Educational Research Centre
Foras Taighde ar Oideachas

Addressing disadvantage:
What have we learned from the evaluation of the DEIS Programme?

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Presentation to the Clare Family Learning Project

May 28th 2014, Old Ground Hotel, Ennis

Overview

- Brief history of attempts to deal with disadvantage
- Defining disadvantage
- What is DEIS?
- Outline of the DEIS evaluation
- Recent evaluation findings at primary level
    - Achievement outcomes
    - Pupil attitudes
    - Parental factors
    - Feedback from principals (Jan – March 2014)
    - Urban/rural differences – achievements, attitudes, parent factors
- Recent evaluation findings at post-primary level
    - Achievement outcomes and retention levels
   - Implementation
- Future evaluation plans

History of provision for disadvantage

Attempts to deal with disadvantage in Ireland are longstanding. For example:

- Books and meals for needy pupils – early 20th century
- Rutland Street Project (1969)
- Disadvantaged Areas Scheme (DAS) (1980s)
- HSCL Scheme (1990s)
- Early Start (1994)
- Breaking the Cycle (1996)
- Giving Children an Even Break (2001)
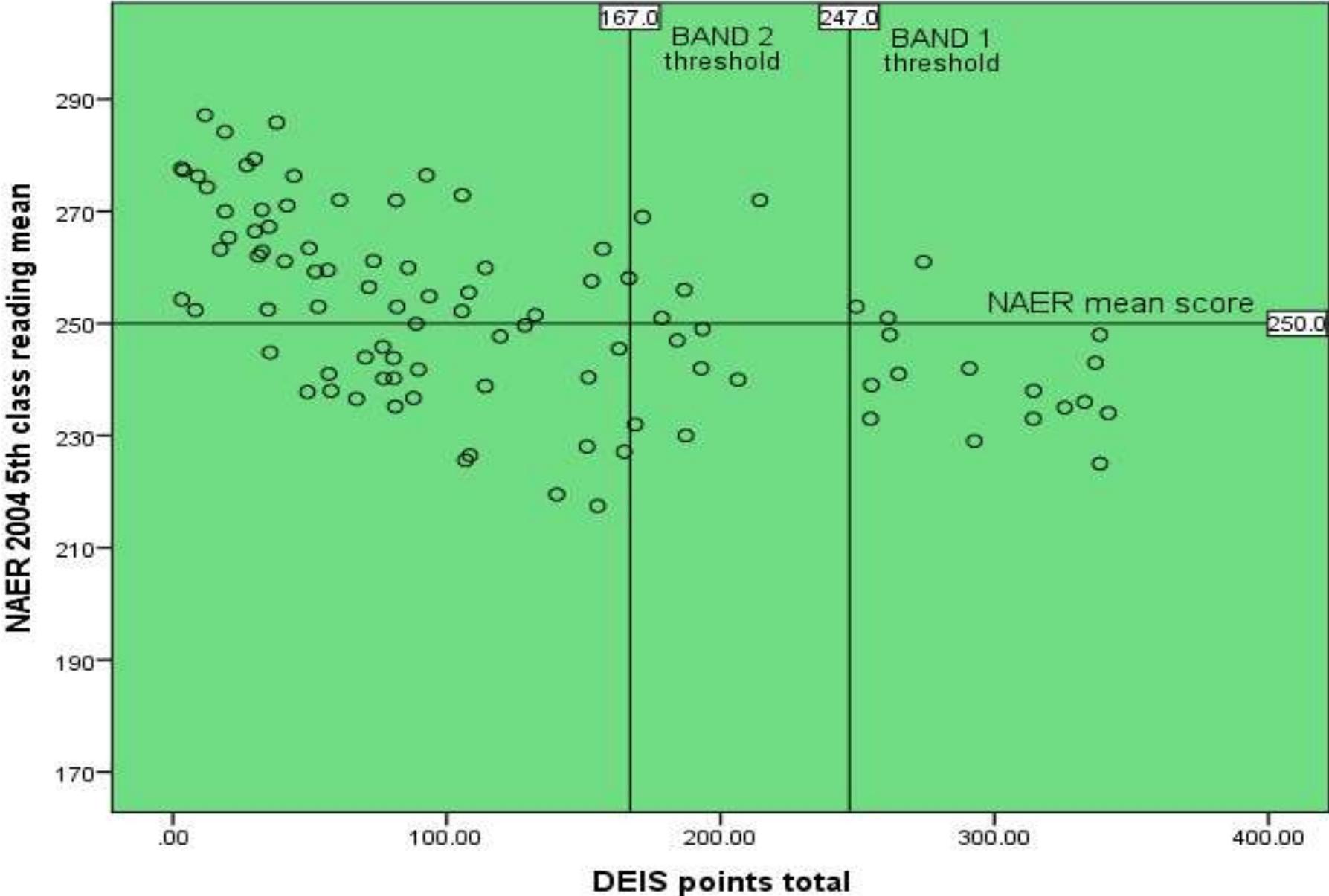- DEIS (2005)

Relationship between achievement & medical card possession at post-primary level
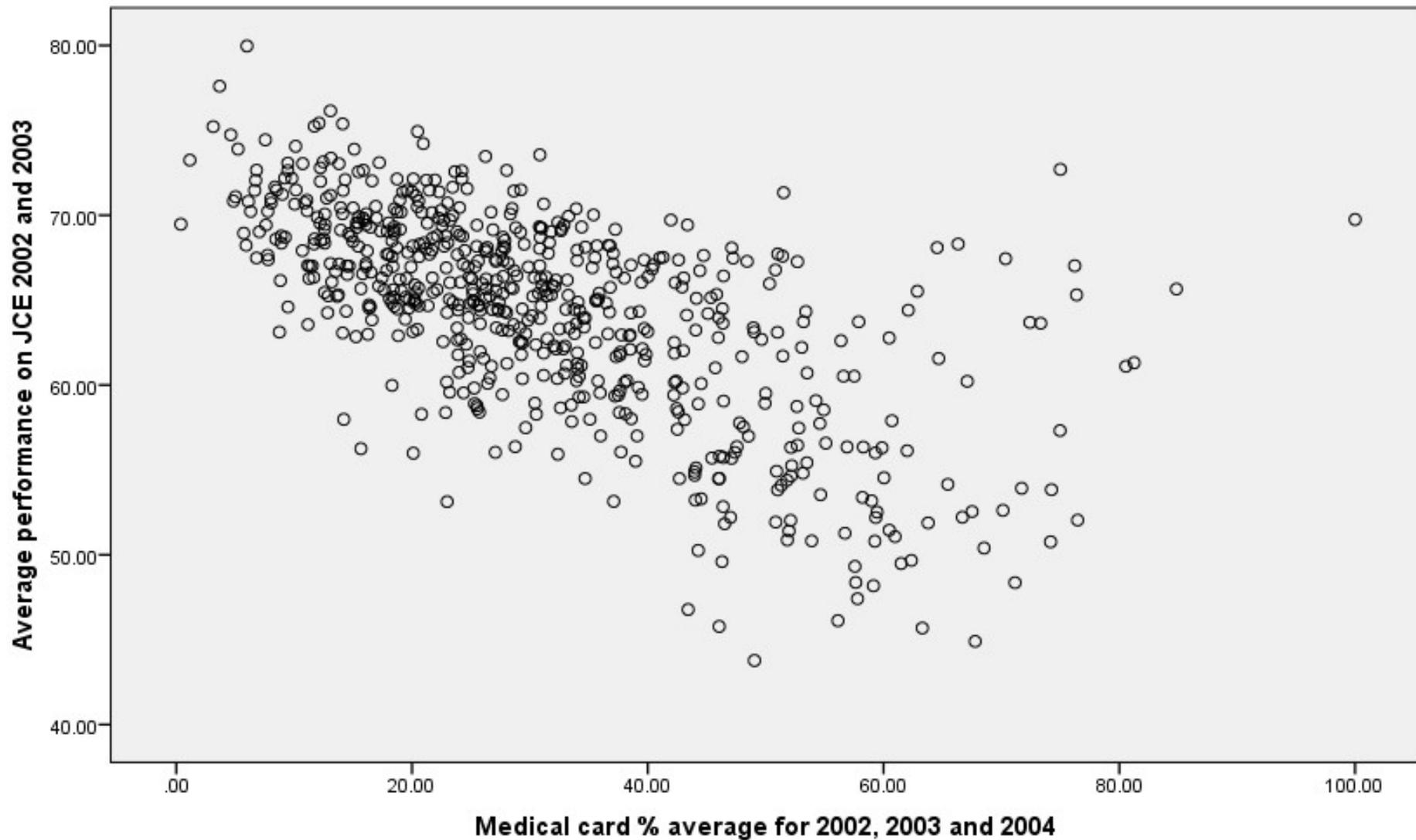
Average achievement of 5th class pupils in the 2004 National Assessment and schools' DEIS points (N=150)
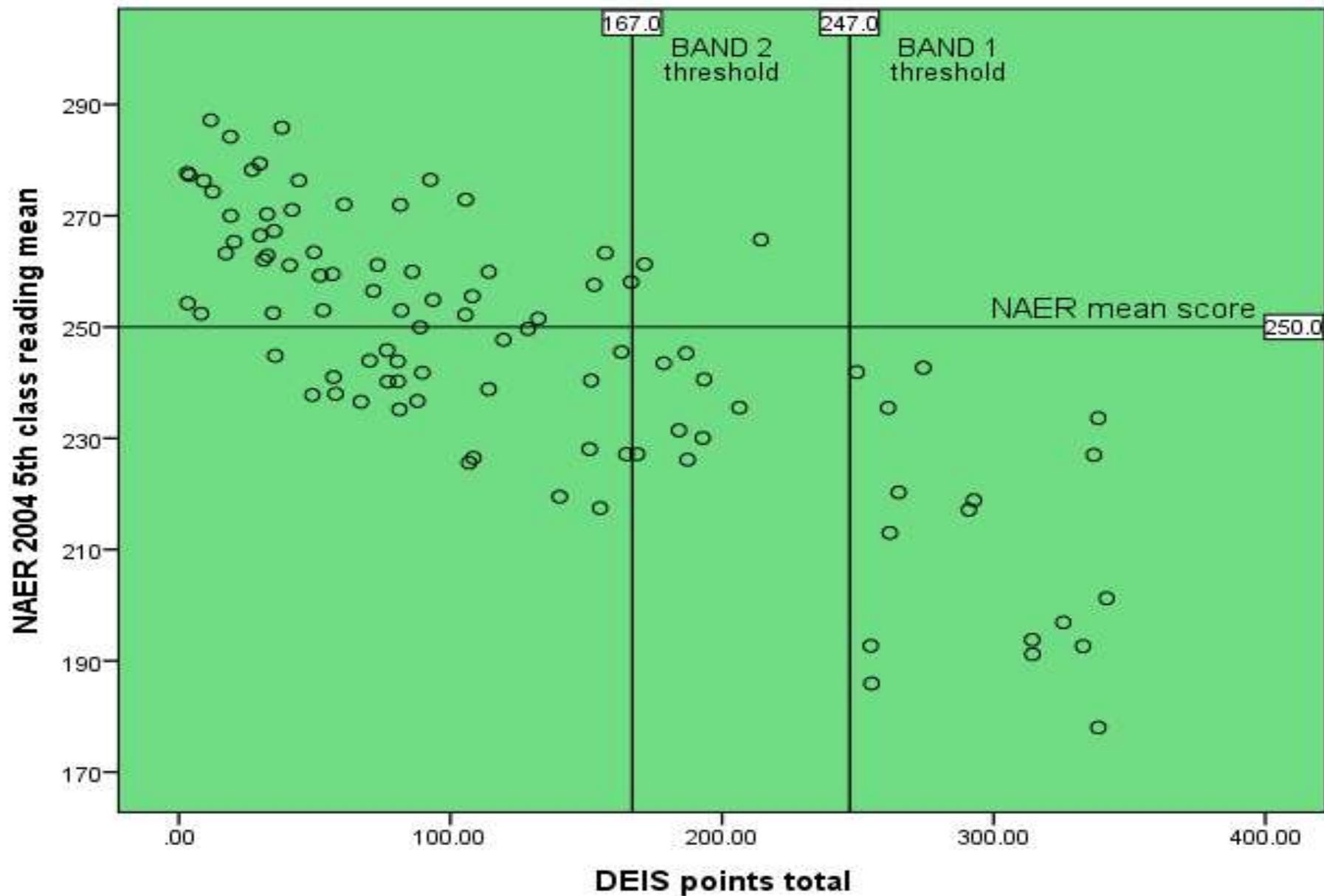
Average achievement of 5th class pupils in the 2004 National Assessment and schools' DEIS points (N=150)

The DEIS programme

DEIS is the most recent initiative aimed at addressing disadvantage at primary and second level.

- Primary level: Survey in 2005 by ERC used to rank order primary schools by level of disadvantage
  - 340 schools identified for the SSP (urban) (Bands 1 and 2)
  - 334 schools identified for the SSP (rural)

- Second level: Analysis in 2005 of centrally held data on socioeconomic and educational data
  - 200 post-primary schools identified for the SSP

The issue of identification

DEIS primary (urban)

DEIS combines previous supports with new elements.

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

Evaluation design

May 2007 baseline measures		May 2010 & 2013 outcome (repeat baseline measures)
-Reading -Maths -Attendance -Parent involvement etc.	»	-Reading -Maths -Attendance -Parent involvement etc.

Implementation at the level of the school and the system

May 2007 baseline measures	SSP put in place	May 2010 & 2013 outcome (repeat baseline measures)
	Which aspects of DEIS were implemented? (Were targets set as part of school development. planning? Were class sizes reduced? Were literacy & numeracy programmes introduced?)	
-Reading -Maths -Attendance -Parent involvement etc.	School Class Pupil Home/community	-Reading -Maths -Attendance -Parent involvement etc.
	Other relevant developments Change in socioeconomic profile of incoming pupils; amalgamations	

DEIS Evaluation activities at primary and post-primary levels

- Monitoring student outcomes (e.g., achievements, attitudes)
- School surveys (e.g., on planning, implementation)
- School visits and interviews with staff
- Meetings with key personnel (e.g., principals, HSCL co-ordinators)
- Longitudinal studies (e.g., involving pupils with early reading difficulties, early school leavers)

Recent DEIS evaluation findings

- High levels of engagement with the programme among staff

- Focus on planning and target setting

- High levels of implementation of various aspects of the programme (e.g., class size reductions at primary level, adoption of literacy programmes)

- Improved student outcomes

Primary level: Reading Standard Scores
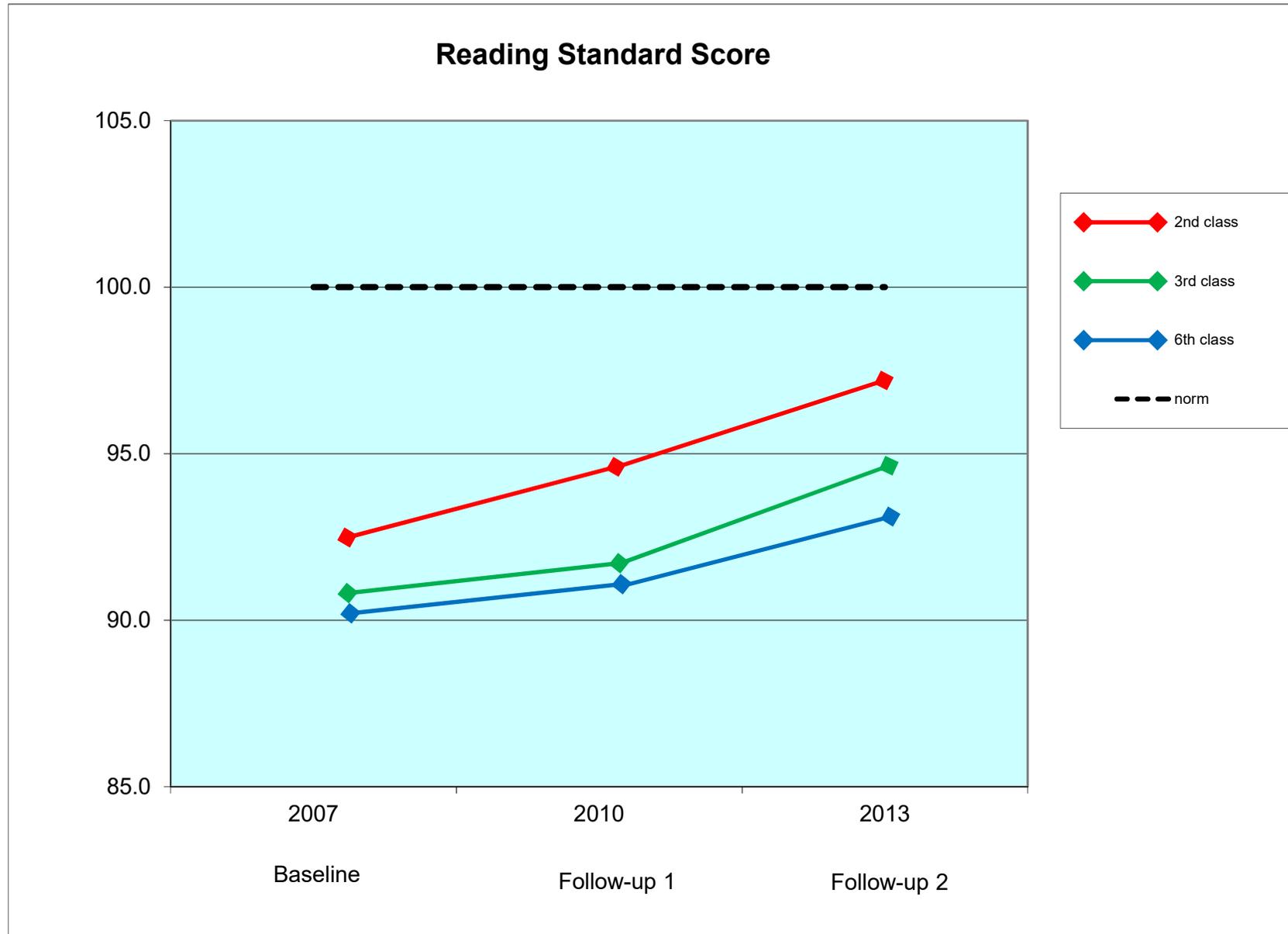
Low Achievers in Reading

Percentages of primary pupils scoring at or below the 10th percentile at each grade level in 2007, 2010 & 2013

Grade level	2007	2010	2013	Norm group average
2nd class	22.0%	15.9%	11.0%	10%
3rd class	26.4%	23.0%	16.8%	10%
6th class	28.0%	25.6%	20.2%	10%

High Achievers in Reading

Percentages of pupils scoring at or above the 90th percentile at each grade level in 2007, 2010 & 2013.

Grade level	2007	2010	2013	Norm group average
2nd class	2.2%	2.2%	4.1%	10%
3rd class	1.6%	1.1%	1.6%	10%
5th class	—	3.3%	4.8%	10%
6th class	2.3%	2.5%	3.1%	10%

Mathematics Standard Scores

Maths Standard Score
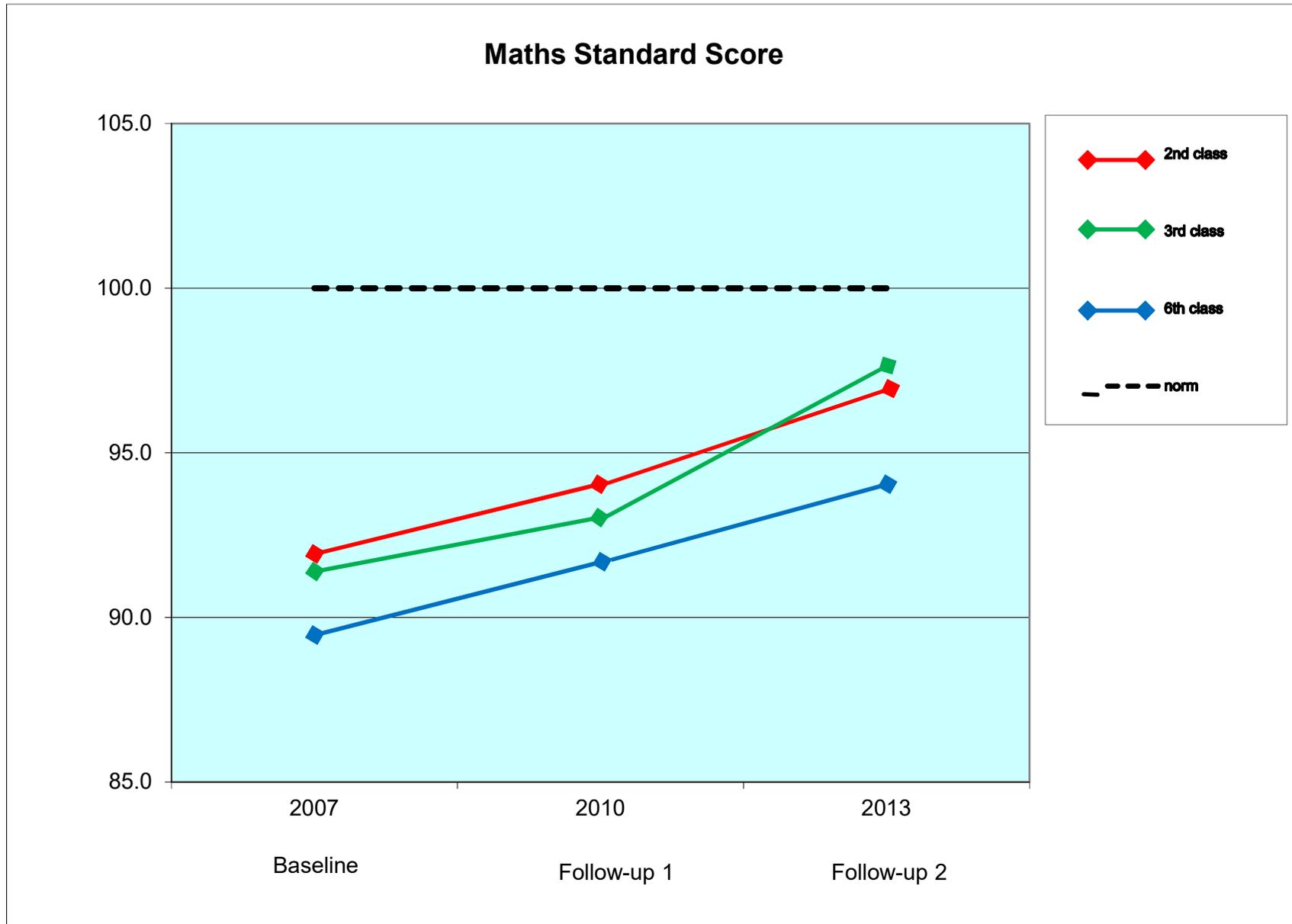
What do the primary pupil outcome data tell us?

- Unmistakable positive change in achievement at individual and school level
- Change at all grade levels (2nd, 3rd, 6th) in both reading and maths, but particularly striking at 2nd class level
- Change most noticeable among lowest-scoring pupils
- Significant upward change observed in longitudinal as well as cross-sectional comparisons

What can pupil outcome data *not* tell us?

- That changes in achievement levels are due to participation in the programme (e.g., they may have been part of an overall national improvement, or the result of increased exposure to standardised tests, or a feature of a changing school population)

- Why some schools improved their outcomes and others did not

- If the programme is responsible, the identity of particular aspects of it that led to improved outcomes

However….

- No evidence of overall improvements nationally

- Improvements in DEIS have occurred in a context of high implementation levels (e.g., class size targets have mostly been met, literacy and numeracy programmes have been introduced)

- Evidence that schools have embraced various aspects of the programme (especially planning)

- Other changes consistent with effects of programme (e.g., significantly improved pupil attendance)

- Measures under DEIS exceed what was available under previous schemes and better reflect what has been identified as important in addressing disadvantage

'Desirable' features of programmes at primary level

DAS

BTC

GCEB

DEIS

Preschool provision

Small classes

Curriculum innovation

Parental involvement

Community links

Integrated services

School planning

Professional devt

Raised expectations

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Raised expectations

3rd class pupils' educational aspirations and expectations

Aspirations	Finish primary school (%)	Junior Cert (%)	Leaving Cert (%)	College/ University (%)	Don't know (%)
2007 (*n*=4,013)	9.2	4.7	16.5	51.4	18.2
2010 (*n*=4,288)	8.3	3.3	12.8	58.4	17.1
2013 (*n*=4,283)	8.1	3.1	11.1	62.6	15.1

Expectations	Finish primary school (%)	Junior Cert (%)	Leaving Cert (%)	College/ University (%)	Don't know (%)
2007 (*n*=4,013)	1.1	5.1	27.4	47.5	19.0
2010 (*n*=4,288)	1.0	2.8	24.7	50.8	20.5
2013 (*n*=4,283)	0.6	2.7	22.3	52.5	22.0

Pupils in 3rd & 6th class indicating how much they like school

3rd	Like a lot (%)	Like (%)	Dislike (%)	Dislike a lot (%)
2007 (n=4,032)	29.1	40.4	10.5	20.0
2010 (n=4,300)	27.8	41.1	11.6	19.5
2013 (n=4,305)	33.2	42.0	11.0	13.8

6th	Like a lot (%)	Like (%)	Dislike (%)	Dislike a lot (%)
2007 (n=3,905)	9.5	53.7	21.7	15.1
2010 (n=4,132)	10.6	55.2	20.7	13.6
2013 (n=4,171)	11.6	58.2	19.7	10.5

Correlations between reading and maths test scores and pupil questionnaire items – 3rd class (2013)

	Liking School	Educational Aspirations	Educational Expectations	Liking Reading
Reading	.06	.24**	.23**	.19**
Maths	.07	.19**	.19**	.09

	Liking Maths	Time spent doing homework	Reading books for fun	Time spent on computer games
Reading	.02	-.19**	.12**	-.15**
Maths	.15**	-.21**	.07	-.15**

**Correlation is significant at the 0.001 level (2-tailed)

Attitudes to school and schoolwork by gender - 3rd class (2013)

Item	Girls	Boys
Liking school	+	
Educational aspirations	+	
Educational expectations	+	
Proud of school work	+	
Liking reading	+	
Liking maths		+
Maths (self-evaluation)		+
English reading (self-evaluation)	No difference	

Extracurricular activities by gender – 3rd class (2013)

Item	Girls	Boys
Borrow books	+	
Read books for fun	+	
Read web pages	No difference	
Time spent watching TV		+
Time spent playing computer games		+
Playing sport		+

3rd class parents' reading of books, and number of books in the home

Reading books	Most days or every day (%)	A few times a week (%)	A few times a month (%)	Hardly ever or never (%)
2007 (*n*=2676)	30.5	22.2	28.7	18.6
2013 (*n*=3034)	30.7	23.9	29.3	16.1

Number of books	None (%)	Between 1 & 10 (%)	Between 11 & 50 (%)	Between 51 & 100 (%)	Between 101 & 250 (%)	More than 250 (%)
2007 (*n*=3016)	2.5	20.4	35.9	19.8	12.3	9.2
2013 (*n*=3208)	1.4	18.6	35.2	22.7	14.3	7.9

Feedback from School Principals
January-March 2014

Recent Bulletin Report
- focused heavily on achievement outcomes
- included only a sample (n=120) of schools
- did not discuss factors behind changes

Mar 2014: Series of 9 nationwide seminars held
- Athlone, Cork, Dublin (x4), Limerick, Sligo, & Wexford
- 49% (n=163) of all primary urban DEIS principals attended

Jan-Feb 2014: Questionnaire circulated to principals of all urban schools in the SSP
- 65% (n=220) returned

To investigate

1. Whether similar changes occurred in schools outside the sample?
2. Can changes be attributed to the SSP (DEIS)?
3. If so, to which particular factors can the changes be attributed?
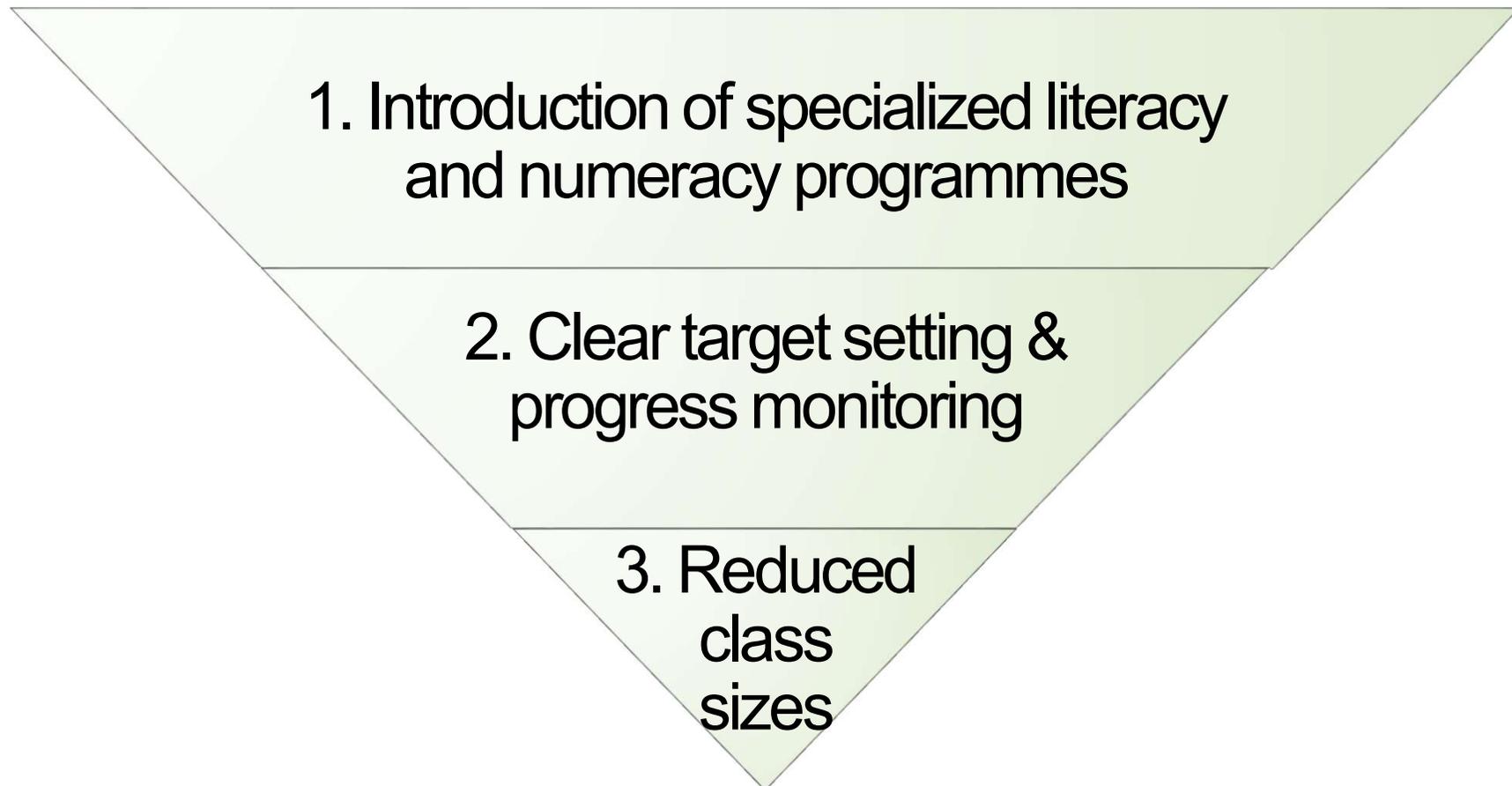4. Has progress been made in other domains?

Patterns of Pupil Achievement: Overall

Q: How would you describe the patterns of achievement in your school over the past 6 years in comparison to the patterns observed in the sample?

	Larger Gains (%)	Similar Gains (%)	Smaller Gains (%)	No Changes or Declines (%)
Reading (*n*=207)	23.2	60.9	15.0	0.9
Maths (*n*=202)	23.8	62.4	12.9	0.9

Perceived Determinants of Gains: Most Important

Q: If there have been gains in achievement outcomes in your school, to what do you attribute these gains?
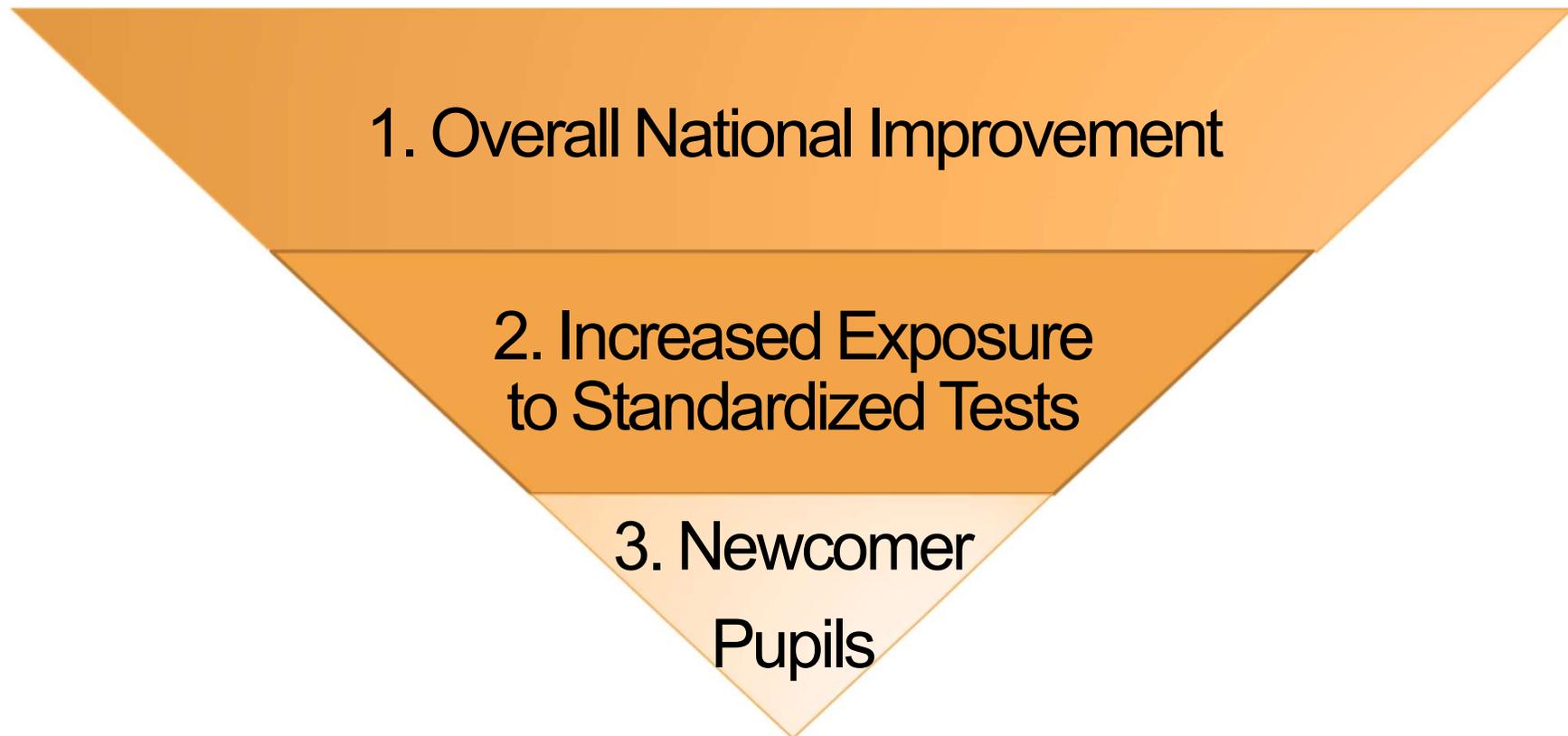
1. Introduction of specialized literacy and numeracy programmes

2. Clear target setting & progress monitoring

3. Reduced class sizes

Any changes in home support ?

But…

- Pleasant school environment provided by SSP can combat negative attitudes of some parents towards the education system

- Resources provide an excuse for some to *'abdicate responsibility'*

- Greater focus on improving parenting skills & tackling mental health issues needed

Perceived Determinants of Gains: Least Important

Q. Please indicate what you believe to be **the least important determinant** of the gains observed

1. Overall National Improvement

2. Increased Exposure to Standardized Tests

3. Newcomer Pupils

Beyond Achievement Gains

Q: How would you describe patterns in relation to attendance, attitudes towards school, behaviour during class, educational aspirations & engagement with school over the last 6 years?

	Improved (%)	No Change (%)	Disimproved (%)
Attendance (*n* = 212)	89.6	8.5	1.9
Attitudes (*n* = 214)	91.1	8.4	0.5
Behaviour (*n* = 214)	78.0	18.2	3.7
Aspirations (*n* = 211)	74.9	23.7	1.4
Engagement (*n* = 212)	90.6	8.5	0.9

Beyond Achievement Gains

- Enjoyment/Engagement:
  "Goals are now set at the level of the child – there is always a sense of achievement"

- Behaviour:
  "Severe emotional difficulties"
  "No. of children being medicated... is alarming"
  "Programmes simply cannot be delivered if the child is not connected"

- Aspirations:
  "Third level education not on the radar"
  in some communities

Summary

- Similar results in schools outside sample

- Perceived determinants of change:
  - are related to the SSP
  - seem to be interdependent

- Improvements seen in diverse areas

- Progress to date highly valued

- Optimism for the future, but considerable concern about diminishing resources evident

Rural disadvantage

- Almost 2,000 of the 3,145 (65%) of schools nationwide are in rural areas

- Following a review of the DAS, rural schools began to be catered for by programmes (only 2.5% of rural schools had been in the DAS)

- Breaking the Cycle rural was the first scheme to address rural disadvantage, followed by GCEB, and most recently DEIS

Achievement levels in rural schools

- Even though schools were largely identified for inclusion on the basis of poverty, sizeable differences in the achievements of urban and rural pupils have been found in several studies

- For example, test data from BTC showed that rural pupil achievement is better on average than urban

- Test data were also collected for the DEIS evaluation in rural schools

Reading and Maths averages of pupils in 3rd class in rural (*N*=256) and urban DEIS schools (*N*=120)

	2007	2010	Norm group
Rural reading	96.3	97.7	100
Rural maths	98.0	99.4	100
Urban reading	90.7	91.6	100
Urban maths	91.1	92.6	100

What might explain these achievement differences?

Several hypotheses:

- Small school size acts as an antidote to the effects of poverty

- Poverty is less concentrated in rural schools

- Rural pupils are less susceptible to the effects of poverty than are their urban counterparts

- Certain factors mitigate the effects of poverty (e.g., home and community)

A comparison of average achievement in rural schools of different sizes in 2007 (*N*=266)

	'Small' (≤ 63)	'Medium' (64-113)	'Large' (114+)
Reading	96.6	96.8	96.6
Maths	98.8	96.6	98.8

(r= .02)

Is poverty less concentrated in rural than in urban schools?

Identification variable	Rural %	Urban %
Unemployed breadwinner	39%	51%
Local authority housing	25%	69%
Lone-parent family	17%	41%

Conclusion: Yes

Reading and maths achievement in 222 schools (111 urban & 111 rural) matched by level of poverty

	Rural	**Urban**
Reading	97.7	90.8
Maths	99.2	91.1

Differential achievement of pupils in urban and rural settings is not simply a reflection of lower levels of poverty

Relationship between reading achievement and medical card possession in rural and urban schools

	Urban	Rural
% medical cards	-.50	-.14

	Medical card		No Medical card	
	Urban	Rural	Urban	Rural
Reading	88.0	94.5	95.2	99.6

Conclusion: Rural pupils appear to be less susceptible to the effects of poverty

Are there differences between urban and rural pupils from poor households in their attitudes, behaviours, and home backgrounds?

Several sources of evaluation data that were used to investigate this:

- Pupil questionnaire

- Pupil Rating Form (completed on behalf of each pupil tested by his / her class teacher)

- Parent questionnaire

Comparison of the scholastic attitudes of urban and rural pupils from poor households

Item	Urban	Rural
Liking school	+	
Educational aspirations	No difference	
Educational expectations	+	
Proud of school work	No difference	
Liking reading	No difference	
Liking maths	+	
Feel they are doing well at school	No difference	
Reading ability (self-evaluation)	No difference	
Maths ability (self-evaluation)	+	

Comparison of the engagement in types of out-of-school activities of urban and rural pupils from poor households

Item	Urban	Rural
Borrow books from library	No difference	
Read books for fun	No difference	
Read web pages	+	
Time spent watching TV	+	
Time spent playing computer games	+	
Time spent hanging out with friends	+	
Member of online community	+	
Member of sports club		+
Member of youth club	+	

Home and other characteristics of urban and rural pupils from poor households

Item	Urban	Rural
Home support, attendance, behaviour in class (all teacher rated)		+ (all)
Parents' educational level		+
Parental reading frequency		+
Frequency of reading to preschool child		+
Number of books in the home		+
Child's use of atlas / dictionary		+
Parents' estimate of child's reading ability	No difference	
Parents' estimate of child's maths ability	No difference	
Family use of public library	No difference	
% parents unemployed	No difference	

Commonalities in the relationship between background variables and achievement by location

Variables	Urban	Rural
Number of books in the home	✓	✓
Frequency of reading to child as a preschooler	✓	✓
Teacher's rating of level of home support	✓	✓
Teacher's rating of child's behaviour in school	✓	✓
Pupil's own educational aspirations	✓	✓
Parent's educational level	✓	✓
Use of educational resources in the home (atlas, dictionary, computer)	✓	✓

Relative importance of factors predicting achievement among urban and rural pupils from poor households

Factors	Urban	Rural
1. Educational resources / practices in the home (books, dictionary, frequency of reading to child)	2	1
2. Students' attitudes towards school (academic aspirations, teachers' ratings of behaviour, pupils' enjoyment of school)	1	2
3. Participation in extracurricular and out-of-school activities (membership of online community, youth clubs, guides / scouts)	3	3
Variance explained	22.3%	35.2%

Conclusion

The relationship between pupil achievement and home background is quantitatively and qualitatively different in urban and rural settings

- The contextual data available explain more of the variance in achievement among pupils in rural areas

- Rural pupils have greater access to educational resources at home and those resources have a greater impact on their achievements than is the case for urban pupils

- Rural pupil achievement may be protected by parents' engagement with, and emphasis on, education (issue of location also)

- Pupil factors are more important in urban areas, in particular pupils' engagement in large amounts of unstructured free time activities (e.g., hanging out with friends and screen time)

- Possible operation of a 'social context effect' in urban but not in rural schools

Further work

- Data here represent very preliminary findings in the special study of rural disadvantage and further work in the area of home background and home processes is indicated

- The potential impact of wider community influences on educational outcomes in rural areas remains to be investigated

- Challenge: Can we use any of these data to inform ways of boosting engagement and achievement among urban pupils?

Elements of DEIS Post-Primary

- Improved staffing schedule

- Additional financial support

- Access to *Home School Community Liaison services*

- Access to *Schools Meals Programme*

- Access to a range of supports under *School Completion Programme*

- Access to Junior Certificate Schools Programme(JCSP)

Elements of DEIS Post-Primary (Contd)

- Some JCSP schools have a library

- Access to Leaving Certificate Applied Programme (LCA)

- Access to planning supports

- Access to a range of professional development supports

- Additional funding under *School Books Grant Scheme*

(Source: DES Website, 2013)

Evaluation

Focus: Examining implementation and outcomes

Activities
- What Students Think (Survey of 1st and 3rd Years)
- School visits
- School Questionnaires
- Analysis of centrally held data (e.g., exams, retention rates)

Uptake of Programmes

- Shortly after the introduction of DEIS, the number of schools with JSCP libraries went from 10 to 30

- Our data indicate that the policy of opening JCSP libraries in schools with highest concentrations of disadvantage has been reasonably successfully implemented.

- LCA participation has also been affected by the introduction of DEIS but to a much smaller extent than JCSP

Uptake of Programmes (Contd.)

- Before DEIS, the number of schools with students taking JCSP hovered around 130 for about 4 years

- Since 2006/07, the number has risen steadily to between 200 and 210

- All but one of the 70 (approx.) extra JSCP schools are in DEIS

Planning

- By school year 2012/13, almost 90% of participating schools had completed a DEIS plan (a majority doing so between 2008 and 2010).

- All plans contained specific targets across a range of areas with a focus on literacy, numeracy, retention and attendance.

- All but 2 or 3 school principals reported progress in relation to stated targets.

- Principals are overwhelmingly positive about the planning process while acknowledging drawbacks and obstacles.

- Inclusive (whole-school) approach to planning is favoured.

What Principals Think about DEIS

- Universal positivity about all elements of DEIS

- Despite deteriorating socioeconomic context, principals report improved

  - Retention

  - Exam performance

  - Literacy and numeracy

  - Attendance

  - Transfer to 3rd level

- Negative feedback mainly reflects concerns about resourcing

Impressions of those of us who visited schools

- We felt that we got 'a feel' for the overall atmosphere in about two-thirds of schools

- In most of the other third, contact was almost entirely with Principal

- Positives seen in almost all schools including

  - Enthusiastic engagement with planning

  - Team work

  - Flexibility in use of resources

  - Strong pastoral care

Impressions of those of us who visited schools (Contd.)

- Many DEIS schools are entitled to be regarded as 'trail blazers' in terms of planning and self evaluation

- Challenges faced very evident
  - Scale of marginalization
  - Resistance to change among a very small minority of staff
  - Impact of enrolment policies and practices

Trends over Time

Academic Achievement
- Junior Certificate Overall Performance Score

Retention Levels
- Retention to Junior Certificate
- Retention to Leaving Certificate

Trends over Time

704 schools
- 200 'SSP' schools enlisted into SSP in 2006/ 2007
- 504 'Non-SSP' schools not in SSP

Academic Achievement
- Junior Certificate Overall Performance Score

Retention Levels
- Retention to Junior Certificate
- Retention to Leaving Certificate

Trends over Time: Exam performance and retention

For each variable…

- Evidence of a significant trend over time?

- Evidence of differing trends for SSP & Non-SSP schools?

- Evidence that the introduction of DEIS in 2006 / 2007 had an impact on trends over time?

Linear Mixed Model

The analysis was designed to estimate average rate of change over time

SSP-status
- Different trends for SSP & Non-SSP schools?

Time varying covariate
- Did the introduction of the SSP in 2006 / 2007 have an impact on the time series?

Academic Achievement

Higher	Ordinary	Foundation	OPS score
A			12
B			11
C			10
D	A		9
E	B		8
F	C		7
	D	A	6
	E	B	5
	F	C	4
		D	3
		E	2
		F	1

Overall Performance Score (Kellaghan & Dwan, 1995)

Number is assigned to each letter grade
OPS score for best 7 subjects summed to give OPS

Mean JC OPS from 2002 to 2011
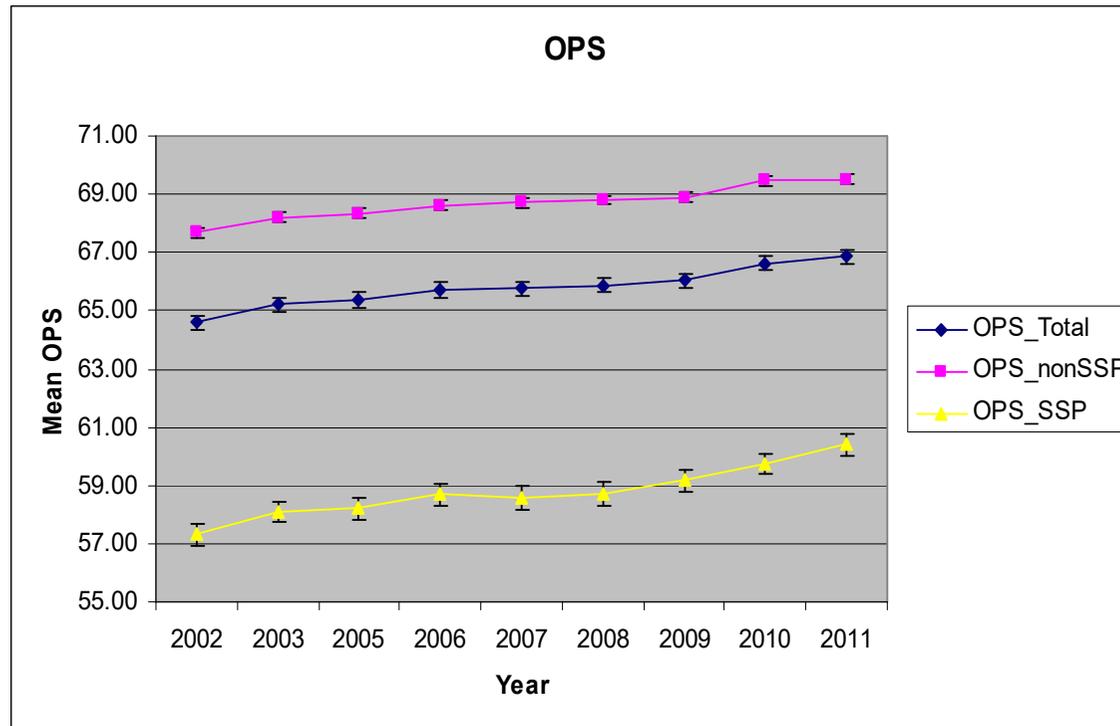
Gap
- SSP v Non-SSP

Increasing trend
- All schools

- Both observations supported by LMM

Mean JC OPS from 2002 to 2011
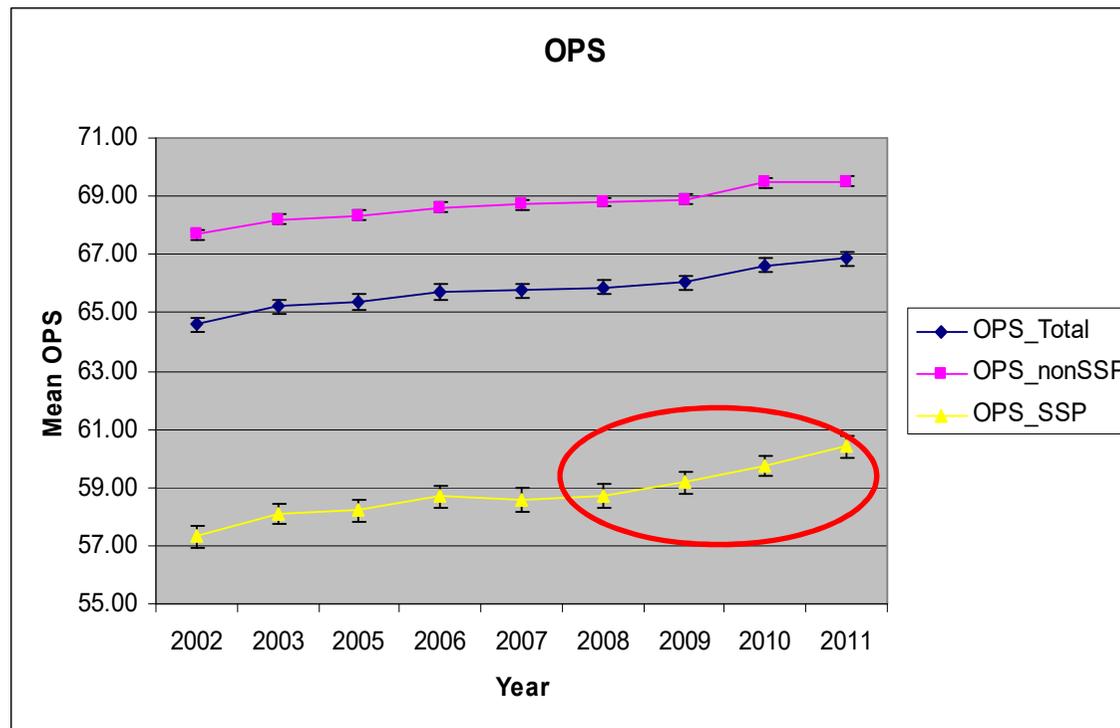
- **Significantly Different Trends**
  - SSP : .32 points
  - Non-SSP : .21

- **Impact of DEIS?**
  - 2008 on
  - Significant increase in trend

- **No such impact for Non-SSP schools**

Average Percentage Retention to JC

Retention to Junior Cert
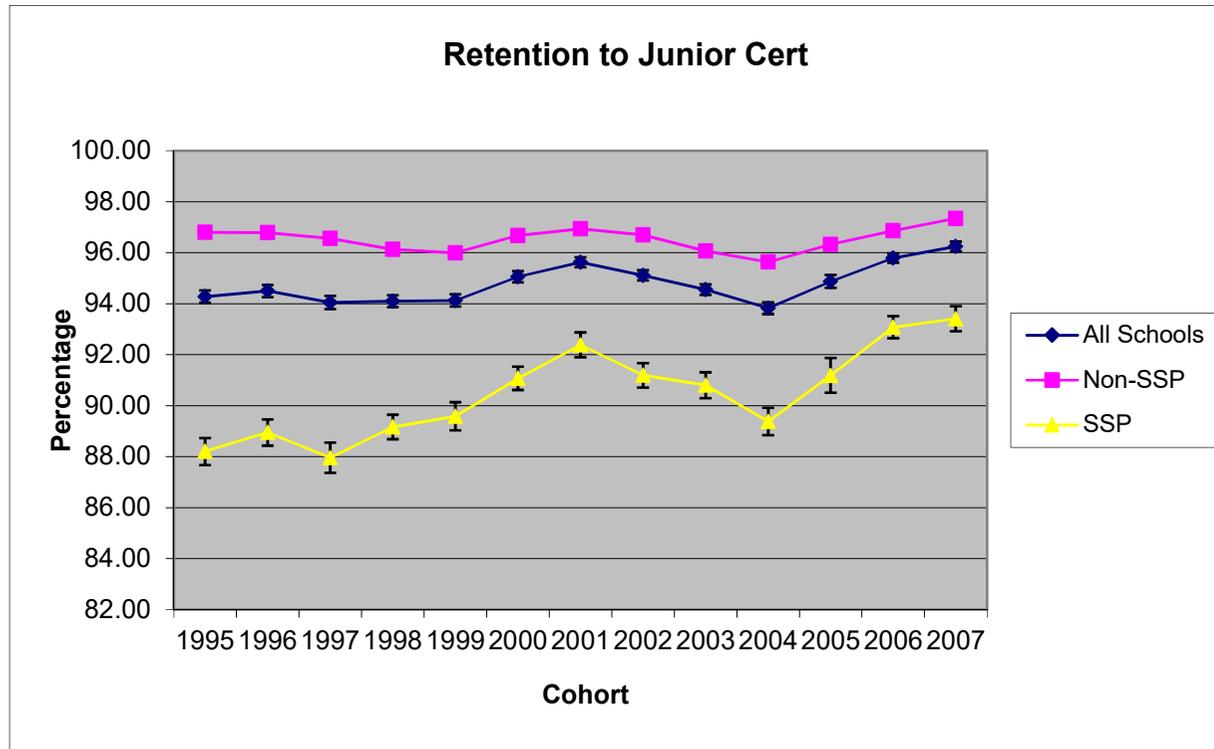
Significant Gap
- SSP v Non-SSP
- 2007 cohort
- 4% gap
- Non-SSP
  - High throughout

Trend?
- Not for Non-SSP
- 1995: 96.8%
- 2007: 97.3%

Cohort refers to Year of Entry
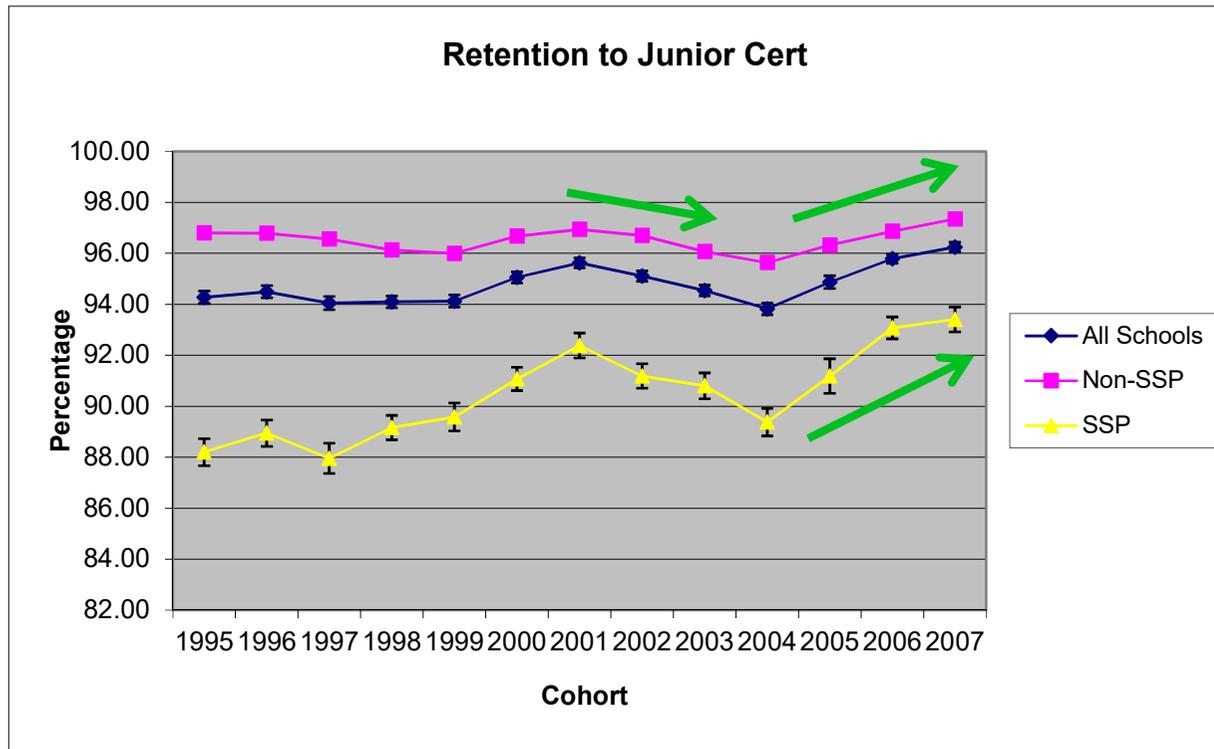1995 cohort entered second level in 1995 & left 5 / 6 years later

Average Percentage Retention to JC

Retention to Junior Cert
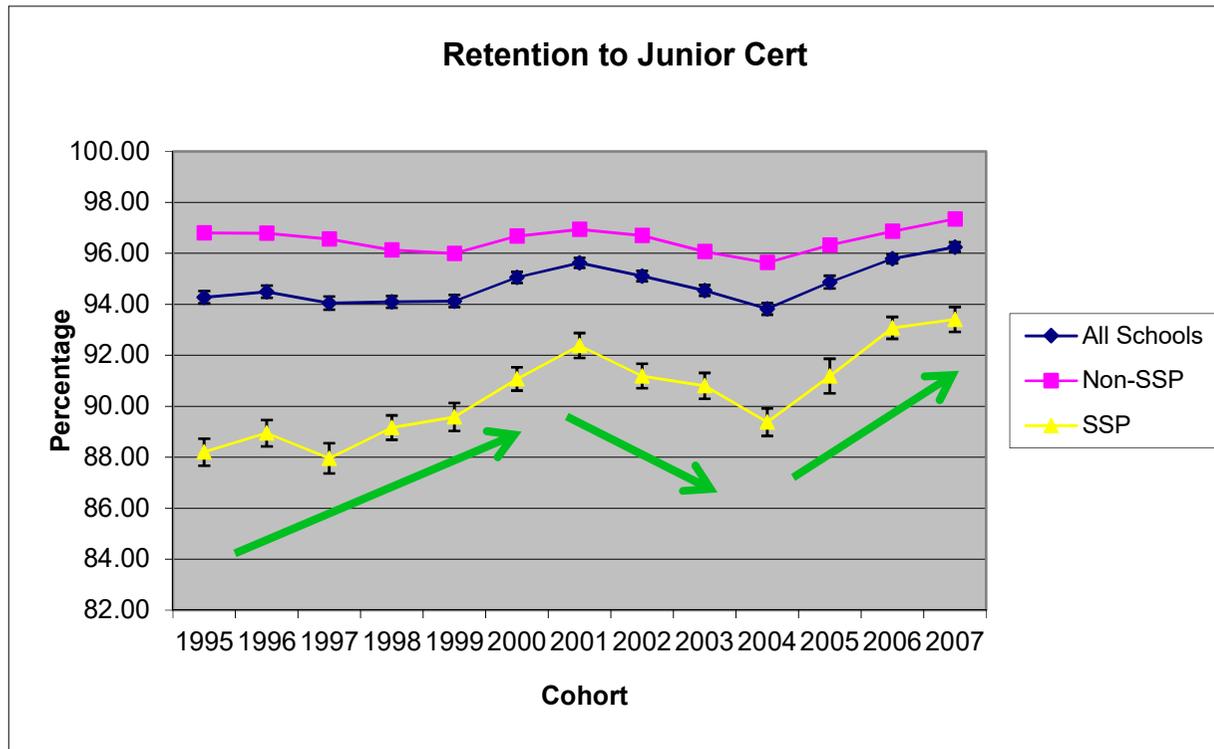
Trend?

- SSP
  - Significant linear trend
- But!
  - Linear trend not appropriate
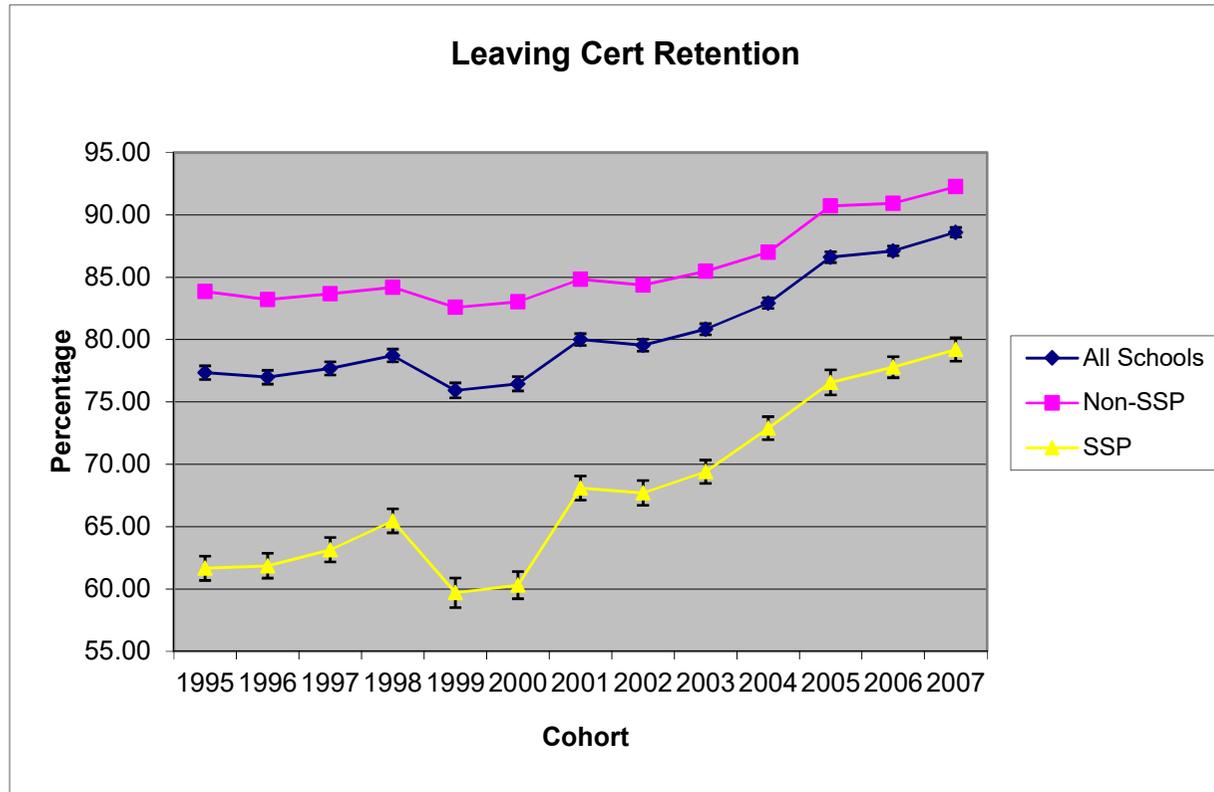 - LMM supported presence of shifting slopes

Average Percentage Retention to JC

Retention to Junior Cert

DEIS resources?

- 2004 cohort on
  - Positive trend
  - Difficult to interpret
- Non-SSP schools
  - Evidence of similar changes in trend
  - Lower magnitude

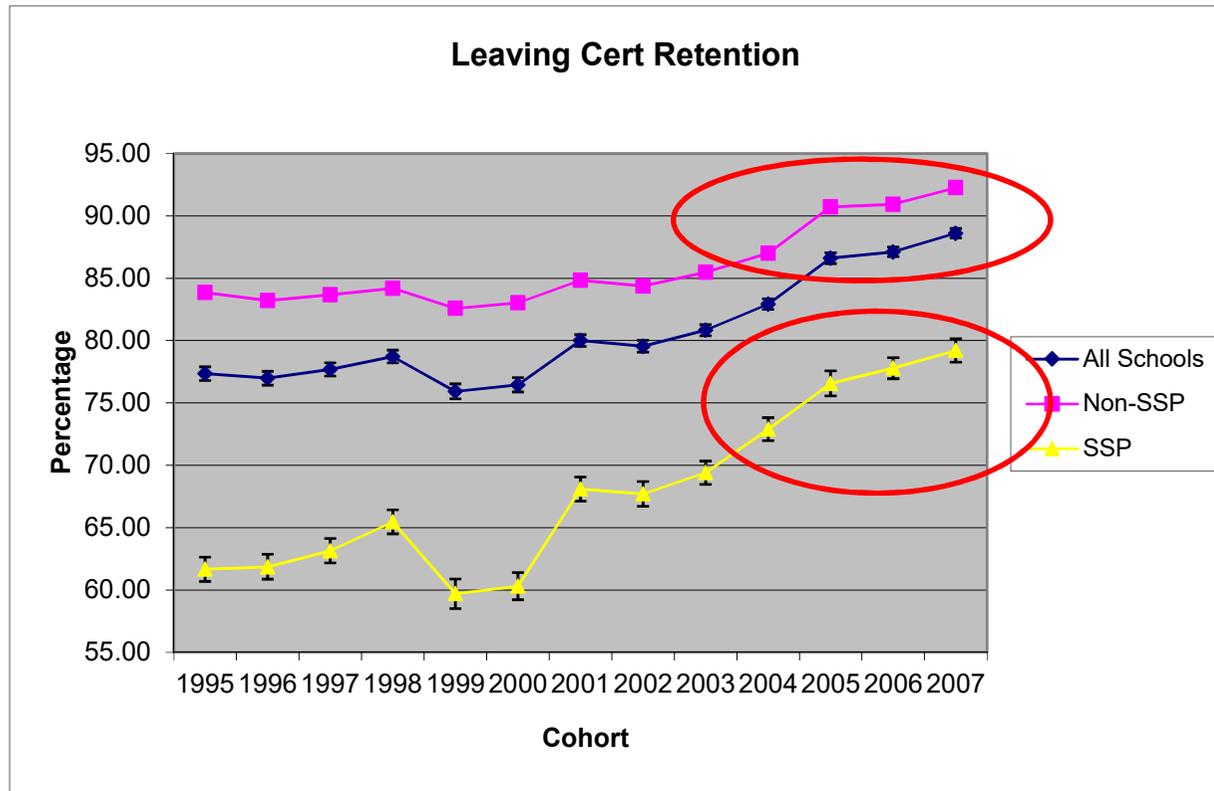# Average Percentage Retention to LC

Significant Gap
- SSP v Non-SSP
- 2007 cohort
- 13% gap
- SSP: 79%
- Non-SSP: 92%

Significant trend
- All schools
- .97 points per year

Cohort refers to Year of Entry

Average Percentage Retention to LC

Leaving Cert Retention

Significant trend
- Greater for SSP

DEIS resources
- 2004 cohorts on
- SSP schools
- Significant increase in trend

Also significant for Non-SSP
- Due to DEIS?

Cohort refers to Year of Entry

Summary

- Evidence of a significant trend over time?
    - Yes
    - SSP & Non-SSP on all variables
        - Exception of JC Retention for Non-SSP

- Evidence of differing trends for SSP & Non-SSP schools?
    - Yes
    - SSP schools trends of greater magnitude
        - Junior Certificate OPS
        - Retention to JC & LC

Summary

- Evidence that the introduction of DEIS in 2006 / 2007 had an impact on trends over time?
  - *Were these years associated with change in trend?*
  - Yes

  - Achievement
    - JC OPS & English scores

  - Retention
    - JC & LC
    - Difficult to interpret

Future evaluation plans

- The evaluation is continuing to monitor programme implementation and attempting to identify factors impacting on student outcomes

- Potential for observational work

- Publication of further reports
  (e.g., report on the organisation of Learning support and classroom traffic in DEIS schools, post-primary evaluation report)

- It is intended to continue to collect data on outcomes

- Return on DEIS investment more likely in the long term