

Selected findings from the Macro Indicator Report

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DBE

17 October 2013



Plan

- Indicators of educational participation (access)
 - GERs
 - NERs
 - ASERs
- Indicators of internal efficiency
 - Age of school entry
 - Repetition
 - Dropout
- Indicators of education quality
- Education finance indicators

GER

$$GER_h^t = \frac{E_h^t}{P_{h,a}^t} * 100$$

Where:

GER_h^t Gross Enrolment Ratio at level of education **h** in school year **t**

E_h^t Enrolment at the level of education **h** in school year **t**

$P_{h,a}^t$ Population in age group **a** which officially corresponds to the level of education **h** in school year **t**

Source: UNESCO

NER

$$\text{NER}_h^t = \frac{E_{h,a}^t}{P_{h,a}^t} * 100$$

Where:

NER_h^t Net Enrolment Rate at level of education **h** in school year **t**

$E_{h,a}^t$ Enrolment of the population of age group **a** at level of education **h** in school year **t**

$P_{h,a}^t$ Population in age group **a** which officially corresponds to level of education **h** in school year **t**

Source: UNESCO

ASER

$$ASER_a^t = \frac{E_a^t}{P_a^t} * 100$$

Where :

$ASER_a^t$ Age Specific Enrolment Rate of the population of age **a** in school year **t**

E_a^t Enrolment of the population of age **a** in school year **t**

P_a^t Population of age **a** in school year **t**

Source: UNESCO

Access to Grade R: Standard GER

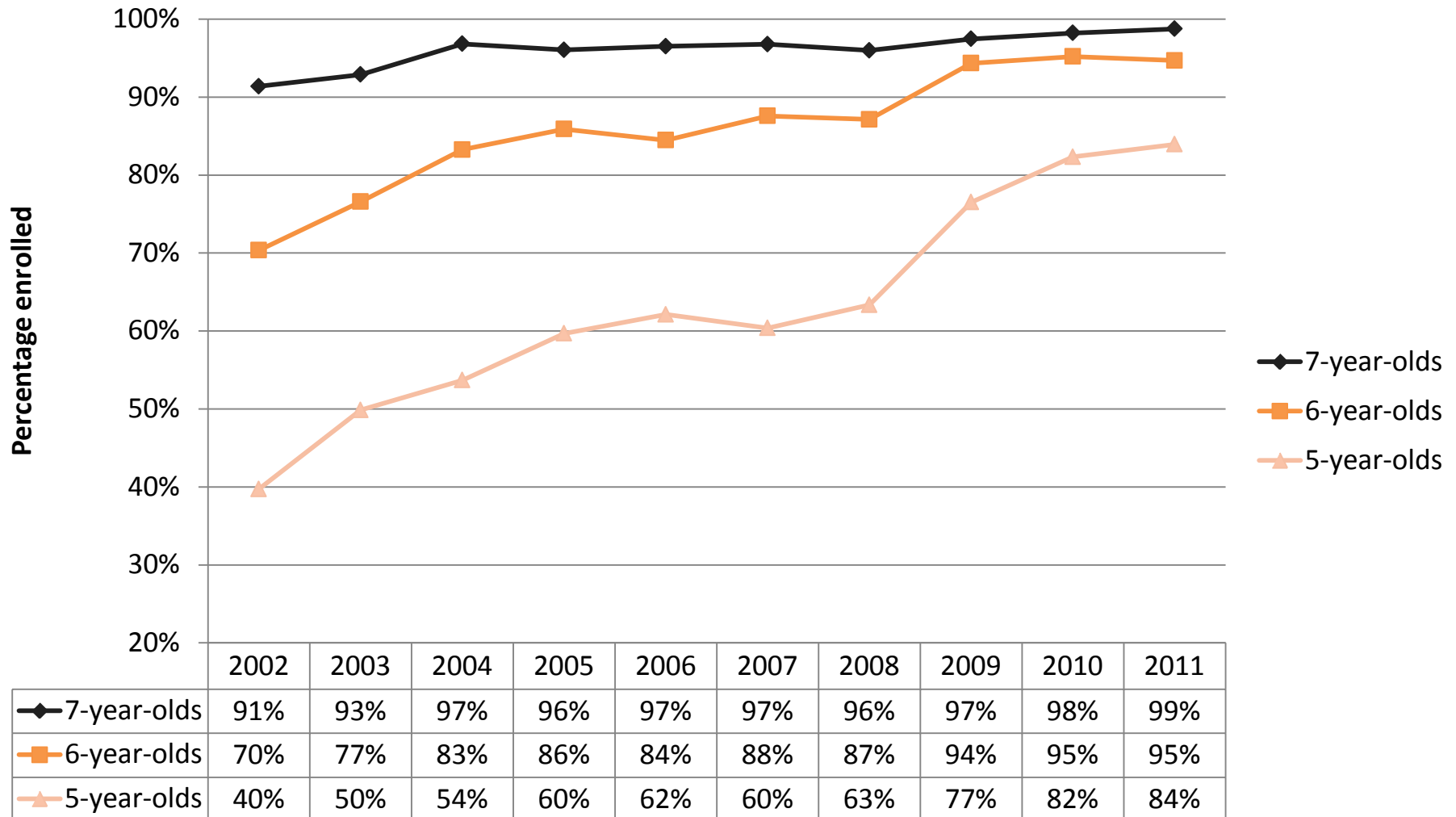
| Year | Females | Males | Total | GER (Female) | GER (Male) | Total GER |
|------|---------|---------|---------|--------------|------------|-------------|
| 1999 | 78 574 | 77 718 | 156 292 | 15.3 | 15 | 15.2 |
| 2000 | 113 607 | 113 024 | 226 631 | 22.1 | 21.8 | 21.9 |
| 2001 | 121 076 | 120 449 | 241 525 | 23.5 | 23.2 | 23.4 |
| 2002 | 139 708 | 139 018 | 278 726 | 27.2 | 26.9 | 27.0 |
| 2003 | 157 855 | 157 532 | 315 387 | 31.0 | 30.7 | 30.8 |
| 2004 | 178 643 | 177 844 | 356 487 | 35.4 | 34.9 | 35.2 |
| 2005 | 202 607 | 202 590 | 405 197 | 40.6 | 40.3 | 40.3 |
| 2006 | 219 969 | 221 652 | 441 621 | 44.3 | 44.1 | 44.2 |
| 2007 | 242 409 | 245 116 | 487 525 | 49.0 | 48.9 | 48.9 |
| 2008 | 271 113 | 272 686 | 543799 | 49.9 | 50.1 | 51.9 |
| 2009 | 308 628 | 311 595 | 620 223 | 60.4 | 60.2 | 60.3 |
| 2010 | 351 351 | 355 852 | 707 203 | 66.8 | 66.5 | 66.7 |
| 2011 | 365 256 | 369 398 | 734 654 | 69.9 | 69.5 | 69.7 |

Source: Department of Basic Education, Education Statistics in South Africa, 1999 to 2011 and Statistics South Africa Mid-Year Population Estimates

Access to Grade R: alternative calculations

- The standard GER excludes Grade R at non-school ECD centres
- GHS 2011: counting school & ECD centre Grade R yields at GER of 99%
- Excluding Grade R repeaters: 96%
- NIDS: 78% of 8-year-olds had attended pre-school

Access to Grade R: ASER



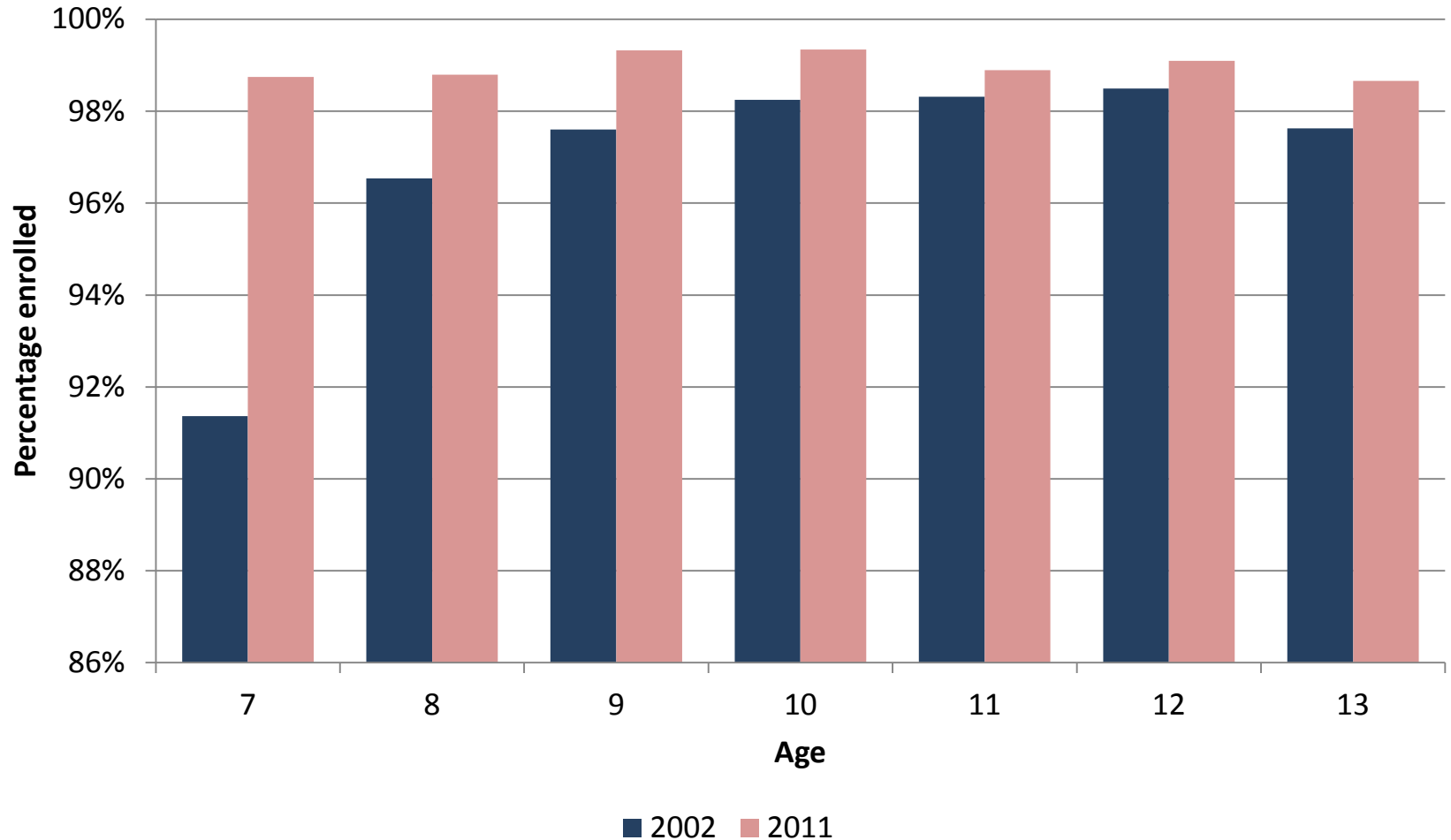
Source: General Household Surveys, 2002-2011

Access to primary education:

Implausible primary GERs using traditional method

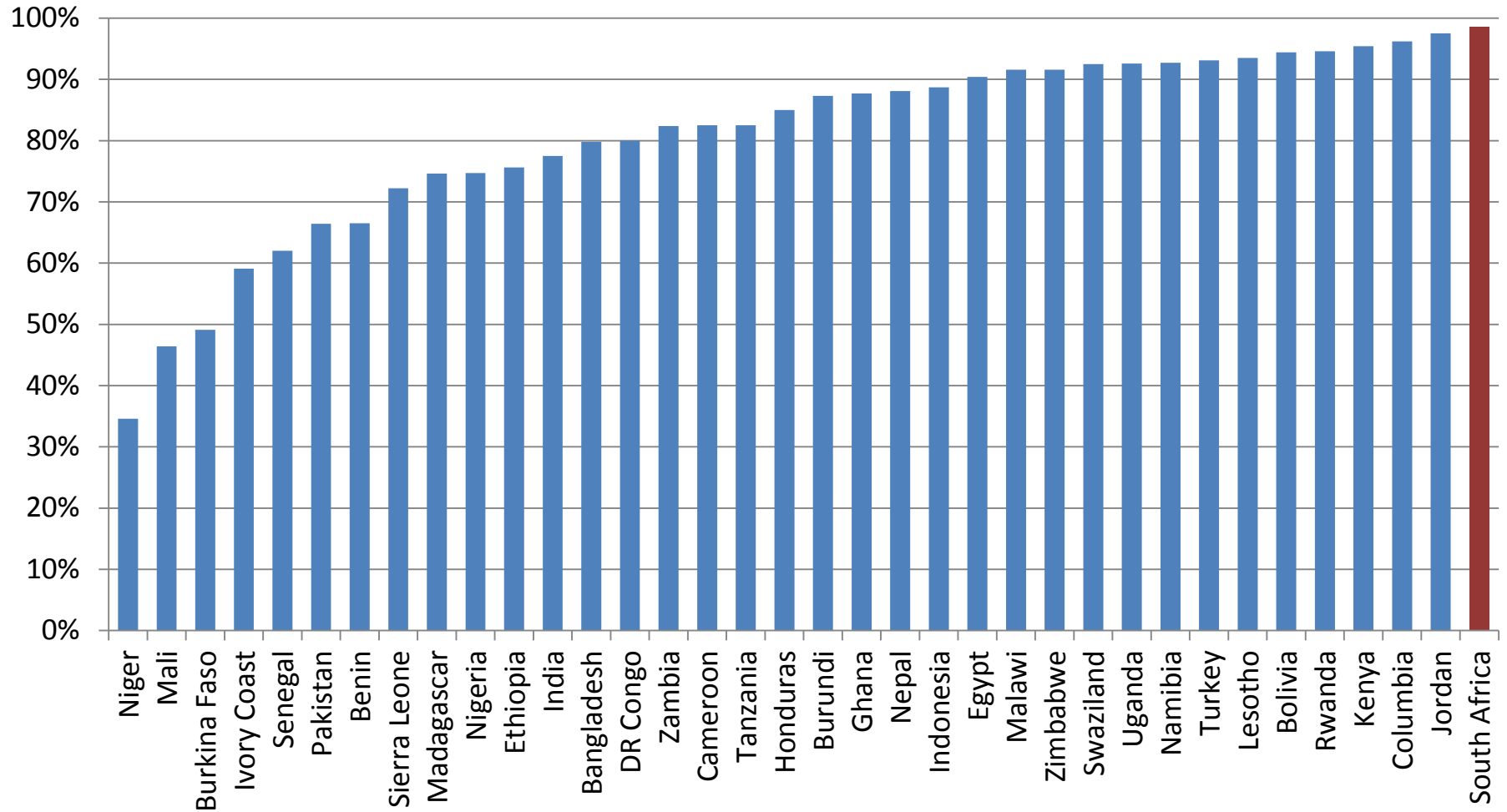
| Province | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-----------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|
| Eastern Cape | 117 | 118 | 114 | 120 | 116 | 120 | 119 | 121 | 116 | 109 |
| Free State | 102 | 99 | 94 | 91 | 92 | 91 | 90 | 92 | 93 | 96 |
| Gauteng | 101 | 100 | 104 | 99 | 99 | 90 | 87 | 83 | 81 | 81 |
| KwaZulu-Natal | 106 | 104 | 105 | 104 | 101 | 100 | 99 | 97 | 92 | 92 |
| Limpopo | 101 | 99 | 101 | 102 | 99 | 102 | 101 | 100 | 97 | 97 |
| Mpumalanga | 105 | 101 | 105 | 104 | 109 | 102 | 102 | 100 | 98 | 101 |
| North West | 101 | 98 | 99 | 92 | 97 | 91 | 94 | 94 | 96 | 94 |
| Northern Cape | 108 | 111 | 101 | 96 | 96 | 91 | 93 | 101 | 94 | 100 |
| Western Cape | 99 | 97 | 102 | 97 | 95 | 85 | 84 | 88 | 86 | 84 |
| National | 105 | 104 | 104 | 103 | 102 | 99 | 98 | 98 | 94 | 93 |

Access to primary education: ASER



Source: General Household Survey, 2002 & 2011

Access to primary education: ASER (13-year-olds)



Source: Own calculations using data from Filmer (2010)

Access to secondary education: Secondary GERs using traditional method

| Province | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|
| Eastern Cape | 72 | 72 | 72 | 72 | 75 | 78 | 75 | 74.8 | 77 | 77 |
| Free State | 83 | 81 | 83 | 85 | 87 | 87 | 85 | 81.4 | 88 | 87 |
| Gauteng | 81 | 81 | 97 | 101 | 101 | 90 | 88 | 88.9 | 84 | 84 |
| KwaZulu-Natal | 81 | 80 | 91 | 90 | 91 | 88 | 83 | 87.3 | 88 | 90 |
| Limpopo | 91 | 90 | 100 | 100 | 102 | 107 | 102 | 100.9 | 101 | 102 |
| Mpumalanga | 88 | 87 | 97 | 94 | 103 | 97 | 95 | 93.1 | 95 | 96 |
| North West | 83 | 82 | 88 | 81 | 89 | 81 | 81 | 76.1 | 79 | 82 |
| North Cape | 76 | 79 | 82 | 85 | 85 | 79 | 76 | 80.8 | 82 | 80 |
| Western Cape | 72 | 71 | 86 | 87 | 86 | 74 | 71 | 72.1 | 76 | 76 |
| Total | 81 | 80 | 89 | 89 | 91 | 88 | 85 | 85.3 | 86 | 87 |

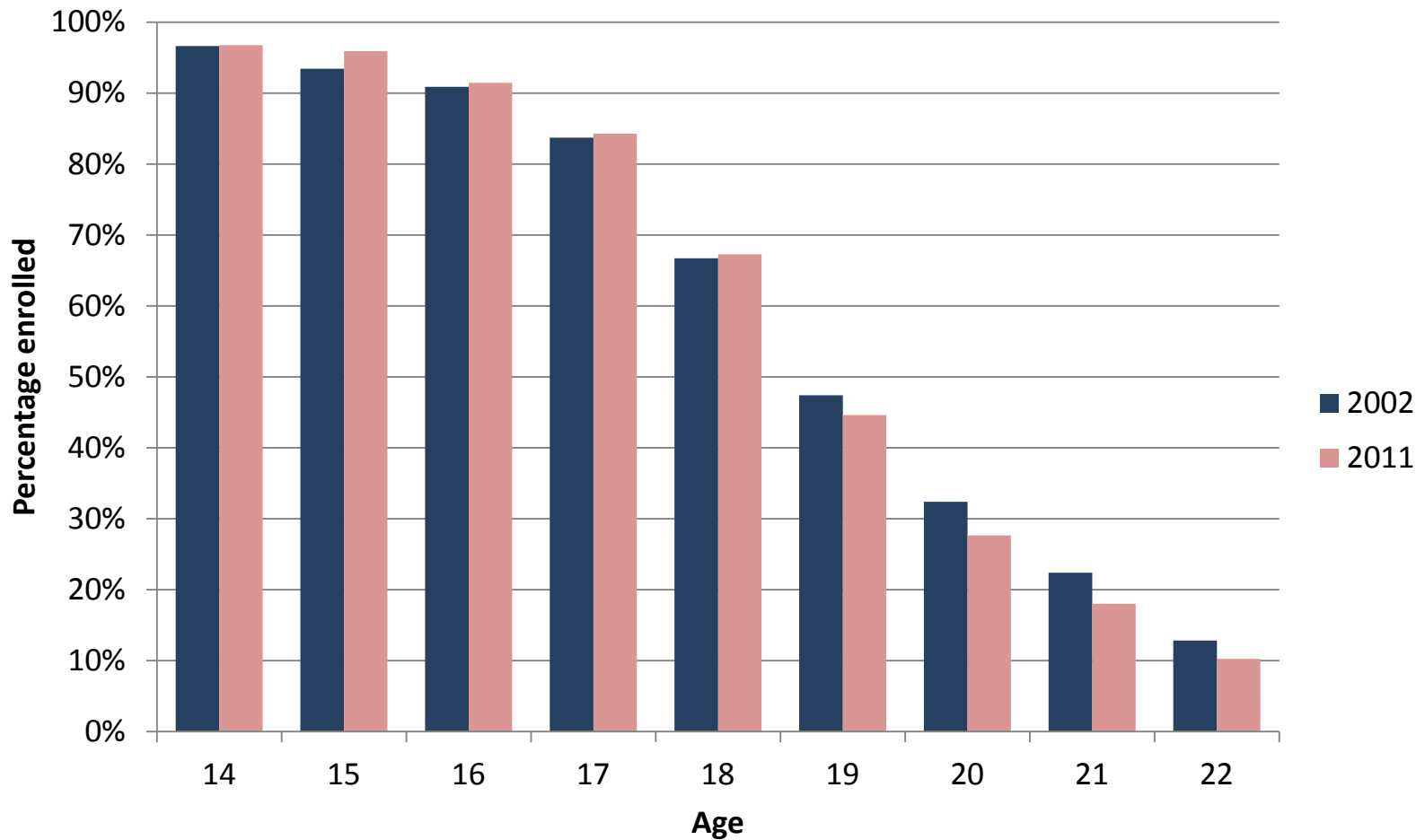
Source: DBE, Education Statistics in South Africa 2002-2010; DoE, School Realities, 2011 and population estimates from Statistics South Africa.

Access to secondary education: Secondary GERs and NERs using Household Data

| | GER | NER |
|-----------------|------------|-----------|
| Western Cape | 86 | 71 |
| Northern Cape | 93 | 73 |
| Eastern Cape | 94 | 65 |
| North West | 95 | 74 |
| Gauteng | 103 | 79 |
| Free State | 104 | 77 |
| Mpumalanga | 106 | 74 |
| KwaZulu-Natal | 107 | 76 |
| Limpopo | 120 | 80 |
| National | 103 | 74 |

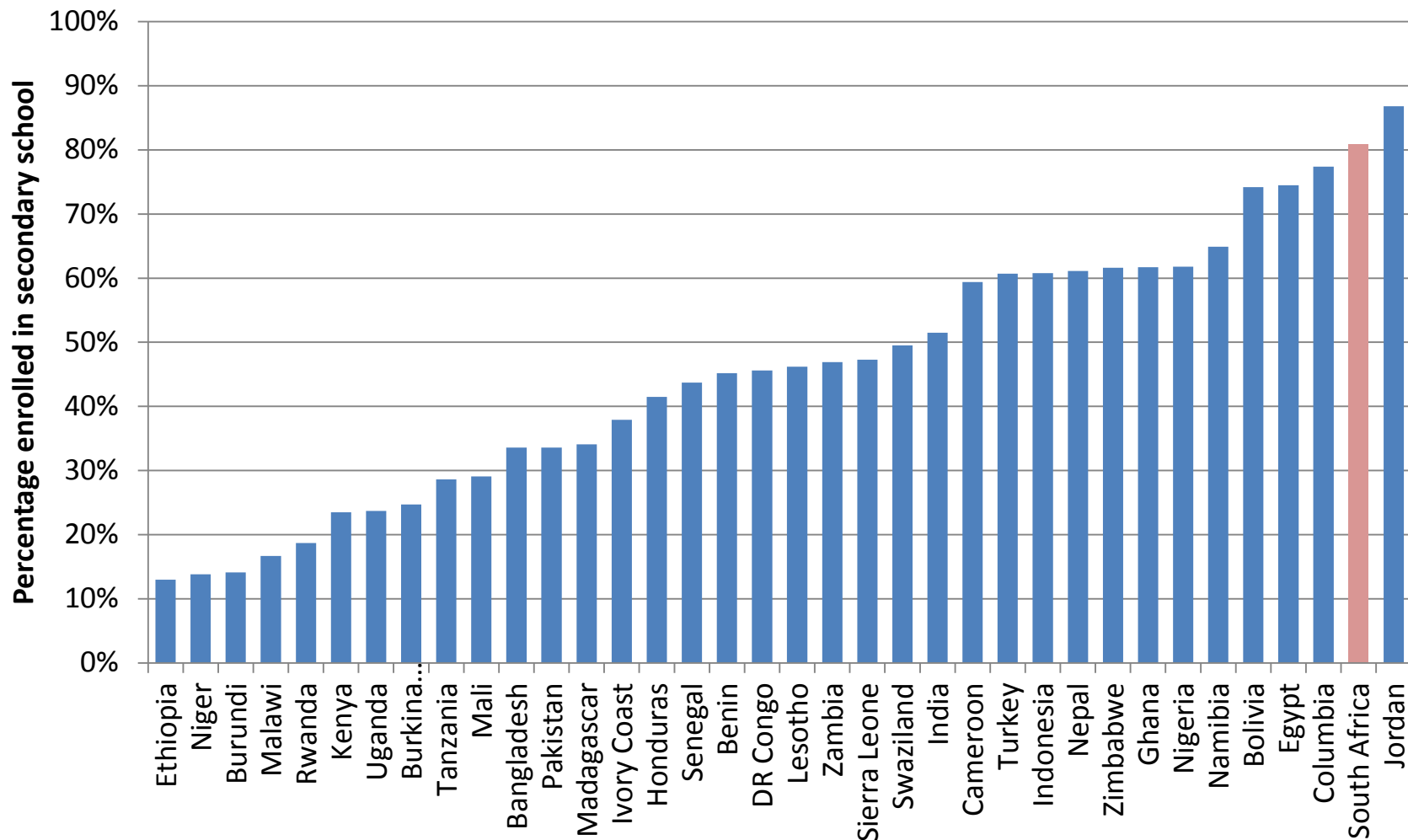
Source: General Household Survey, 2011

Access to secondary education: ASERs in school using Household Data



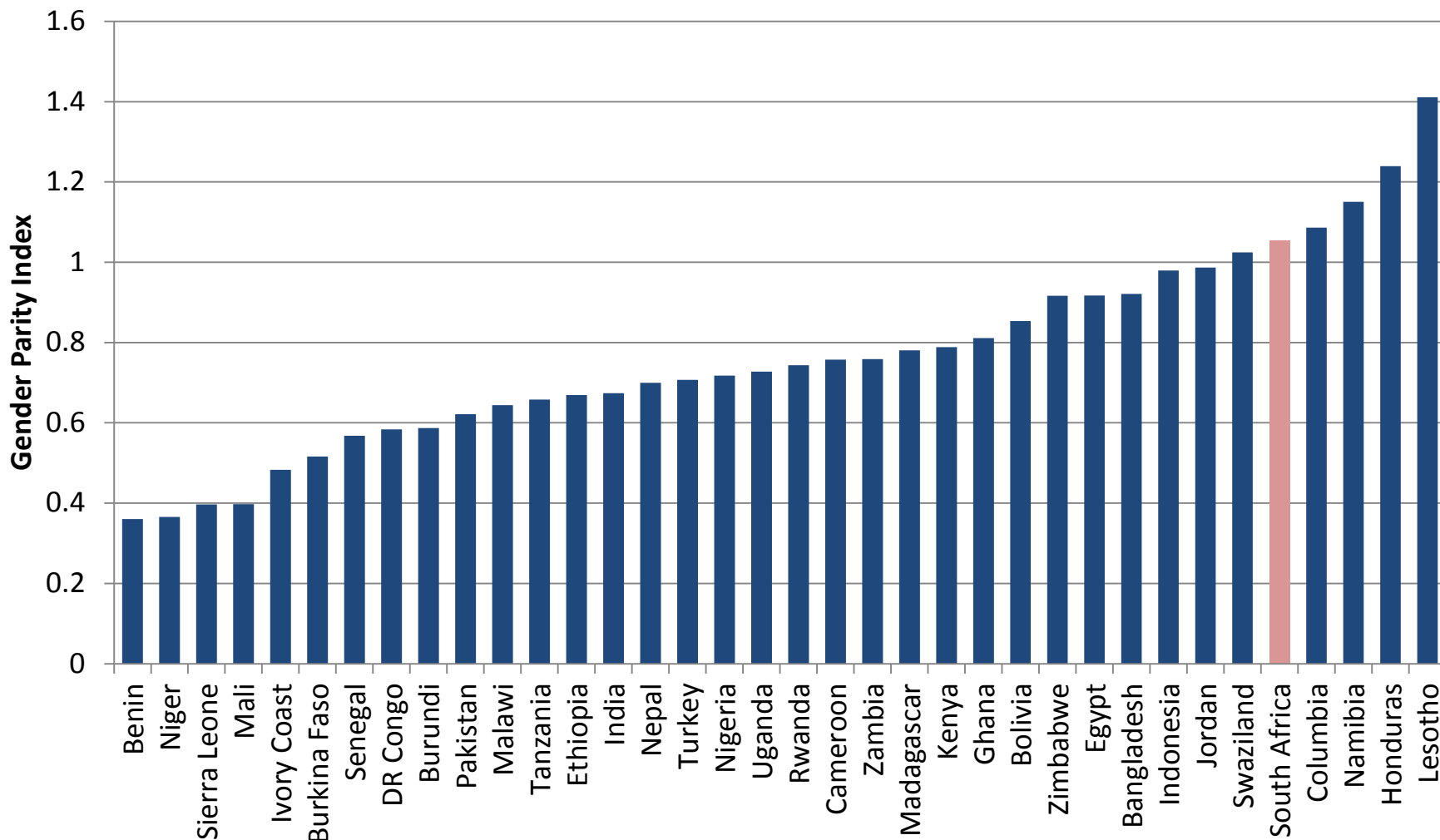
Source: General Household Surveys, 2002 & 2011

Access to secondary education: ASERs in school using Household Data (16-year-olds)



Source: Own calculations using data from Filmer (2010)

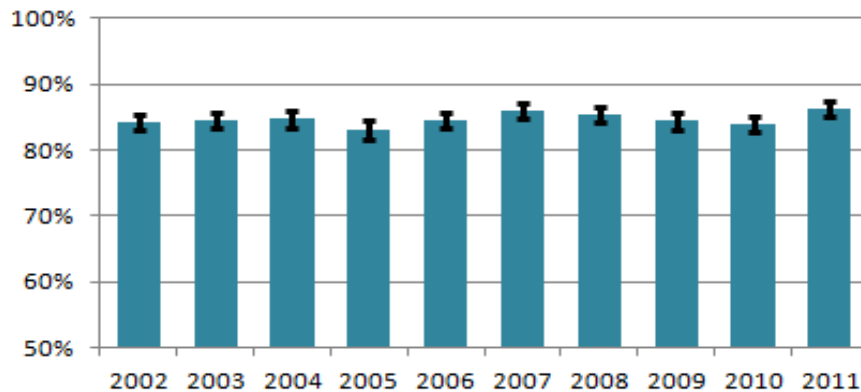
Access to secondary education: GPI (20- to 29-year-olds completed grade 9)



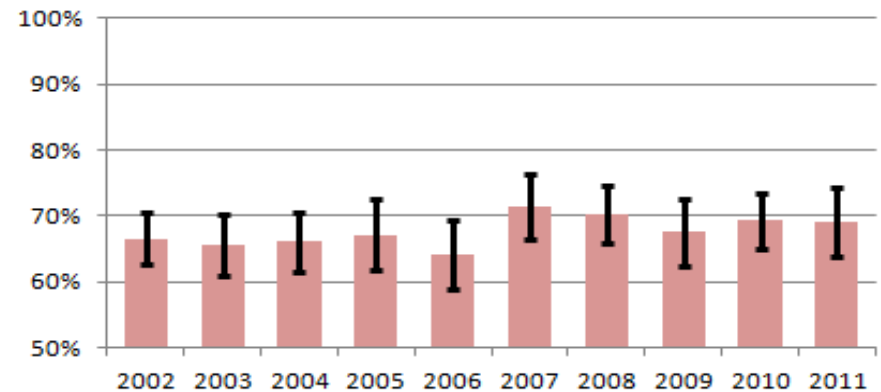
Source: Own calculations using data from Filmer (2010)

Access to secondary education: ASER (16-18-year-olds)

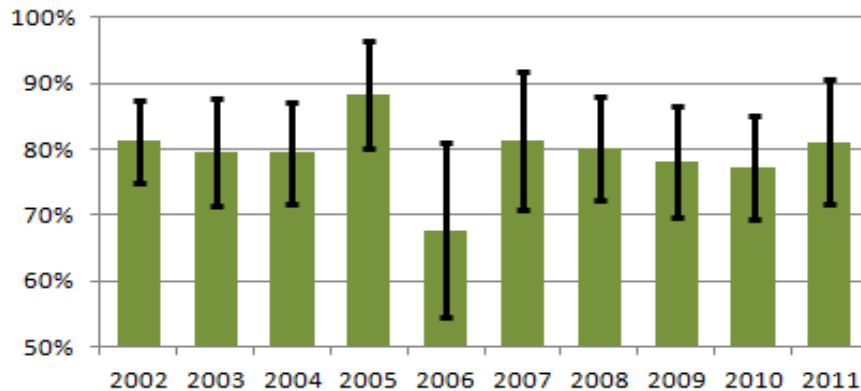
Black



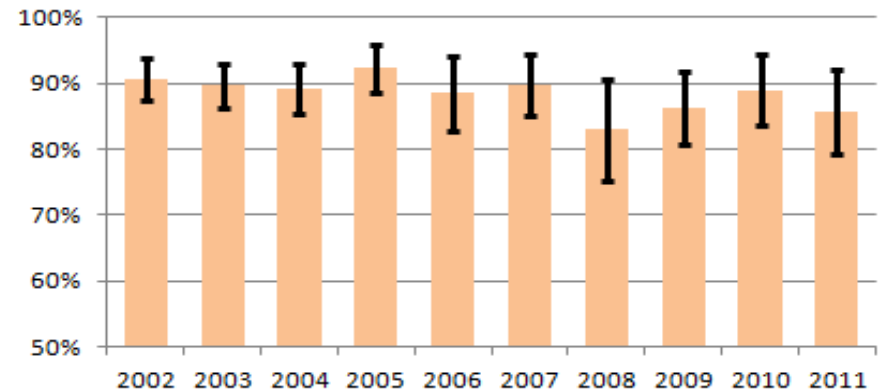
Coloured



Indian

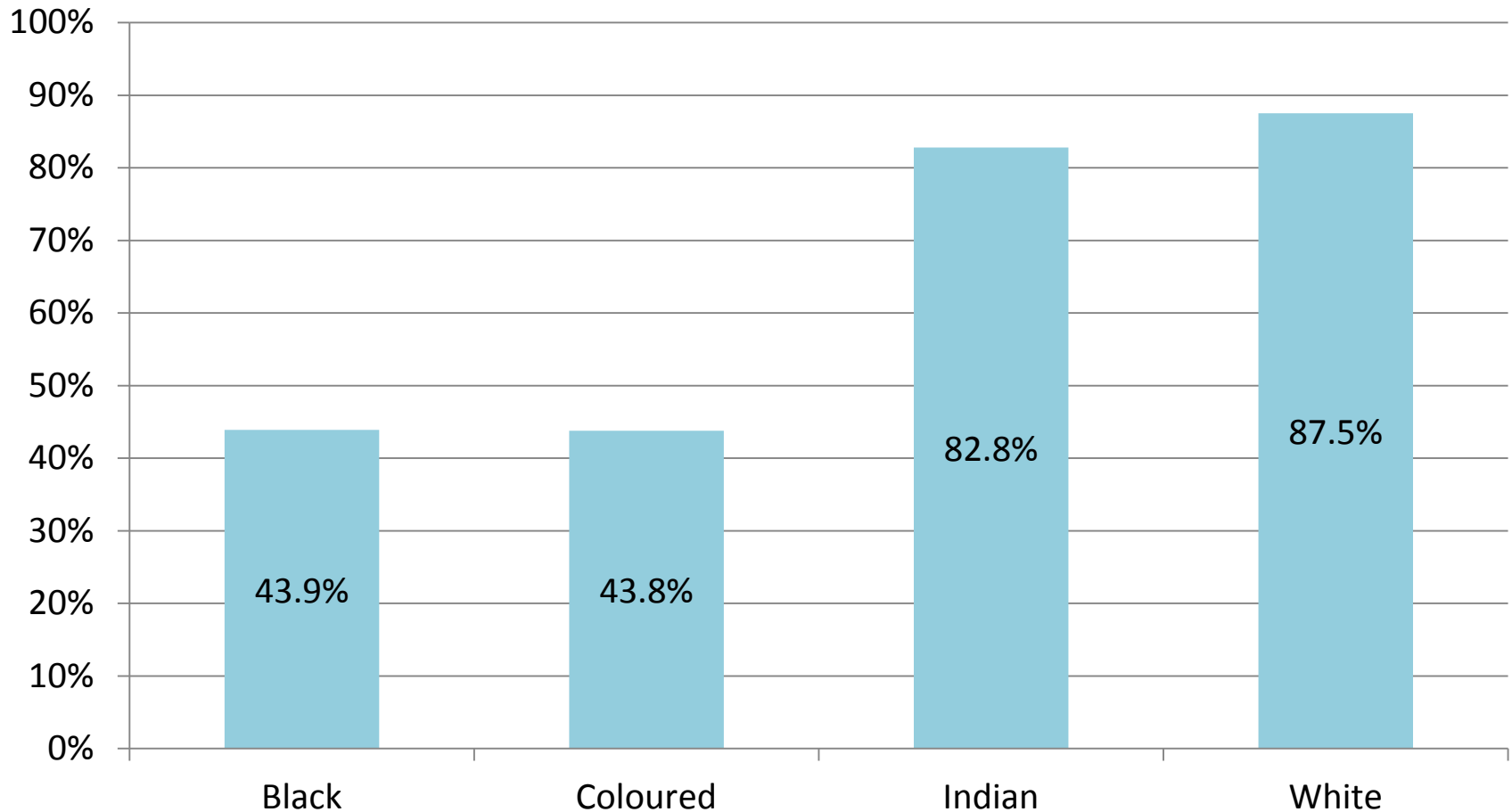


White



Source: General Household Surveys, 2002 - 2011

Access to secondary education: Proportion of 23-24-year-olds with matric



Source: General Household Survey 2011

Access to secondary education:

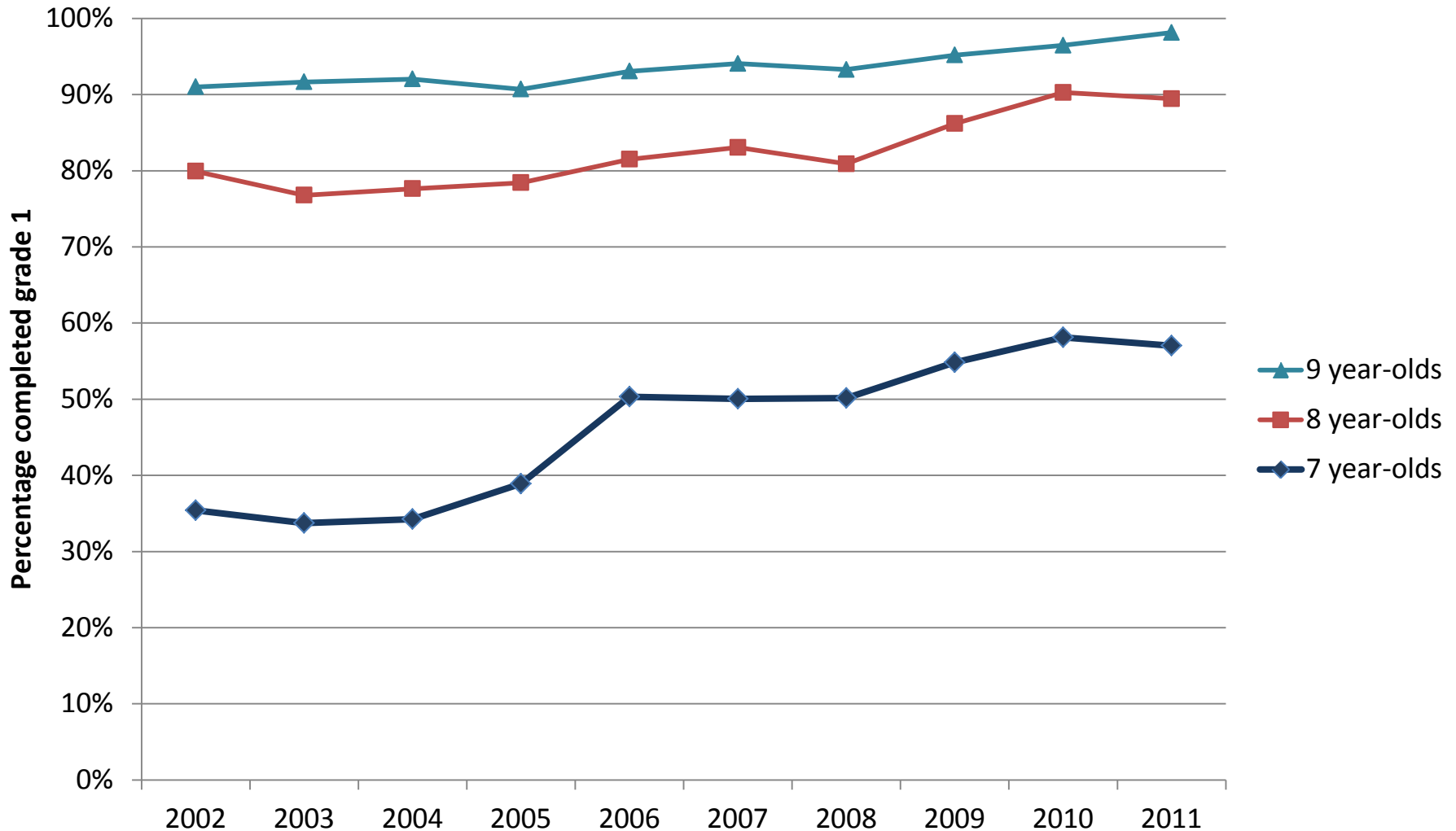
Age at school completion by race and highest level of education (14 -27 year olds)

| | Black | Coloured | Asian/Indian | White |
|-------------------------------|----------------|----------------|---------------|---------------|
| Primary | 15.36 (280) | 14.92 (60) | 12.10 (2) | 14.64 (3) |
| Lower Secondary (grade 8-9) | 16.98 (409) | 15.69 (99) | 14.40 (4) | 16.51 (8) |
| Upper Secondary (grade 10-11) | 18.90 (739) | 17.51 (98) | 16.71 (6) | 17.01 (6) |
| Matric (grade 12) | 18.94 (924) | 17.97 (112) | 17.79 (13) | 17.77 (24) |

Source: NIDS 2010

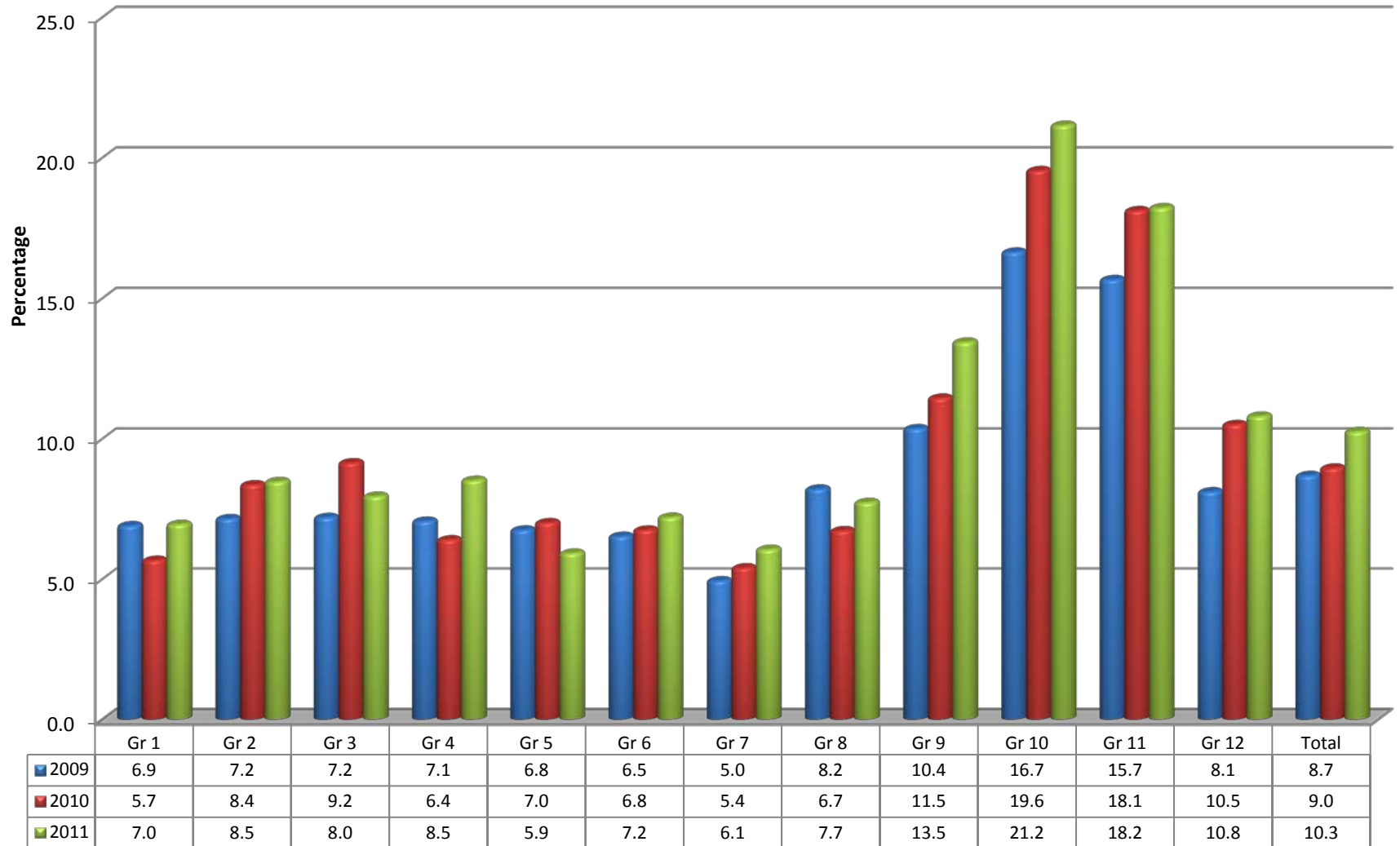
Internal Efficiency

Internal Efficiency: Age of school entry



Source: General Household Surveys, 2002-2011

Internal Efficiency: Grade repetition



Source: General Household Surveys, 2009-2011

Internal Efficiency: Grade survival and drop-out

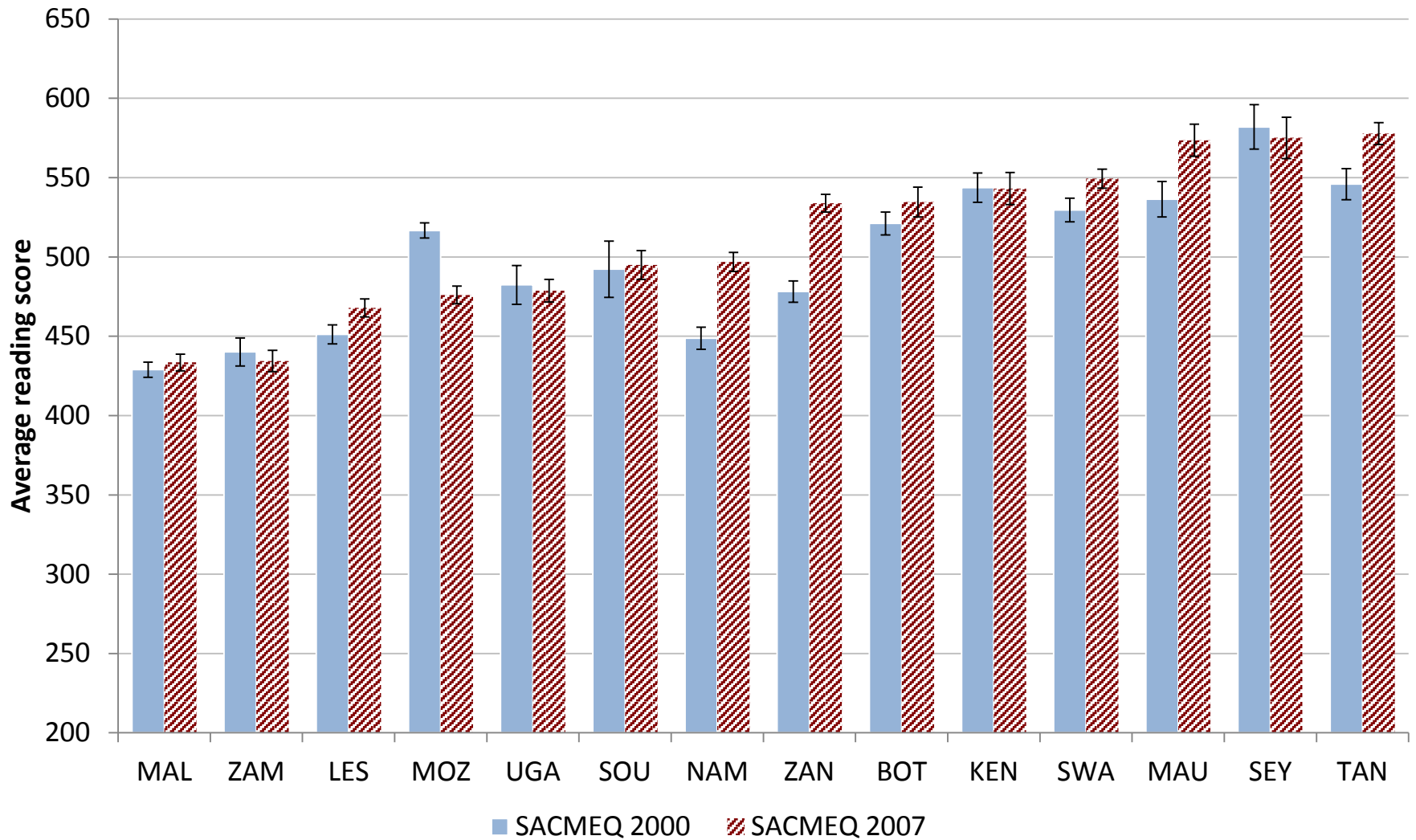
| GHS years | 2003-2005 | | 2006-2008 | | 2009-2011 | |
|----------------|-------------------|--|-------------------|--|-------------------|--|
| Birth Cohort | 1979-1981 | | 1982-1984 | | 1985-1987 | |
| Birth | Survival per 1000 | Percentage dropping out with this grade attained | Survival per 1000 | Percentage dropping out with this grade attained | Survival per 1000 | Percentage dropping out with this grade attained |
| Zero education | 1000 | 2.0 | 1000 | 1.8 | 1000 | 1.1 |
| Grade 1 | 980 | 0.3 | 983 | 0.2 | 989 | 0.2 |
| Grade 2 | 977 | 0.4 | 980 | 0.4 | 987 | 0.3 |
| Grade 3 | 973 | 0.9 | 976 | 0.5 | 985 | 0.6 |
| Grade 4 | 964 | 1.3 | 971 | 1.1 | 979 | 0.9 |
| Grade 5 | 951 | 1.8 | 961 | 1.6 | 970 | 1.3 |
| Grade 6 | 935 | 3.1 | 945 | 3.1 | 957 | 1.9 |
| Grade 7 | 906 | 5.2 | 916 | 5.2 | 939 | 3.7 |
| Grade 8 | 858 | 7.5 | 868 | 7.4 | 904 | 5.7 |
| Grade 9 | 793 | 11.1 | 804 | 11.3 | 853 | 9.9 |
| Grade 10 | 705 | 18.5 | 713 | 17.5 | 769 | 17.5 |
| Grade 11 | 575 | 27.6 | 588 | 28.3 | 634 | 28.3 |
| Grade 12 | 416 | | 422 | | 455 | |

Source: General Household Surveys, 2003-2011

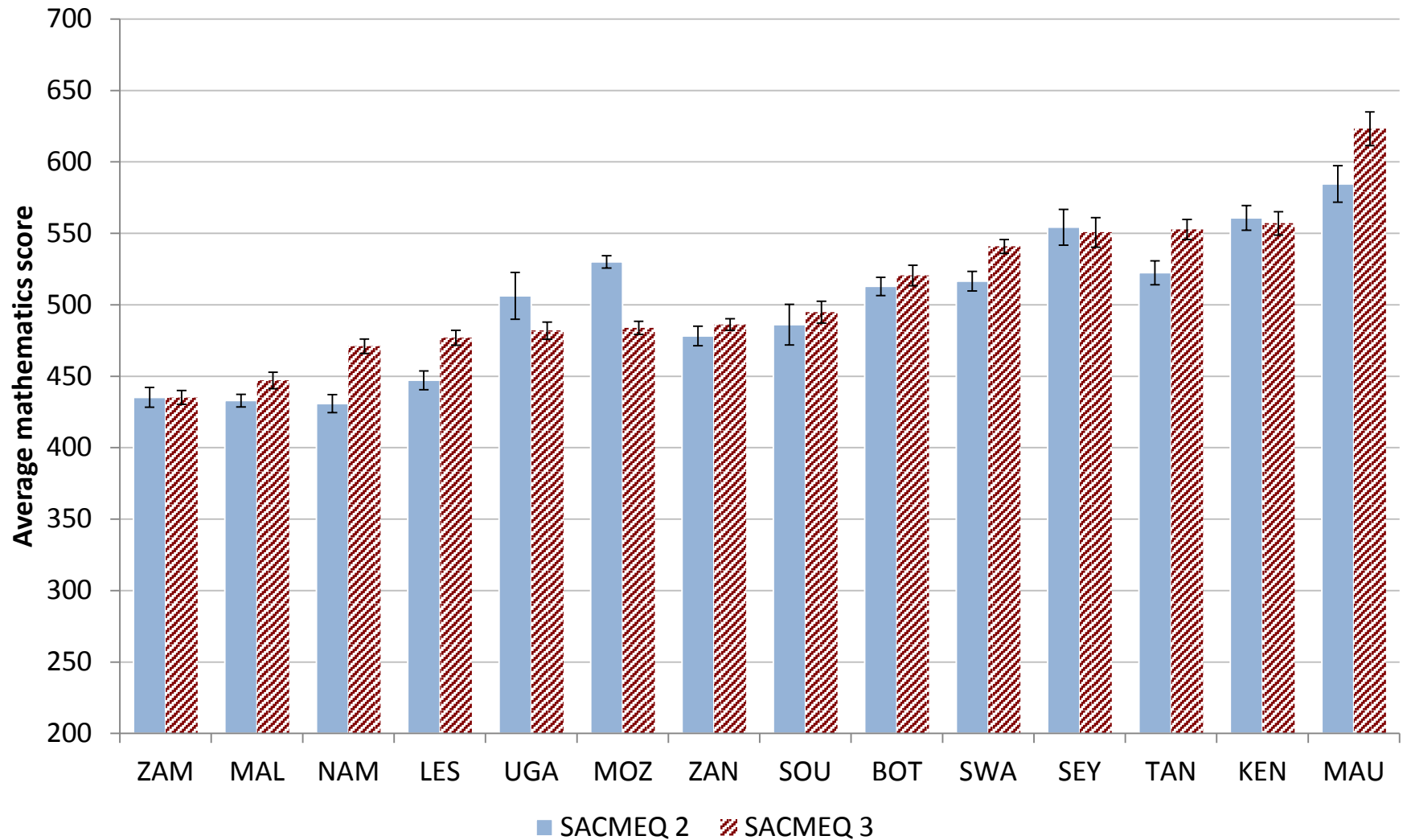
Indicators of education quality:

- ANA
- NSC
- International assessments of achievement
- Input indicators

Indicators of education quality: SACMEQ reading

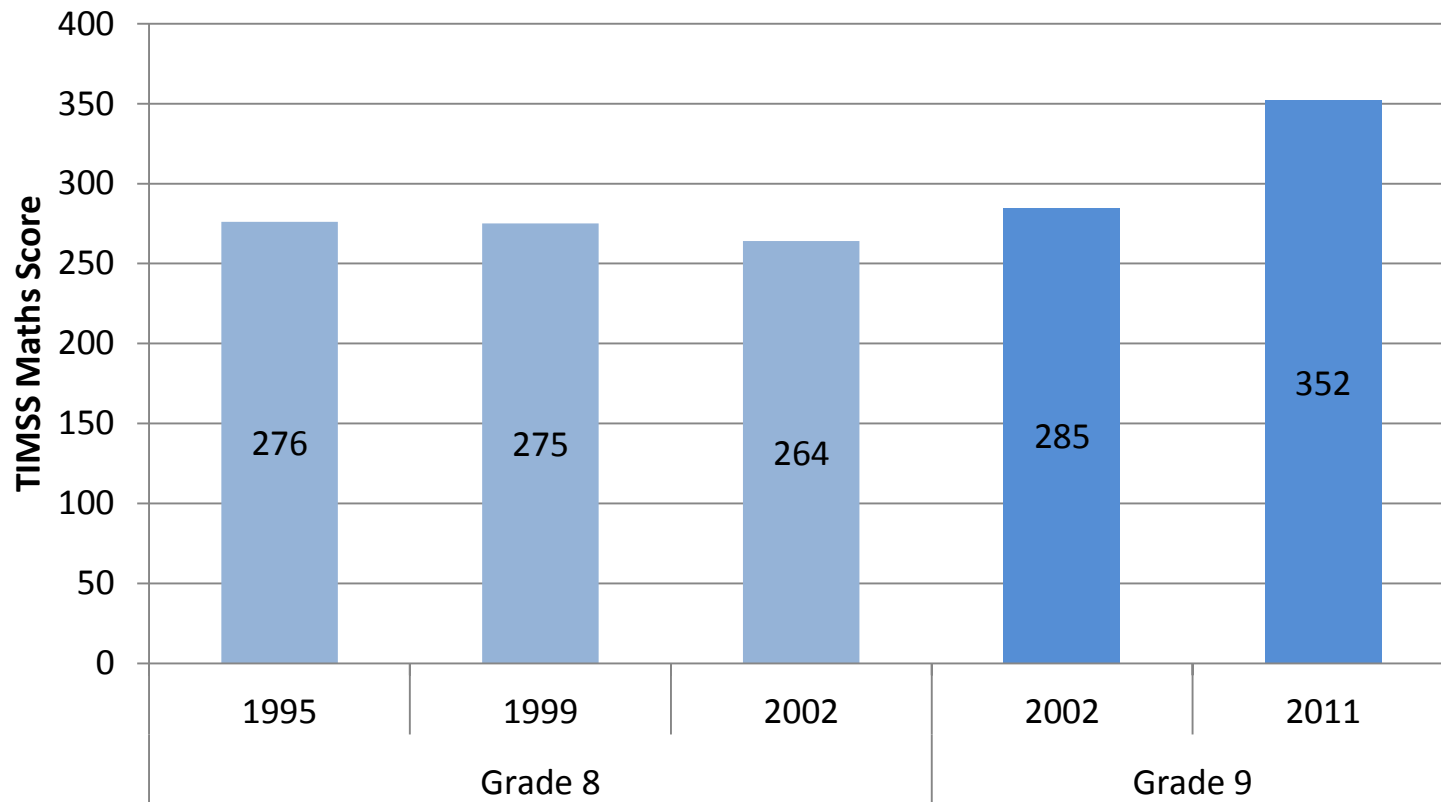


Indicators of education quality: SACMEQ mathematics



Indicators of education quality: TIMSS

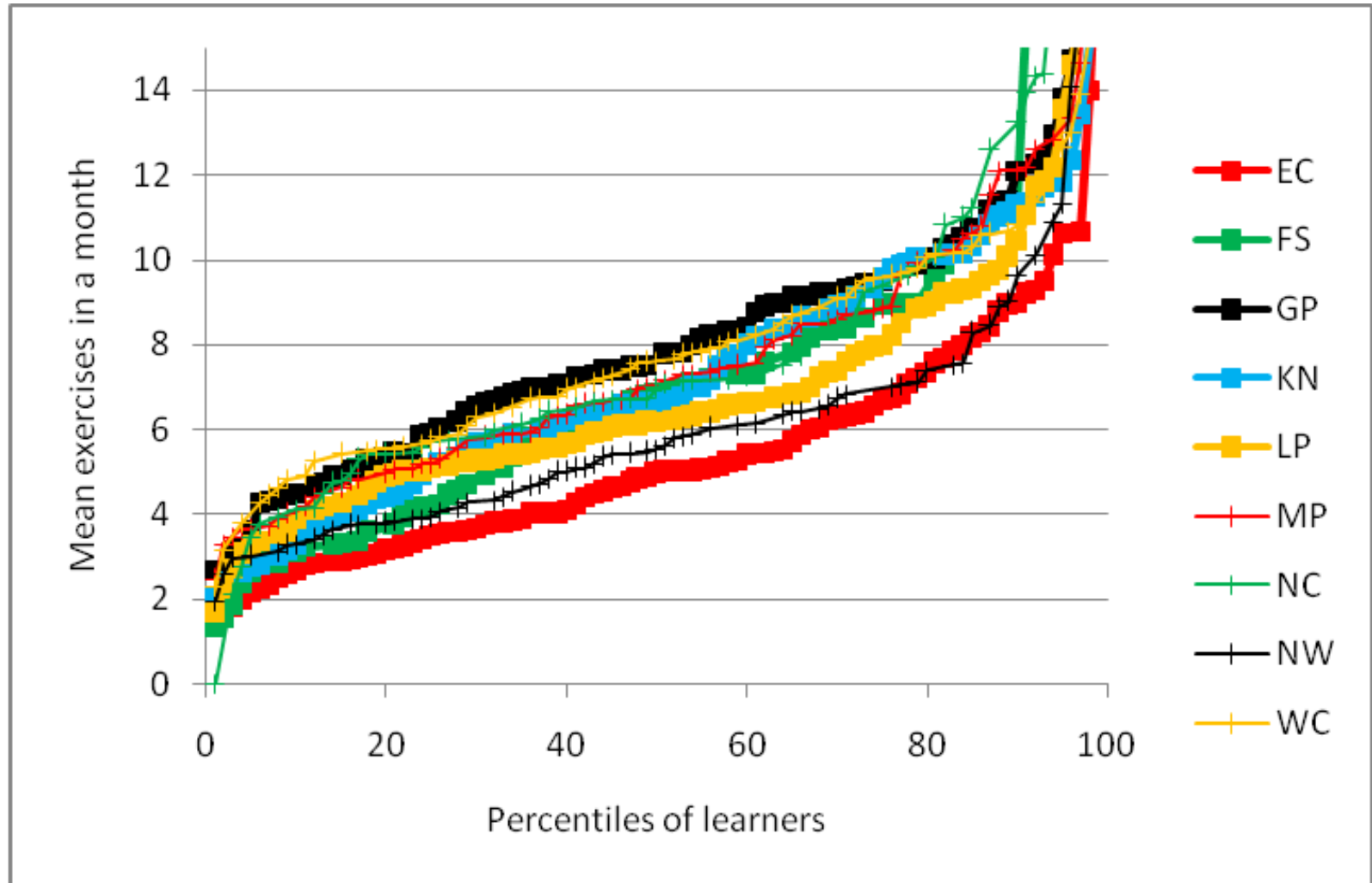
- TIMSS & PIRLS surveys have shown us to perform very poorly compared with developed countries



Indicators of education quality: TIMSS

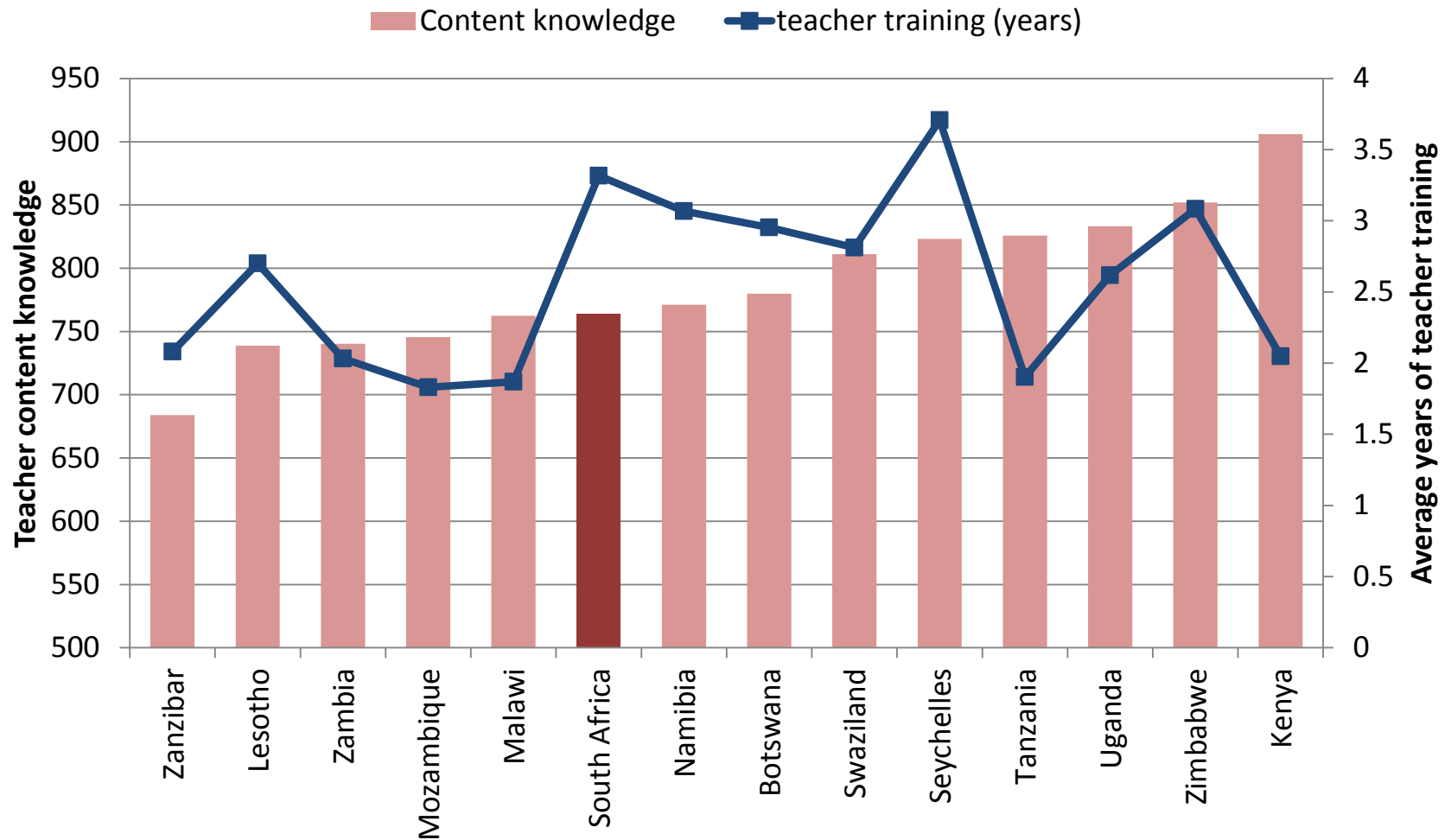
| Province | Mathematics | | Science | |
|-----------------|-------------|------------|------------|------------|
| | TIMSS 2002 | TIMSS 2011 | TIMSS 2002 | TIMSS 2011 |
| Eastern Cape | 250 | 316 | 222 | 282 |
| Free State | 291 | 359 | 280 | 341 |
| Gauteng | 303 | 389 | 301 | 387 |
| KwaZulu Natal | 278 | 337 | 253 | 308 |
| Limpopo | 244 | 322 | 216 | 284 |
| Mpumalanga | 287 | 344 | 266 | 326 |
| North West | 280 | 350 | 260 | 334 |
| Northern Cape | 340 | 366 | 357 | 368 |
| Western Cape | 414 | 404 | 421 | 409 |
| National | 285 | 352 | 268 | 332 |

Indicators of education quality: Curriculum coverage



Source: Grade 6 workbooks, School Monitoring Survey 2011

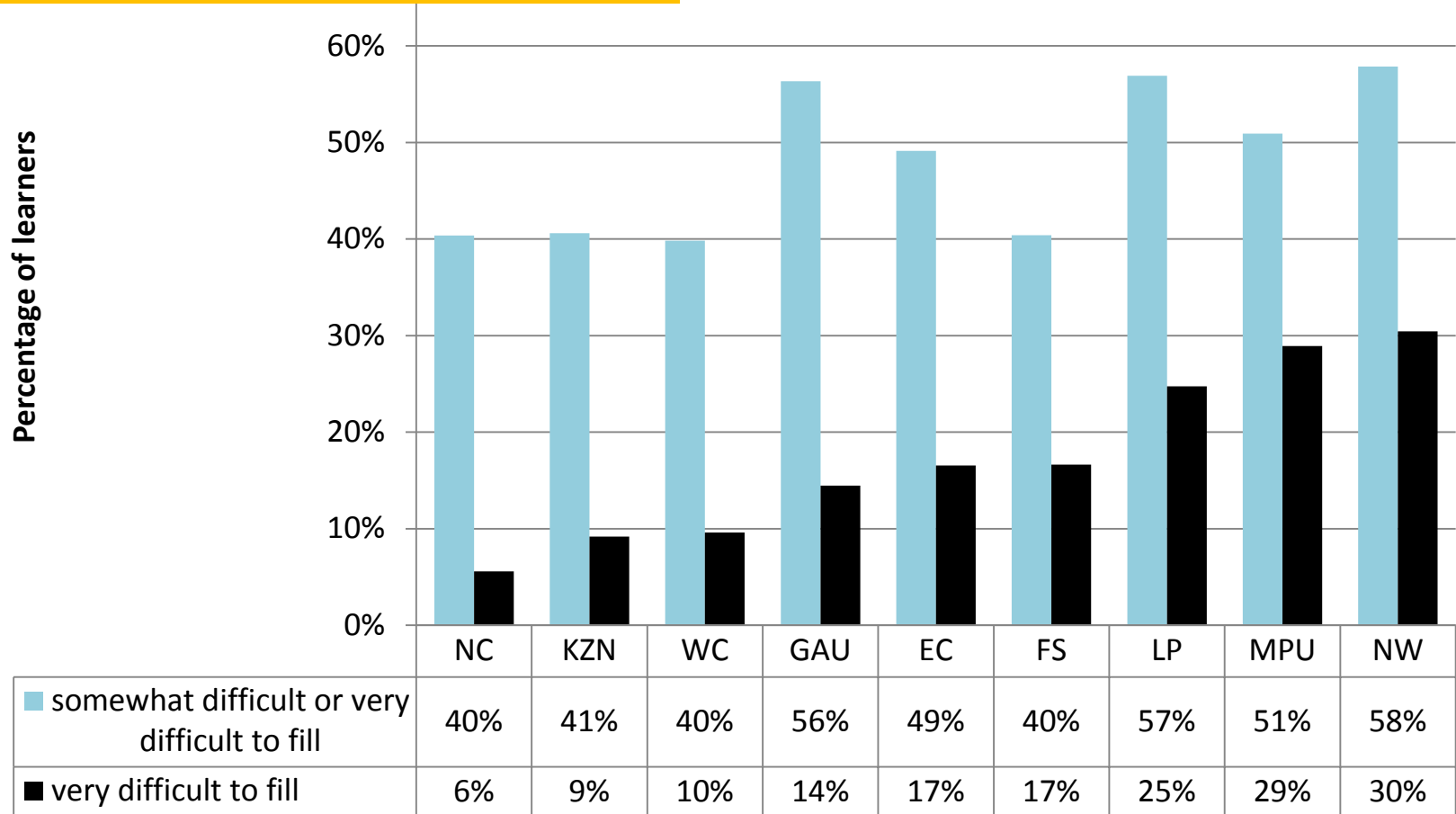
Indicators of education quality: Teacher training and subject knowledge



Source: SACMEQ 2007

Indicators of education quality: Vacant teacher posts

SA 2nd worst out of 44 countries



Source: TIMSS 2011

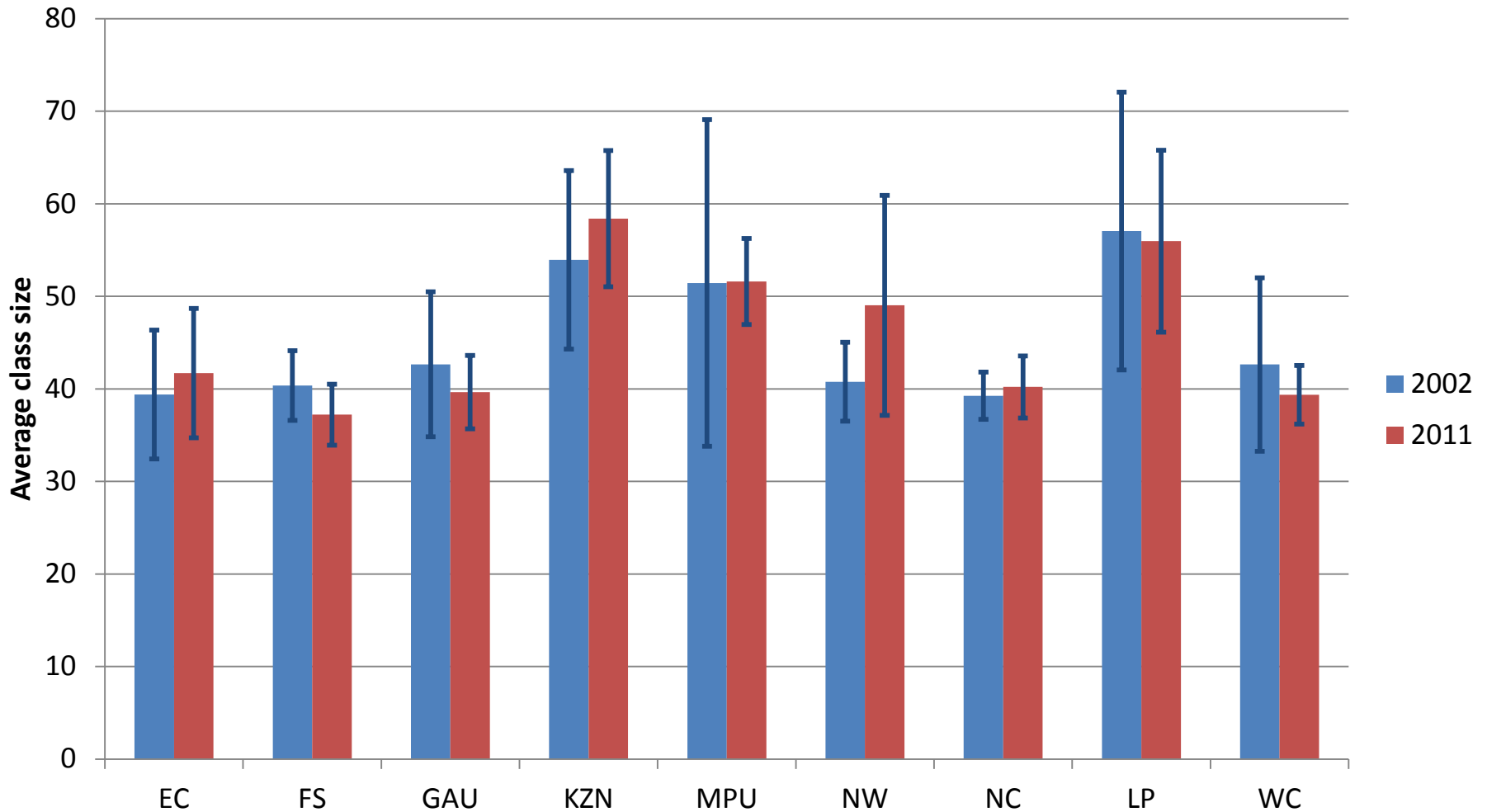
Indicators of education quality:

Learner-Educator ratio

| Province | Learner educator ratio in ordinary public schools | | | | |
|---------------|---|-------------|-------------|-------------|--|
| | 2009 | 2010 | 2011 | 2012 | |
| Eastern Cape | 30.1 | 30.1 | 29.0 | 29.1 | |
| Free State | 27.8 | 27.8 | 27.6 | 27.1 | |
| Gauteng | 31.5 | 30.9 | 31.3 | 31.4 | |
| KwaZulu-Natal | 32.3 | 31.4 | 31.4 | 31.2 | |
| Limpopo | 29.4 | 29.7 | 29.6 | 30.1 | |
| Mpumalanga | 29.9 | 30.5 | 30.8 | 31.1 | |
| North West | 29.7 | 29.8 | 31.3 | 31.8 | |
| Northern Cape | 29.8 | 30.9 | 30.1 | 30.6 | |
| Western Cape | 30.2 | 30.1 | 30.3 | 30.6 | |
| National | 30.5 | 30.3 | 30.3 | 30.4 | |

Source: Annual Survey of Schools

Indicators of education quality: Class size (grade 9 mathematics)



Source: TIMSS 2002 & 2011

Resources in SA: the big question

- Government education spending in 2010/11
 - 6% of GDP
 - 19.5% of Overall government spending
- According to UNESCO, South Africa ranked 39th out of 140 countries for which information was available in terms of public spending on education as a proportion of GNP in 2009

Spending per pupil (2009 US\$)

| South Africa | \$1685 |
|--------------|--------|
| Botswana | \$1136 |
| Swaziland | \$634 |
| Lesotho | \$327 |
| Malawi | \$55 |

Why do we not substantially outperform these countries in assessments of educational achievement?

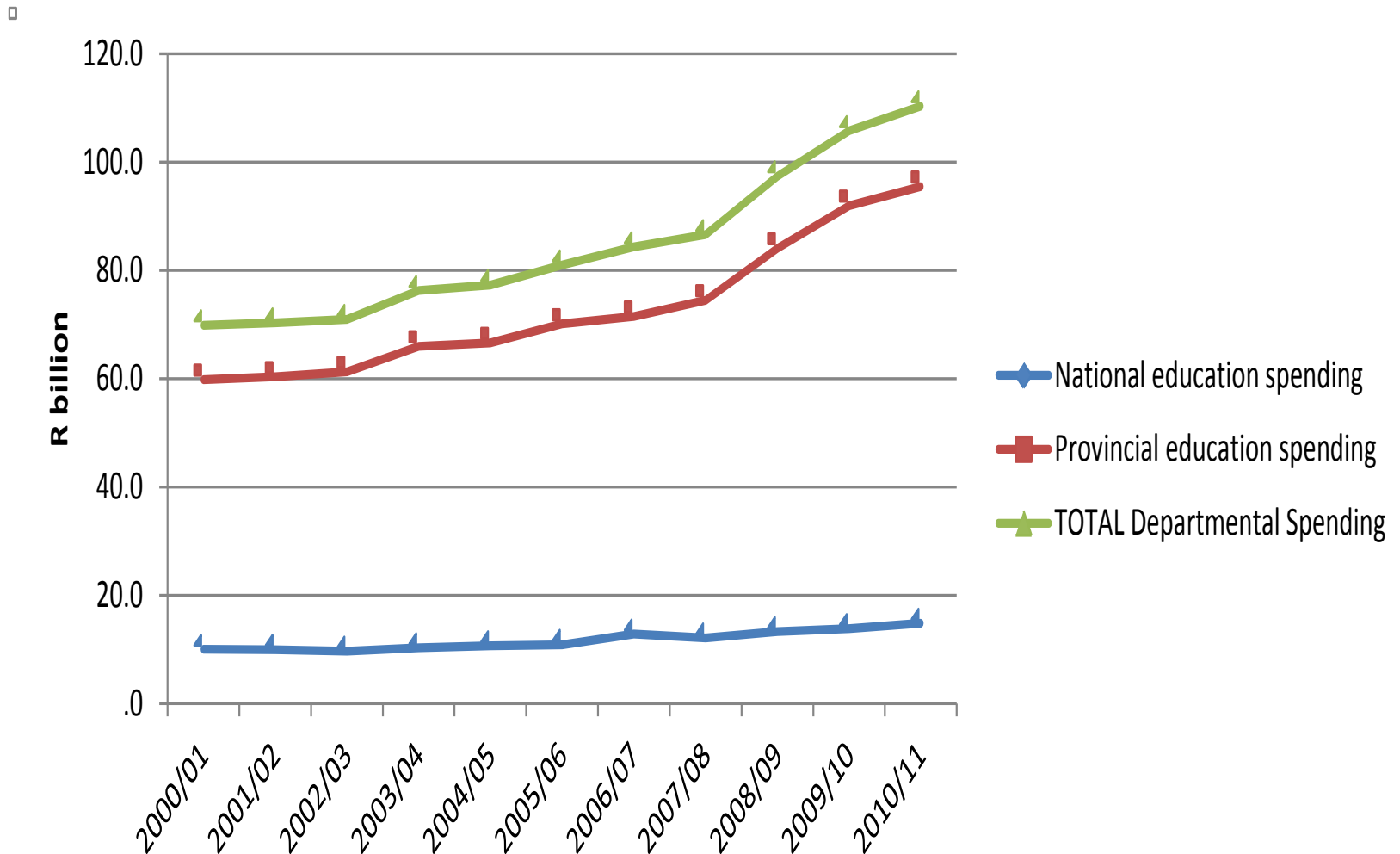
The basics of education spending

1. Cost drivers

- Size of school-aged population
- Enrolment rates
- Pupil-teacher ratios
- Teacher salary levels

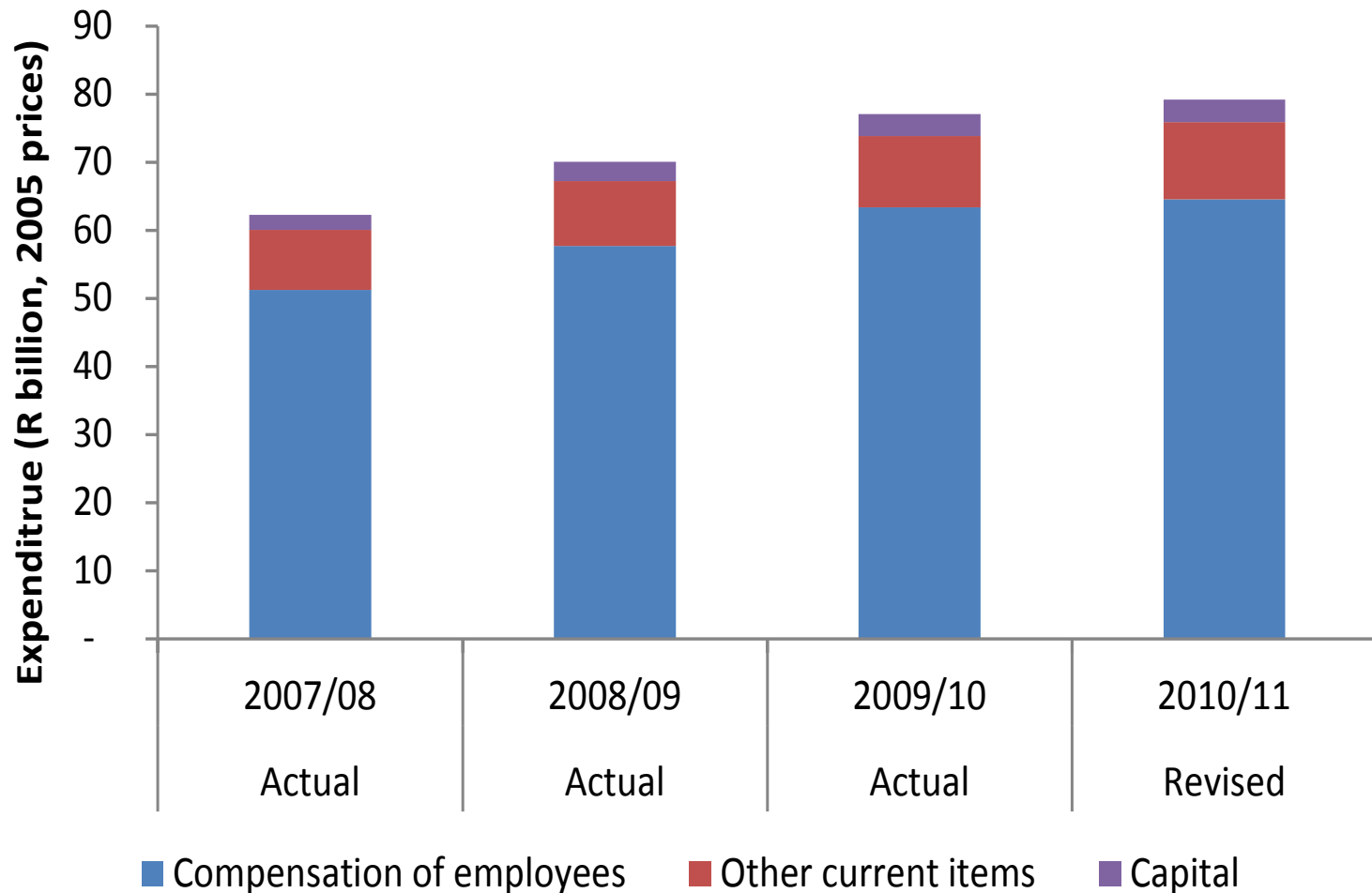
The basics of education spending

2. Time trends



The basics of education spending

3. Composition of spending



The basics of education spending

4. Equity

- Fiscal incidence studies (Van der Berg, 2006; Gustafsson, 2006)
 - Racial spending inequalities eliminated
 - Educ spending now virtually as pro-poor as feasible
 - Teacher salaries limit this
 - Non-personnel spending...

Conclusions

- Measuring access to education is problematic
- Participation in pre-school education has dramatically increased
- South Africa has remarkably good access to primary education
- Also good access to secondary education
- Despite some improvements, various internal inefficiencies persist:
 - Grade repetition
 - Drop-out in grades 10 & 11
 - Weak input indicators, e.g. Curriculum coverage; teacher subject knowledge
- Low learning outcomes beginning in early grades
- Improved quality of learning according to TIMSS
- South Africa has achieved gender parity on all access and quality indicators