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INTELLIGENCE PARTNERSHIP

Smooth, staggered or stopped?

Educational transitions in SAYPS

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Area of analysis

Key findings

South African mathematics achievement

Mathematics and science performance in grade 8 in South Africa 1998/1999

Low national mathematics mean score and last position on the rank order table.

Mathematics and Science Achievement in South African Schools in TIMSS 2003

Low national mathematics mean score. High educational inequalities reflective of the societal inequalities.

Beyond Benchmarks: What twenty years of TIMSS data tells us about South African education, 2011

Low national mathematics mean score. Slightly reduced educational inequalities from 2002 to 2011. Trend analysis from 1995 to 2011 shows in improvement of mathematics achievement by 63 TIMSS points, equivalent to improvement of 1.5 grade levels.

Student progression and pathways through secondary school

Foundational mathematics skills
Mathematics achievement gaps persists through secondary school.

Mathematics performance in early grades is strongly predictive of survival to grade 12

Educational pathways and progression through secondary school
TIMSS mathematics performance in grade 9 predicts educational pathways and performance in subsequent years.

There is the predictable story of who succeeds in school, but there are also some students who succeed against the odds.

The South African Youth Panel Study



- SAYPS a longitudinal panel study, commenced in 2011.
- SAYPS targeted learners from Grade 9 who took part in TIMSS 2011. Wave 1 of the panel
- Three further annual waves of information were collected in 2012, 2013, 2014 and, recently, 2015, providing five waves of individual data tracking learners from Grade 9, age 15.

Publications to date

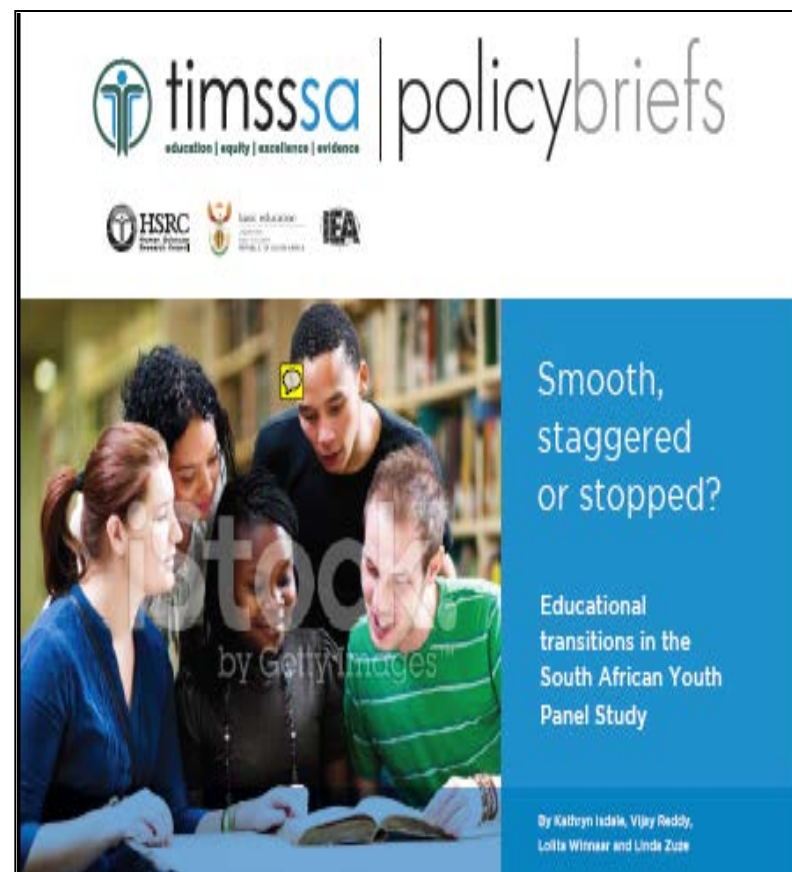
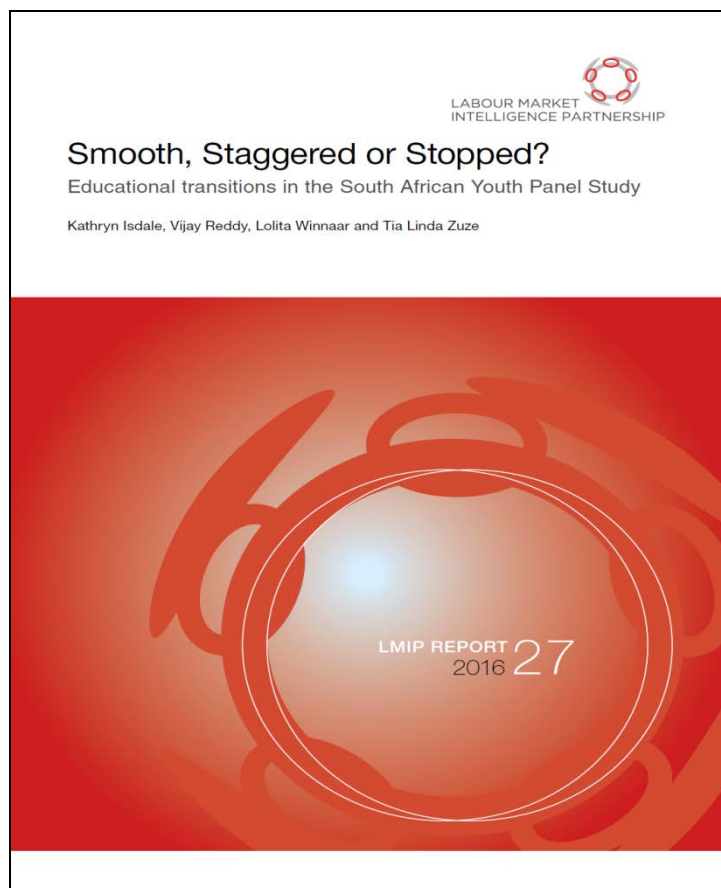
LMIP: www.lmip.org.za

Report: Four waves of data

Forthcoming: Five waves of data

timssa: www.timss-sa.org.za

Policy Brief: 4 waves of data





Overview: Smooth, Staggered or Stopped?

- The report uses SAYPS to examine educational transitions in the post-compulsory phase of school
- We analyse characteristics of learners making different transitions and explore key predictors of these pathways
- We report on four distinct groups of learners:
 - Smooth; Staggered; Stuck; Stopped
- Our results are twofold:
 - Confirmatory story re. advantage and prior achievement begets success
 - New story: Beating the odds and a significant role for individual's own academic attitudes and expectations



Research Background

- SA low educational performance in international comparisons
 - In 2011, only 25% learners reach lowest levels of TIMSS benchmarks
 - Just 1% reaching advanced levels
- Early school exit and high levels of grade repetition exacerbates a system with already low levels of schooling and high educational inequalities
- The current study develops previous work in the area by:
 - Using a longitudinal dataset, not a quasi-panel one
 - Considering national, rather than regional, data
 - Exploring school progression and the determinants of different educational pathways in more depth

South African Youth Panel Study (SAYPS)

A five year, longitudinal panel study of Grade 9 learners in South Africa starting in 2011

2011: Wave 1

2012: Wave 2

2013: Wave 3

2014: Wave 4

2015: Wave 5

TIMSS 2011

- Grade 9 learner assessments in maths & science
- Learner qu'naire
- Parent qu'naire
- Teacher qu'naire
- Head qu'naire

At baseline, when learners were in Grade 9, their ages ranged from 12 to nearly 20

In the original sample, the sex split is equal: males = 50.7%

In 2013, learners were asked about their current activities and retrospectively about those for 2012

In the wave 4 data, the sample slightly over represents females (53.3%)

SAYPS:
Learner qu'naire

Achieved sample

11 898

SAYPS:
Learner qu'naire

5 872

SAYPS:
Learner qu'naire

3 616

SAYPS:
Learner qu'naire

2 224

5 946

SAYPS missing data



- Analysis of missing data
 - Attrition is non-random and cannot be ignored
 - Missing are more likely to be: male, more disadvantaged, attend poorer schools and lower achievement.
- Focus on the core longitudinal component
 - Caveat that our estimates are an upper bound
 - Nevertheless, best data to answer our research question

Research Questions



- What are the main activity choices of young people over time and how do learners move through the education system?
 - Transition matrices
- What are the characteristics of young people following different pathways through school?
 - Descriptive statistics & correlations
- How do individual characteristics, family background and school factors predict educational pathways?
 - Logistic regression

Main activities at each wave of SAYPS



	Wave 1: 2011	Wave 2: 2012	Wave 3: 2013	Wave 4: 2014
Still at school	100	98.0	96.2	92.3
Moved to FET college		0.7	1.4	1.1
Working		0.2	0.5	1.0
Not studying and not working		1.2	1.9	5.6

- Provides a snapshot of what the sample of learners are doing at any one point in time
- But doesn't tell us anything about movement between these activities

Grade transitions: Wave 1 to 4

	Grade 9	Grade 10	Grade 11	Grade 12	Total
	Wave 4: 2014:				
Wave 1: 2011					
Grade 9	33	360	1 230	1 713	3336
	1	10.8	36.9	51.4	100

- High levels of grade retention.
- Using the core longitudinal sample, $N = 3\ 616$, just under half, 47%, have a “smooth” transition
 - Overestimate: NIDS suggests this figure \sim a third of learners

Young people's transitions



Smooth	Staggered	Stuck	Stopped
<p>Neat, year-on-year grade progression through school.</p>	<p>Learners in school for all 4 waves of SAYPS, but have at least one episode of grade repetition or a move to FET college;</p> <p>Individuals who return to school in Wave 4 but are out of education (either working or NEET) for at least one wave.</p>	<p>Learners in school for all four waves of SAYPS, but stuck in grade 9 or 10 for three or more periods</p>	<p>Individuals who leave school before Wave 4 and do not return</p>
<p>47%</p>	<p>39%</p>	<p>7%</p>	<p>7%</p>



Characteristics of different transition groups



		Girl	Age 2011	highest household ed.	Books in household	TIMSS Maths	TIMSS Science
All		.58	15.7	4.82	2.01	367	351
Smooth	47%	.63	15.4	5.11	2.15	409	407
Staggered	39%	.54	15.8	4.62	1.88	343	321
Stuck	7%	.54	16.1	4.55	1.82	318	286
Stopped	7%	.43	17.0	4.28	1.91	309	271

- *Smooth* group come from most advantaged households: highest education, social ladder etc.
- Note that even *smooth* only just reaches bottom of international “low” benchmark



Key findings: Predicting who has which transition?

- Girls fare better than boys
- Particular importance of prior achievement
- Those in better-off schools more likely to have smooth transitions

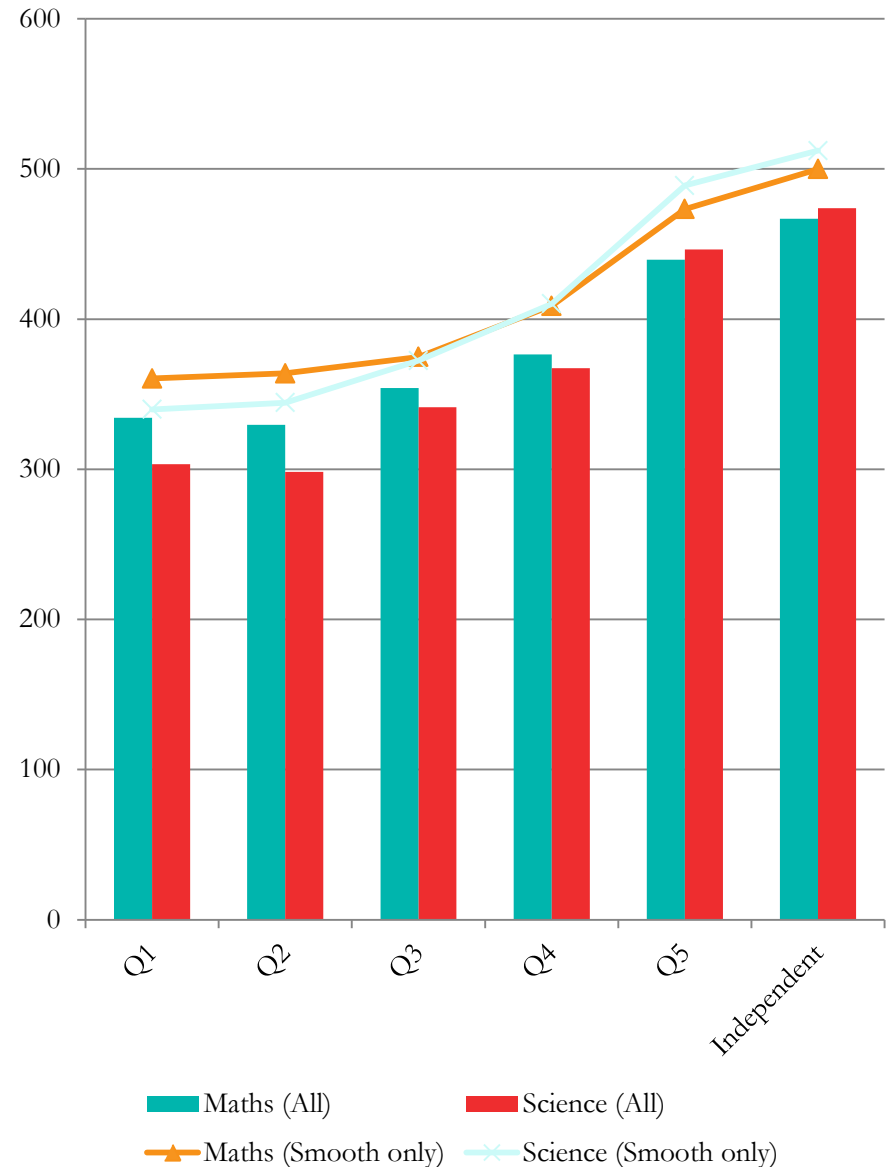
However...

- Social background does not significantly differentiate educational transitions
- More salient are academic attitudes and expectations



A good news story?

- Learners with even very low TIMSS scores are following “smooth” pathways
 - Even from the least well-off schools
- 57% of the “smooth” group come from fee-paying or independent schools
 - Meaning 43% come from non-fee paying schools





Beating the odds... and some surprises

	School quintile					Indep	Total
	Non-fee paying			Fee paying			
<i>Transition group:</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>		
Smooth	188	269	275	306	424	235	1,697
	11.1	15.9	16.2	18.0	25.0	13.9	100
Staggered	228	311	354	296	152	84	1425
	16.0	21.8	24.8	20.8	10.7	5.9	100
Stuck	56	70	59	41	14	10	250
	22.4	28	23.6	16.4	5.6	4	100
Stopped	47	58	68	50	16	5	244
	19.3	23.8	27.9	20.5	6.6	2.1	100
Total	519	708	756	693	606	334	3616
	14.4	19.6	20.9	19.2	16.8	9.2	100



Key findings.... The predictable story *vs.* a new one...

- Our study provides a more nuanced picture of continuities & discontinuities in educational transitions
- Around half (47%) the sample achieves a “smooth” transition
- Achievement begets achievement, but it is possible to succeed academically despite disadvantage
- Learners stay in school even if they are not progressing to the next grade. Possible stagnation effects
- Significant role for individual’s own academic attitudes and beliefs not previously demonstrated in South African data
- Very high educational expectations across all learners



Policy implications

- Schools matter
 - Invest early, yes, but don't give up!
- Parents are important irrespective of their own education
 - Promoting positive attitudes towards education
- Role of positive attitudes, but need for realistic expectations
- Gender and male disadvantage
- Progression policy
 - “Quick win” for poor performing Q4 & Q5 learners?
- Importance of multiple routes post grade 9
 - Transitions should be seen more like revolving doors than dead ends
- Interpreting role of international studies in context

Taster of what happens next...

	Wave 4: 2014	Wave 5: 2015
Still at school	92.3	45.6
Moved to FET college	1.1	-
Post-school institution	-	24.5
Learnership / Apprenticeship / Traineeship	-	1.4
Working	1.0	6.5
Not studying and not working	5.6	21.9

- Nearly a quarter have moved into a post-school institution
- Nearly half remain in school
- More than one in five is not studying or working

But...

		Post-school	School	Learnership etc.	Working	NEET	Total
	% W4						
<i>W1-W4 Transition Group:</i>							
Smooth		508	131	22	86	33	1,080
	48.6	47.0	12.1	2.0	8.0	30.8	100
Staggered		29	736	5	21	65	856
	38.5	3.4	86.0	0.6	2.5	7.6	100
Stuck		2	119	0	5	17	143
	6.4	1.4	83.2	0	3.5	11.9	100
Stopped		6	29	4	33	73	145
	6.5	4.1	20.0	2.8	22.8	50.3	100
Total		545	1,015	31	145	488	2,224
		24.5	45.6	1.4	6.5	21.9	100

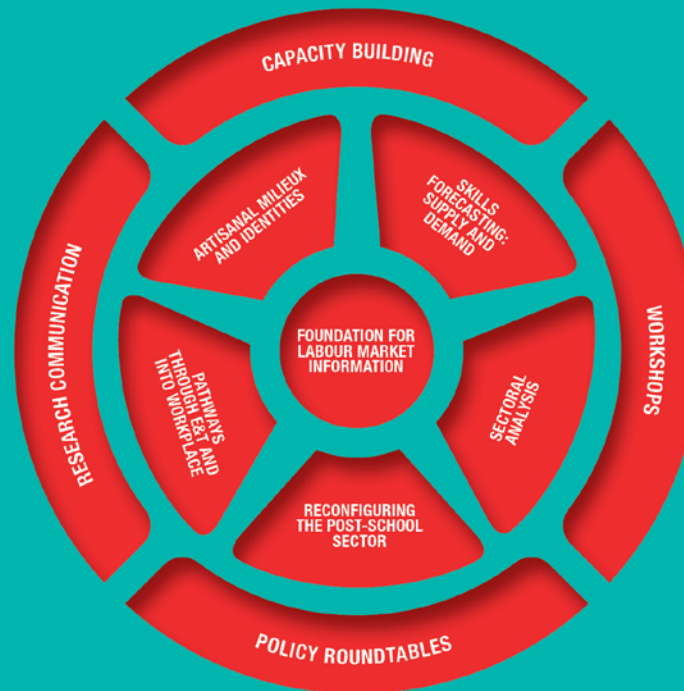


Thank you



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