

Early childhood education and care in a broad social and economic context

Edward Melhuish

Birkbeck, University of London

e.melhuish@bbk.ac.uk

Social & economic context

By 2050 the EU working population will decrease by 50 million while the elderly will grow by 50%.

Economic sustainability will require maximizing the capacity of the workforce.

The skills necessary for good life chances are rising (and changing),

And there is still great inequality of opportunity.

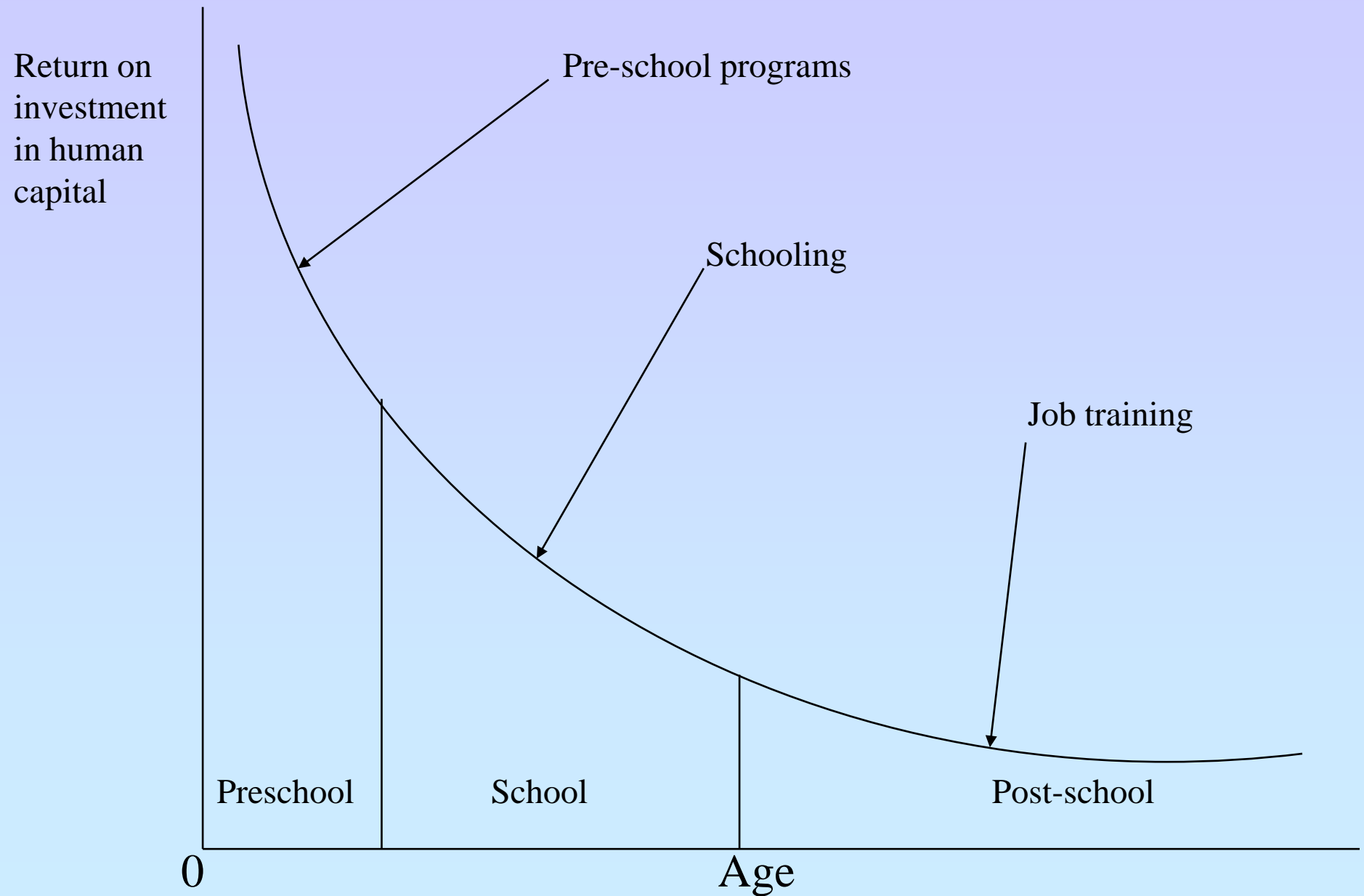
Both cognitive and non-cognitive skills are critical for greater productivity.

How can these be improved for the population?

Why the early years?

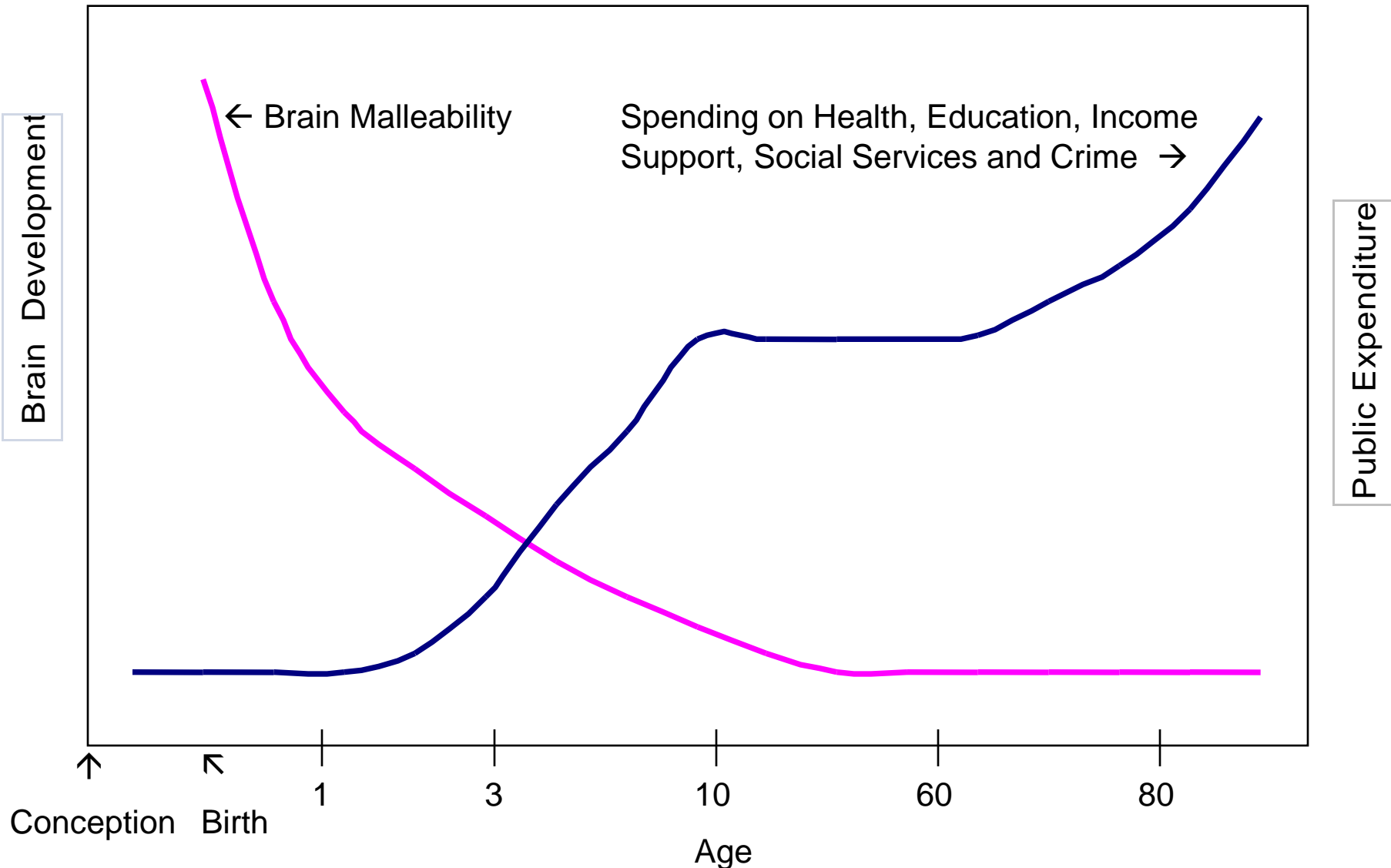
- “ If the race is already halfway run even before children begin school, then we clearly need to examine what happens in the earliest years.” (Esping-Andersen, 2005)
- “ Like it or not, the most important mental and behavioural patterns, once established, are difficult to change once children enter school.” (Heckman & Wax, 2004).

Rates of return to human capital investment (Heckman 2000)



Brain Development

– Opportunity and Investment



Wealth of data from life course studies linking adversity in early life to:

- poor literacy and educational attainment
- anti-social and criminal behaviour
- substance abuse
- poor mental and physical health
- adult mortality

Intervention strategy

If people keep falling off a cliff, don't worry about where you put the ambulance at the bottom. Build a fence at the top and stop them falling off in the first place.

Source: Allen & Duncan-Smith, 2010

Early childhood education and care

2 major policy strategies

- 1. Intervention with disadvantaged groups**
- 2. Services for general population**

INTERVENTIONS - DISADVANTAGED GROUPS

Examples

Perry Preschool Project – preschool 3-6 years

Abecedarian Project – childcare/preschool 0-6

Early Head Start – childcare/ home visit 0-3

Sure Start – 0 - 5

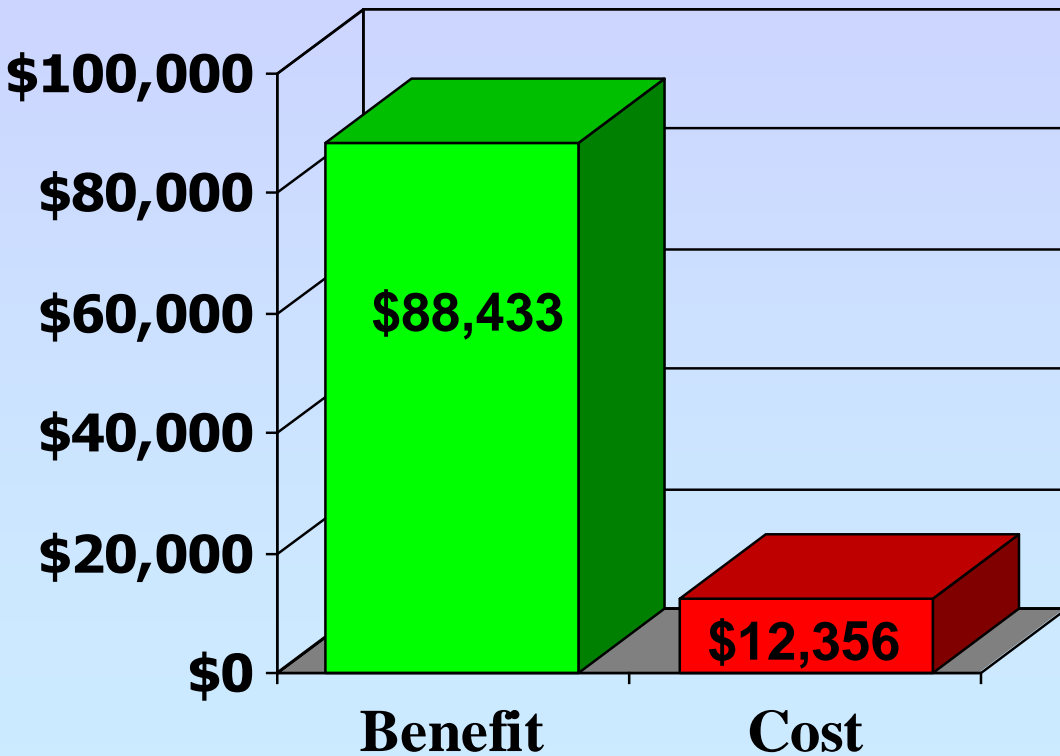
Perry Preschool Study

(Schweinhart, Barnes & Weikart, 1993)

- 📄 123 young African-American children, living in extreme poverty and at risk of school failure
- 📄 Randomly assigned at ages 3 and 4 to program and no-program groups
- 📄 Daily High/Scope classes with planned learning activities and weekly home visits to families

Return on investment - Age 21

Program Benefits Versus Cost



1992 dollars, 3% annual discount rate

**Return on the
dollar
invested**

\$7.16

Abecedarian Project

111 African-American disadvantaged children randomly assigned at age 3 months to:

- **High quality centre-based provision
(Early childhood care and preschool)**
- **Control group:**
 - **Both groups followed into adulthood**

Abecedarian Project

Results up to age 21 years

- Intervention group showed

- Higher cognitive development from 18 months on
- Greater social competence in preschool
- Better school achievement
- More college attendance
- Delayed child bearing
- Better employment
- Less smoking and drug use
- **Cost – benefit - Savings 2.5 times costs**

Early Head Start --- 0-3year olds

3000 disadvantaged families studied from birth – randomly assigned:

- Home-based programme
- Centre-based programme
- Centre and home visits
- Control group

Age 3 intervention improved Cognitive, Language and Social outcomes,

Also:

- Improved parent-child interaction
- Improved home environment (more reading – less spanking)

Centre and home > centre >> home-based

Also – better implementation overall → better effects

UK, Sure Start

- Targeted - 20% most disadvantaged areas
- 0-5 year olds
- Universal in area - All families in area served
- Locally controlled
- Enhancement of existing services
- No clear guidelines given to practitioners

Changes to Sure Start as a result of evidence

1. Early findings - Sure Start having mixed effects:
2. EPPE showed that integrated Children's Centres were particularly effective:

ACTION: the government decided to transform Sure Start Programmes into Children's Centres.

From 2006 all became Children's Centres:

With a more clearly specified set of services and guidelines.

What happened next, 2008

3 year olds

- **5 outcomes clearly indicated beneficial effects for SSLPs.**
 - child positive social behaviour (cooperation, sharing, empathy)
 - Child self-regulation (perseverance, self-control)
 - Parenting Risk Index (observer rating + parent-report)
 - home learning environment
 - total service use
- **In addition there were better results in SSLPs for:**
 - child immunisations
 - child accidents

But these 2 outcomes could have been influenced by timing effects

Impact of Sure Start when children are 5 years old

Mothers in Sure Start areas reported:

- greater life satisfaction,
- less harsh discipline
- a less chaotic home and a
- more stimulating home learning environment (HLE)
- *but more depressive symptoms*

Children had:

- Lower BMIs – less overweight
- Better general health

Families had:

- a greater decrease in workless status from *9 months to 5 years* of age

CONCLUSIONS

- Sure Start has improved over the years and Children's Centres are in the right direction
- Many examples of good practice
- Still great variation between best and worst
- Need to learn from most effective Children's Centres

Non-intervention studies

Day Care Project – London 1980's

Effective Preschool & Primary Education – EPPE
3000 children followed from age 3

Effective Preschool Provision in Northern Ireland -
EPPNI

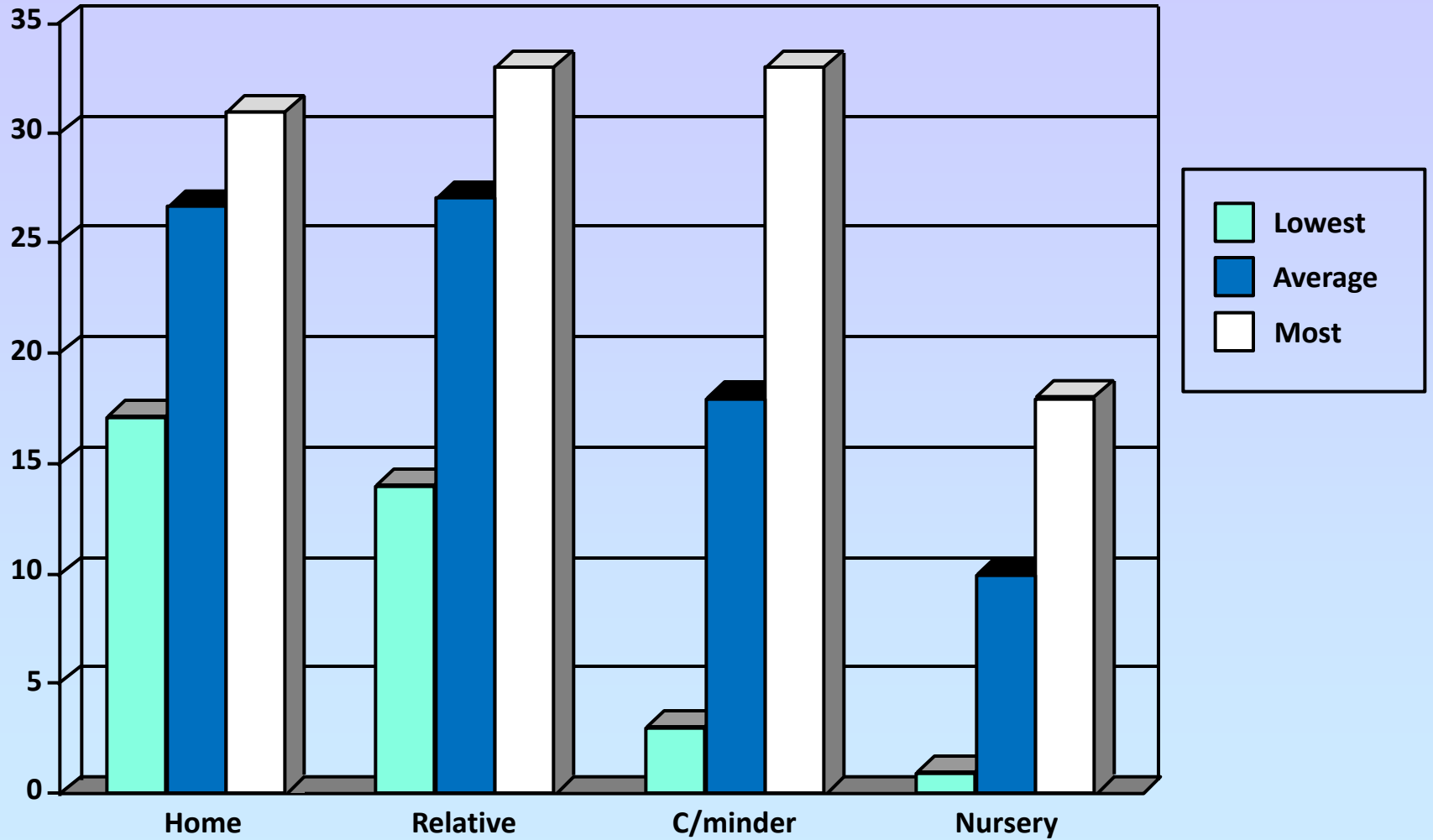
London Day Care Project - 1980's (Melhuish et al., 1990)

255 children studied 0-6 years

4 groups

1. Home - no non-parental care
2. Relative day care - grandmother etc.
3. Childminder – individual carer
4. Nursery – Group day care

Childcare Quality



MAJOR RESULTS

After controlling for family background factors

1. Language development related to quality of care in first 3 years
 - particularly communication and responsiveness
2. These effects persisted to 6 years of age
3. Stability of care associated with quality of care.

Results from this study informed the
childcare regulations in the 1989
Children Act

Similar results found in several countries:

- ❖ Quality of childcare affects development.
- ❖ The biggest effects in first 3 years for language development.
- ❖ Those children with good language development then do better on literacy and most educational outcomes.

NICHD Study of Early Child Care in USA

Early Child Care has Benefits and Risks

- **Higher **quality** child care linked to**
 - better pre-academic skills
 - better language skills
- **Experience in child care **centres** linked to**
 - better language skills
 - more problem behaviors
- **More **hours** in child care **centres** linked to**
 - more problem behaviors—aggression, disobedience

Effective Pre-School and Primary Education EPPE



Kathy Sylva – University of Oxford
Pam Sammons – University of Oxford
Iram Siraj-Blatchford – Institute of Education, University of London
Brenda Taggart – Institute of Education, University of London
Edward Melhuish – Birkbeck, University of London

EPPE STUDY

(3+ yrs)



School
starts



6yrs

7yrs

16yrs

25 nursery classes

590 children

34 playgroups

610 children

31 private day nurseries

520 children

20 nursery schools

520 children

24 local authority day care nurseries

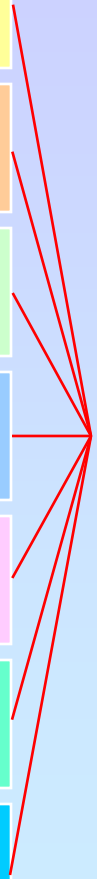
430 children

7 integrated centres

190 children

home

310 children

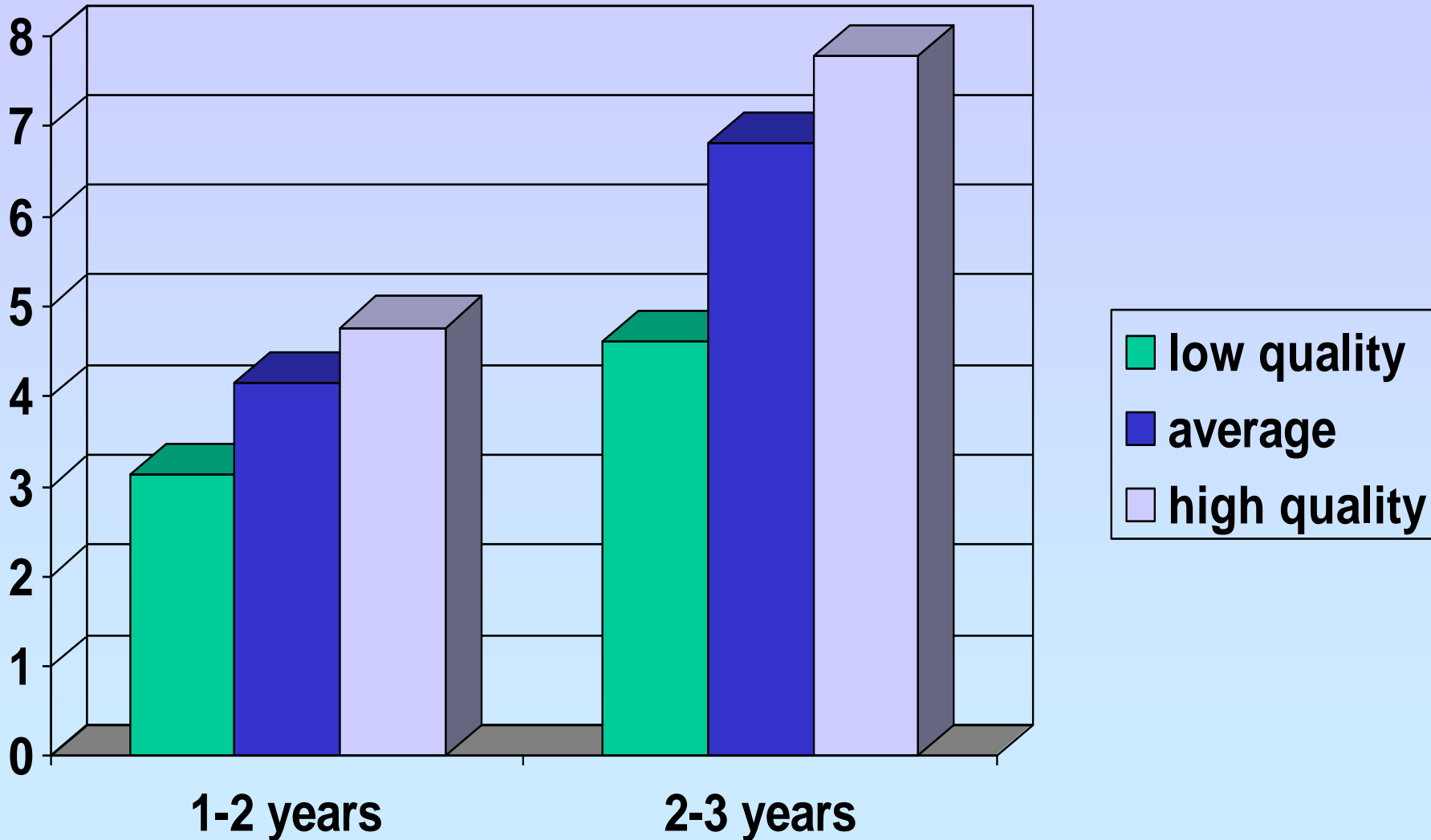


Key Stage 1
600 Schools
approx. 3,000 chd

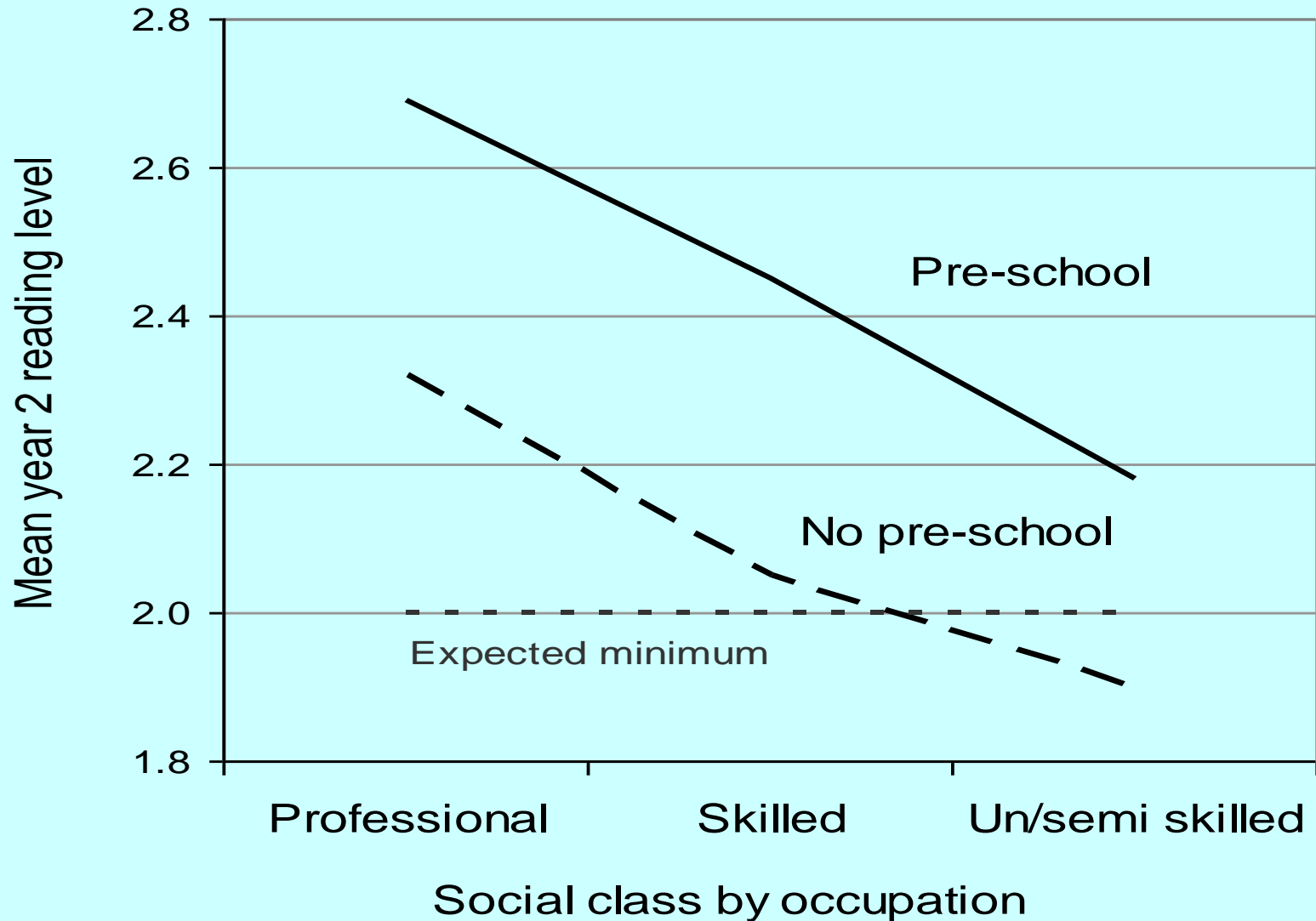
Key Stage 2
800 Schools
approx. 2,500 chd

Quality and Duration matter

(months of developmental advantage on literacy)



Social class and pre-school on literacy (age 7)



Measuring the effectiveness of primary schools

- Data on every child in every state school
- 600, 0000 children in each year,
N = 15,771 primary schools

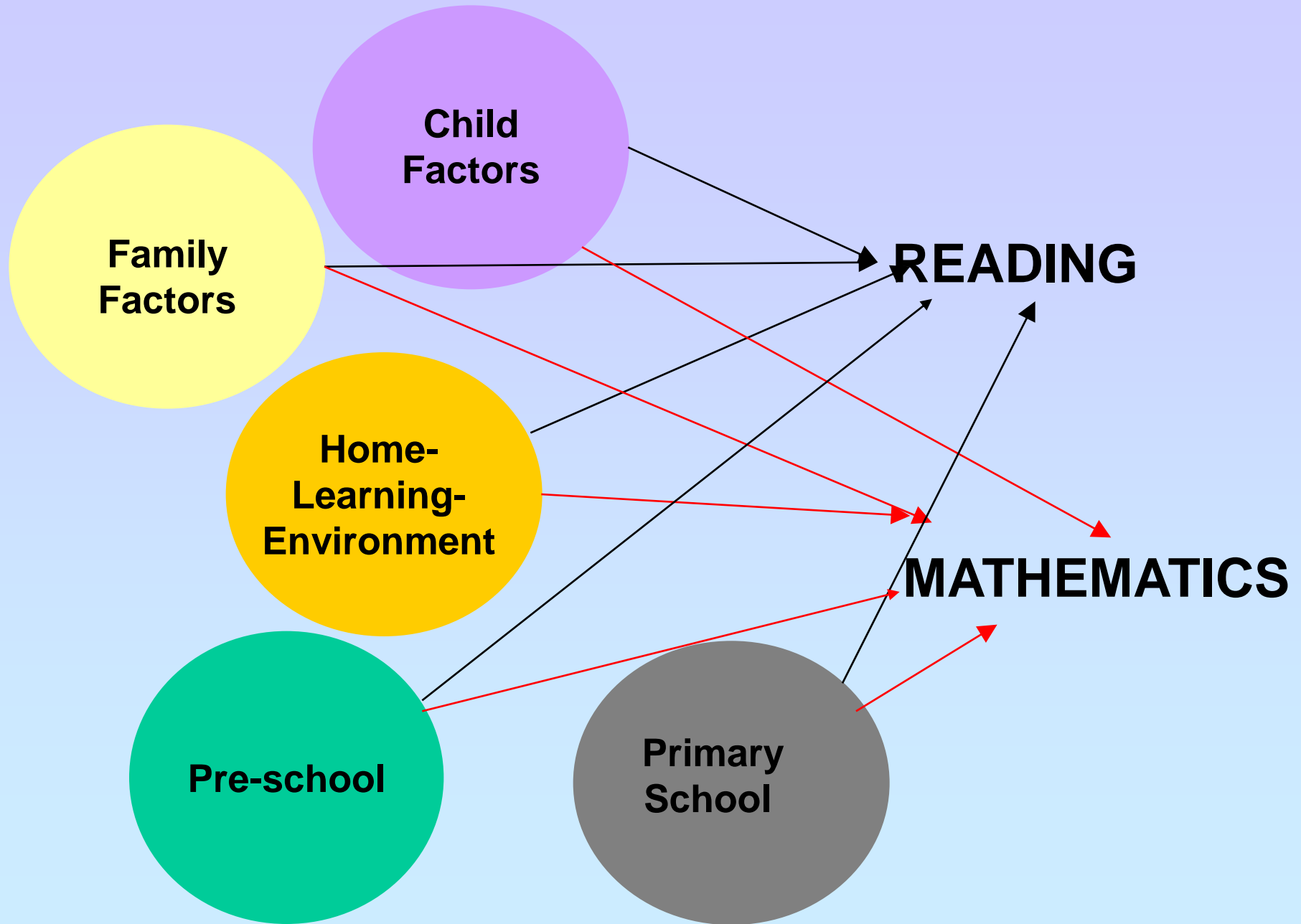
We used the data to calculate the **effectiveness** of each school

EFFECTIVENESS

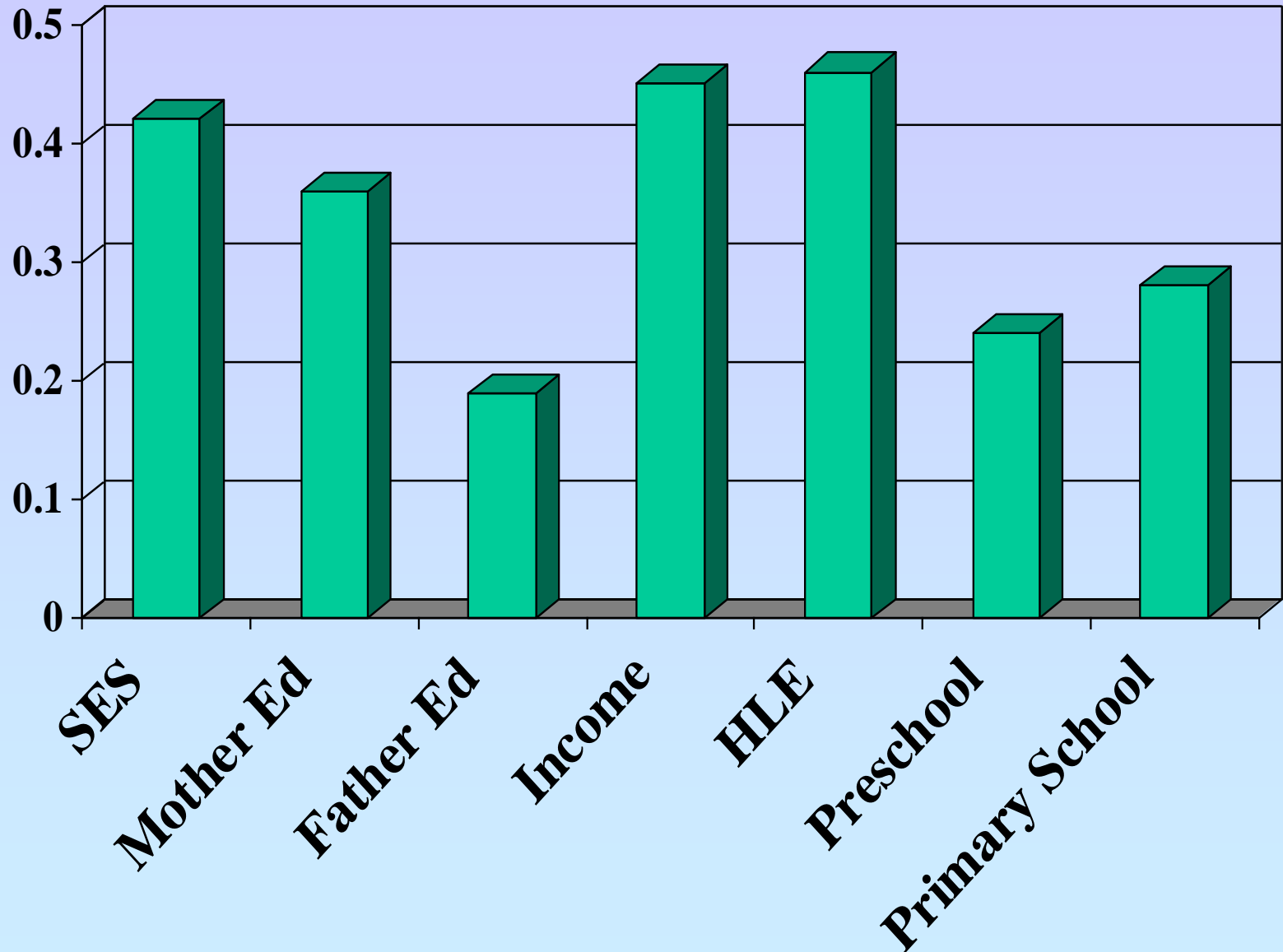
- Schools where children make greater progress than predicted on the basis of initial attainment and pupil and area characteristics can be viewed as *more effective*.
- Schools where children make less progress than predicted can be viewed as *less effective*.

We have a continuous scale of school effectiveness

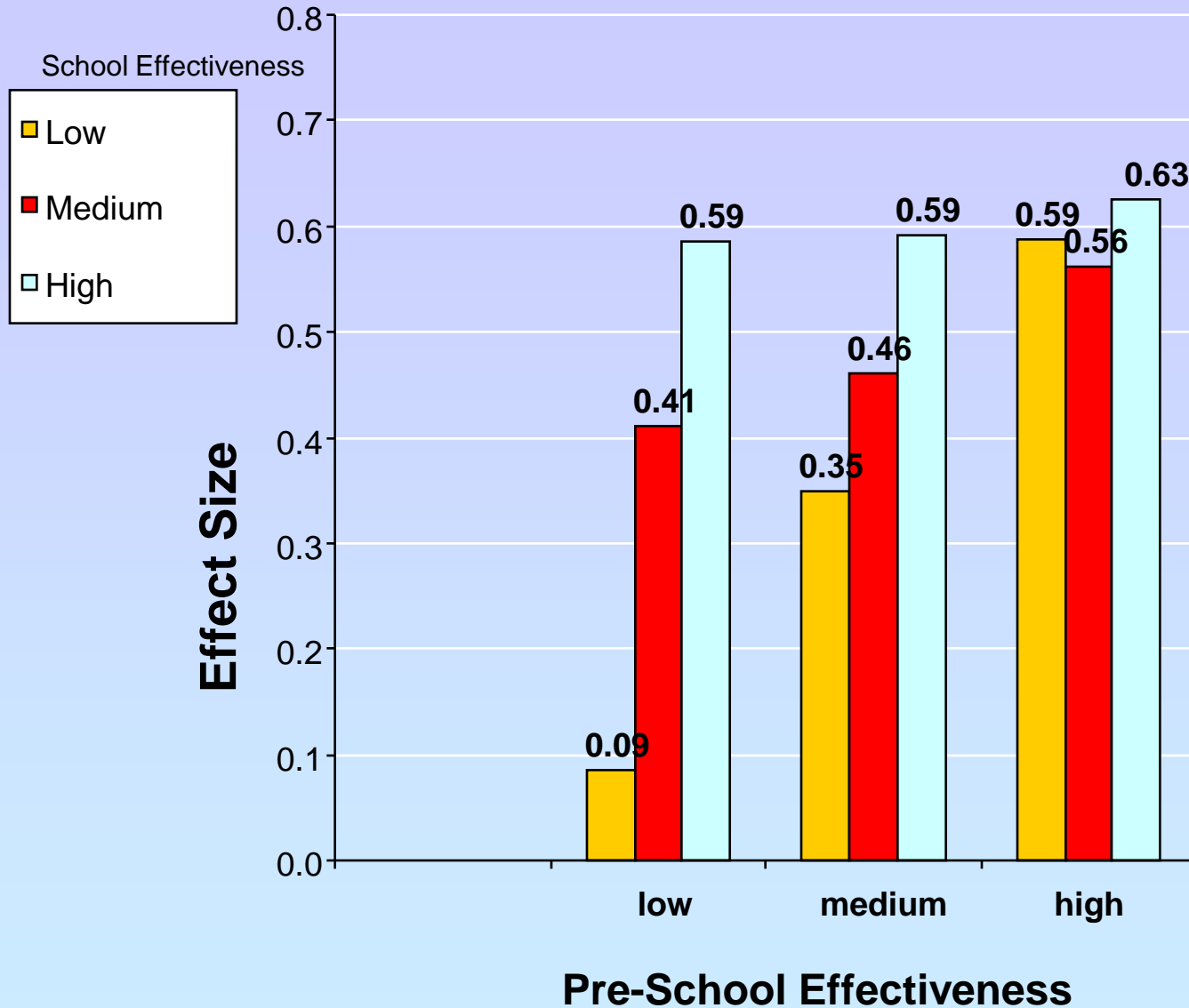
Modelling Age 11 outcomes



Effects upon child achievement -age 11

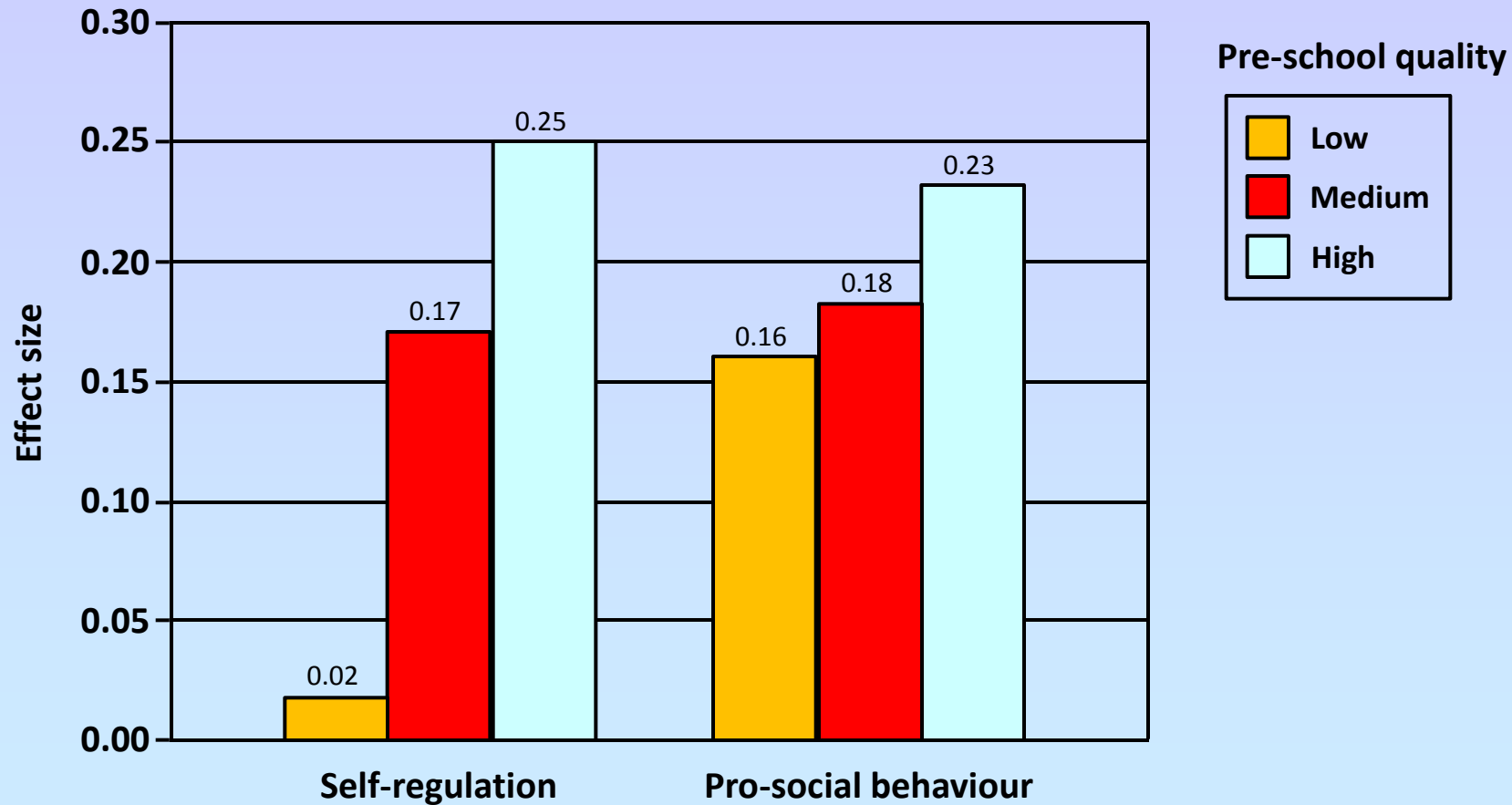


Combined Impact of Pre- and Primary School - Maths

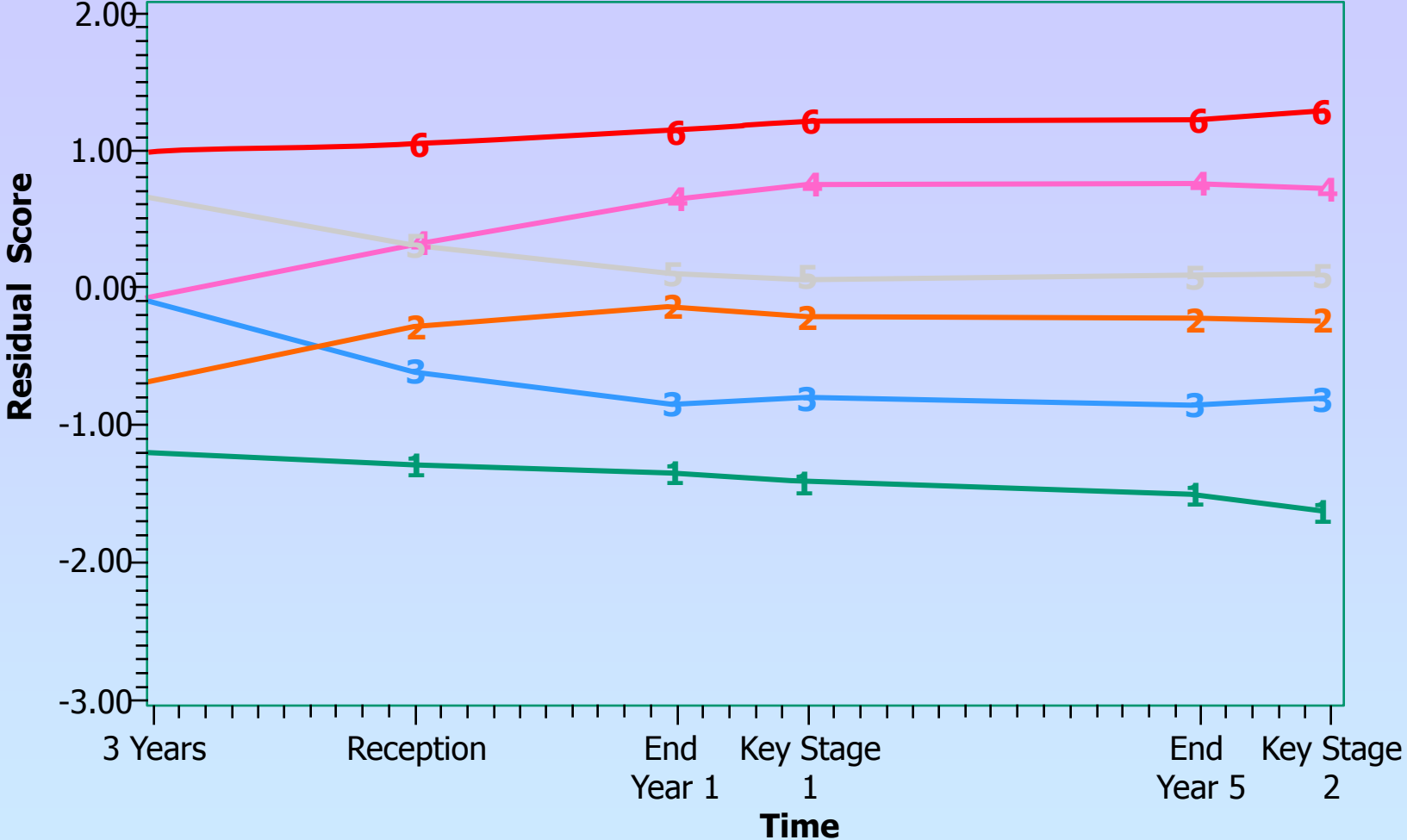


Reference Group: No Pre-School and low Primary School Effectiveness

Pre-school Quality and Self-regulation and Pro-social behaviour (age 11)



Pre-school group Trajectories for Numeracy



Group % 11 18.2% 22 19.6% 33 18.8% 44 17.3% 55 23.2% 66 12.9%

What matters

3 elements that can lead to educational success

Good Home Learning Environment (pre-school)

Good Pre-schools for longer duration

Good Primary schools

Those children with all 3 will out-perform those with 2
who will out-perform those with 1
who will out-perform those with 0
All other things being equal

EFFECTIVE PRE-SCHOOL PROVISION IN NORTHERN IRELAND (EPPNI)

Similar study to EPPE with children in Northern Ireland
850 children followed from 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.

Conclusions

- From age 2 all children benefit from pre-school.
- The quality of preschool matters.
- Part-time has equal benefit to full-time.
- Quality of preschool effects persist until at least the end of primary school.
- High quality preschool can protect a child from consequences of attending low effective school.

EPPE results have influenced policy:

- Free part-time pre-school for all 3 & 4 year-olds (2004)
- Extension of parental leave (2004)
- 10-year Childcare Strategy (2004)
- Guidance for Children's Centres (2005)
- Childcare Bill (2006)
- Acceptance that money spent on pre-school produces savings later

Similar evidence from USA

Magnusson, Meyers Ruhm & Waldfogel (2003)

Results for nationally- representative sample of
12,800 children

Age 5 Reading by sub-group & pre-school quality:

- Comparison with no pre-school

Year Before	READING				
	ALL	Poverty	Low Mother Educ.	Single Parent	Non- English
Pre-school (High Quality)	1.66**	2.23**	3.44**	3.10**	2.72**
Pre-school (Low Quality)	1.34**	1.48*	1.21	2.11**	1.56**

Cost-benefit of Early interventions

Benefits deriving from improvements in:

- Not in Employment Education or Training -NEET
- Obesity
- Crime
- Teenage births
- Substance misuse – Drug use
- Mental health problems
- Domestic violence
- Child abuse and neglect

Universal interventions

Figure 3. Universal interventions: costs and estimated savings (£ billions)

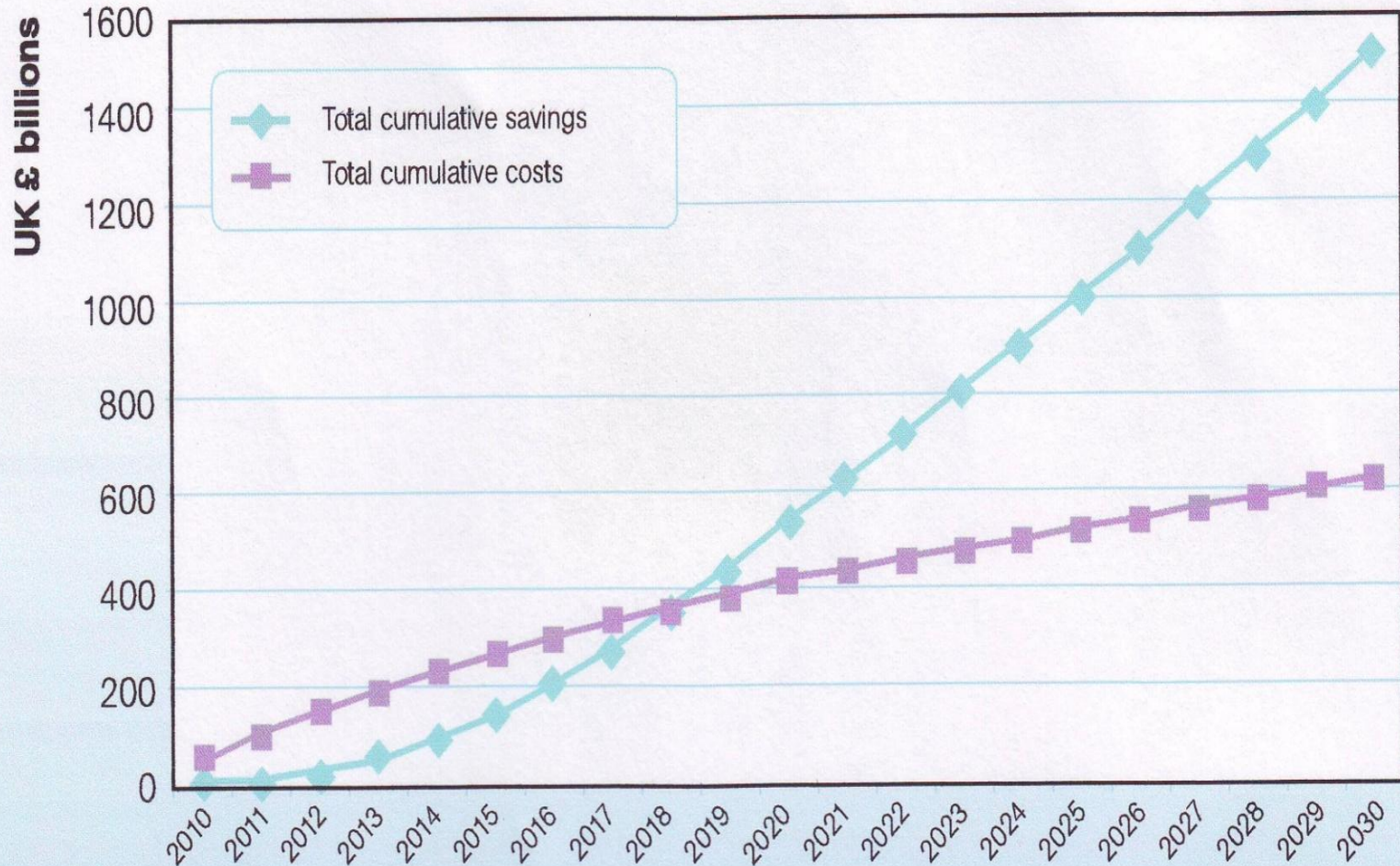


Universal Interventions: Savings over 20 years

£612 billion

Targeted and universal interventions

Figure 4. Combined interventions: costs and estimated savings (£ billions)



Targeted & Universal Interventions: Savings over 20 years

£880 billion

International Perspectives

Countries planning for economic expansion are increasing their investment in pre-school education.

E.g. China, New Zealand, Scandinavia, Canada, some US states (e.g. California, Minnesota, Massachusetts).

See

**Melhuish & Petrogiannis (Eds.) (2006)
*Early Childhood Care & Education:
International Perspectives.*
London: Routledge**

Some governments are realising-

Good quality pre-school is an essential component of the infrastructure for sustained economic development

PISA results for 2009

15-year-olds who had attended pre-school were on average a year ahead of those who had not.

Also, PISA results suggest that pre-school participation is strongly associated with reading at age 15 in countries that

1. have sought to improve the quality of pre-school education
2. provide more inclusive access to pre-school education.

PISA 2009 - the relationship between pre-school and performance at age 15 is strongest when

1. larger % of population can use pre-school
2. pre-school is for more months
3. pre-school has smaller pupil-to-teacher ratios
4. more is spent per child in pre-school

OECD report on PISA results

“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.”

For more information

EPPE:

Melhuish, et al. (2008). Preschool influences on mathematics achievement. *Science*, 321, 1161-1162.

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

eppe.ioe.ac.uk

NESS:

Melhuish, et al. (2008). Effects of fully-established Sure Start Local Programmes on 3-year-old children and their families living in England. *Lancet*, 372, 1641-1647.

Melhuish, E, Belsky, J., & Barnes, J. (2010). Evaluation and value of Sure Start. *Archives of Disease in Childhood*, 95, 159-161.

Melhuish, E. (2010). Fruhpädagogische Forschung und ihre Wirkung auf die Politik in Grossbritannien. In F. Becker-Stoll, J Berkic & B. Kalicki (Eds.) *Bildungsqualität für Kinder in den ersten drei Jahren*. Berlin: Cornelsen.

www.ness.bbk.ac.uk