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Human Sciences
Research Council

**Changing lives of
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through human and
social sciences**

Technology

LIFE ORIENTATION

Mathematics

VTSD SKILLS DEVELOPMENT LEKGOTLA

Perspectives on Skills Development and Lessons for South Africa

HSRC



Office of the Premier

North West Provincial Government
REPUBLIC OF SOUTH AFRICA



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www.lmip.org.za

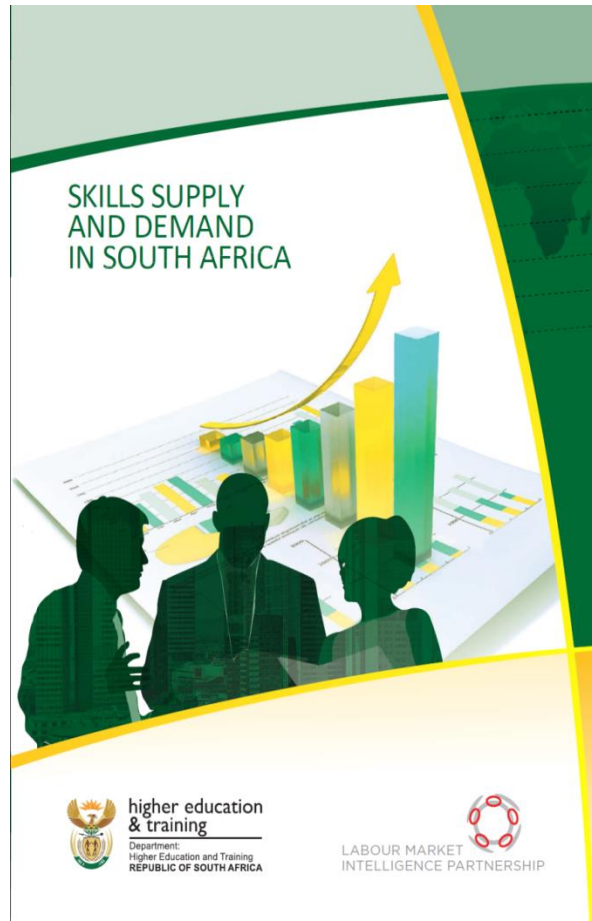
www.timss-sa.org.za

TIMSS 2015

Highlights of Mathematics and Science
Achievement of Grade 9 South African
Learners

Nurturing green shoots

Vijay Reddy
Mariette Visser
Lolita Winnaar
Fabian Arends
Andrea Juan
Cas Prinsloo
Kathryn Isdale



Public Attitudes to Work in South Africa

Bongiwe Mncwango

LMIP REPORT
2016 16

1. Skills planning in South Africa

- Challenge for government is to estimate the education and skills (skills strategy) required to support society and a productive and inclusive economic growth path.
- From 1994 efforts to plan for skills needs – but fragmented and imperfect.
- DHET commissioned the Labour Market Intelligence Partnership (LMIP) programme for research to inform the skills planning process (initiated in 2012).
- Skills Planning: need to understand the signals for the quantity and quality of skills demanded by the economy.

2. The Current Realities

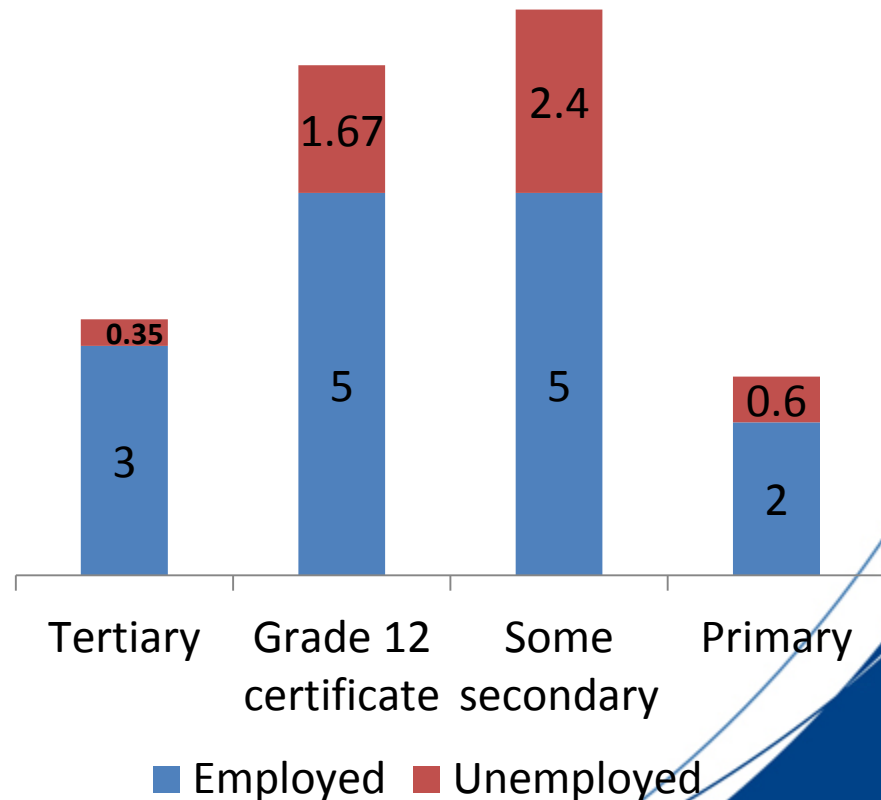
- The South African economy: low economic growth rates, leading to poor employment growth.
- Employment growth is not sufficient for the large numbers of youth coming to the labour market for the first time.
- Sectors where people work and the types of jobs are changing: absence of low-wage jobs in the manufacturing sector, structural shift towards a service economy and dependence on high-skilled financial services.
- The sector experiencing significant employment growth is the state sector and this is not sustainable.
- Educational attainment in South Africa is lower than most economically productive countries. The key constraint is the level of basic education.

The Labour Force and Skills (2014)

The Labour Force

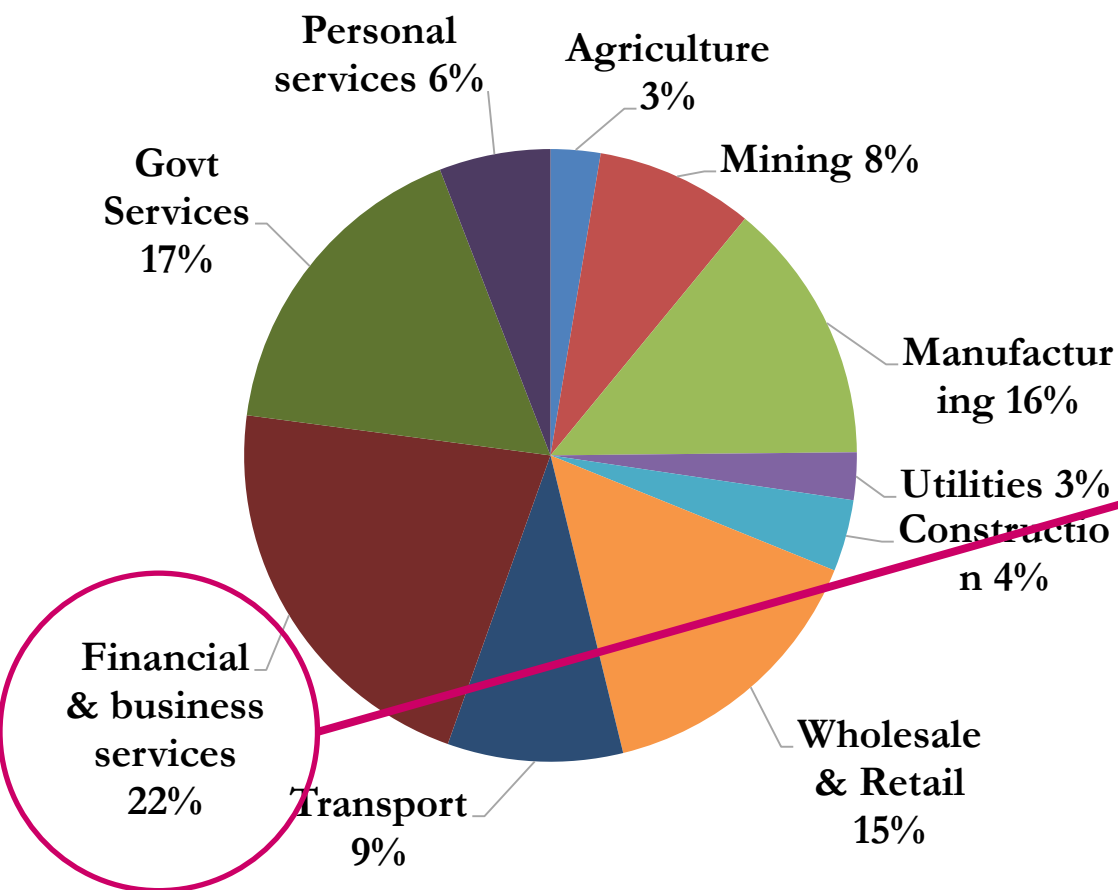
- 15 million employed people.
- High levels of unemployment (8 mill), especially for youth (5 mill).
- 3.3 million workers in vulnerable sectors.
- The labour force growing at twice the rate as the jobs being created.

Skills Levels of the Labour Force (million)



Sectoral Contribution to GDP, 2014

Employment by sector, 2014



Sector	%
Wholesale and Retail	22
Govt. Services	21
Manufacturing	13
Financial	13
Private Households	9
Construction	8
Transport	6
Agriculture	5
Mining & Quarrying	2
Utilities	1

- The role of education and skills is given for transformation and inclusive development
 - The higher a person's qualification, the more likely they are to be employed and absorbed in the formal labour force.
- The move towards a knowledge economy places different demands on the labour force.

1. The basic education story

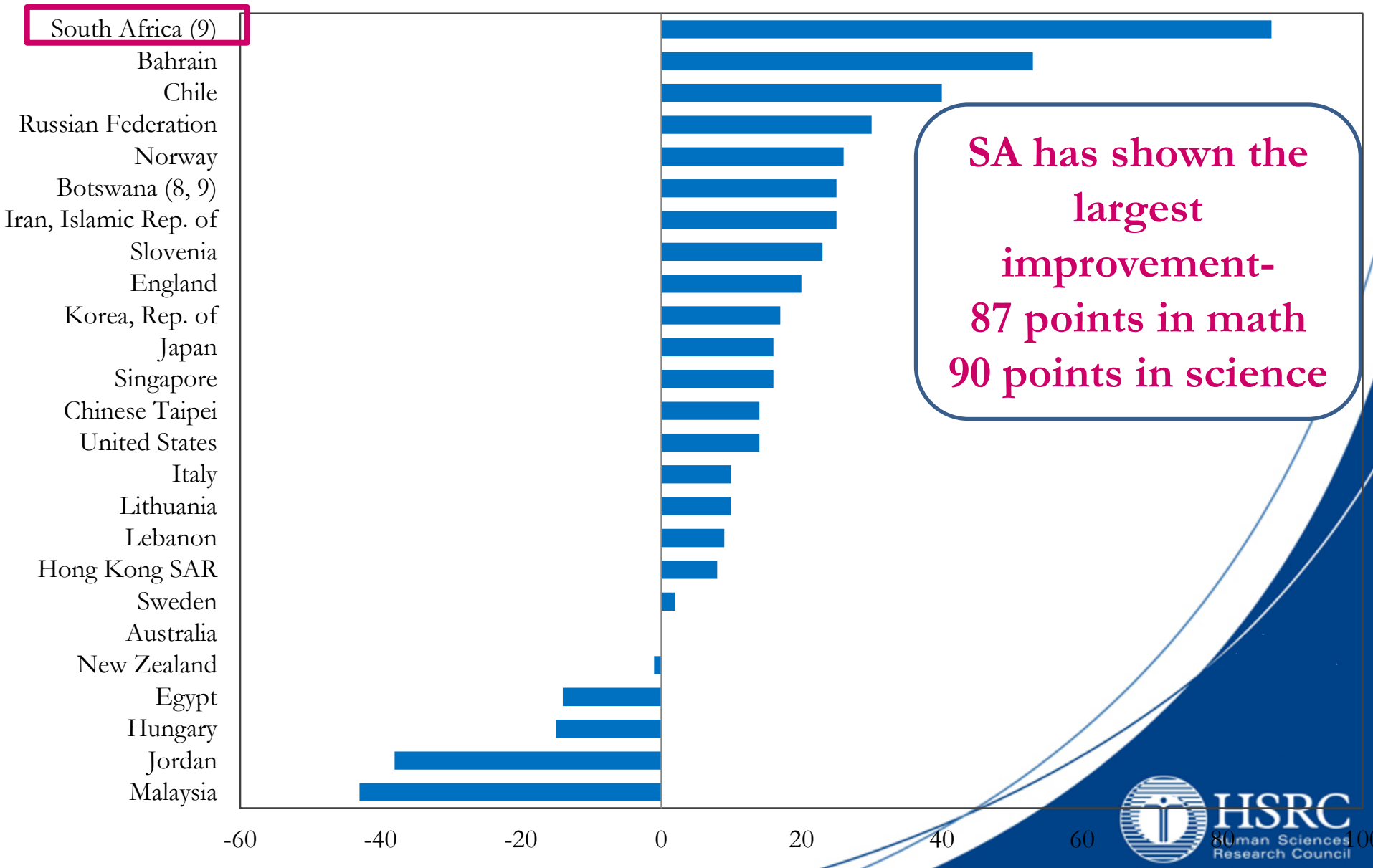
2. Pipeline from schools: The Post School Education and Training story

3. The Labour market outcomes story

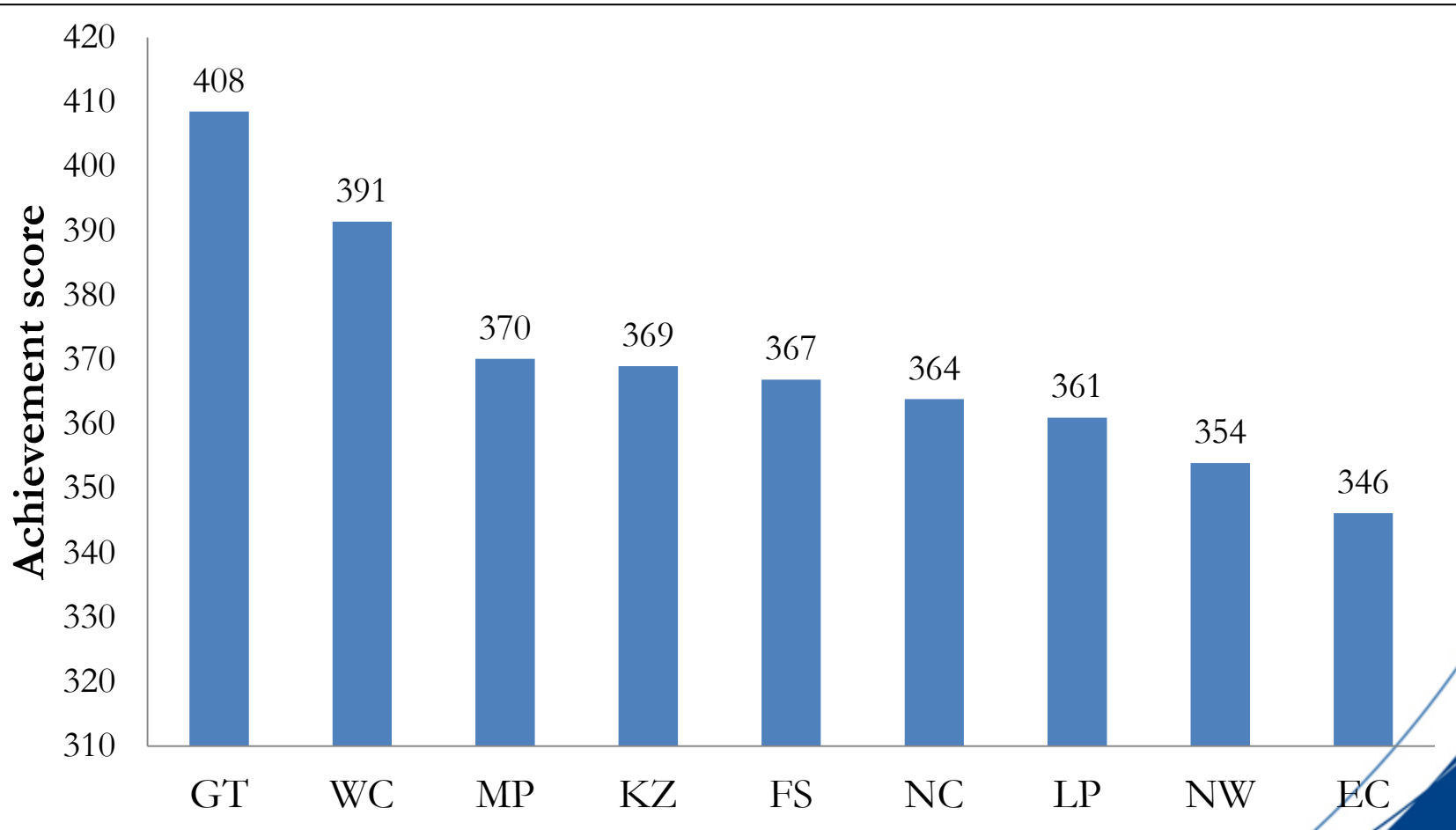
4. Implications for skills development

Story 1:
South Africa's performance in
Mathematics and Science at the school
level - TIMSS

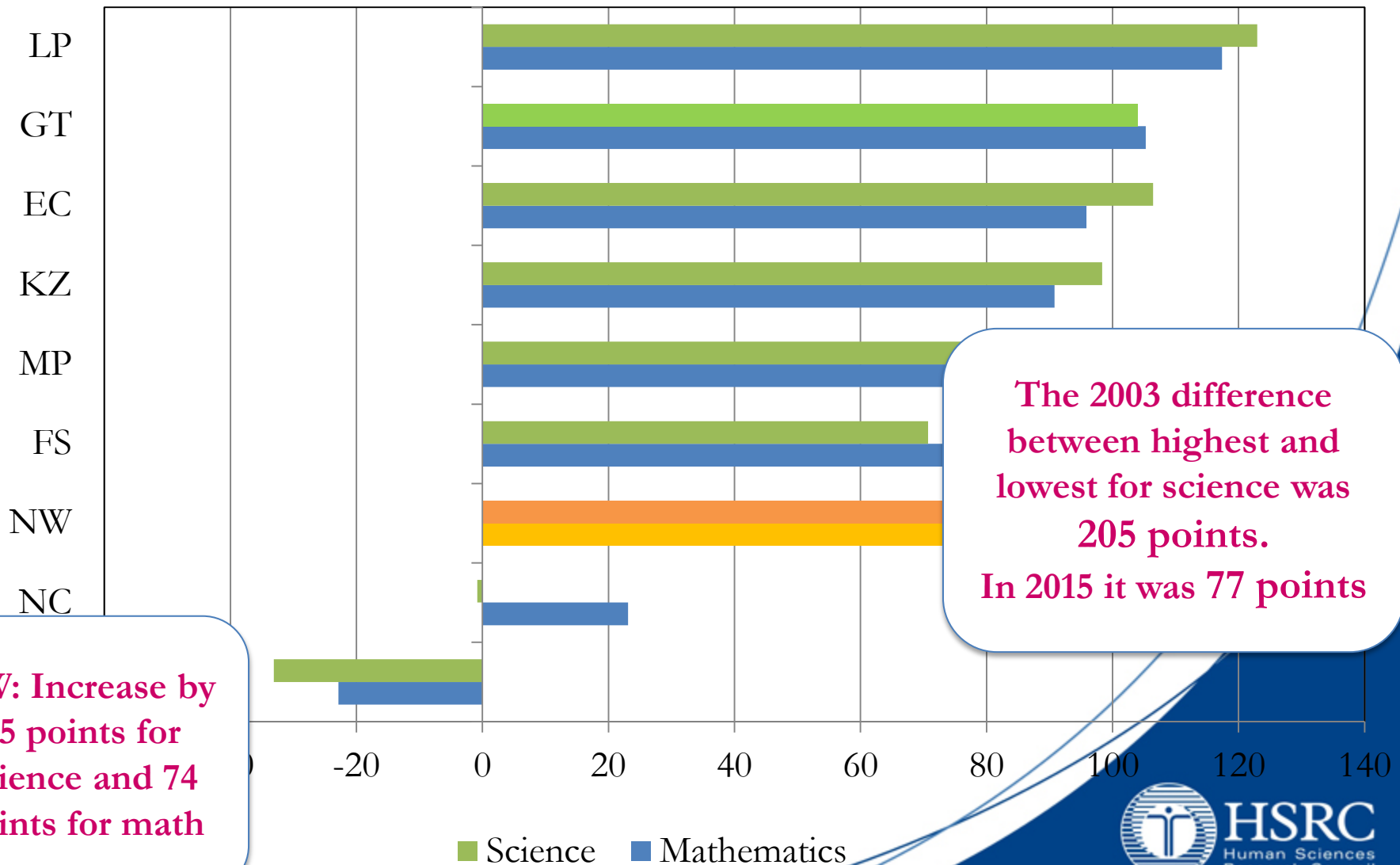
Change in math achievement between 2003 and 2015



Mathematics Performance by province, 2015



Change in provincial achievement 2003 to 2015



**NW: Increase by
75 points for
science and 74
points for math**

**The 2003 difference
between highest and
lowest for science was
205 points.
In 2015 it was 77 points**

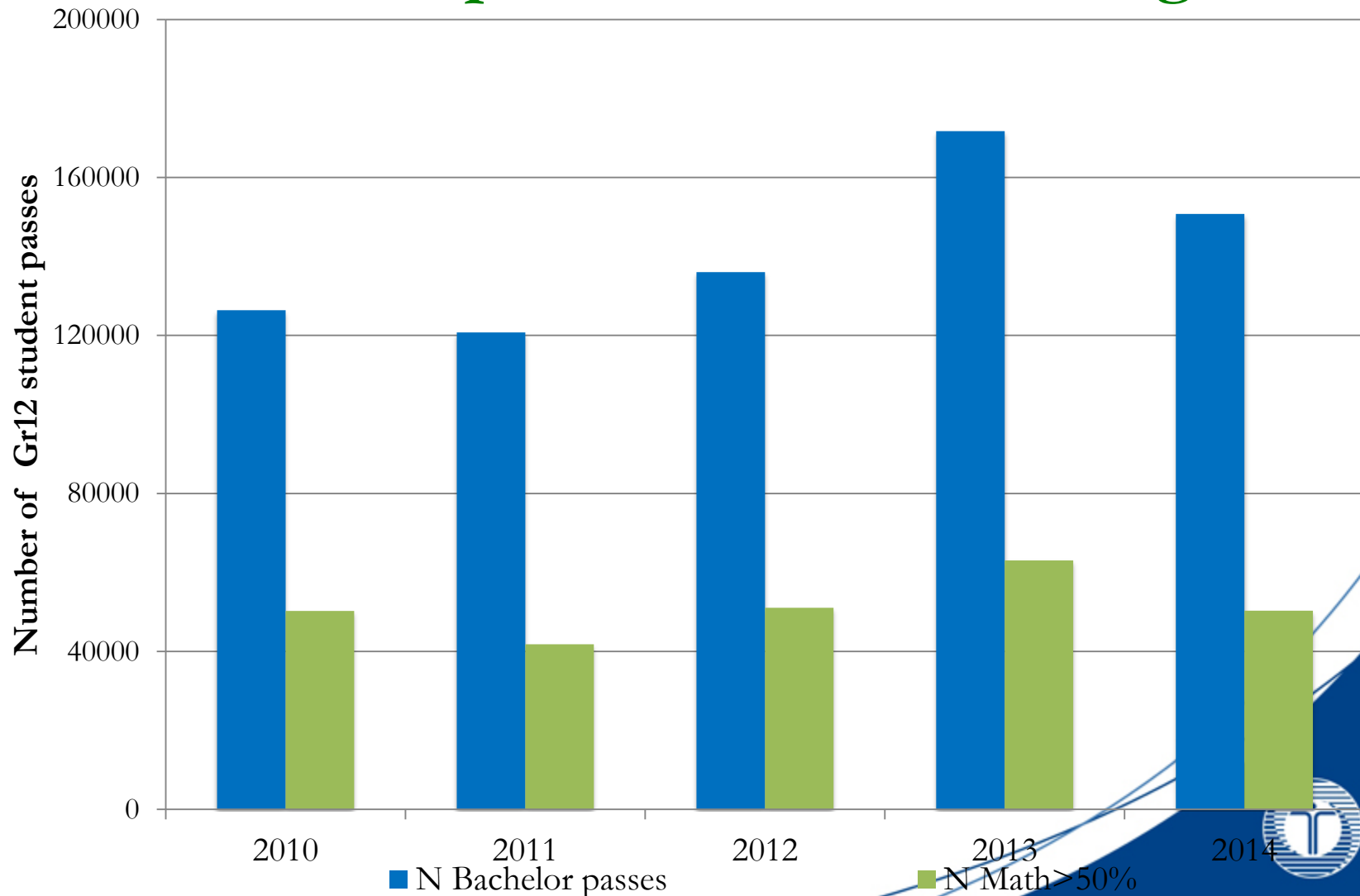
Influence of contextual dynamics on mathematics achievement

Home SES indicators	Positive as the number of assets increases. Positive as levels of parent education increases.
School SES Indicators	Positive as historical resource provision increases. Higher resourced schools outperform the no-fee paying schools.
Speaking the language of instruction at home	Positive for convergence of languages, negative for divergence.
Age	Student achievement is higher for age-grade appropriate students and negative for others
Gender	The gender achievement gap is small to non-existent. Gender differences favour girls for higher educational expectations, higher levels of parental engagement and experiencing lower levels of bullying.
School safety	Students in schools that are safer, with higher discipline tend to perform better.

Story 2:
Post-school Education and Training
(PSET) – the Higher Education story -
LMIP

Progress from school to tertiary completion

Key constraint is quantity and quality of competences from schooling



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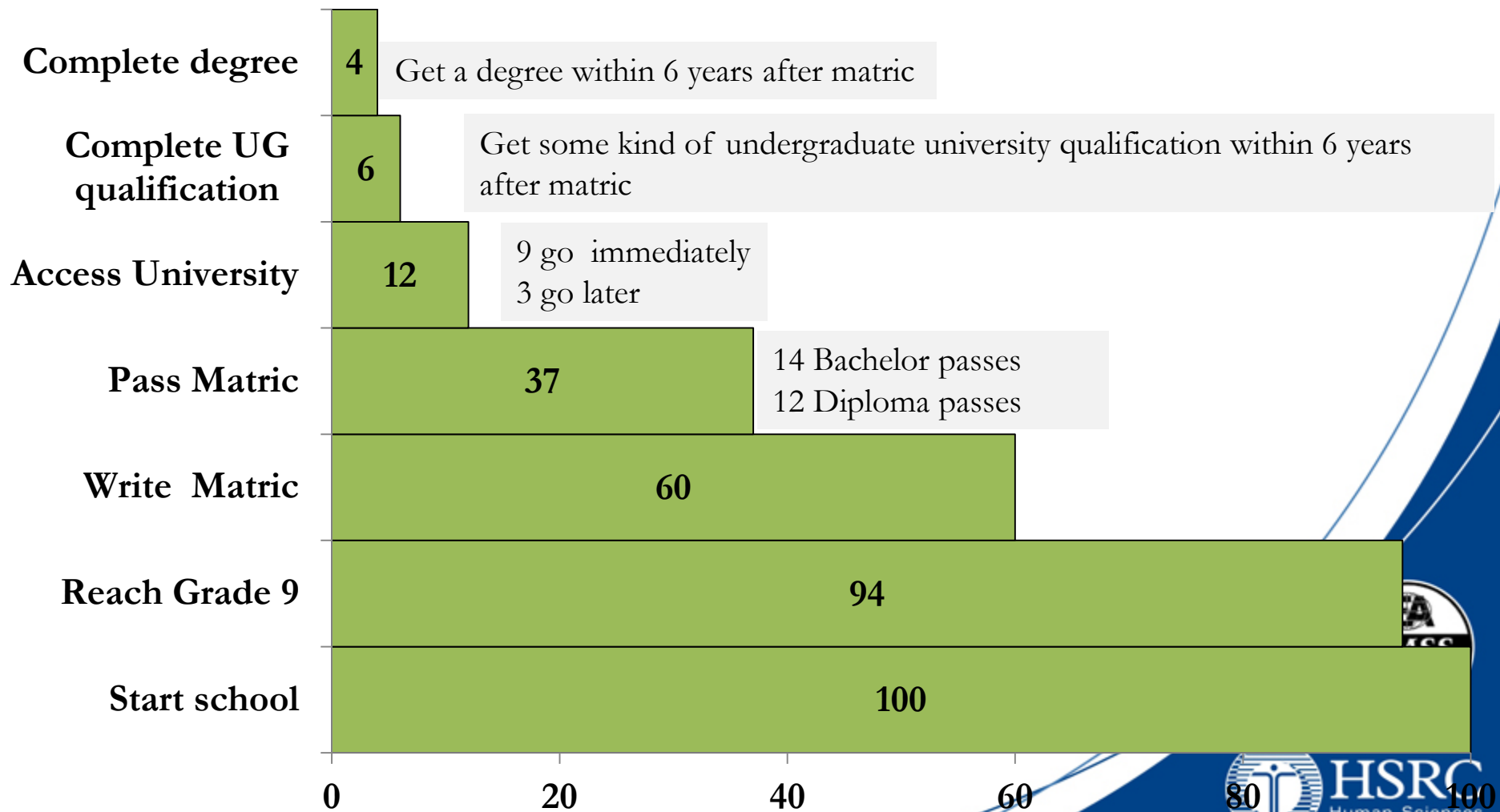
University & TVET Completers, 2014

	TOTAL	Business, Economic & Management Science	Science, Engineering Technology	Humanities	Services
Universities	185394	50380	55574	79749	
Diplomas and Degrees		27%	30%	43%	
TVET Colleges	7405	3824	1628		1953
NCV 4		52%	22%		26%
TVET Colleges	24178	13886	7925		2367
NATED 6		57%	33%		10%

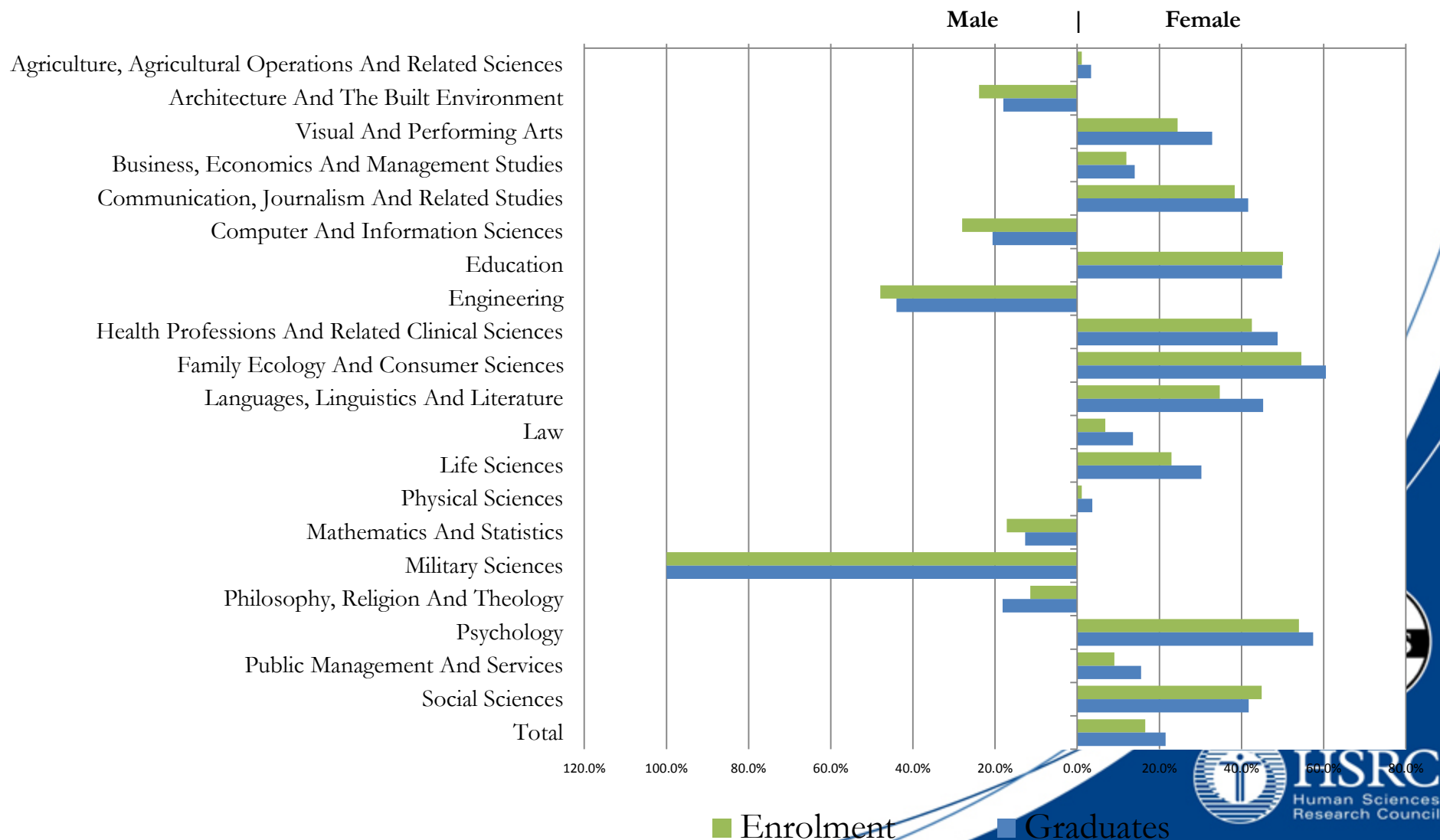


Progression from schools to tertiary qualifications: a helicopter view

(Servaas van der Berg, US)



Gender difference in university enrolments and completions, 2014



Story 3: Labour Market Outcomes

Education-Job Match: Sectors

Industry sector	1.2 million degrees	1.8 million Post-grade 12 cert & diploma
Community, social services	50	43
Financial	25	18
Manufacturing	8	10
Wholesale and Retail	6	13
Transport	4	6
Construction	3	5
Mining and quarrying	2	3
Agriculture, forestry and fishing	1	1
Electricity, gas and water supply	1	2

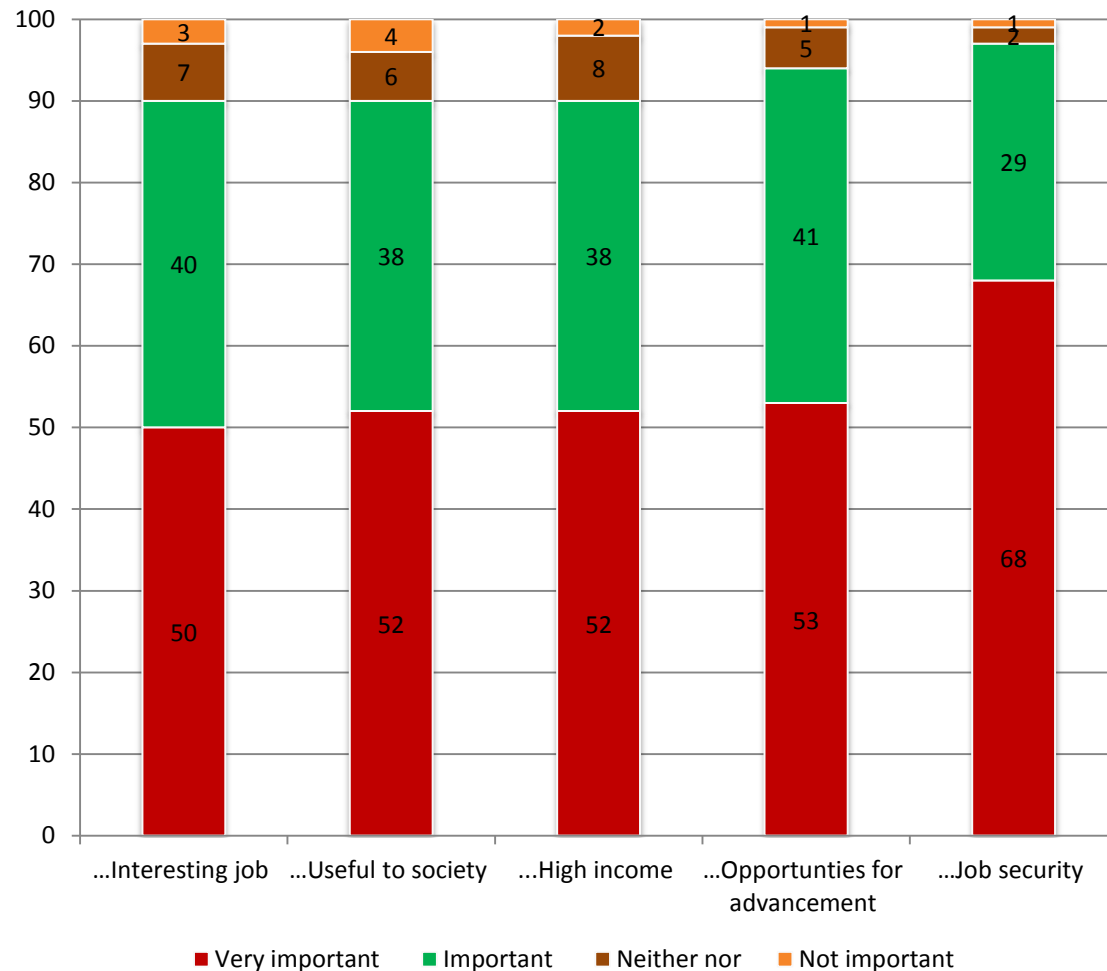
Sectors Engineering qualifications work?

	118 700 degrees	382 700 Post gr 12 Cert & Diploma
Financial	31	19
Manufacturing	23	18
Construction	15	13
Community, social, personal services	8	14
Transport	7	9
Wholesale and Retail	6	10
Mining and quarrying	5	9
Electricity; gas and water supply	4	5
Agriculture; forestry and fishing	0	1

DO PUBLIC ATTITUDES TO THE LABOUR MARKET MATTER?

- ❖ Personal decisions influence the success of interventions aimed at correcting labour market imbalances and mismatches.
- ❖ **A deeper understanding of public perceptions regarding the labour market is key to formulating tailored employment and skills-development interventions.**
- ❖ A survey with specific questions about social attitudes to the labour market was initiated.
- ❖ Examined public attitudes to work to gain a deeper understanding of work values, preferences and experiences, and work seeking behaviour.

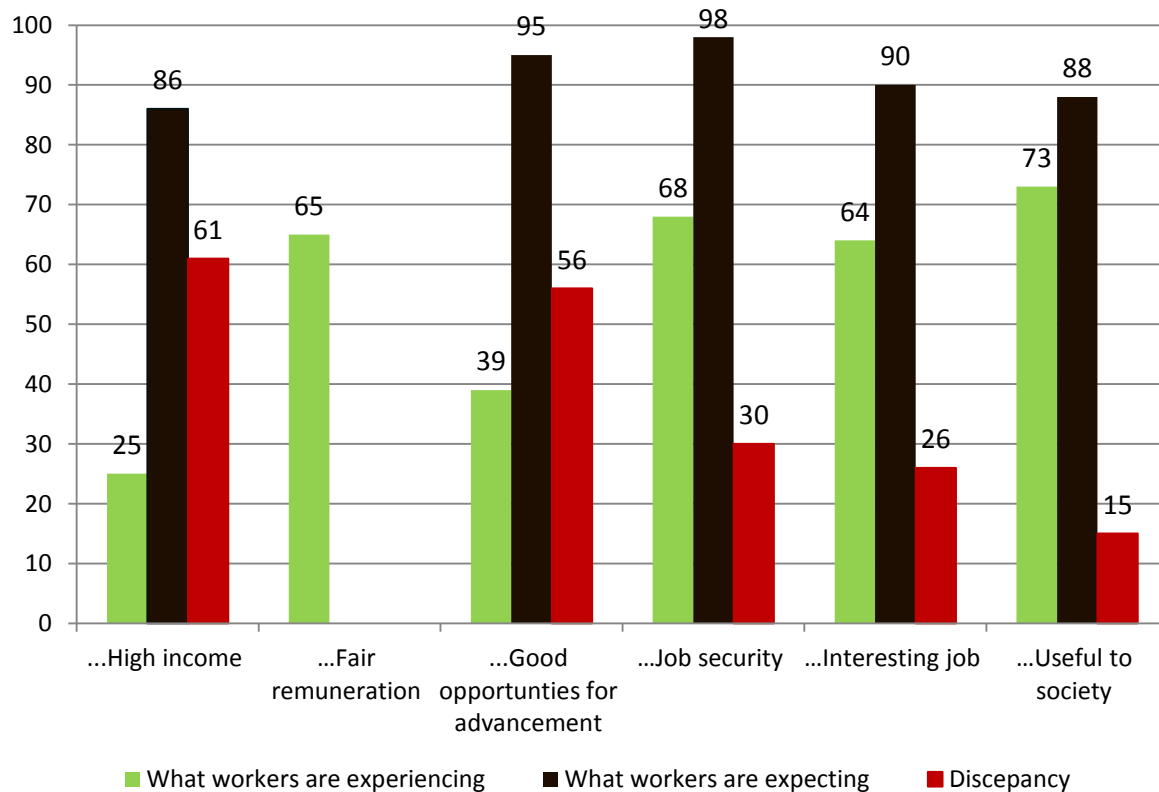
Perceived important job attributes



- Workers indicated all work aspects as important for a decent job.
- Job security is most frequently identified as important
- Individual expectations from work are much more complex, in accordance with varied needs and preferences.

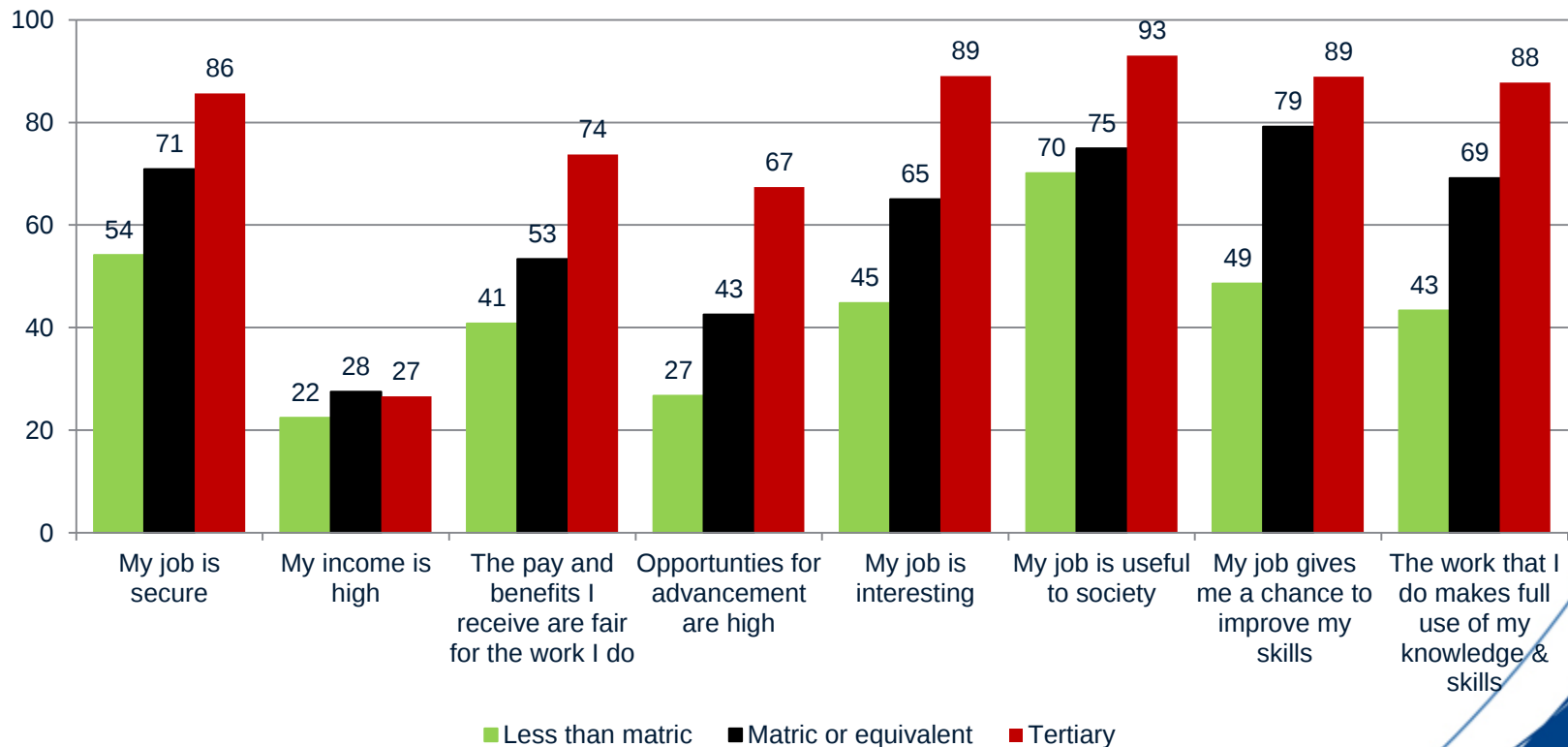
Extent to which attributes match workers expectations

Comparing what workers expect, and experience at work



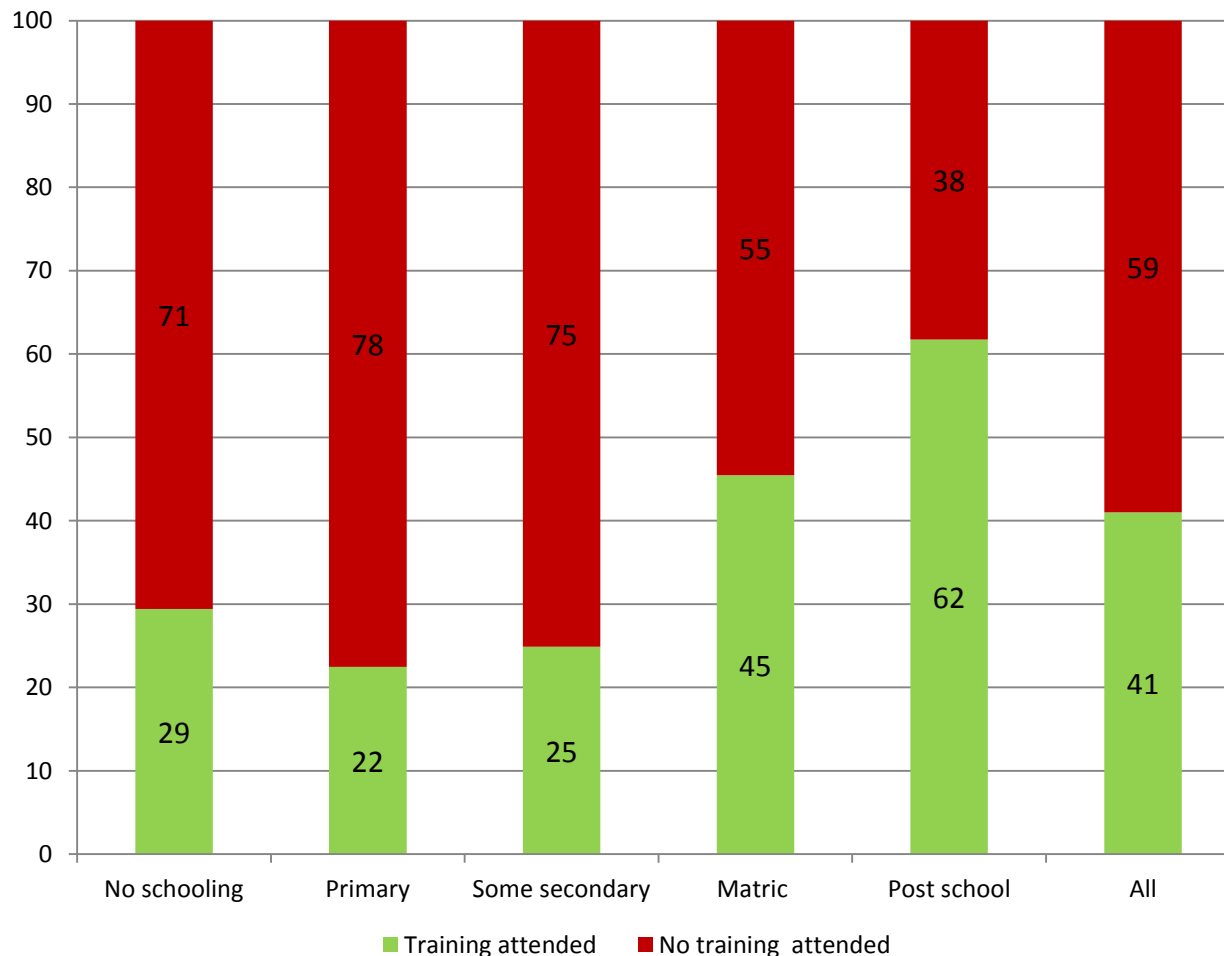
- The discrepancies are most extreme in relation to the reality of attaining a high income and good prospects for job promotion and advancement.

Association between education levels, and perceived work conditions



- Workers with tertiary education enjoy and value their jobs more highly.

Association between education levels and extent of workplace training



- Only 59% reported workplace training.
- Workers with tertiary education were three times more likely to attend training.

Implications for skills development

1. **Improve levels of education and skills:** improved basic education, increase STEM graduates and technicians, focus on unemployed youth with less than grade 12 certificate.
2. **Improved match between field of study and labour market destination:** 50% of graduates work in the public sector. Private sector needs to look at its human resource strategy to attract skilled graduates.
3. **Education remains an important currency in the labour market:** Higher education related to better working conditions. There is a need to strengthen targeted interventions focused at vulnerable labour market participants with low education and skills levels. On-the-job training and vocational training to upgrade skills and boost overall human capital is required.