

Niamh at 9 months



Niamh at 3 years



Niamh at 5 years



Fun, Learning or Both – Does it Matter to Academic Achievement what Children do on the Internet?

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Introduction

- ‘Digital divide’ debate, concern has shifted from access to use of computers/internet
 - DiMaggio et al, 2004; Willis & Tranter, 2006; Greenfield & Yan, 2006
 - Rapid increase in levels of access to computer & internet.
 - In 2011, 93% of two-adult households with children and 76% of one-adult households with children have internet access
- Paper uses 9-year cohort of GUI Survey (N= 8570, RMF)
 - Examine social class differences in the way children combine use of the internet for learning and for fun at home and
 - Examine whether the different patterns of use at home are associated with differences in academic achievement.



Outline

- **Conceptual Background**
- **Data & Measurement**
- **Hypotheses**
- **Social class differences in patterns of use**
- **Association between patterns of use and reading**
- **Conclusions**



Conceptual Background

- **Drawing on socio-cultural reproduction theory...**
 - We expect that parents will seek to pass their advantage onto their children, not only through transmission of economic capital but also social and cultural capital (Bourdieu, 1984, 1990; Bourdieu and Passeron, 1977; Passeron 1986).
 - We know that those from more advantaged class backgrounds have higher levels of academic achievement in school.
 - Home use of the internet may be one of the mechanisms through which this parental social capital and cultural capital advantage is passed on to children.



Data

- **GUI 9-year olds, probability sample, N=8,570**
 - Two-stage, clustered in 910 schools in Ireland (stratified by county, disadvantage, religious denomination, size, gender mix).
 - Response rate 82% at school level and 57% at household level
 - Data collection in homes August 2007 – May 2008
- **Data reweighted to ensure representativeness.**
- **Questionnaires were completed by CAPI with**
 - child's primary caregiver (socio-demographic data, child computer in bedroom, child time spent reading)
 - the child (use of internet)
 - school principal and class teacher (access to PC at school).



Measurement

- **Drumcondra Maths & Reading tests (Educational Research Centre, 2006; 2007).**
- **Irish social class measure, grouped into 3 categories:**
 - Professional/managerial;
 - Intermediate and skilled manual;
 - Unskilled/semi-skilled manual
 - Unknown (a particularly disadvantaged group)
- **Use of Internet: Do you use it [PC at home] for ...**
 - Surfing the internet for fun? [Fun]
 - Surfing the internet for school projects? [Learning]



Hypotheses

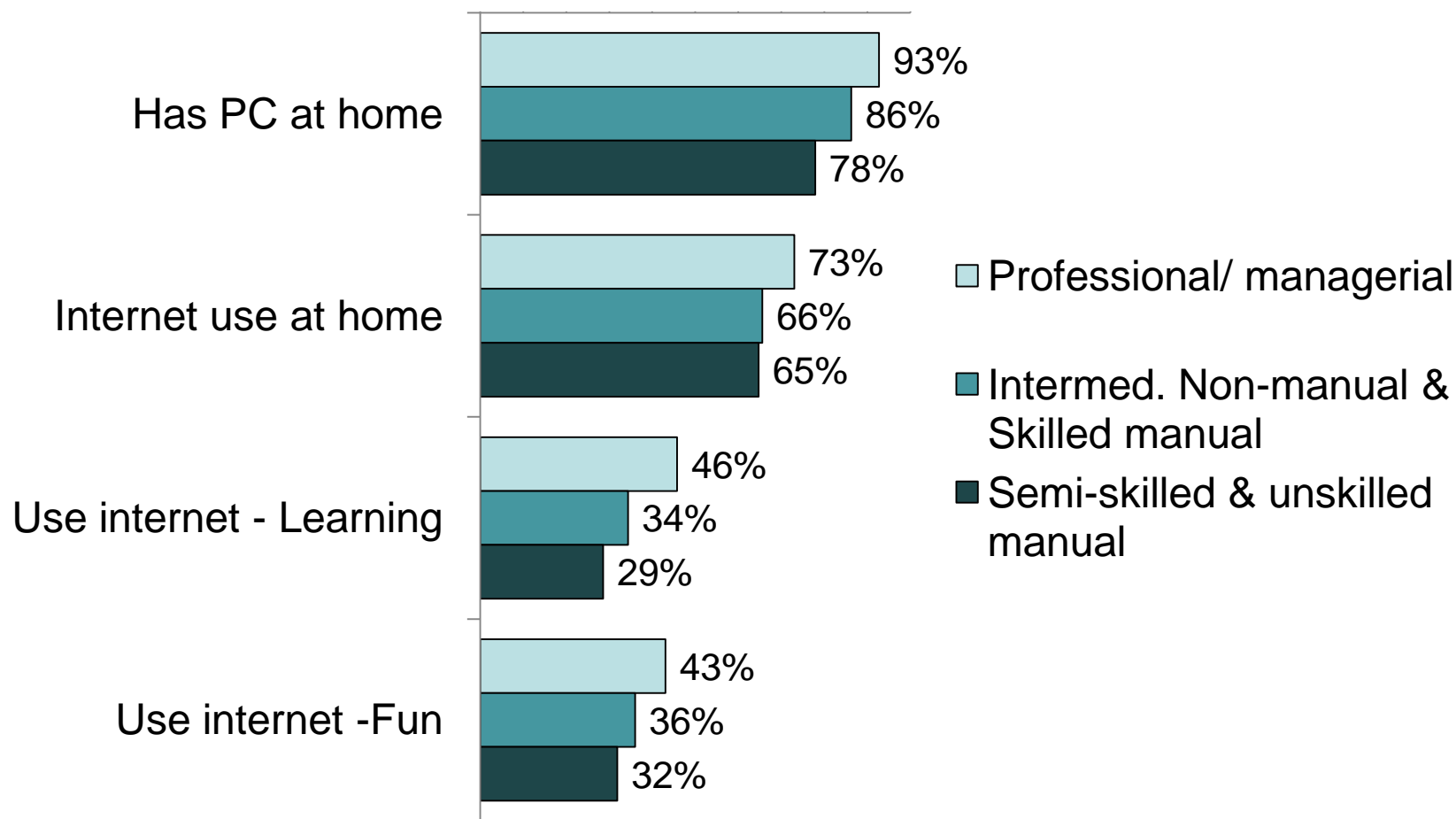
- **Expect children's internet use linked to social class**
 - Expect children from professional/managerial backgrounds more likely to use the internet for 'learning only' (socio-cultural reproduction)
 - Expect children from lower service/ manual backgrounds will be more likely to use the internet for 'fun only'.
 - No hypothesis on using the internet for both fun & learning.
- **Expect reading & maths performance linked to use of the internet for 'learning'** (following Casey et al, 2012).
 - Any benefit of using internet for 'fun only' expected to be less than benefit from using the internet for 'learning only'.
- **Expect greater positive impact among children from professional & managerial backgrounds.**
 - Parental guidance; better hardware/ software/ speed



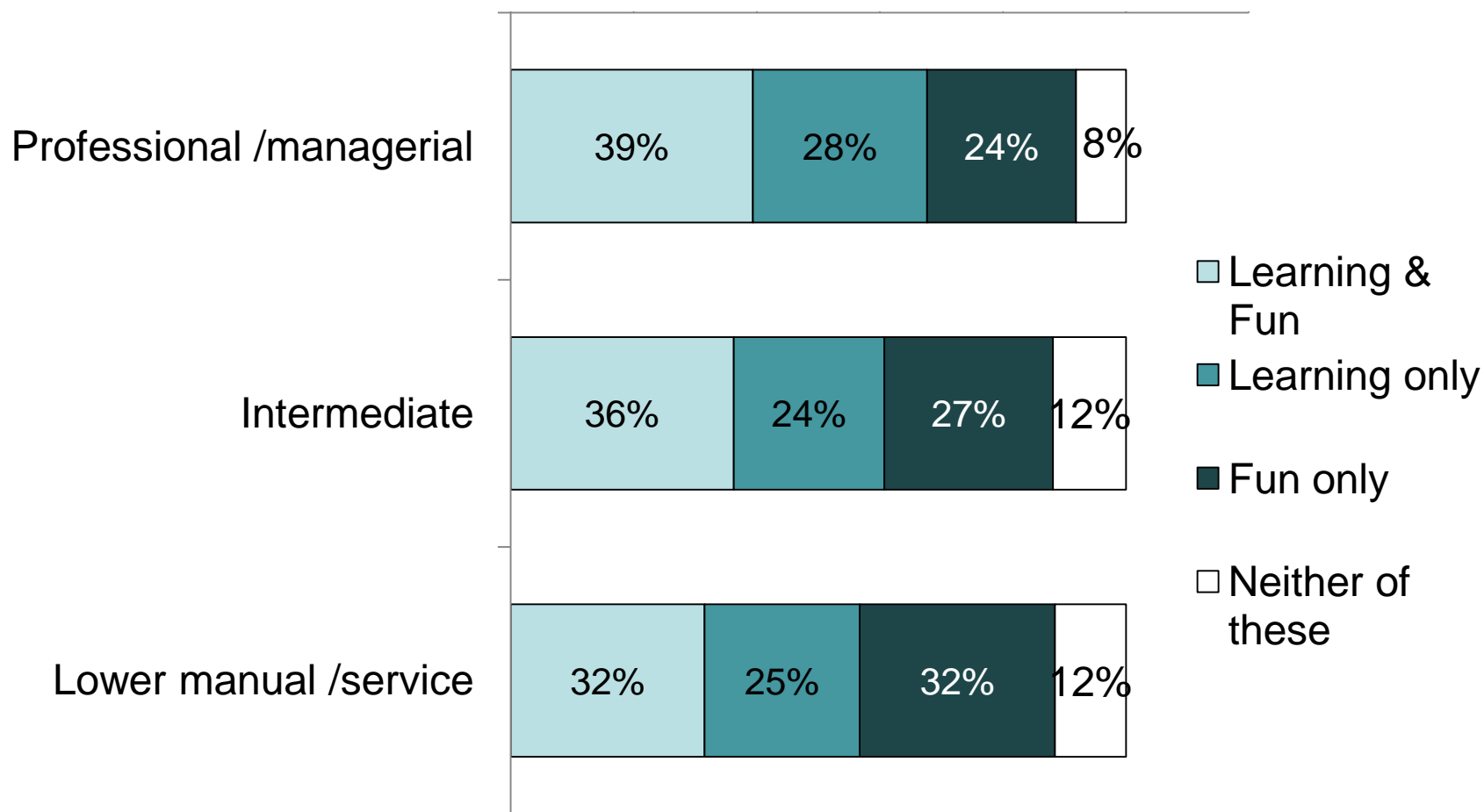
SOME DESCRIPTIVE RESULTS



Social Class differences in Access to & Use of Internet



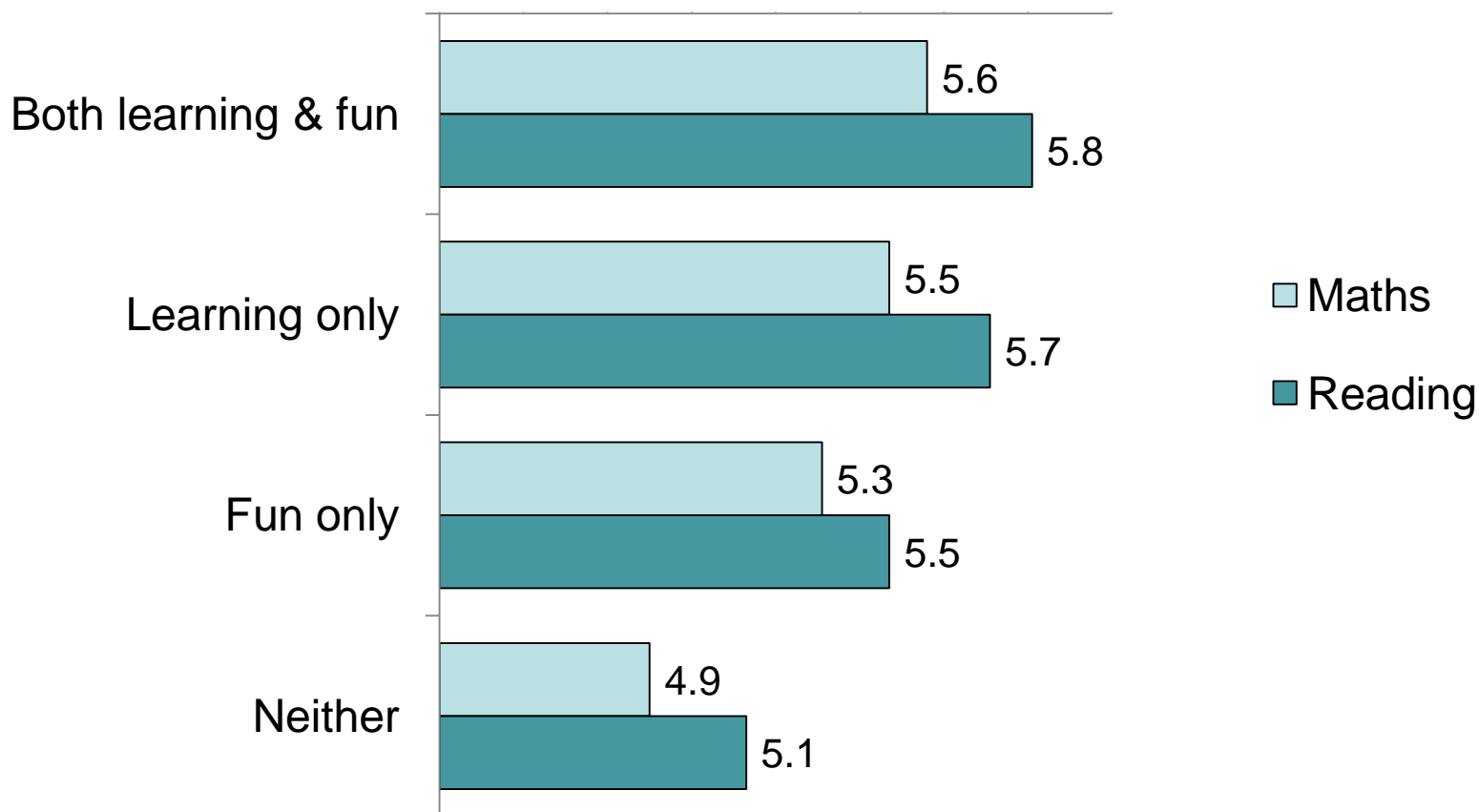
Combined Patterns of Use



Base: 9-Year olds who use the internet



Reading & Maths Score by internet use (bivariate)



Base: 9-Year olds.



Modelling Patterns of Use

- **Multinomial logit (neither, fun only, learning only, both)**
 - Robust standard errors (adjusted for clustering and for weighting).
 - Model reference category is 'no use of the internet for fun or school projects' (includes those with no access to internet at home)
- **Main interest is in social class and related variables:**
 - Social Class (household) Income quintile
 - Primary care-giver education Basic deprivation
- **Controls**
 - Number children in HH TV in bedroom
 - Lone parent or two parents PC/laptop in bedroom
 - Parents cohabiting or married Read for 1+ hours per day
 - Gender Internet in classroom
 - Urban/rural location



Social Class and Patterns of Internet Use (Odds)

Middle Income vs. top

Second income 5th vs top

Bottom income 5th vs top

PCG Educ. Hi 2nd vs. Hi 3rd

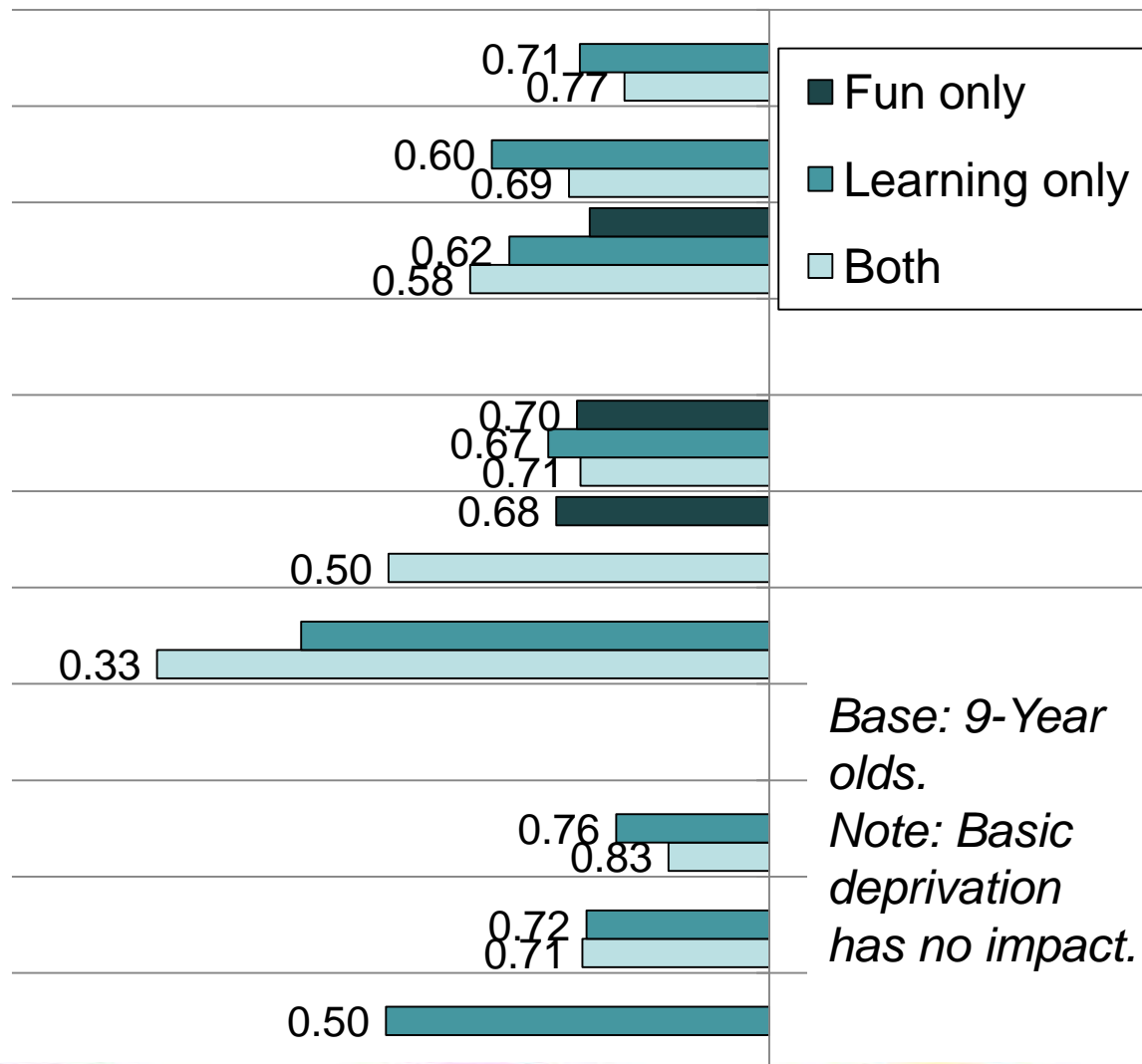
PCG Educ. Lo 2nd vs. Hi 3rd

PCG Educ. no quals vs. Hi 3rd

SC Intermed. vs. Profess./Manag.

SC semi- unskilled manual vs. Profess./Manag.

SC unknown vs. Profess./Manag.

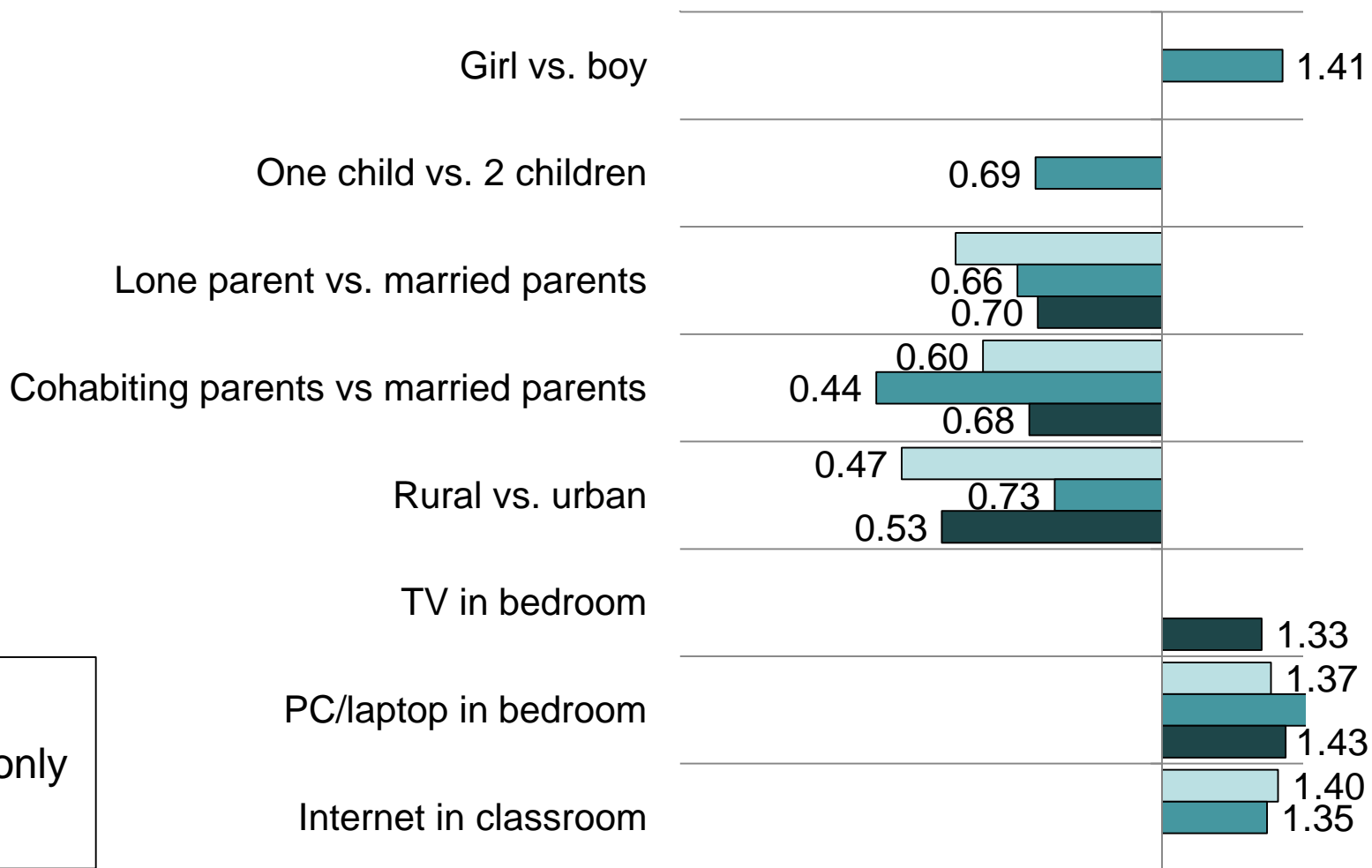


Base: 9-Year olds.

Note: Basic deprivation has no impact.



Other factors and Patterns of Internet Use (Odds)



Base: 9-Year olds. No impact: larger families, reading for 1+ hours per day.

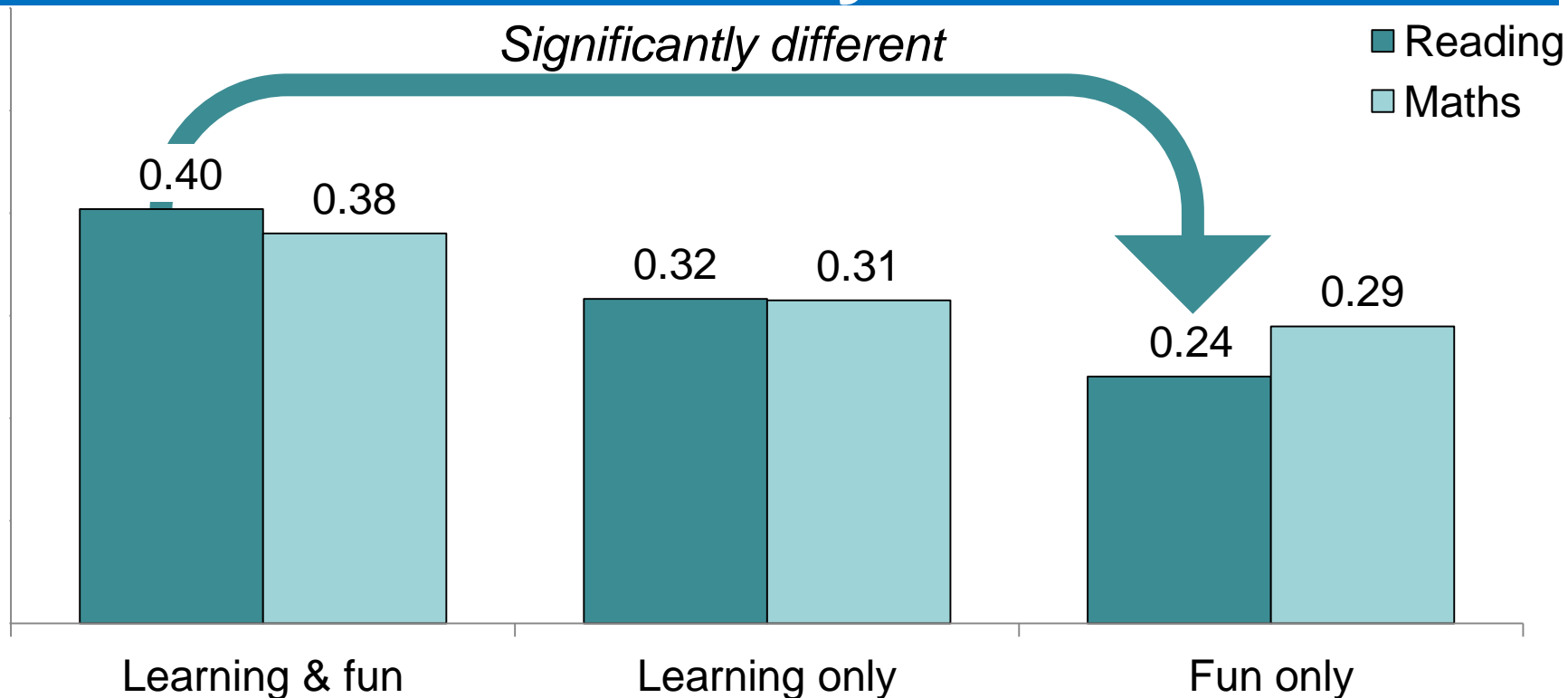


But does it matter to reading and maths achievement?

- **To check whether these patterns of internet use matter for reading and mathematics achievement**
 - Linear regression of Drumcondra reading and maths scores on patterns of internet use
 - Controlling for the full set of social class variables, household type and size variables etc. as before



Change in reading & maths score by internet use



Base: 9-Year olds. From linear regression model with controls (as previous model)

Drumcondra Reading and Maths scales standardized to range from 0 to 10.

-- All uses of internet are more beneficial than non-use (Ref.) for both reading & maths

-- Learning & fun significantly more beneficial for **reading** than Fun only.

R-square .178 for reading; .136 for maths.

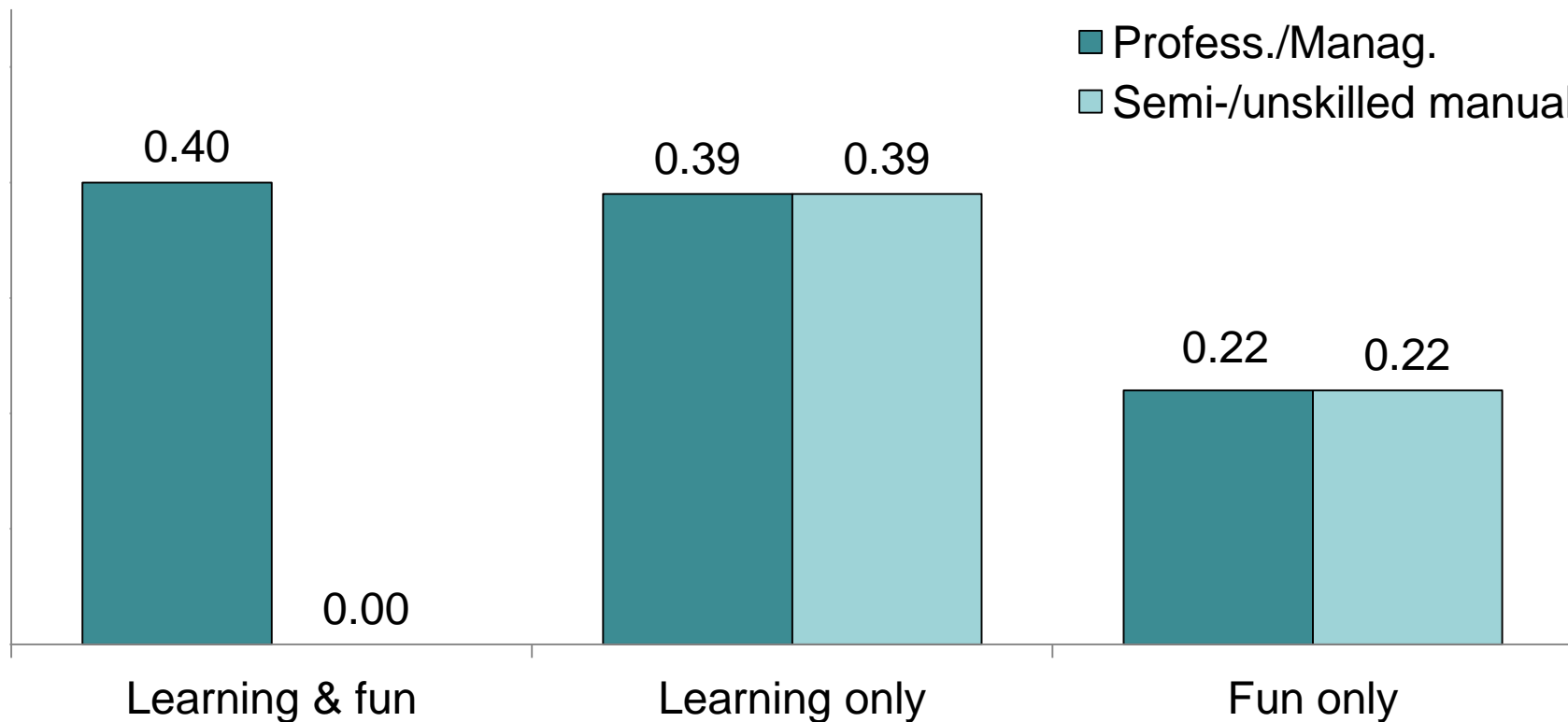


Is the benefit of internet use greater for higher social classes?

- **Using the internet is associated with higher reading and maths scores**
- **But are the benefits of internet use greater for those in higher social classes?**
 - Unmeasured factors such as parent's capacity to help, quality of hardware and software, connection speed.
- **Linear regression model with interaction between type of internet use and social class.**
 - Found a significant social class difference in impact of internet use for reading
 - for contrast between **professional/managerial & semi/unskilled manual**
 - For use of internet for **both learning & fun**



Reading & Maths by internet use by social class



*Base: 9-Year olds. From linear regression model with controls (as previous model)
Drumcondra Reading and Maths scales standardized to range from 0 to 10.
Using the internet for **learning only** or for **fun only** is more beneficial for reading than non-use for all social classes. But the benefits of using the internet for **both learning & fun** are not found for children from the semi-skilled/unskilled manual social class.*



Summary

- **There are social class differences in Internet use**
- **Using the internet is associated with higher reading and maths scores**
 - Any use is beneficial, compared to no internet use
 - But type of use (learning, fun) matters less
 - Though, contrary to expectations using the internet for both learning & fun is significantly more beneficial than using the internet for fun only – but only in the case of reading
- The improved reading associated with using the internet for '**both** learning & fun' are not found for those in semi-skilled/unskilled manual social class
 - No social class difference in impact of internet use for mathematics.



Implications

- **Greater impact on reading because Internet is very much a text-based medium – to find the material they need, children get reading practice.**
 - Explains why reading impact larger than mathematics impact
 - The benefit may lessen with age.
 - Social class difference may reflect parental guidance in finding internet sites that make learning fun.