Global thoughts on early literacy

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Populations are changing

Australian Bureau of Statistics 2061: workforce will decrease by 15% while elderly increase by 50%.

Similar situation in other developed countries.

Economic sustainability will require maximizing the capacity of the workforce, with an increase in productivity to maintain living standards.

OECD 2012: Across OECD, 20+% do not achieve basic minimum skills for full functioning in modern society.

Currently 24% of Australian children enter school with developmental problems.

1 million Australian children at risk for reading failure.

Disadvantaged children - 5 times more low literacy.

1 in 3 disadvantaged children start school with poor language

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.

The impact of family disadvantage upon well-being is persistent.

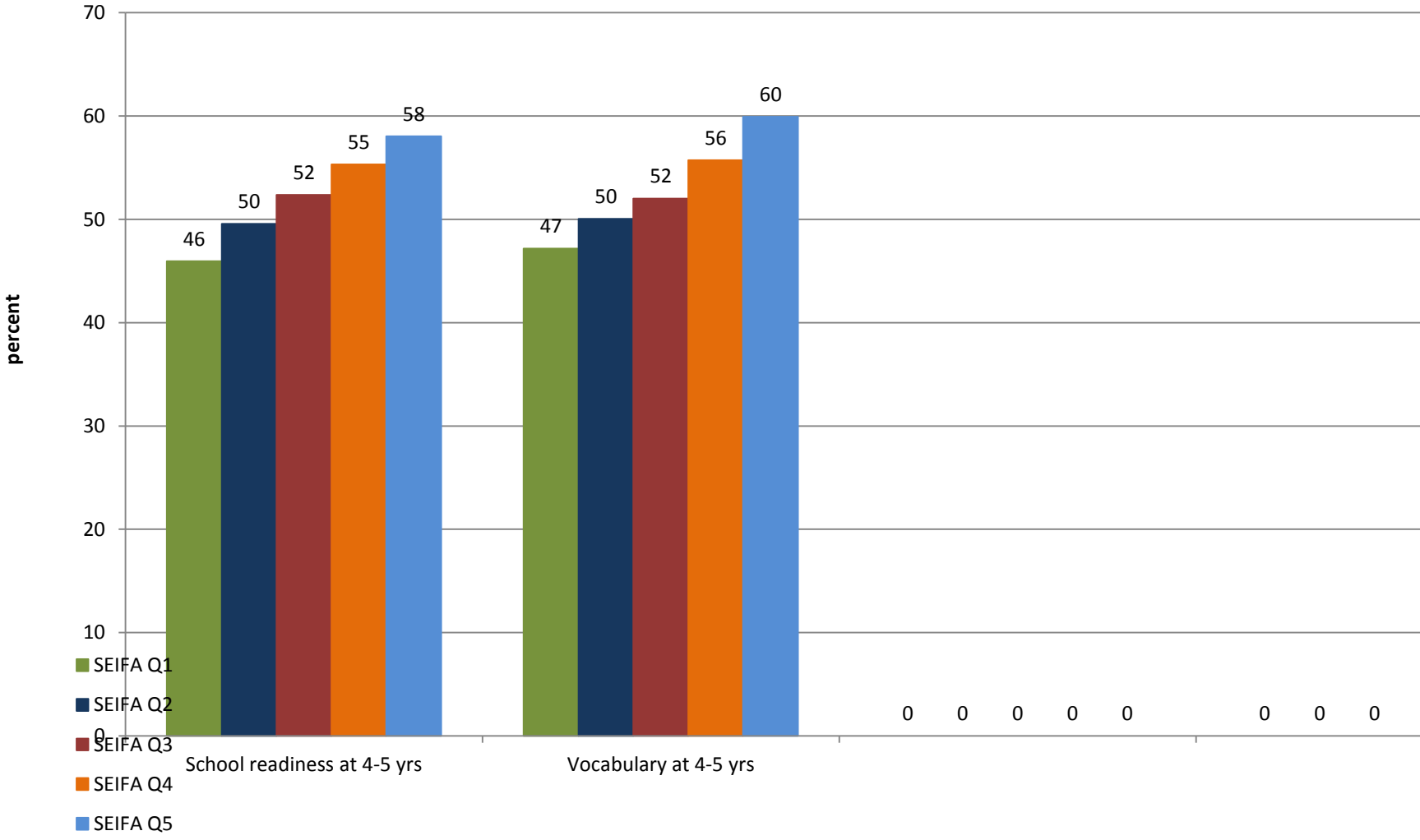
Early experience is critical in this link: - because

Interactions Drive Development.

Two arguments for investing in early childhood.

1. Moral – moral duty to optimise well-being.
2. Economic – we all benefit in the long-term

Indicators of school readiness by parental income, Australia



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).

Culture and social context (macro-level)

(e.g., labour markets & ideology)

↓

Provision of childhood services, e.g. ECEC, schools

↓

Family support, childcare, preschool, school etc.

↓

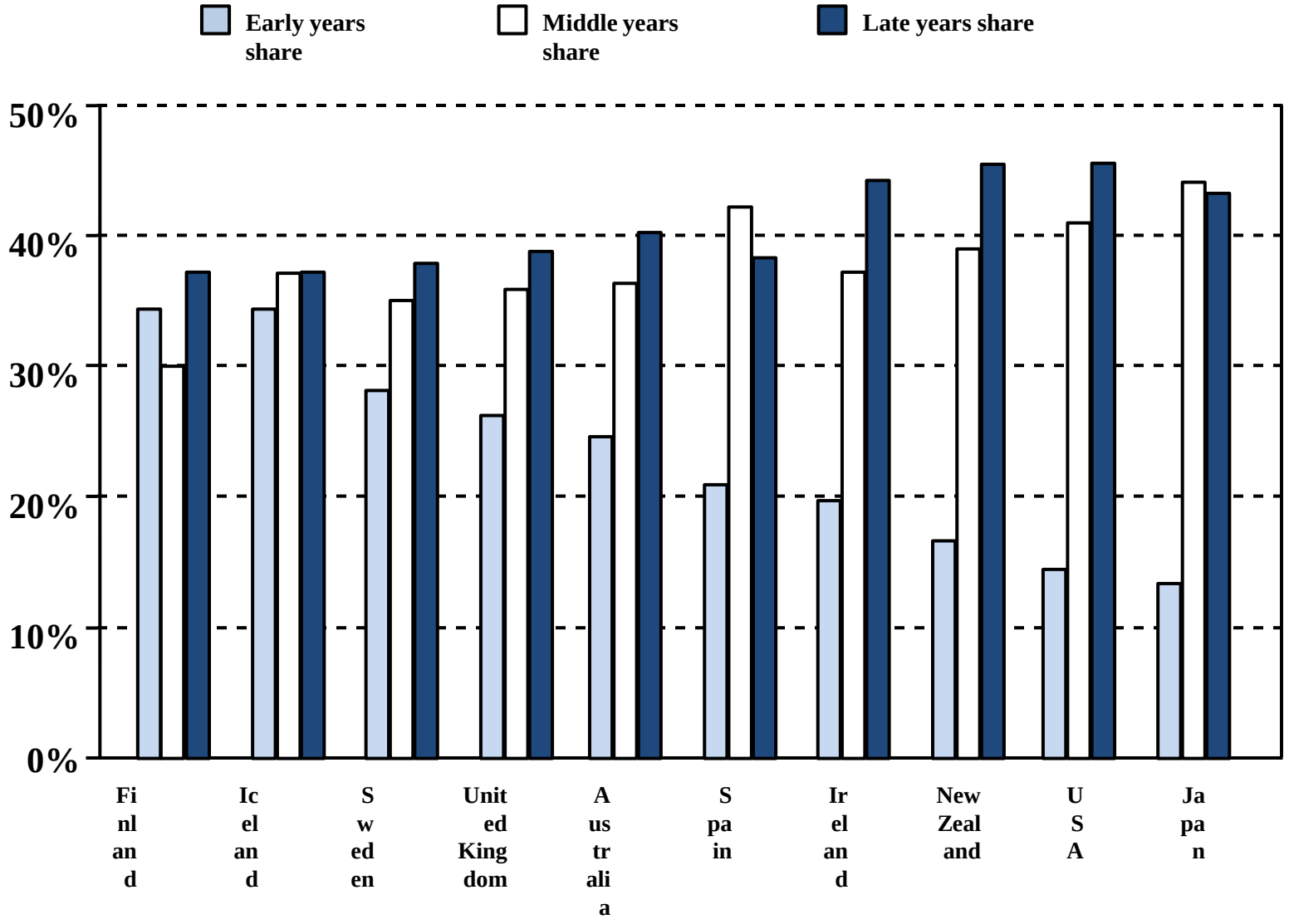
Children's daily experiences (home and out-of-home)

↓ (individual level)

Children's development

Factors affecting children's development

Countries in the OECD tend to prioritise spending on older children



MESSAGE - REMEMBER THIS

The child's experience matters, particularly

Interactions Drive Development

Experience *at home*
(home learning environment –HLE)
&
out of home
Early Childhood Education & Care (ECEC)

are areas where we can make a difference,
Both for 1. disadvantaged groups &
2. the general population

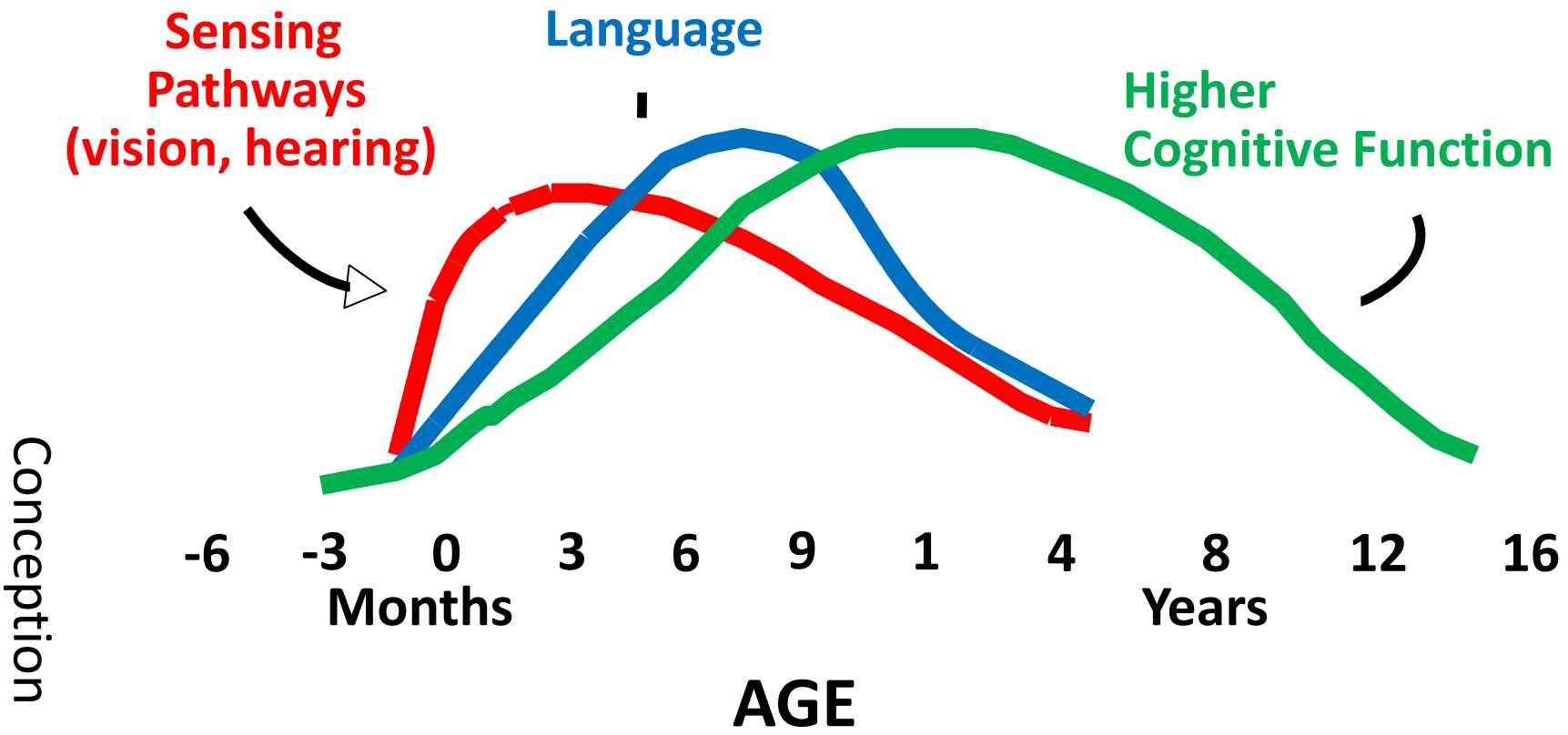
THE IMPORTANCE OF THE CHILD'S LANGUAGE ENVIRONMENT

LANGUAGE DEVELOPMENT UNDERPINS
COGNITIVE,
EDUCATIONAL AND
SOCIAL DEVELOPMENT

Language development begins at birth

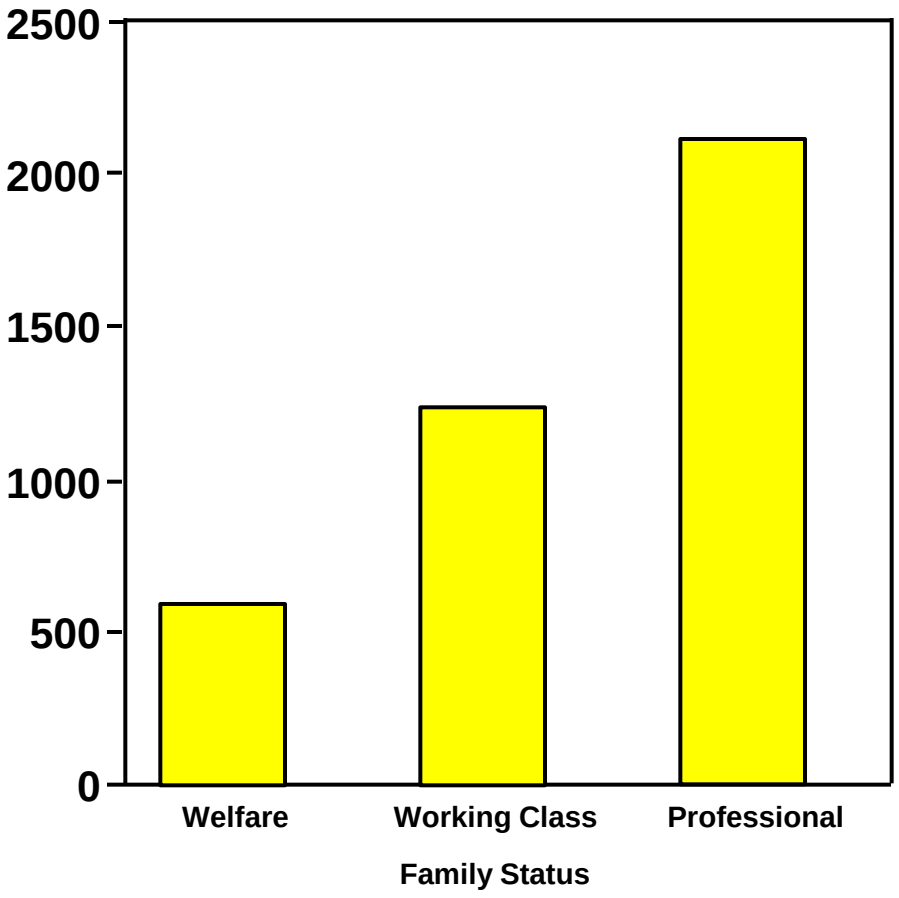
A CHILD WITH POOR LANGUAGE AT 3 YEARS WILL BE AT RISK UNLESS INTERVENTION TAKEN.

Sensitive periods & Synaptic Development

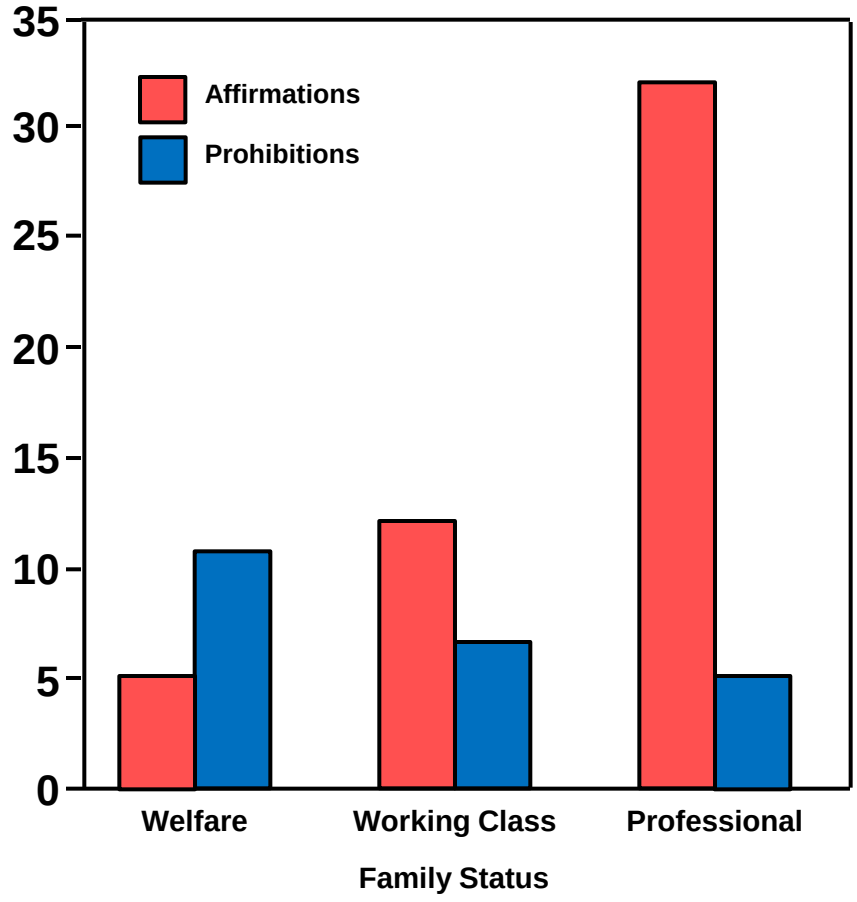


C. Nelson, in From Neurons to Neighborhoods, 2000.

Quantity of Words Heard In Typical Hour

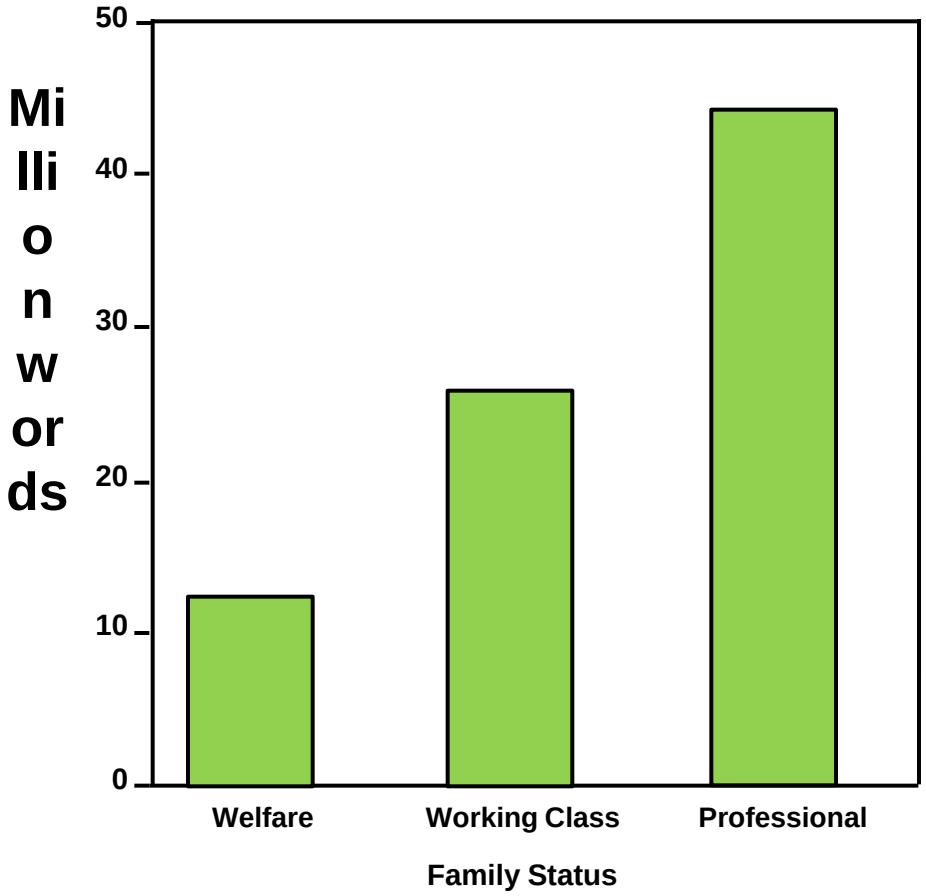


Quality of Words Heard In Typical Hour

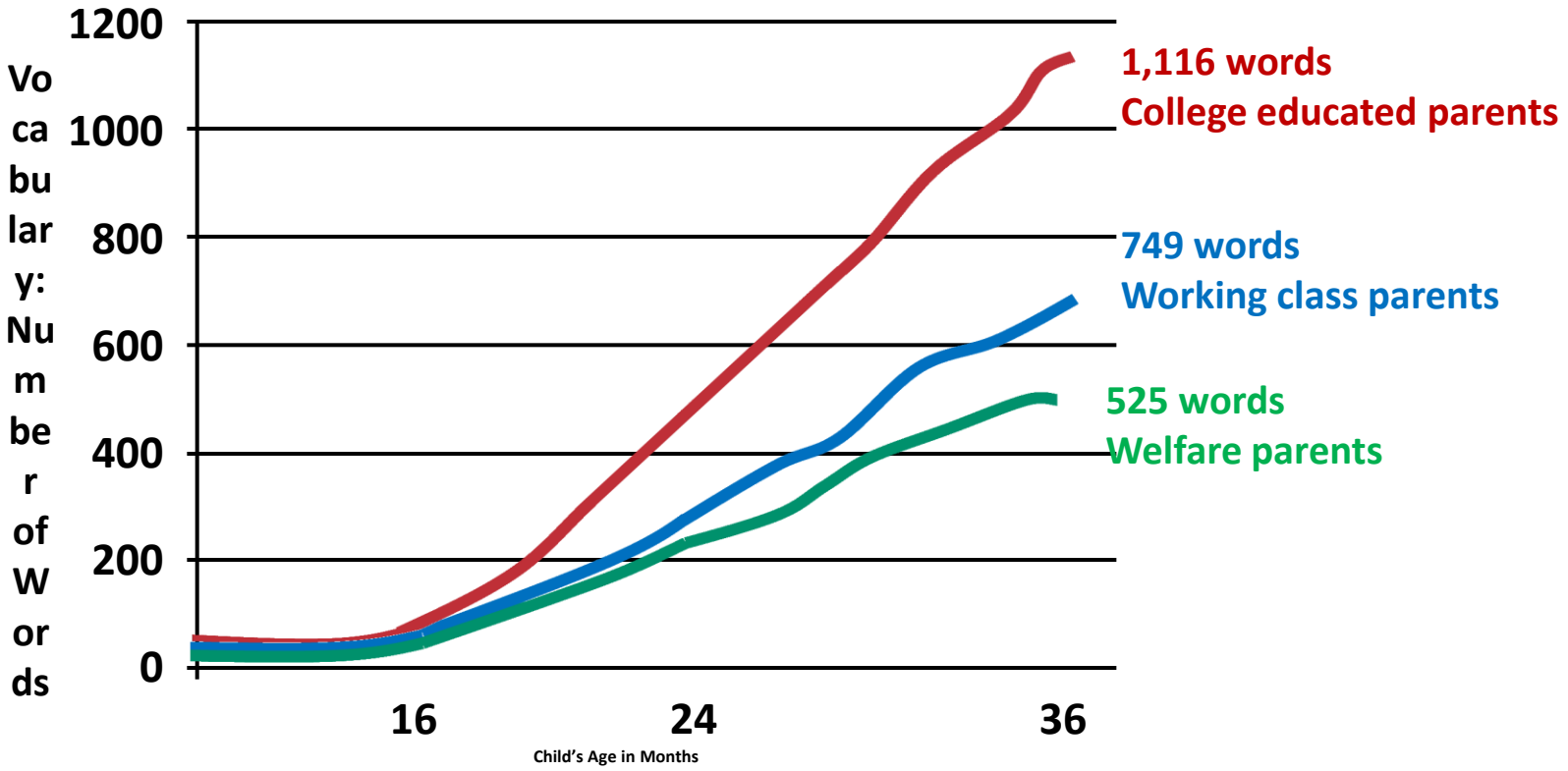


From – Hart & Risley 1995

Words Heard In 4 Years



Achievement Gap starts early



INTERVENTIONS with DISADVANTAGED GROUPS

Examples

Nurse Family Partnership (NFP) –home-visiting

MESCH – Australian home-visiting programme

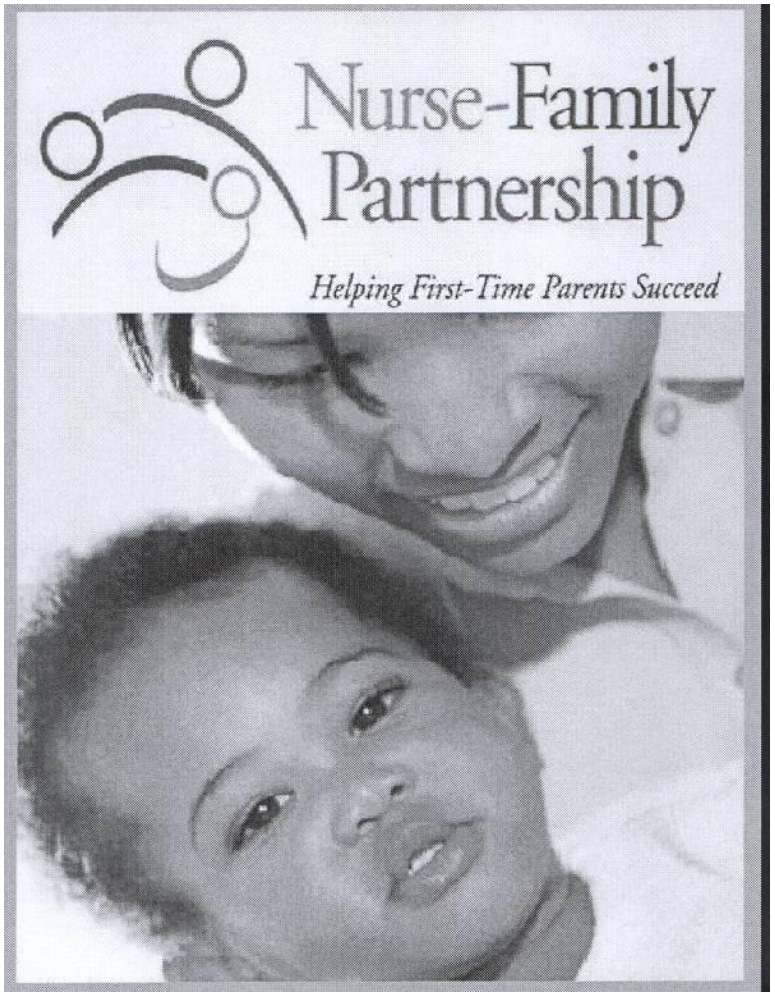
Abecedarian Project – childcare/preschool 0-6

Perry Preschool Project – preschool 3-6 years

Nurse Family Partnership

From 1970s onwards

- **Nurse home visiting programme**
- **Regular visits from pregnancy to 2**
- **Rigorously tested by RCTs**



Consistent results

- **improvements in women's health:**
- **fewer pregnancies- greater intervals between births**
- **increases in father's involvement**
- **increases in employment**
- **reductions in welfare dependency, child abuse & neglect**
- **reduction in children's injuries**
- **improvements in school readiness and achievement**
- **reductions behaviour problems and crime**

Maternal Early Childhood Sustained Home-Visiting Program - MECSH (Lynn Kemp)

MECSH expands postpartum care in Australia through home visiting during and after pregnancy to enhance maternal and child outcomes.

The program targets disadvantaged, pregnant women at risk of adverse maternal and/or child health and development outcomes.

MECSH provides individualized, home-based services focusing on parent education, health and well-being, relationships, and goal setting.

In addition, Learning to Communicate starts with one month old. This is to foster children's development and is delivered for 12 months.

Also support for families on issues such as housing and finances.
http://homvee.acf.hhs.gov/Default.aspx

Abecedarian Project (Ramey et al., 2000)

Results up to age 21 years

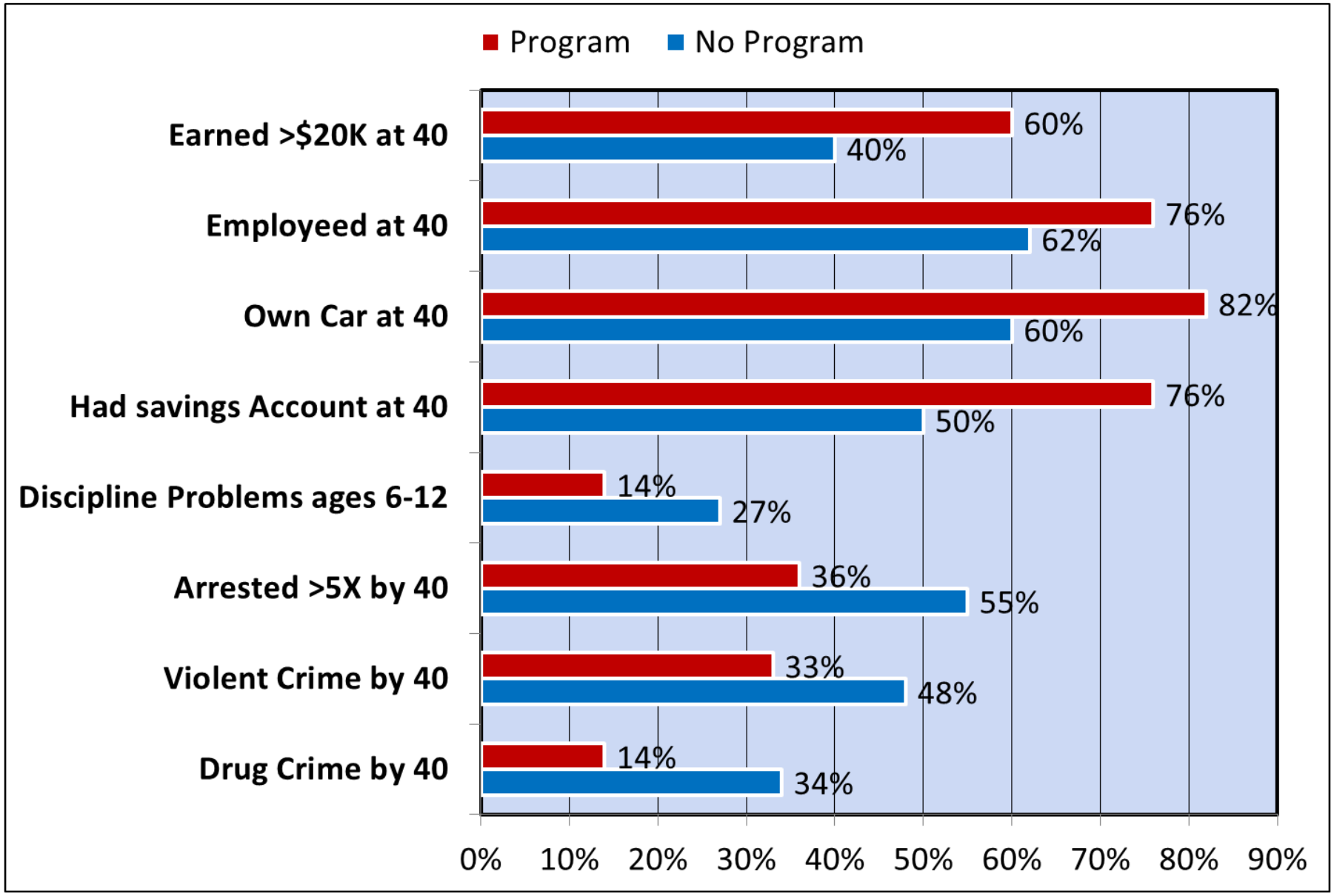
- Intervention group showed

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

Perry Preschool Study

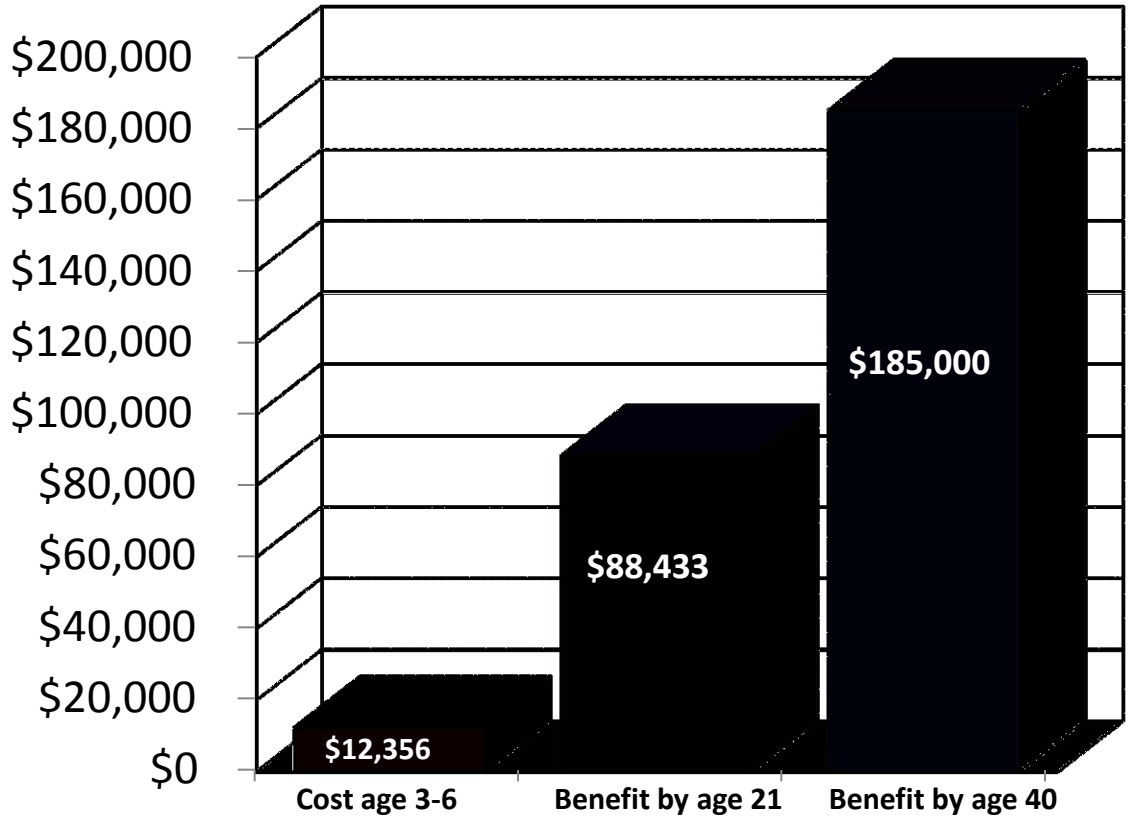
(Schweinhart, Barnes & Weikart, 1993)

- 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


Program
No Program
Earned >$20K at 40
60%
40%
Employeed at 40
76%
62%
Own Car at 40
82%
60%
Had savings Account at 40
76%
50%
Discipline Problems ages 6-12
14%
27%
Arrested >5X by 40
36%
55%
Violent Crime by 40
33%
48%
Drug Crime by 40
14%
34%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%

Return on investment

Program Benefits Versus Cost



1992 dollars, 3% annual discount rate

Return on dollar invested age 21

7:1

Return on dollar invested age 40

16:1

Non-intervention studies – General population

Day Care Project – London 1980's

Effective Preschool & Primary Education – EPPE

3000 children followed from age 3

Effective Preschool Provision in Northern Ireland
EPPNI

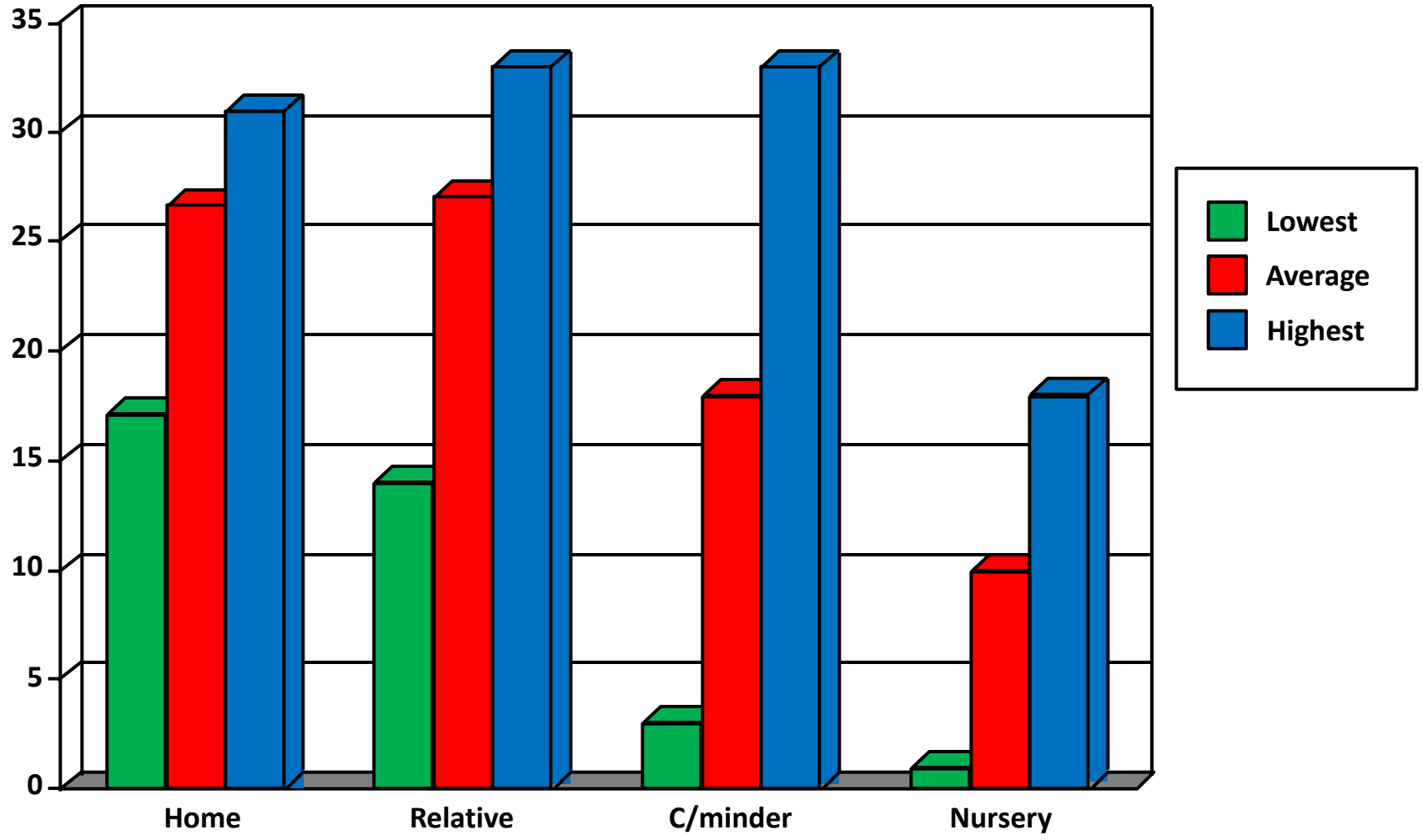
London Day Care Project - 1980's (Melhuish et al., 1990)

255 children studied 0-6 years

4 groups

1. Home - no non-parental care
   Relative day care - grandmother etc.
2. Child minder – individual carer
3. 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

– pp. communication + responsiveness in interactions

2. These effects on language and literacy persisted to 6 years of age

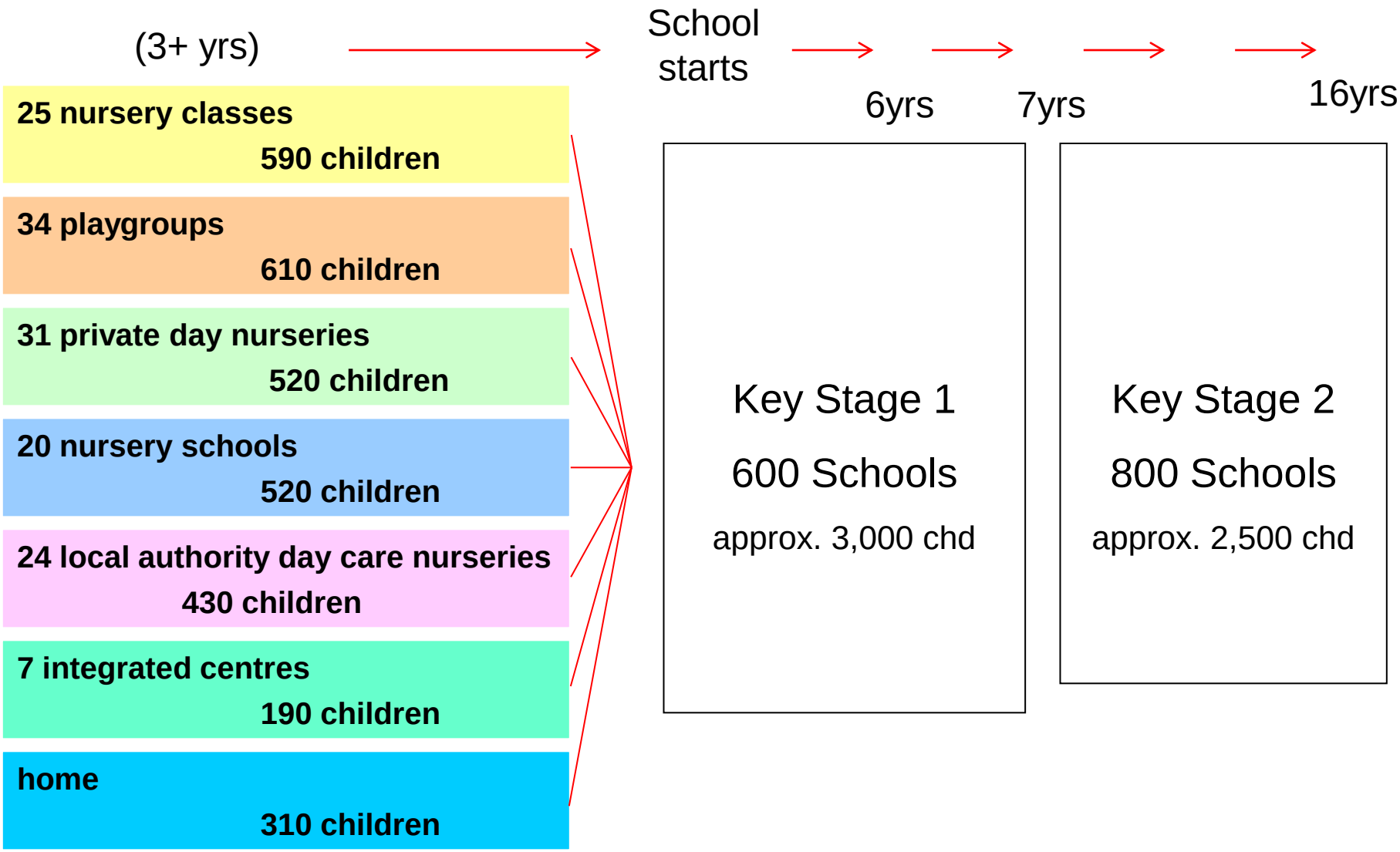
3. Stability of care associated with quality of care.

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

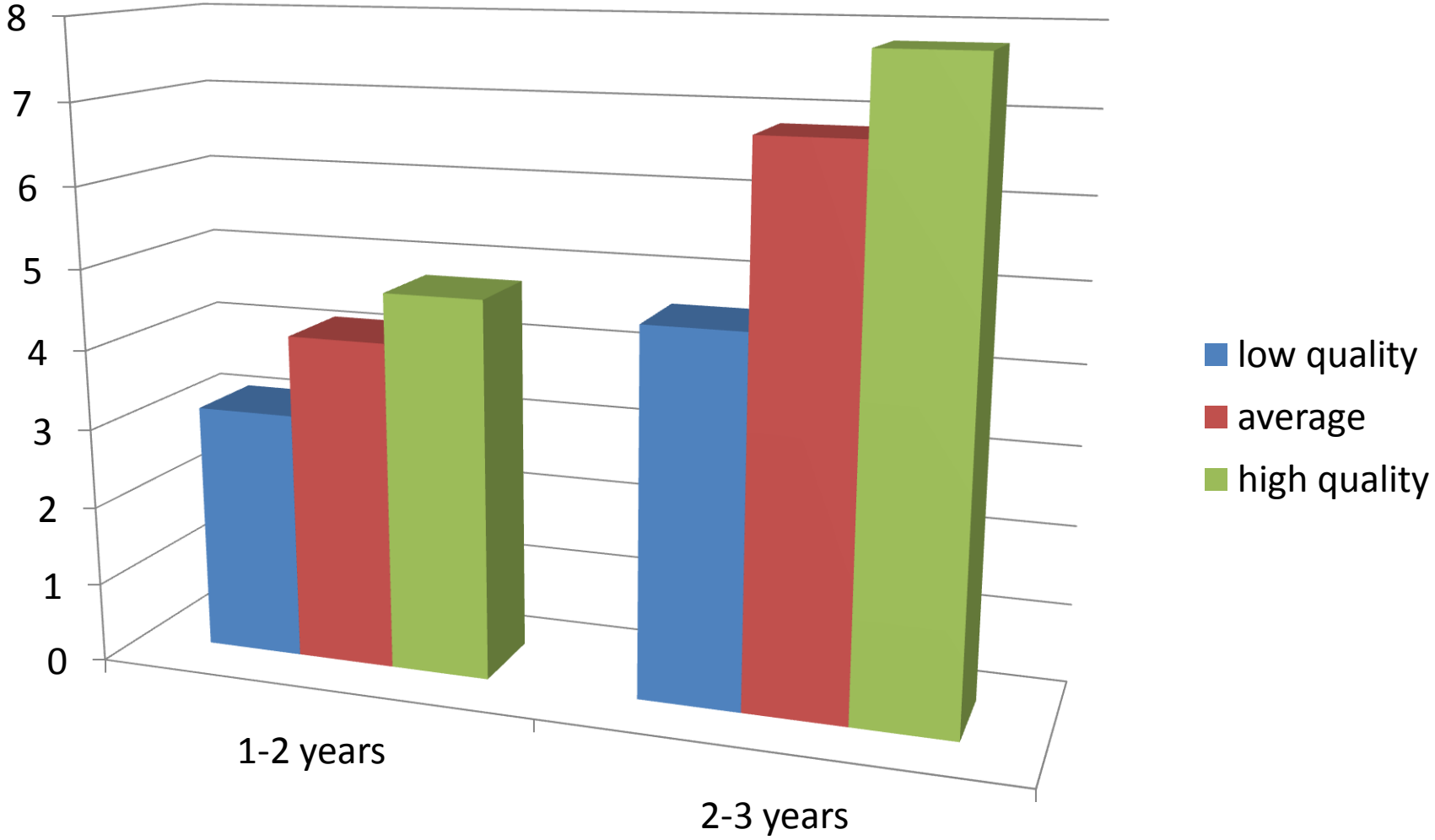
Similar results found in several countries:

- 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.

General Population - EPPSE STUDY in UK



Quality and Duration matter
(months of developmental advantage on literacy at 5 years)



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

Home Learning Environment

Parents asked about activities at home – child 3-4 years old.

A home learning environment (HLE) index constructed
(Melhuish et al., 2001).

Several activities linked to development.

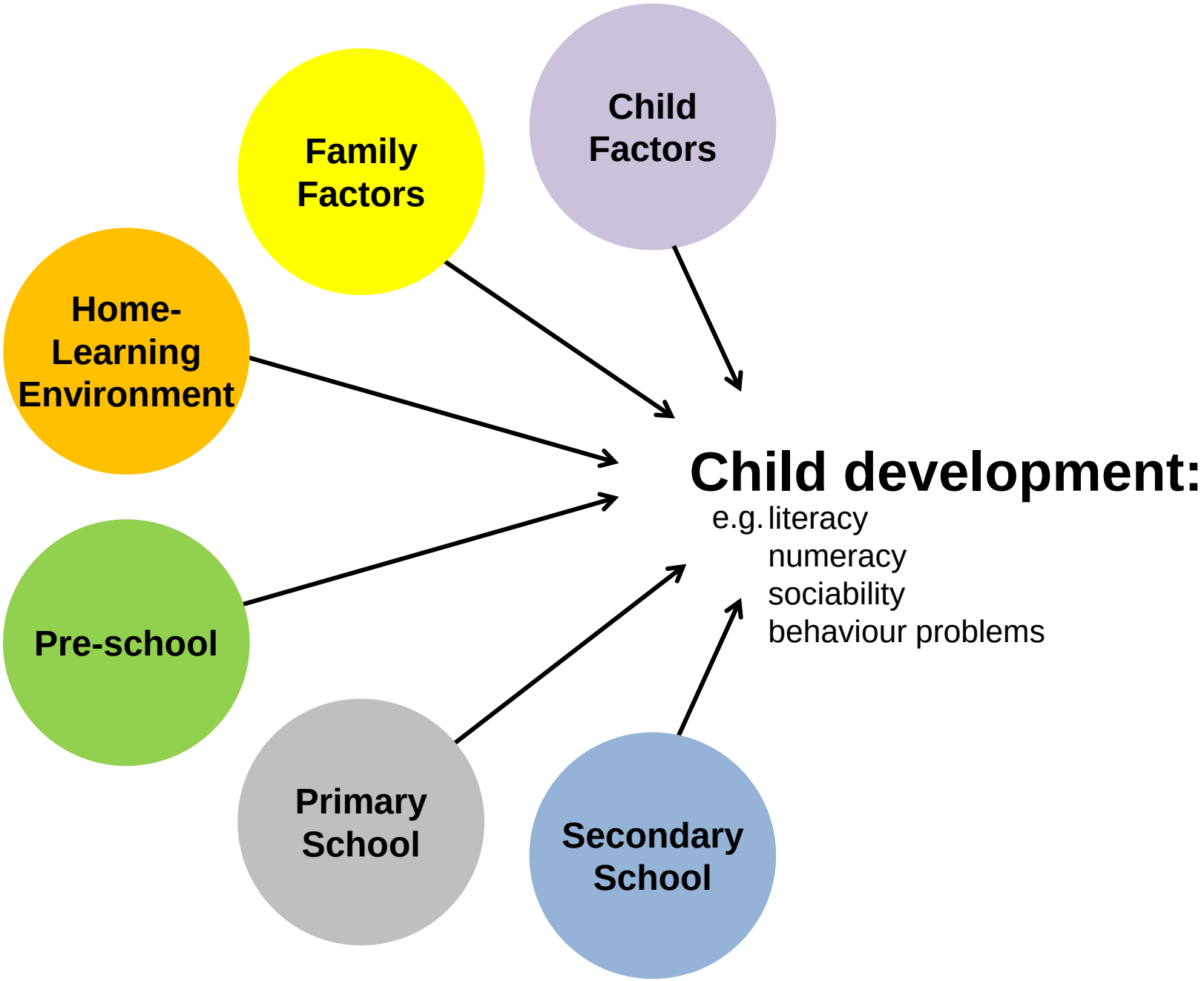
0 1 2 3 4 5 6 7

not occur ***very frequent***

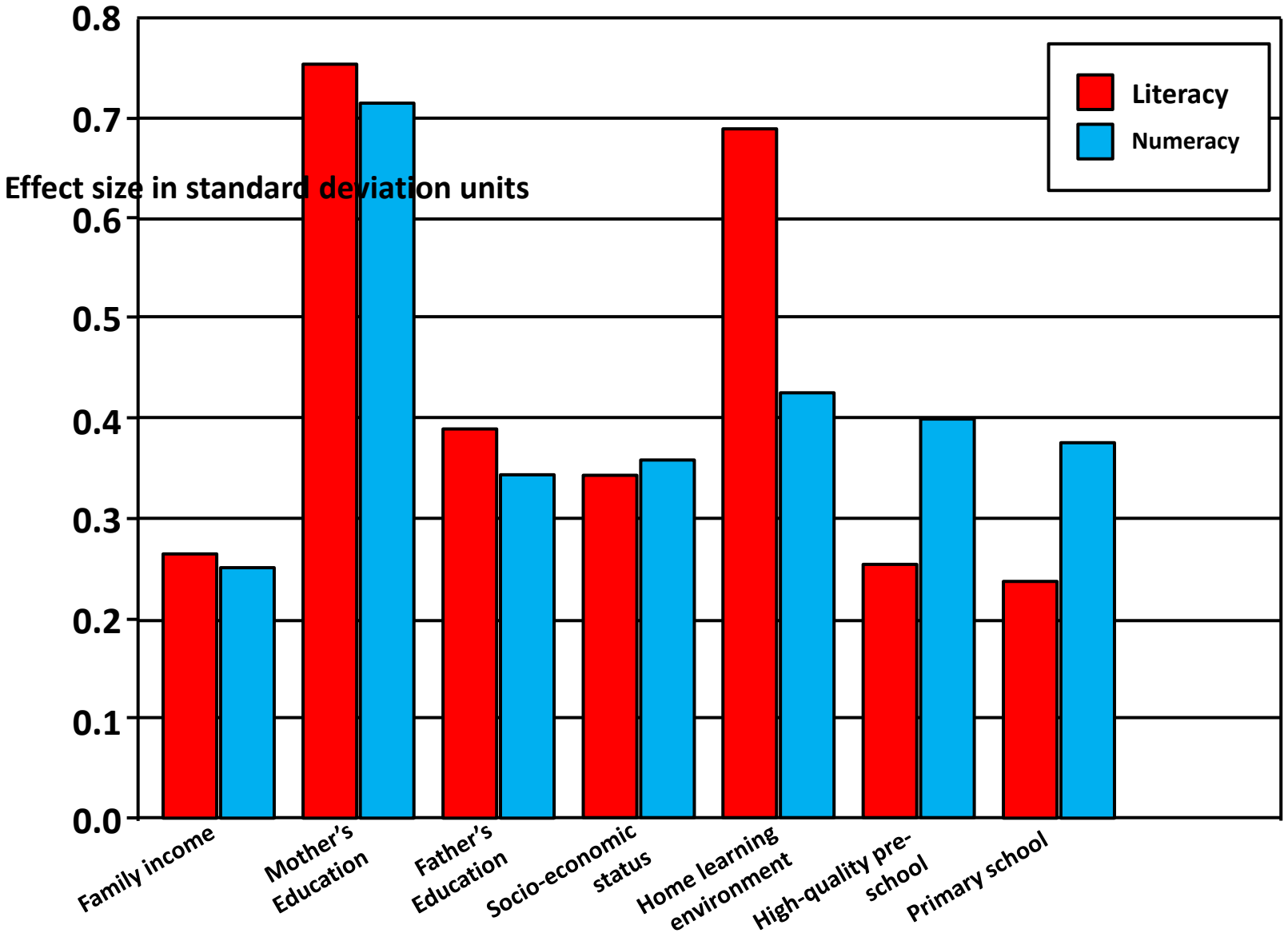
- reading to child
- painting and drawing
- going to the library
- playing with letters/numbers
- learning activities with the alphabet
- learning activities with numbers/shapes
- learning activities with songs/poems/nursery rhymes

- Modest association with social class or parental education

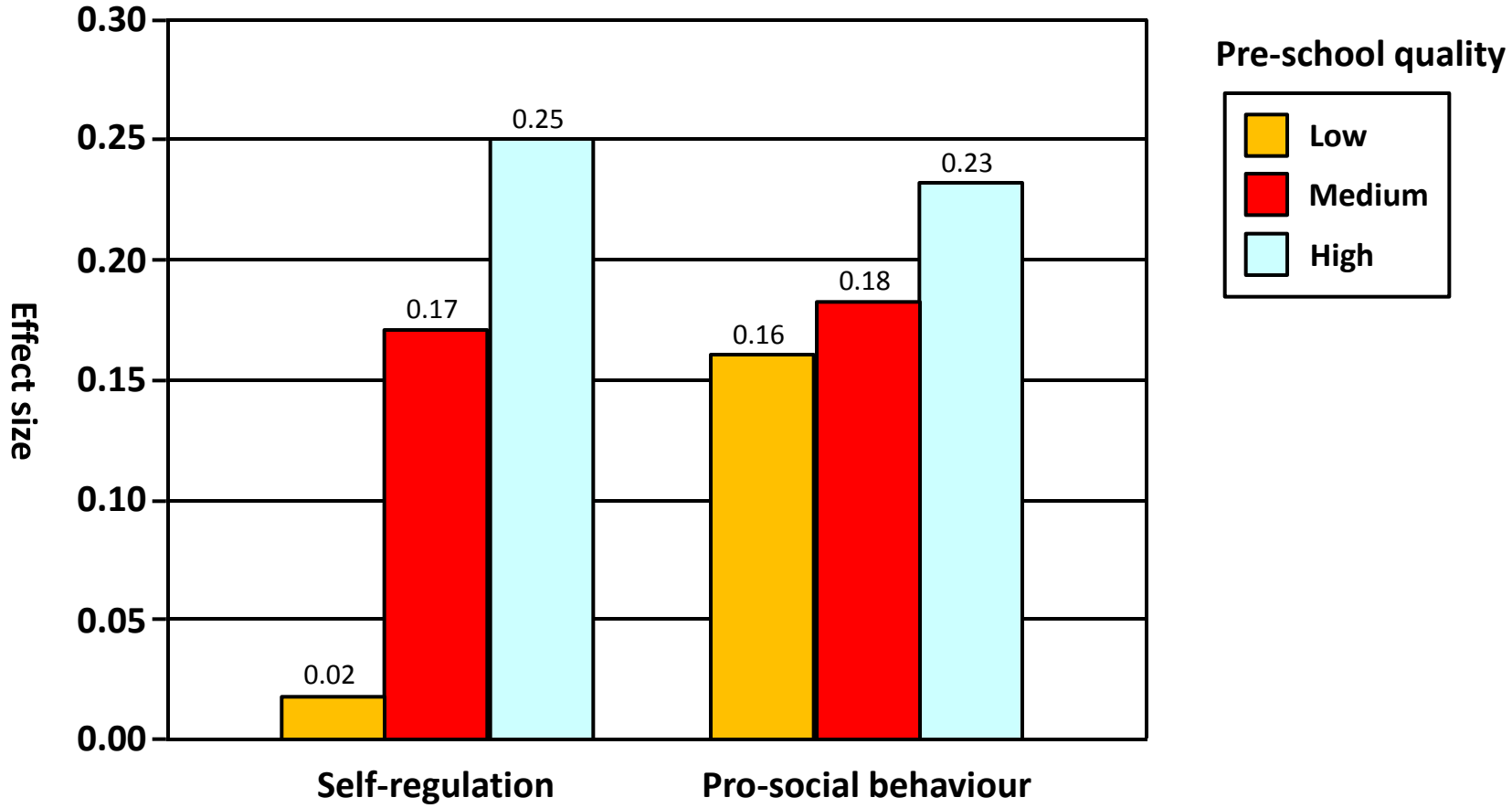
Modelling later outcomes



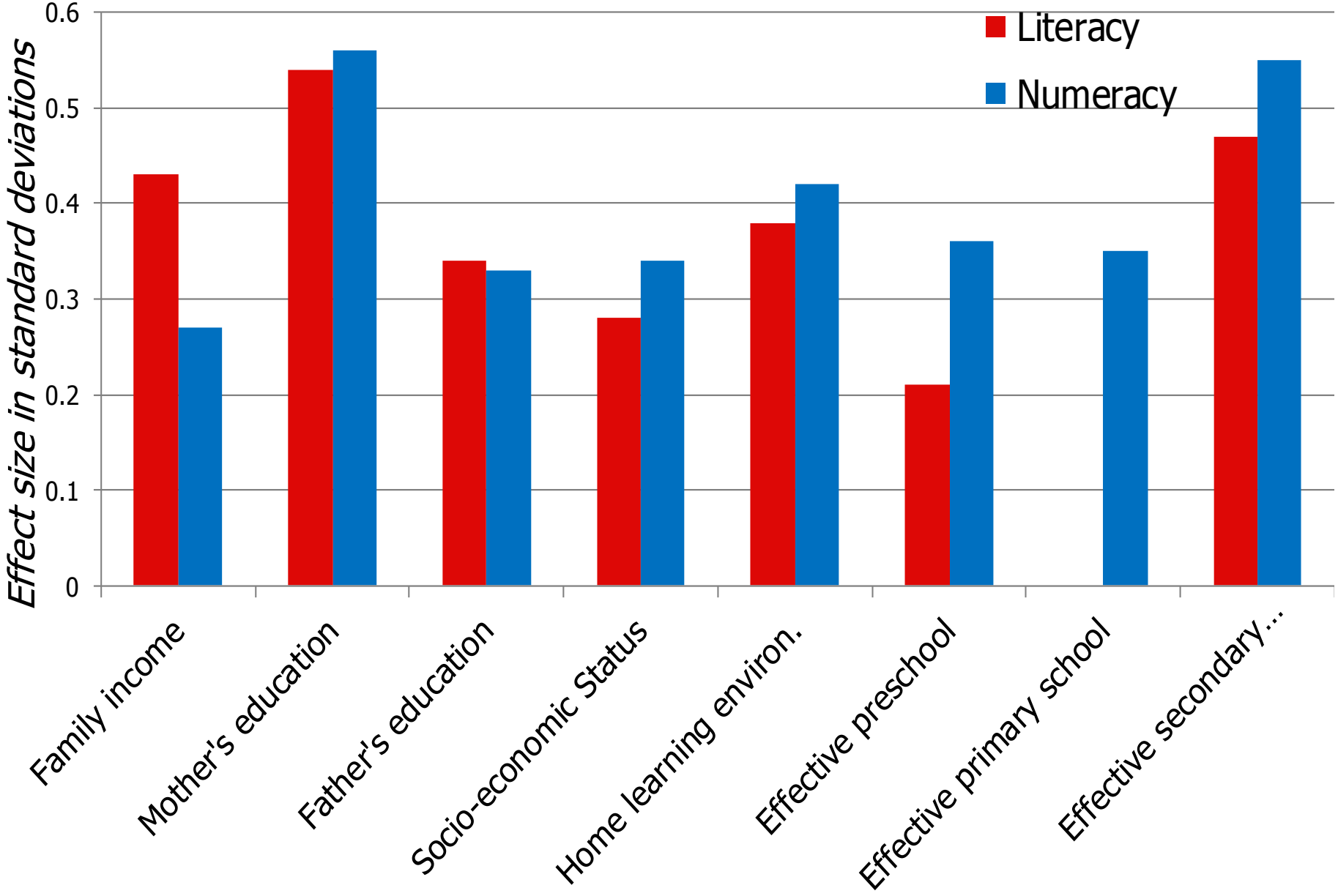
Effects upon Age 11; literacy and numeracy



Pre-school Quality and Self-regulation and Pro-social behaviour (age 11 and 14)



Effects at Age 16: Literacy and Numeracy



EFFECTIVE PRE-SCHOOL PROVISION IN NORTHERN IRELAND (EPPNI)

Study in Northern Ireland
850 children followed from 3 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.

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)
- *2016* - 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.

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

DENMARK – high quality preschool- better 16 years outcomes

USA – evidence from some states of benefits of 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.

Goodman & Sianesi (2005). Early education and children's outcomes: How long do the impacts last? *Fiscal Studies, 26*, 513-548.

Pre-school in random sample of children born in 1958 in UK

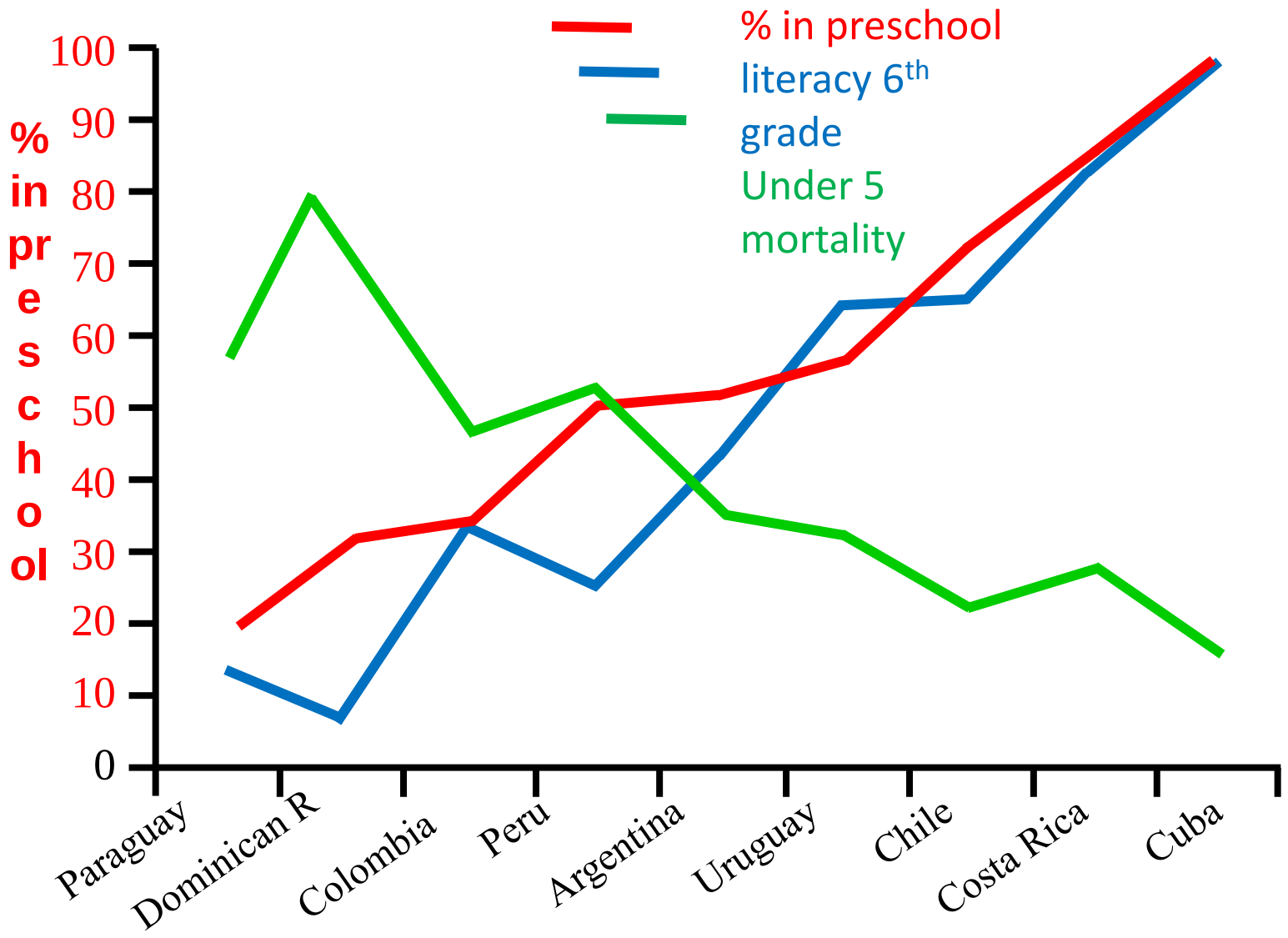
Effects on cognition and socialisation are long-lasting.

Controlling for child, family and neighbourhood, there were **long-lasting effects from pre-school education**.

pre-school leads to **better cognitive scores at 7 and 16 years**
In adulthood, pre-school was found to increase
the **probability of good educational qualifications** and **employment at age 33**, and
better earnings at age 33.

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."

OECD (2011). *Pisa in Focus 2011/1: Does participation in pre-primary education translate into better learning outcomes at school?.* Paris: OECD. Available at
www.pisa.oecd.org.dataoecd/37/0/47034256.pdf

OECD 2013

"Investing in high-quality early childhood education and initial schooling, particularly for children from socio-economically disadvantaged backgrounds, has proved to be an efficient strategy to ensure that all children start strong and become effective learners.

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

What do we mean by quality in early childhood education and care?

2 major aspects of quality

Structural quality

Process Quality

Structural & Process Quality

Structural factors – relatively stable over time, e.g.,
Group size
Adult: child ratio
Staff training and qualifications
Curriculum
Wages and conditions of staff
Staff turnover – stability

Process factors, child's daily experience, e.g.,
Adult: child interactions
Relationships
Communications
Responsiveness
Adult-initiated vs. child-initiated interactions

Structural → **Process** → **Child Outcomes**
Easy to regulate hard to regulate

Effective Pre-schools

- **The EPPSE study identified which pre-school centres were having the most benefit for children's development.**

- **Then case studies of very effective and average centres to ask what made a difference?**

- **ANSWER:-**
- **Interactions Drive Development**

Effective Pre-schools

Five areas were particularly important in differentiating effective preschools:

- **Quality of the adult-child verbal interaction.**
- **Knowledge and understanding of the curriculum.**
- **Knowledge of how young children learn.**
- **Adults skill in supporting children in resolving conflicts.**
- **Helping parents provide learning interactions at home.**

Sustained Shared Thinking

- In effective preschools a specific type of interaction occurred more often.
- We called this

  Sustained Shared Thinking – SST

Where adult and child interact to jointly solve a problem, the adult feeding the child the information needed for the child to come up with the solution.

What is the role of non-cognitive skills for educational outcomes?

Non-cognitive skills are individual attributes that are not derived from cognitive abilities,
e.g., social skills, personality

Child's personal resources at age 5 (non-cognitive skills)

Measures of social development

- **Self-regulation (independence & concentration)**
- **Sociability**
- **Cooperation**
- **Antisocial/worried Behaviour**
- **Prosocial behaviour**
- **Openness**

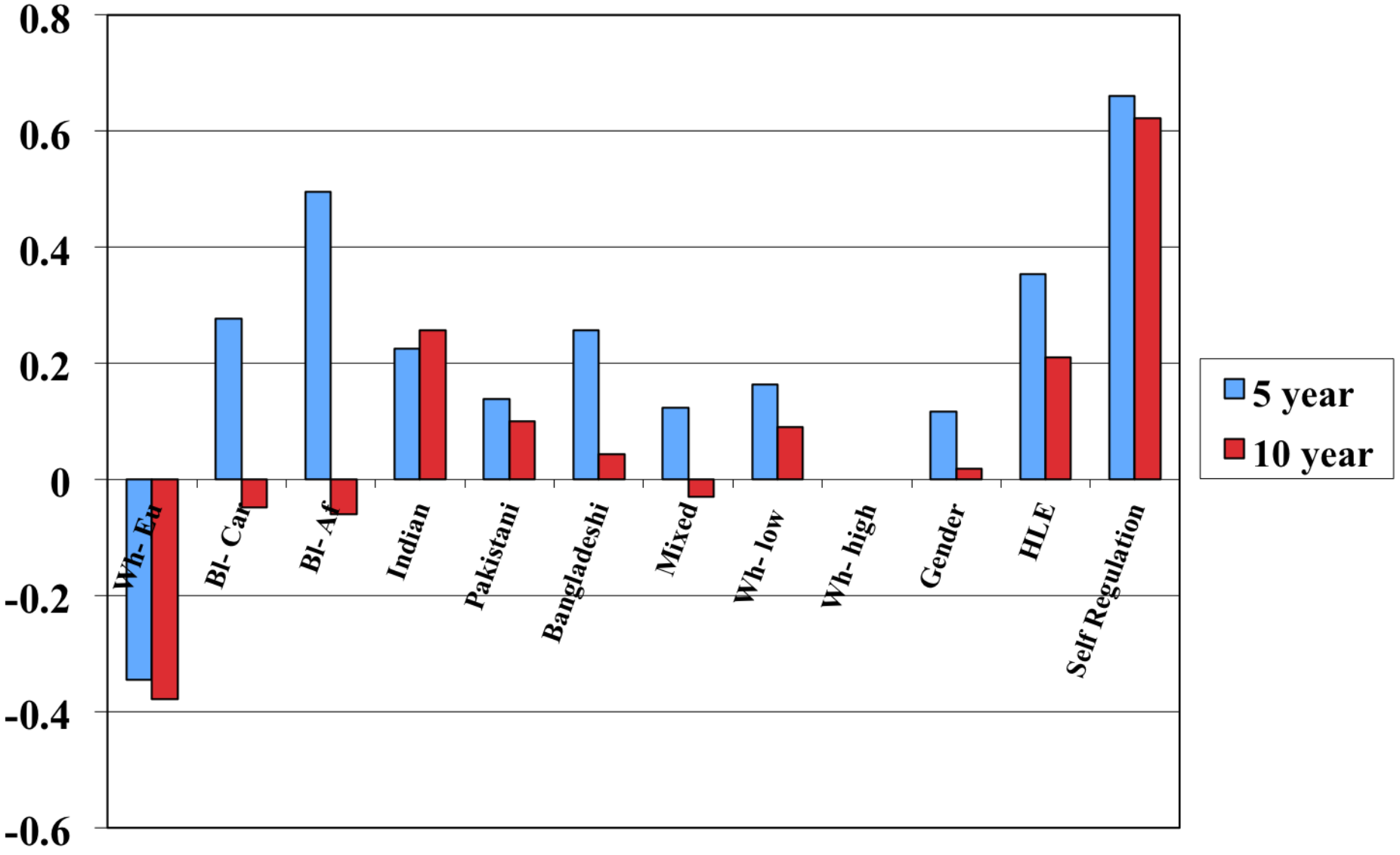
Tested for effects upon cognitive outcomes (5, 6, 7 & 10 years)
Only self-regulation had significant independent effect (similar all years)

Self-Regulation

- A child's ability to regulate behavior and emotions plays a role in becoming a competent individual.
- The learning of this ability starts in early life.
- Children become able to think before acting, control their anger or need to cry.
- Involves conscious & unconscious processes

Predicting resilience for 5 & 10 years literacy

-ethnic groups compared with white – mid/high SES



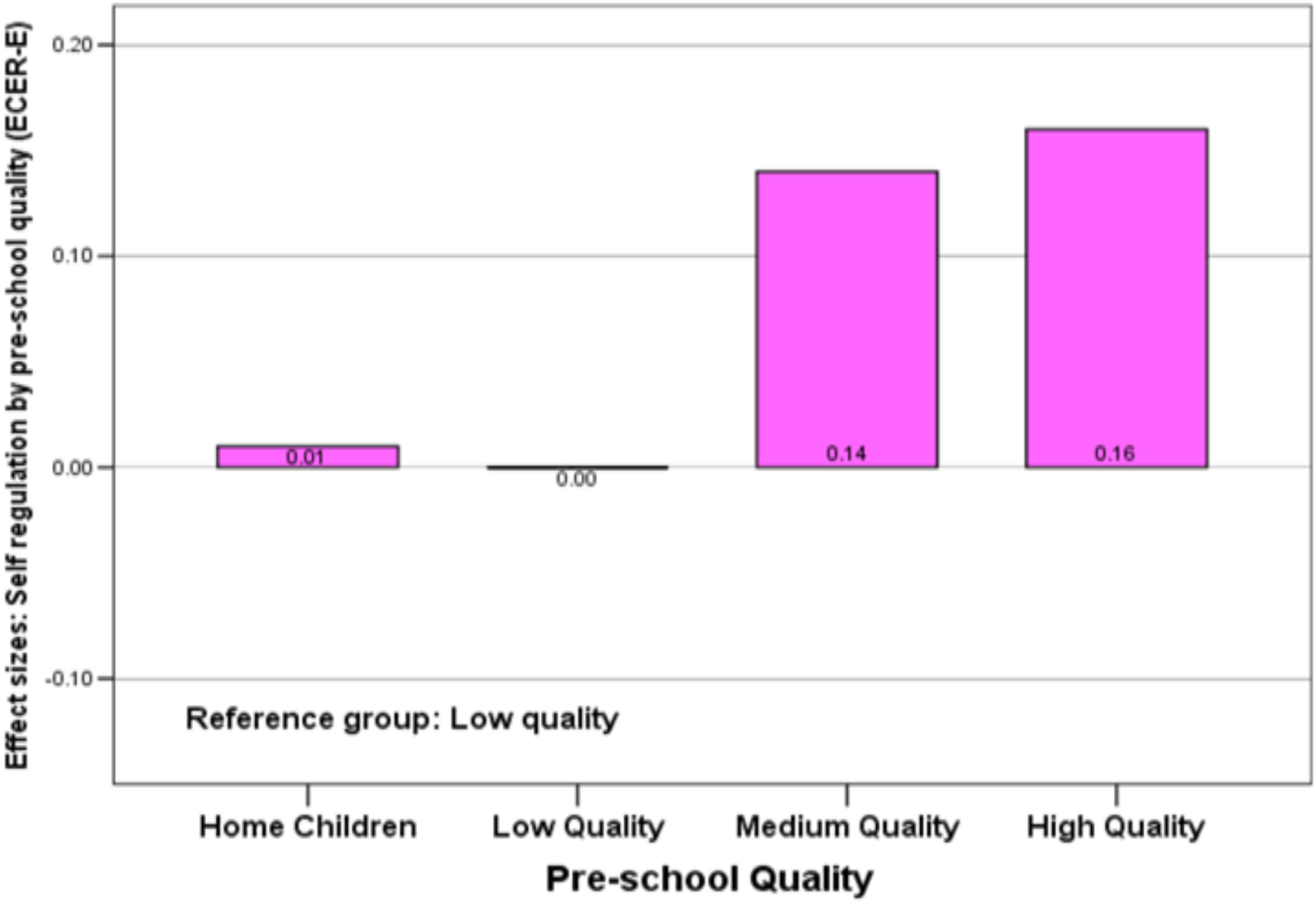
Items for Self-Regulation – 5 year olds

- Thinks things out before acting
- Not easily distracted
- Can move to new activity upon completion of task
- Can independently select and return equipment
- Does not fidget or squirm about
- Perseveres in face of difficulty
- Likes to work things out for self
- Not restless
- Sees task through to end

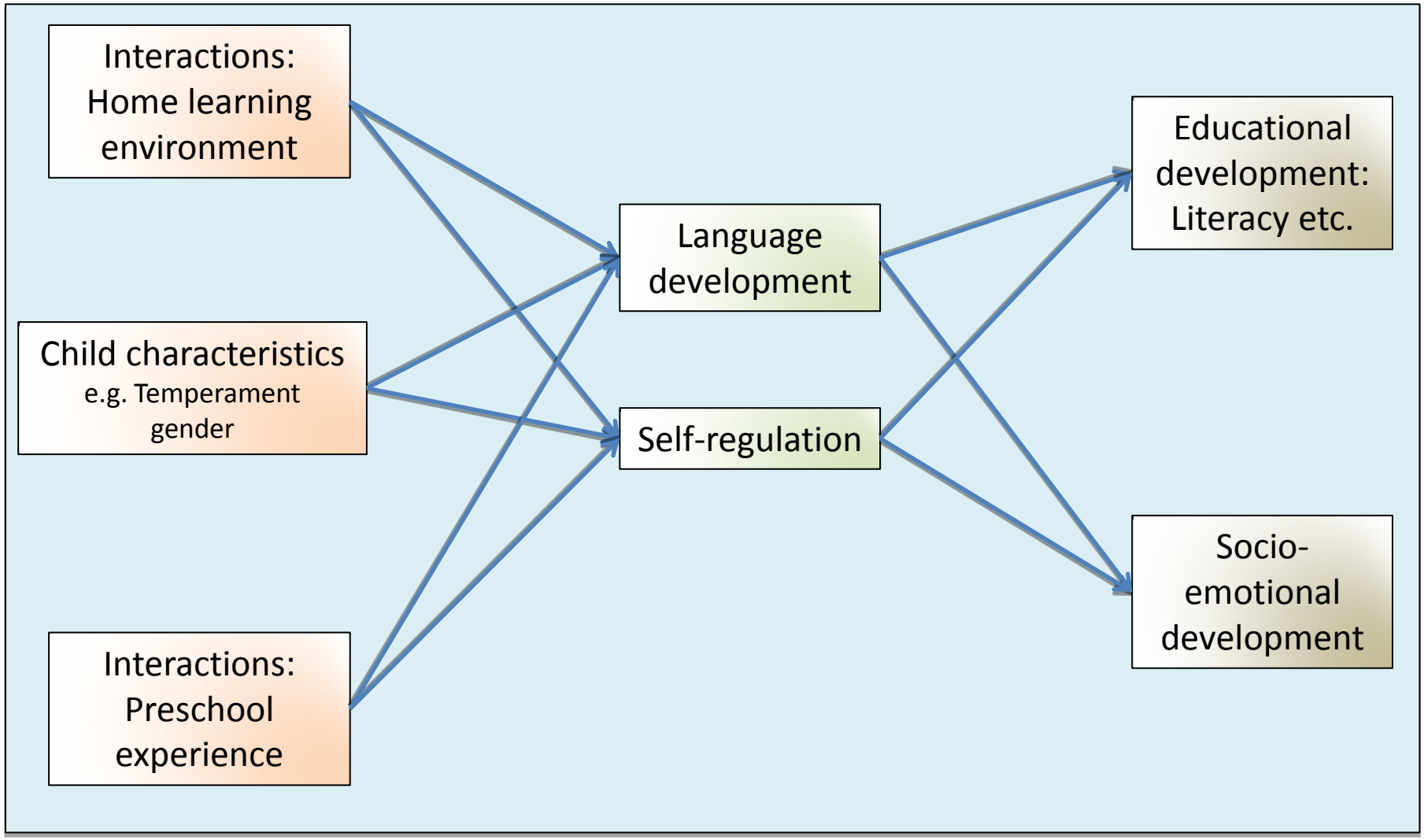
What influences self-regulation

Age	- older -better
Gender	- girls -better
Birth weight	- low birth weight -less
Developmental problems	- worse
Home Language not English	- worse
Siblings	- 1 or 2 best
FSM – measure of poverty	- lower
Mothers education	- higher -better
Fathers education	- higher -better
SES	- higher -better
HLE	- higher -better
Preschool quality	- higher -better
Preschool duration	- more -better

Effects of pre-school on self-regulation at age 10



Model for understanding influences on child development



Interactions Drive Development

Interactions both in the home (HLE) and in ECEC (quality of ECEC) have effects on developmental outcomes.

The effects in the early years for
language development and
self-regulation
seem particularly important for long-term outcomes.

-suggests interactions fostering language development and self-regulation are particularly important aspects of quality in ECEC.

LESSONS

1. Early years are very important
2. ECEC is part of infrastructure for a successful society (example)
3. High quality ECEC boosts development
4. Parenting is also very important
   – parenting support can work
5. ECEC can lift population curve.
6. Disadvantaged children benefit greatly from high quality ECEC.

Example References

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