

**Associations between the technology use and scholastic  
achievement of students in urban DEIS primary schools**

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# Delivering Equality of Opportunity in Schools (DEIS)

- ▶ Introduced in 2006/7, DEIS is the current national initiative aimed at addressing educational disadvantage in Ireland.
- ▶ DEIS combines previous supports with new elements.
- ▶ Has urban and rural dimensions
- ▶ Operates at primary and post-primary levels.

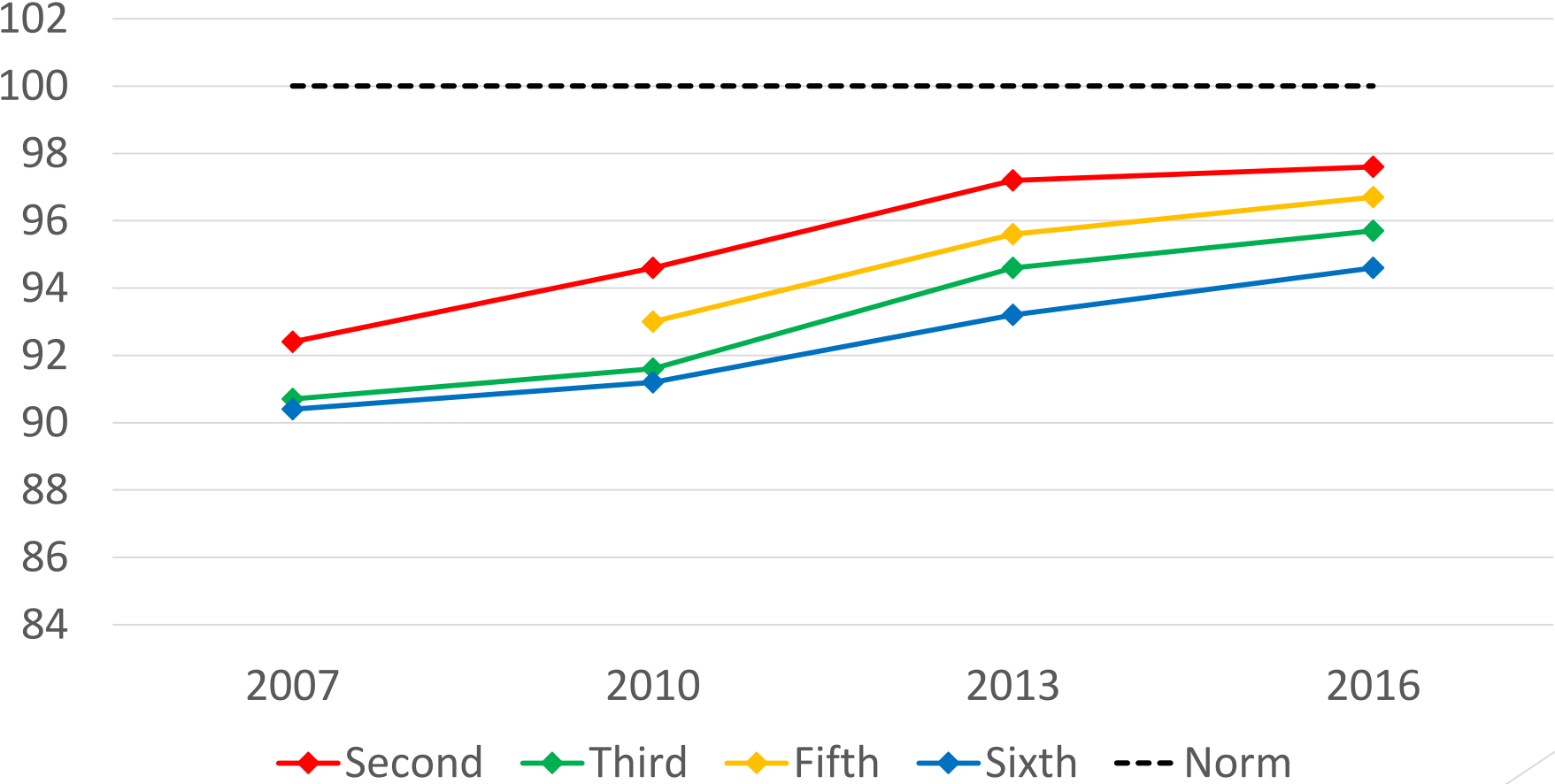
# Delivering Equality of Opportunity in Schools (DEIS)

- ▶ Among other things, the **SSP** under **DEIS** provides:
  - Reduced class size (Band 1 urban only)
  - Additional funding
  - Access to planning supports
  - Access to literacy/numeracy programmes & professional support in their implementation
  - HSCL Scheme
  - School Completion Programme
  - School Meals
  - Free book grant

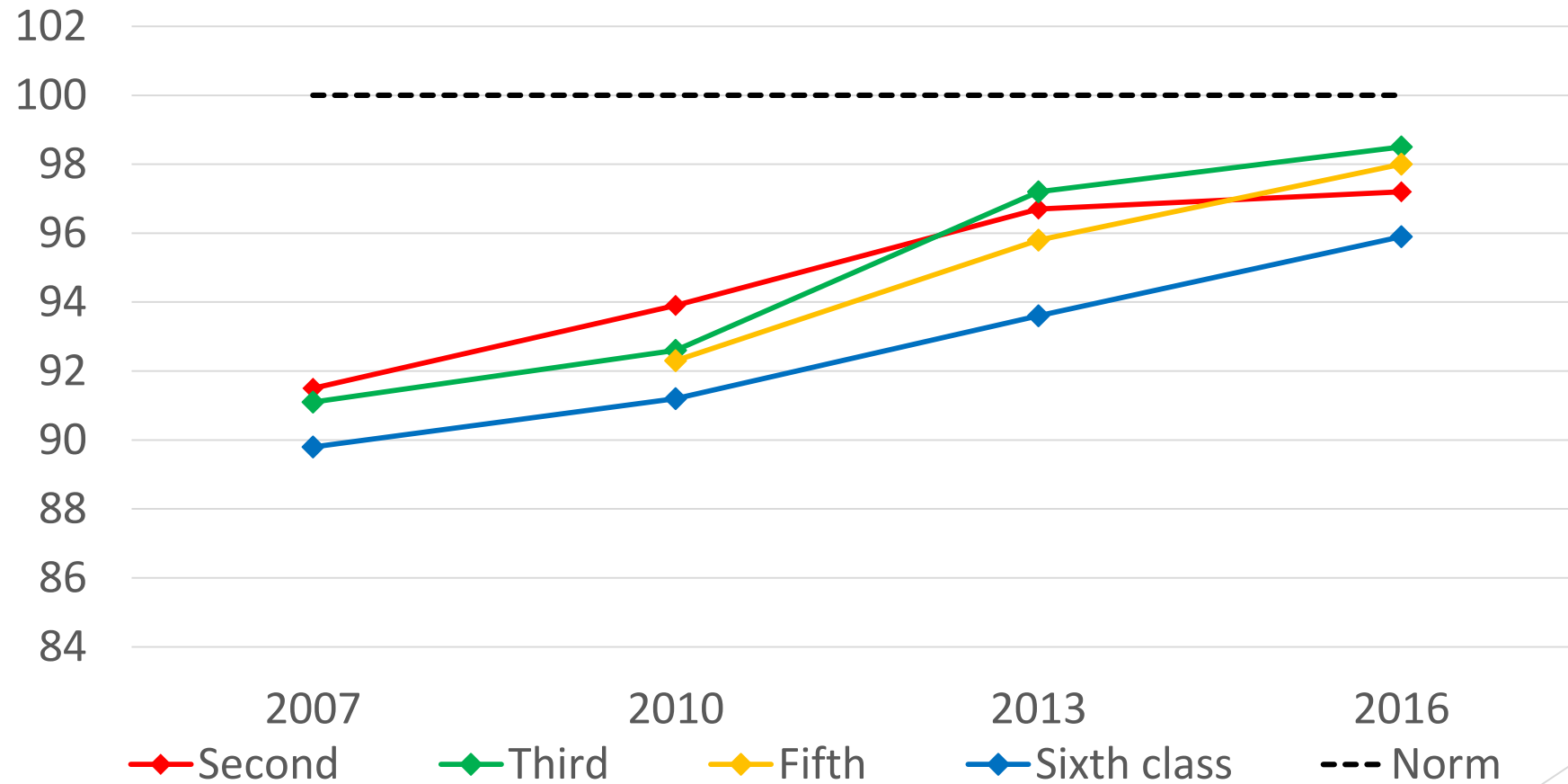
# The independent evaluation of DEIS

- ▶ Carried out by the ERC on behalf of the Department of Education and Skills since 2007
- ▶ Implementation
- ▶ Outcomes

# Reading Standard Scores



# Mathematics Standard Scores



# Contextual Information

- ▶ Questionnaires administered in conjunction with the cognitive tests
- ▶ Administered to children, their parents, their principals
- ▶ Collect information on:
  - ▶ Sociodemographic profile
  - ▶ Educational aspirations and expectations
  - ▶ Pupil attitudes towards school, reading, mathematics
  - ▶ Parental involvement and home learning environment
  - ▶ **The ways in which children spend their time**

# The Present Investigation

- ▶ Data collected in May 2016
- ▶ Over 17,000 children in 118 schools
- ▶ Tests and questionnaires administered by teachers
- ▶ At Third class level, 4289 pupils participated (50.0% girls; age range: 8-10 years;  $M= 9.4$  years;  $SD= 0.48$ )



# The Present Investigation

## ▶ Measures:

- ▶ Drumcondra Primary Mathematics Test – Revised (DPMT-R).
- ▶ Drumcondra Sentence Reading Test (DSRT).
- ▶ Pupil Questionnaire: items on technology access and use

# Home technology access

		Third Class		
		%	Reading	Maths
Computer or tablet at home	Yes	93.3	96.1	99.0
	No	6.7	<b>92.3</b>	<b>92.9</b>
TV in bedroom	Yes	67.6	94.7	96.9
	No	32.4	<b>98.2</b>	<b>102.0</b>
Pupil owns mobile/ smartphone	Yes	64.3	94.5	97.1
	No	35.7	<b>98.3</b>	<b>101.2</b>
Member of a social network	Yes	46.5	96.1	99.1
	No	53.5	95.7	98.4

# Time spent on a typical school day...

		Third Class		
		%	Reading	Maths
Messaging friends	No time	43.3	97.1	100.7
	Up to 1 hour	22.8	97.7	101.1
	1-2 hours	12.0	96.0	98.9
	2-4 hours	8.5	93.7	95.3
	More than 4 hours	13.5	90.2	90.1
Streaming music	No time	37.5	97.4	100.7
	Up to 1 hour	26.9	97.7	101.3
	1-2 hours	13.2	94.0	97.1
	2-4 hours	9.7	93.8	95.9
	More than 4 hours	12.7	91.6	91.4
Streaming TV/movies	No time	27.8	97.3	100.8
	Up to 1 hour	26.9	97.7	100.9
	1-2 hours	19.5	96.7	99.4
	2-4 hours	12.5	93.3	96.1

# Time spent on a typical school day...

		Third Class		
		%	Reading	Maths
Streaming videos (e.g. youtube)	No time	16.6	96.4	99.8
	Up to 1 hour	23.6	97.5	101.2
	1-2 hours	19.1	97.0	100.8
	2-4 hours	15.2	96.4	98.7
	More than 4 hours	25.5	<b>93.0</b>	<b>94.4</b>
Playing electronic games on devices (phone, tablet)	No time	15.5	96.1	99.5
	Up to 1 hour	30.4	98.1	101.4
	1-2 hours	17.4	96.6	100.2
	2-4 hours	13.9	95.7	98.2
	More than 4 hours	22.8	<b>92.4</b>	<b>93.9</b>
Play computer games on a console	No time	33.4	97.2	99.7
	Up to 1 hour	19.1	97.7	101.2
	1-2 hours	12.2	96.4	100.6
	2-4 hours	11.7	95.8	98.8
	More than 4 hours	23.6	92.3	94.3

# Multilevel Modelling of Student Achievement

The background of the slide is white with abstract green geometric shapes on the right side. These shapes include overlapping triangles and polygons in various shades of green, from light to dark. A thin grey line runs diagonally across the white space, intersecting the green shapes.



# Conclusions

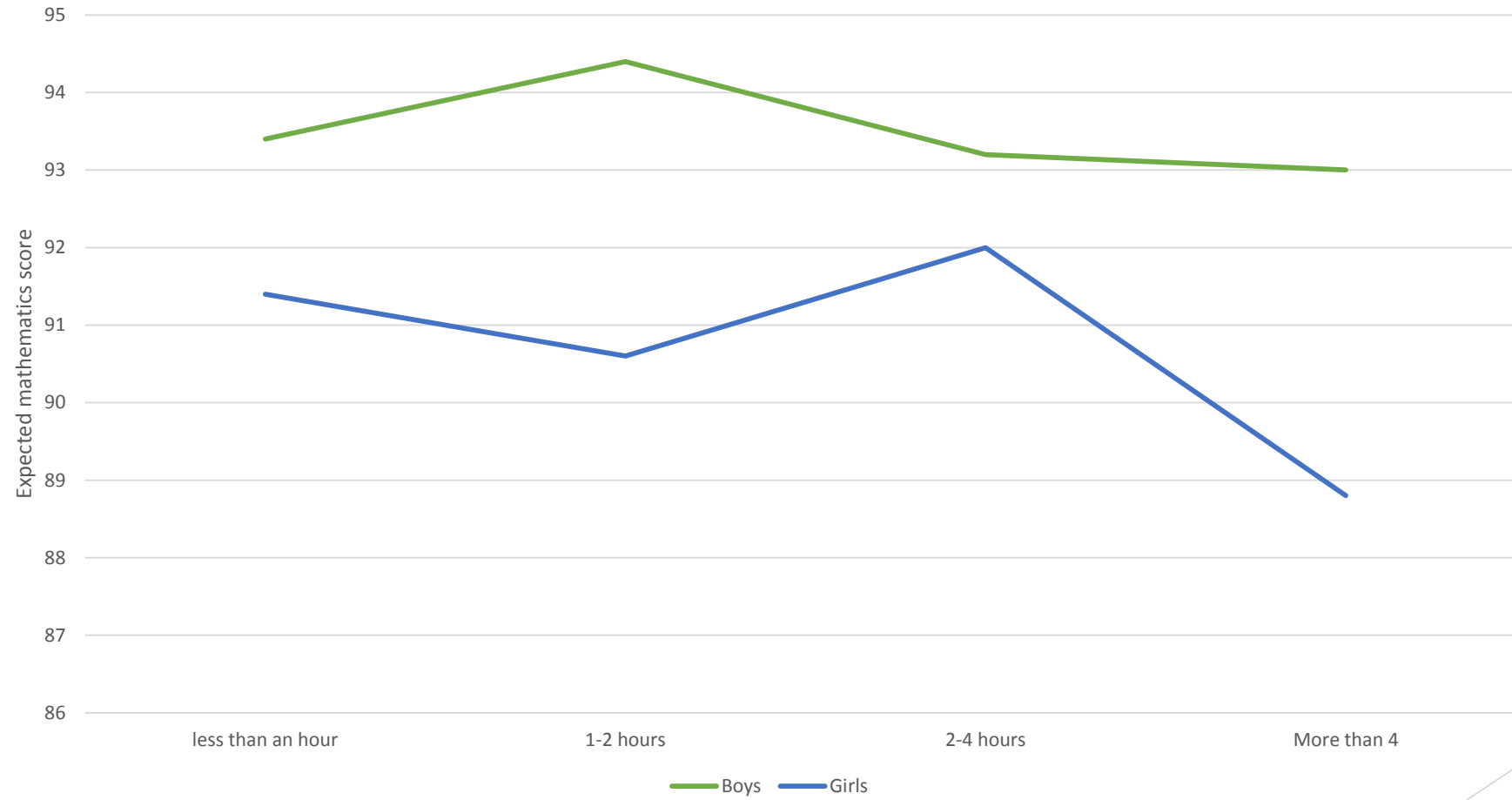
- ▶ All else being equal, large amounts of technology use are associated with lower student achievement in reading and mathematics.
- ▶ After controlling for the effects of other relevant variables, highest mean scores are found among students who engage in **moderate** technology use.
- ▶ Suggests a ‘sweet spot’ for technology usage.
- ▶ Caveats: Similar patterns are seen for other out-of-school activities (with one notable exception!), so perhaps there is nothing ‘special’ about activities involving digital technologies.

Thank you!

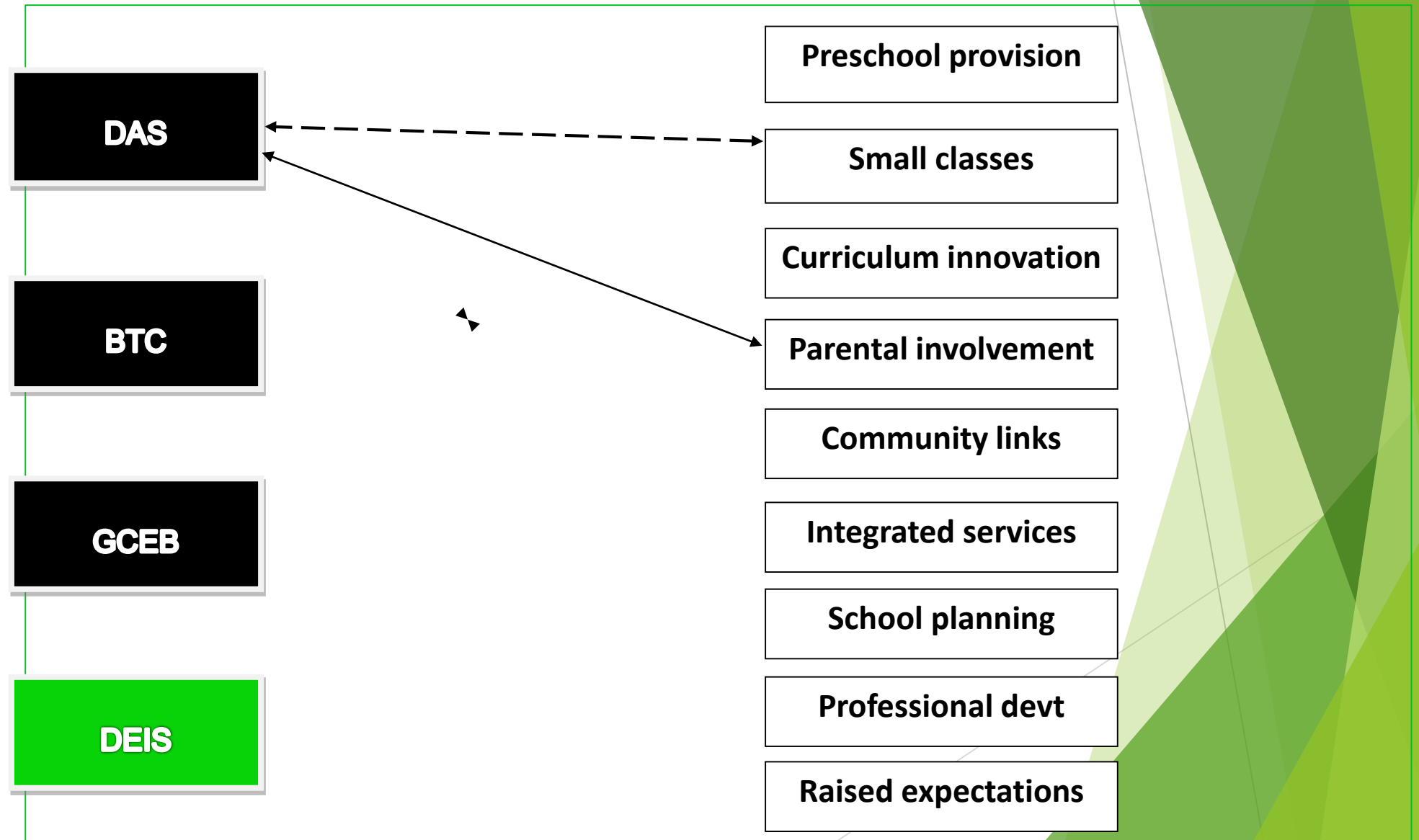
Questions?



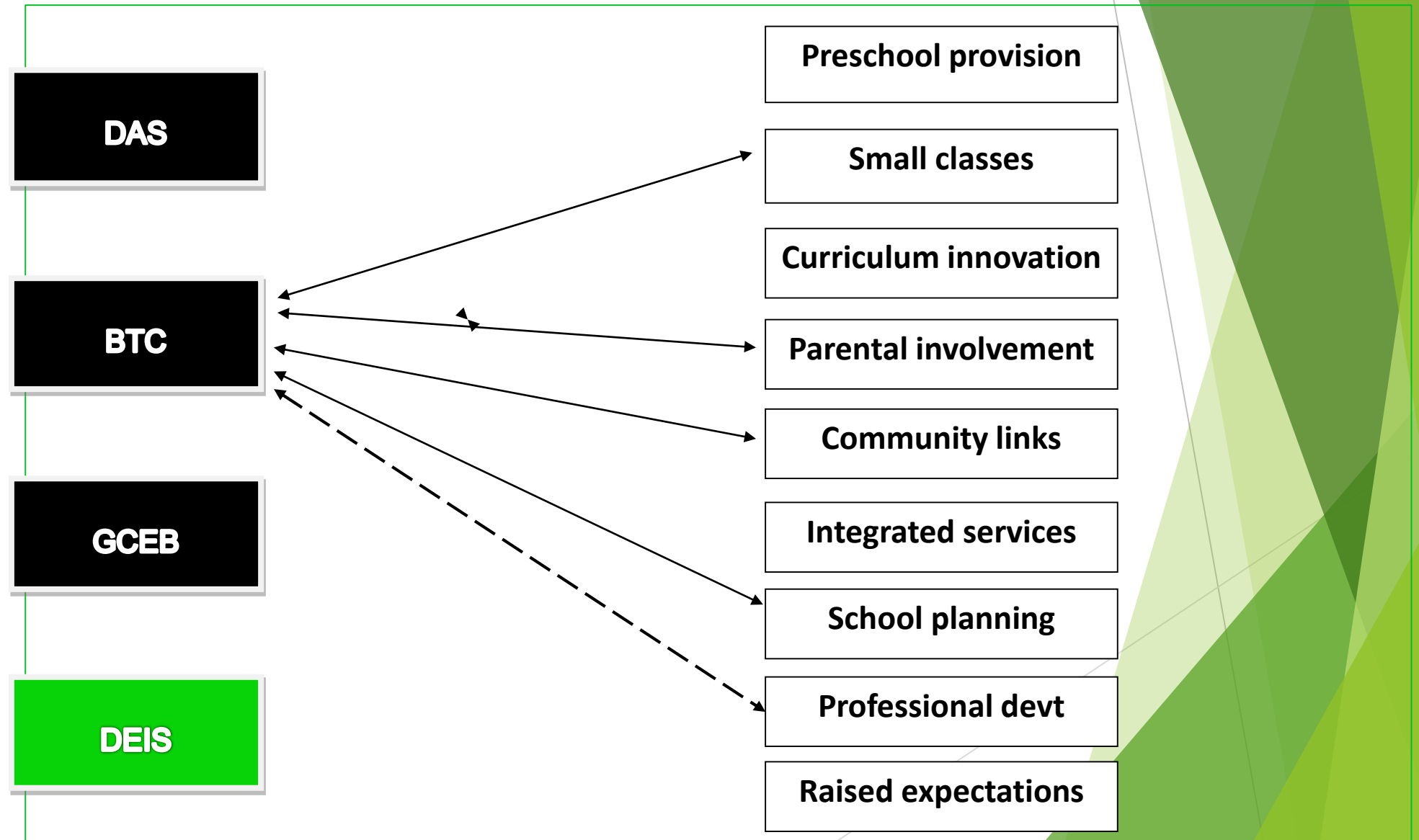
Interaction: Gender and time spent playing games on devices



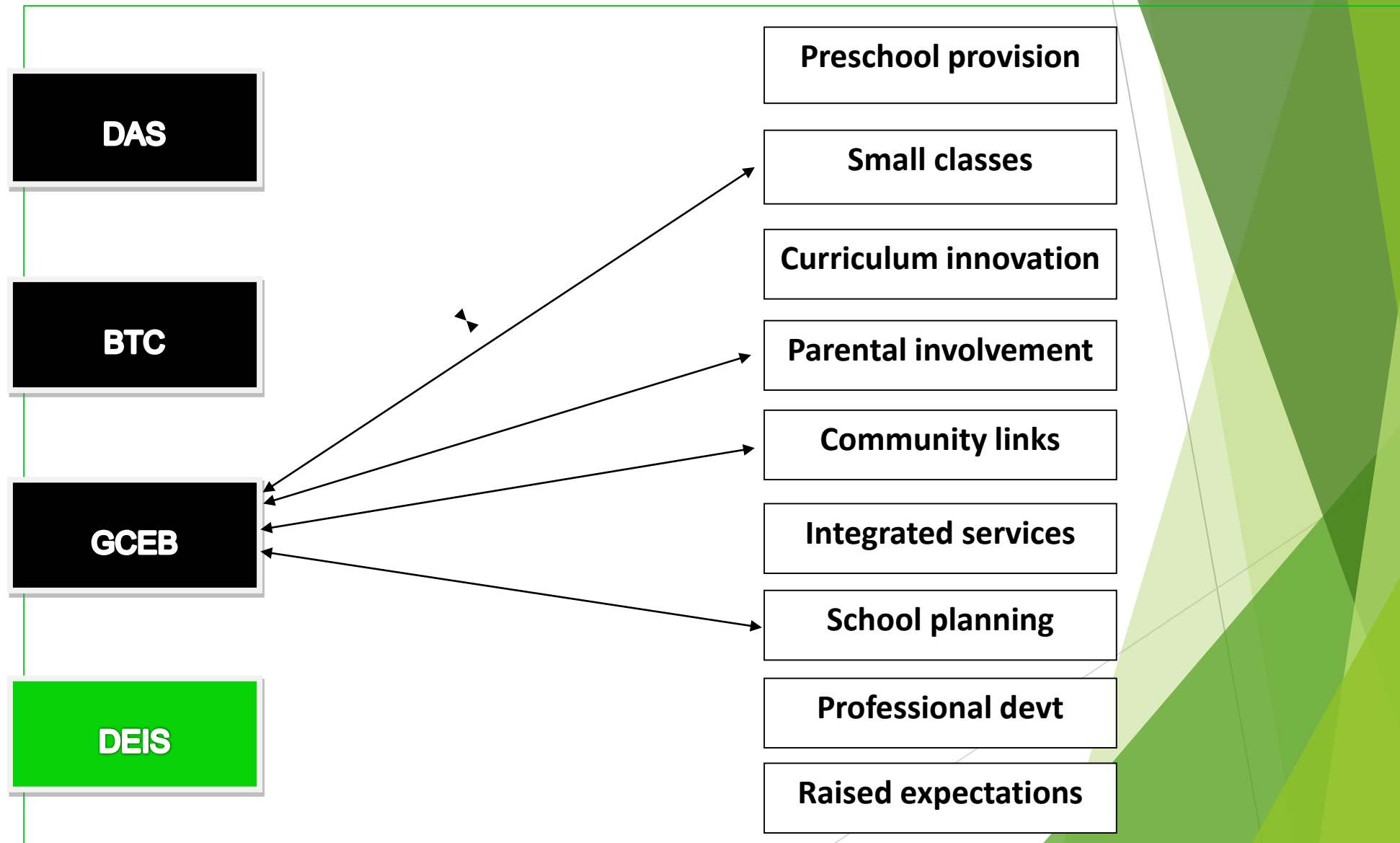
# 'Desirable' features of programmes at primary level



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# 'Desirable' features of programmes at primary level

