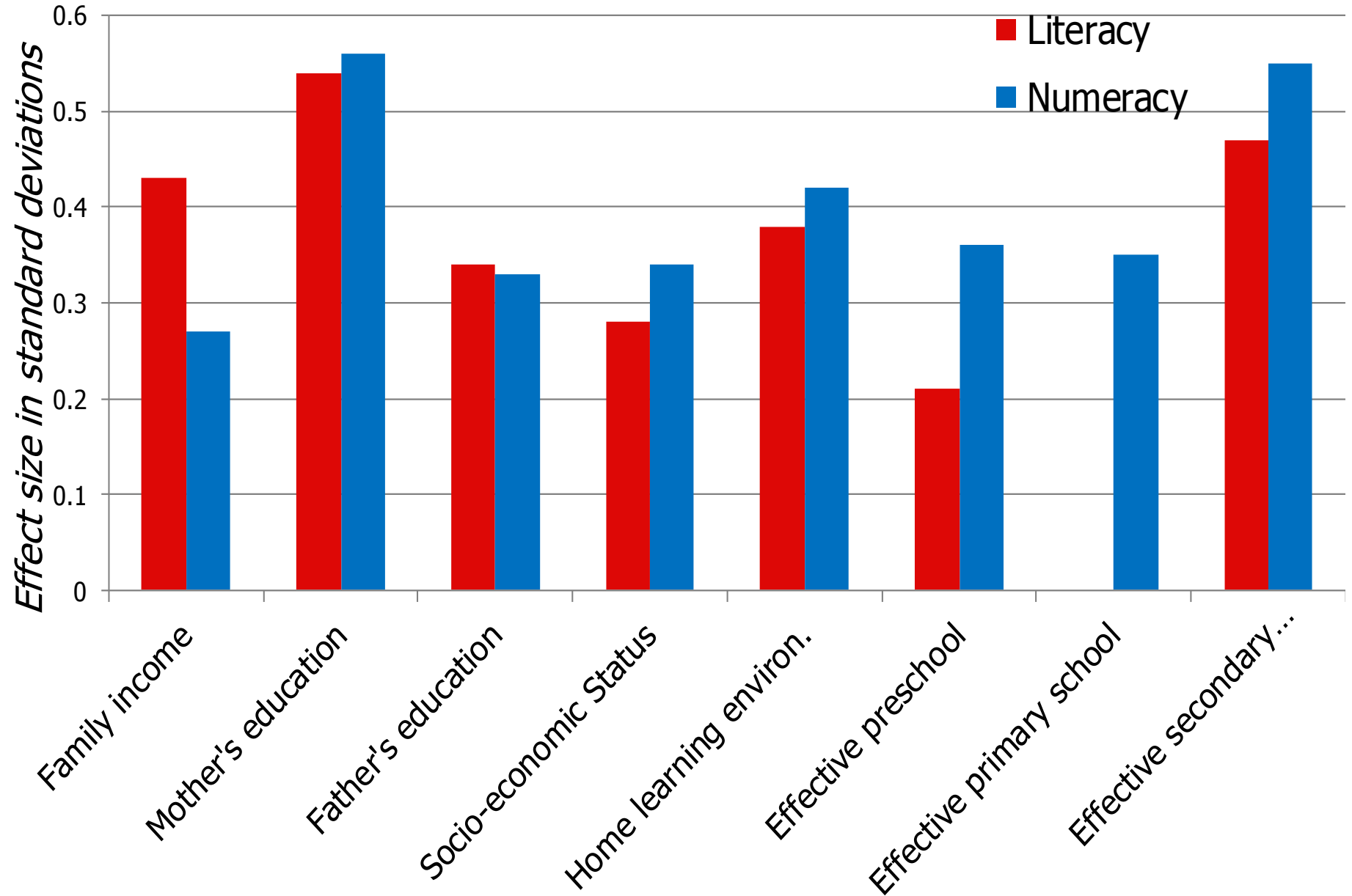
~~3~~~~3~~~~3~~ 18.8%

~~4~~~~4~~~~4~~ 17.3%

~~5~~~~5~~~~5~~ 23.2%

~~6~~~~6~~~~6~~ 12.9 %

# Effects at Age 16: Literacy and Numeracy



# Conclusions

- From age 2 all children benefit from preschool.
- The quality of preschool matters.
- Part-time has equal benefit to full-time.
- Preschool effects persist until teenage years
- High quality preschool can protect a child from effects of a low effective school.
- Primary school effects are more persistent for numeracy.
- Secondary school effects are strong

# Policy Impact in the UK

- *2004* -Free ECEC place from 3 years -15hours/week
- *2013* -Free ECEC place from 2 years -15hours/week  
(40% most deprived)
- *2017* - 15 hours/week increases to 30 hours/week
- Maternity leave increased to 1 year
- New Early Years curriculum
- New training programs for EY staff
- Acceptance that EY is part of state responsibilities

# International evidence

Evidence is consistent - ECEC is essential part of infrastructure for optimising global wellbeing.

**USA** – pre-school improves educational attainment, particularly for disadvantaged

**NORWAY, FRANCE, SWITZERLAND** – population studies  
– all preschool increased education, employment, incomes.

**DENMARK** – high quality preschool- better 16 years outcomes

**NORTHERN IRELAND** - high quality preschool increased grades in English **X 2.4** and math **X 3.4**.

# USA- Age 5 Reading by pre-school quality: 12,800 children

- Comparison with no pre-school (Magnusson et al 2003)

	<b>READING</b>				
	<b>ALL</b>	<b>Poverty</b>	<b>Low Mother Educ.</b>		
Pre-school (High Quality)	1.66**	2.23**	3.44**		
Pre-school (Low Quality)	1.34**	1.48*	1.21		

In **Norway**, free preschool available to children aged 3 years during the 1960's and 1970's – huge increase in preschool attendance.

- Analysis showed children attending preschool:
  1. had higher educational levels and
  2. better job outcomes later in life.
  3. higher income in later life

In **France**, preschool expanded in 1970's  
– huge increase in preschool attendance.

- Analysis showed preschool:
  1. leads to higher income in later life
  2. reduces socio-economic inequalities - children from less advantaged backgrounds benefit more.

**Switzerland** has also expanded preschool.

- Improved intergenerational education mobility
- especially beneficial for disadvantaged children



# Denmark

Bauchmüller, Gørtz and Rasmussen (2011)

[http://www.cser.dk/fileadmin/www.cser.dk/wp\\_008\\_rbmgaawr.pdf](http://www.cser.dk/fileadmin/www.cser.dk/wp_008_rbmgaawr.pdf)

Danish register data on whole population

5 quality indicators of preschool:

- 1) the staff-to-child ratio
- 2) the share of male staff in the preschool,
- 3) % of pedagogically trained staff
- 4) % of non-native staff,
- 5) the stability of the staff (staff turnover).

Controlling for background factors, **better preschool quality** linked to better test results in 9th grade.

**“the fact that we find long-lasting effects of pre-school even after 10 years of schooling is quite remarkable”**

# NORTHERN IRELAND

## EFFECTIVE PRE-SCHOOL PROVISION IN NORTHERN IRELAND (EPPNI)

850 children followed up to 11 years of age.

Similar results to EPPE in England.

At age 11, allowing for all background factors,

The effects of quality of pre-school persist until age 11 years

High quality pre-school – improved English and maths,

And improved progress in maths during primary school.

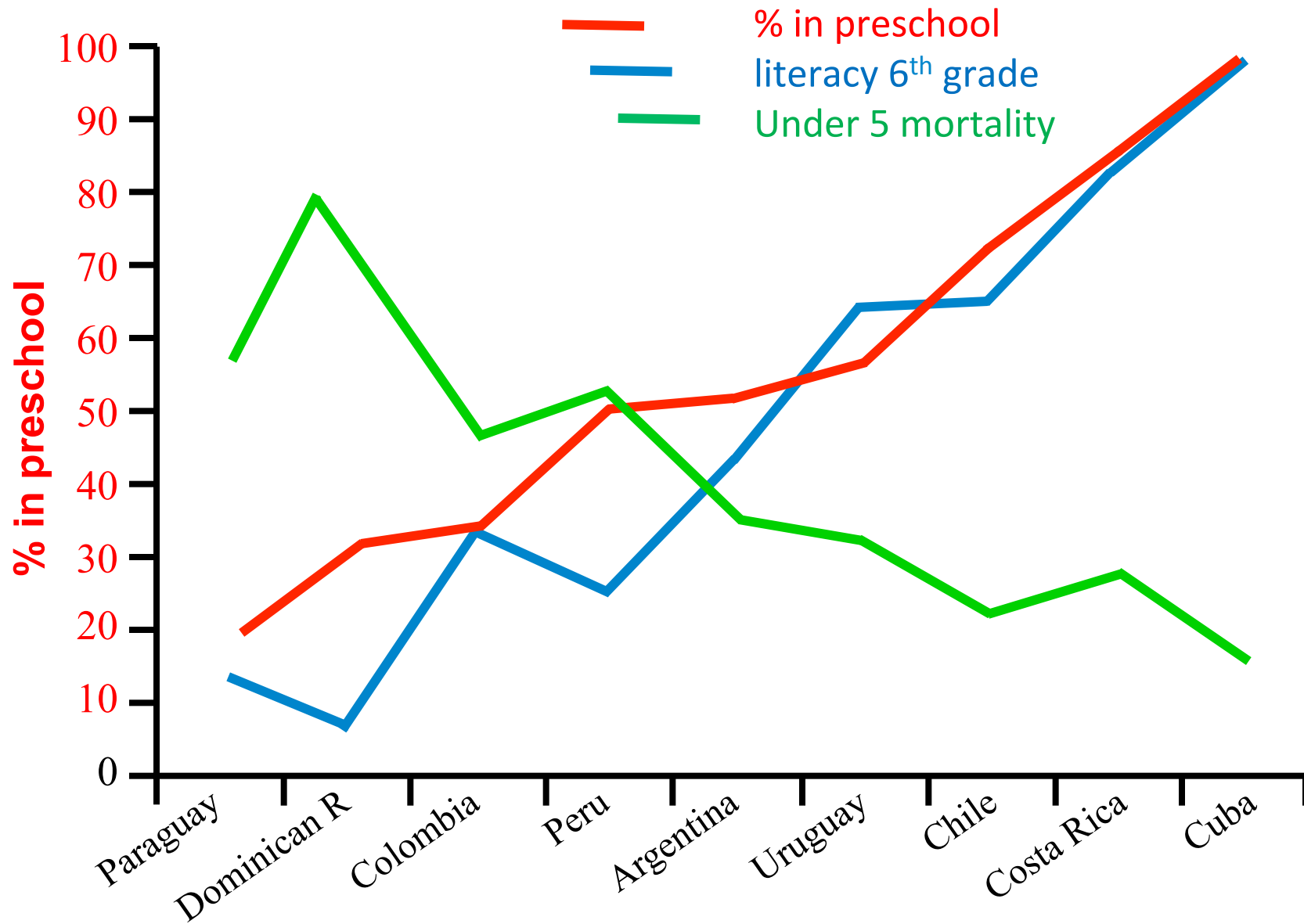
Children who attended high quality pre-schools were **2.4** times more likely in English, and **3.4** times more likely in mathematics, to attain the highest grade at age 11 than children without pre-school.

Benefits of preschool have also been evident in **Asia** and **South America**.

- In **Bangladesh**, children attending preschool achieved higher attainment levels at primary school.
- **Uruguay** has followed suit - studies identified better attainment in secondary school for children who attended preschool.
- **Argentina** found increases in primary school attainment from children who spent at least 1 year in preschool.

# Latin America

## Association between Preschool, Literacy and Under 5 Mortality



## PISA results for 2009

Across OECD countries, 15-year-olds who attended preschool were, on average, a year ahead of those who had not.

“The bottom line: Widening access to pre-primary education can improve both overall performance and equity by reducing socio-economic disparities among students, if extending coverage does not compromise quality.”

# Gains from ECEC

## **Education and Social Adjustment**

- Educational Achievement improved
- Special education and grade repetition reduced
- Behaviour problems, delinquency and crime reduced
- Employment, earnings, and welfare dependency improved
- Smoking, drug use, depression reduced

## **Decreased Costs to Government**

- Schooling costs
- Social services costs
- Crime costs
- Health care costs

Cost: Benefits - 1:2 to 1:4 general population

# LESSONS

1. Early years are very important
2. Preschool is part of infrastructure  
for a successful society
3. High quality preschool boosts development
4. Parenting is also very important
5. Preschool lifts population curve.

# Example References

- Melhuish, E. et al. (2008). Preschool influences on mathematics achievement. *Science*, 321, 1161-1162.
- Barnett, W. S. (2011). Effectiveness of early educational intervention. *Science*, 333, 975-978.
- Heckman, J.J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 132, 1900-1902.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. and Taggart, B., (Eds) (2010). *Early Childhood Matters: Evidence from the Effective Pre-school and Primary Education Project*. London: Routledge
- Melhuish, E. C. (2004). *A literature review of the impact of early years provision upon young children*. London: National Audit Office. [www.nao.org.uk/publications/0304/early\\_years\\_progress.aspx](http://www.nao.org.uk/publications/0304/early_years_progress.aspx)
- OECD (2009). *Doing Better for Children*. [www.oecd-ilibrary.org/social-issues-migration-health/doing-better-for-children\\_9789264059344-en](http://www.oecd-ilibrary.org/social-issues-migration-health/doing-better-for-children_9789264059344-en)
- European Commission (2011). Early Childhood Education and Care: Providing for all our children with the best start for the world of tomorrow. [ec.europa.eu/education/school-education/doc/childhoodcom\\_en.pdf](http://ec.europa.eu/education/school-education/doc/childhoodcom_en.pdf)
- Melhuish E (2011) Preschool Matters. *Science*, 333, 299-300.
- Melhuish E, Barnes J. Preschool programs for the general population. Melhuish E, topic ed. In: Tremblay RE, Boivin M, Peters RdeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: <http://www.child-encyclopedia.com/Pages/PDF/Melhuish-BarnesANGxp1.pdf>
- Irwin, L. Siddiqi, A., & Hertzman, C. (2007). *Early Child Development: A powerful equalizer*. WHO. <http://whqlibdoc.who.int/hq/2007/a91213.pdf>
- UN (2010). *The Real Wealth of Nations: Pathways to Human Development*. New York: UNDP. [http://hdr.undp.org/en/media/HDR\\_2010\\_EN\\_Complete\\_reprint.pdf](http://hdr.undp.org/en/media/HDR_2010_EN_Complete_reprint.pdf)
- World Bank (2007). *Early child development : from measurement to action*. Washington DC: World Bank
- Havnes, T. & Mogstad, M. (2011). No Child Left Behind: Subsidized Child Care and Children's Long-Run Outcomes. *American Economic Journal: Economic Policy*, 3(2): 97–129.
- Naudeau, S. et al. (2010). *Investing in Young Children: An ECD Guide for Policy Dialogue and Project Preparation*. Washington, DC: World Bank.
- Currie, C., Dyson, A., Eisenstadt, N., Jensen, B.B., Melhuish, E. (2013). *A good start for every child: Final report of the Early Years, Family and Education Task Group for the WHO European review of social determinants of health and the health divide*. Copenhagen: WHO Europe