
Learner flow through patterns in the Western Cape using CEMIS datasets from 2007 to 2014: A longitudinal cohort analysis

CHRIS VAN WYK
ANDERSON GONDWE
PIERRE DE VILLIERS

Stellenbosch Economic Working Papers: WP02/2017

www.ekon.sun.ac.za/wpapers/2017/wp022017

January 2017

KEYWORDS: longitudinal cohort analysis, unit-level records,
cross-sectional analysis, repetition, unique identifier, pseudo cohorts,
primary school, secondary school

JEL: I21, C55, Y55

RESEARCH ON SOCIO-ECONOMIC POLICY (ReSEP)
<http://resep.sun.ac.za>

DEPARTMENT OF ECONOMICS
UNIVERSITY OF STELLENBOSCH
SOUTH AFRICA



A WORKING PAPER OF THE DEPARTMENT OF ECONOMICS AND THE
BUREAU FOR ECONOMIC RESEARCH AT THE UNIVERSITY OF STELLENBOSCH

www.ekon.sun.ac.za/wpapers

LEARNER FLOW THROUGH PATTERNS IN THE WESTERN CAPE USING CEMIS DATASETS FROM 2007 TO 2014: A LONGITUDINAL COHORT ANALYSIS¹

CHRIS VAN WYK, ANDERSON GONDWE & PIERRE DE VILLIERS

ABSTRACT

The aim of the study was to track learners as a group or cohort over a specified period of time. This longitudinal data cohort analysis was to determine how successful learners progressed through the Western Cape public education system and how many eventually dropped out of this system. The Central Education Management Information System (CEMIS) datasets from 2007-2014 were used to create a longitudinal dataset of individual learners. The study shows the importance of unit-level records. With the availability of unit-level learner records key questions can be answered such as: "What is the profile of the learners who dropped out of the system, or what is the profile of the learners who progressed without any repetition?" When individual learner-unit records are available one can track learners as a group or cohort over a specified period of time. Longitudinal cohort tracking provides a more complete picture and true reflection of the education system about the progress (dropout and repetition) of learners. In order to achieve the goals in this study, the following methods were used: cross-sectional analysis of patterns and trends in the flow of learners in the Western Cape between 2007 and 2014 and a longitudinal cohort analysis to determine progression of learners through the education system without repetition, repetition of learners who nevertheless remain in the system and dropping out of learners. The study clearly shows high repetition in primary school. Most learners progressed through the system without repeating, but a high percentage also repeated one or more grades but remained the system. The study shows evidence of high dropout in secondary school. This is in contrast with the primary school phase where a high repetition rate but a lower dropout was recorded. Although there is movement out of public schools into independent schools, and out of the Western Cape to other provinces, the most likely cause of dropping out of the CEMIS data in high schools is actual dropping out of school. Furthermore, the study has shown a particularly high repetition rate of Grade 9 learners and a high dropout of learners after Grade 9. Hence, it was informative to follow a number of Grade 9 cohorts in order to determine the consistency of trends in repetition, dropout and completion over time. Perhaps more important is the clear evidence that repetition in Grade 9 is the precursor to almost inevitable dropping out of school without completing matric.

CHRIS VAN WYK
DEPARTMENT OF ECONOMICS
UNIVERSITY OF STELLENBOSCH
PRIVATE BAG X1, 7602
MATIELAND,
SOUTH AFRICA
E-MAIL: chrisvanwyk@sun.ac.za

ANDERSON GONDWE
DEPARTMENT OF ECONOMICS
UNIVERSITY OF STELLENBOSCH
PRIVATE BAG X1, 7602
MATIELAND,
SOUTH AFRICA
E-MAIL: asgondwe@gmail.com

PIERRE DE VILLIERS
DEPARTMENT OF ECONOMICS
UNIVERSITY OF STELLENBOSCH
PRIVATE BAG X1, 7602
MATIELAND,
SOUTH AFRICA
E-MAIL: apdv@sun.ac.za

¹ This working paper is the first from a set of research reports undertaken by Research on Socio-Economic Policy (ReSEP) within the Department of Economics at the University of Stellenbosch for the Western Cape Education Department. The study focuses on utilising the individual unit record data available in the Western Cape CEMIS datasets to track learners between datasets so as to be able to determine flows through, in and out of the Western Cape public school system. Later working papers will deal in more detail with other related matters, e.g. predicting learner performance based on systemic tests.

Introduction

This study utilises individual learner-unit record data available in Central Education Management Information System (CEMIS) in the Western Cape to track learners between different years so as to be able to determine flows through, in and out of the Western Cape public school system. The aim is to track learners as a group or cohort over a specified period of time. This longitudinal data cohort analysis makes it possible to determine how successful learners progress through the public education system in the Western Cape and how many of them eventually drop out of this system. It is to be noted from the offset that dropping out of this provincial public education system does not necessarily imply dropping out of school, as such learners may have moved to private schools or to other provinces.

A cohort is a group of learners who start a specific grade in the same year. To estimate the dropout and repetition rates individual learners were followed within the primary school, within the secondary school and also between the primary and secondary phases of the basic education sector in the Western Cape. Tracking these cohorts of learners is a useful tool for helping administrators to understand trends in dropouts and repetition rates in primary and secondary schools in the Western Cape.

The paper is organized as follows: First, a brief description is provided of the rationale for focusing on the cohort analysis. Second, the aspect of longitudinal data coverage is described. Third, a brief overview is presented of selected methods that are used to track learners. Fourth, enrolment patterns in the Western Cape are discussed using learner-unit record datasets.

Creating a Longitudinal Data System

Longitudinal data coverage is a key requirement in order to track individual learners through the education system. This involves creating a dataset that includes information of the same learners from year to year. With this longitudinal data coverage one can determine exactly how many learners of a specific cohort dropped out of the system, how many progressed through the system without any repetition and how many are still in the system with one or more repetitions. Furthermore, with the availability of unit-level learner records key questions can be answered such as: “What is the profile of the learners who dropped out of the system, or what is the profile of the learners who progressed without any repetition?”

The Western Cape has put in place a good learner-unit record system for administrative and policy making purposes that is not yet available in other provinces. Learner-unit record data refers to the data collected for each learner through a school administration and management system. The main functionality of the system is to register learners and to track and monitor individual learners in the province: registration of learners, transfers of learners between schools, examination passes, etc. Because it is centrally managed, the WCED has access to the information of each learner in all schools. The CEMIS dataset now makes it possible for the WCED through longitudinal cohort analysis to determine flow through patterns: progression of learners through the education system without repetition, repetition of learners who nevertheless remain in the system and dropping out of learners. Linking the CEMIS data with the data of Systemic Tests further makes it possible not only to follow learners through the education system, but also to track the performance of individual learners over time. CEMIS datasets have been in existence long enough (2007-2015) to follow individual learners to determine flow through patterns, repetition and dropout, and the learner characteristics that influence these.

The CEMIS datasets from 2007-2014 were provided for this study to create a longitudinal dataset of individual learners. The annual CEMIS datasets collected for individual learners for each year from 2007 to 2014 were linked through the use of a common field across these datasets. The unique identifier, which was in this case the learner CEMIS number, was used to integrate the datasets of the different years.

The Department of Basic Education (DBE) is already moving towards data collection at the learner unit-level through an electronic school administration and management system. The South African School Administration and Management System (SA-SAMS) is a comprehensive school administration and management software solution developed, maintained and enhanced free of charge by the national DBE. SA-SAMS is an off-line (desktop) school administration and management system that has been widely distributed and piloted in all provinces. In the Free State, all their data collection processes (SNAP and ASS) take place via this method. The Eastern Cape is another province where this method is successfully implemented. The availability of such learner-unit record data makes it possible to analyse the flow through patterns in terms of repetition, dropout and progression, which is not possible with aggregated datasets.

Importance of a unique learner identifier

In creating a longitudinal data system it is necessary to link the different datasets that have been collected for individual learners for each year through the use of a common field across these datasets. To be able to do this, unique identification codes must be assigned to every learner. It is important that this identifier is consistent and accurate over time. A unique identifier is a single, non-duplicated number that is assigned to, and remains with, a learner throughout his or her education career irrespective of whether the learner changes schools. The WCED assigns a unique learner identification number for each learner. Thus learners can be tracked as they move from one school year to another within the Western Cape public education system. It is then possible through this learner identifier to follow the progress of each learner over time, and across schools or districts within the province to determine:

- progression of learners through the education system without repetition
- repetition of learners who nevertheless remain in the system
- dropping out of learners ('dropping out' in this report refers to persons who left the Western Cape public education system).

Data used in this study

The following datasets were used for this study:

- **CEMIS DATA:** 2007 - 2014 individual learner records by grade and school for public ordinary schools. The data of different years was obtained as single datasets which were linked through a common unique field (CEMIS learner ID) to create a longitudinal dataset.
- **SYSTEMIC TESTS:** Language and mathematics test data of individual learners were available for:
 - Gr 3: 2006, 2008, 2010, 2011, 2012
 - Gr 6: 2007, 2009, 2010, 2011, 2012
 - Gr 9: 2010, 2011, 2012
- The **MASTER LIST OF SCHOOLS** with geographic coordinates.

Research Methods

In order to determine trends in repetition and school dropout rates in the Western Cape education system, the following methods were used:

- A cross-sectional analysis was undertaken of the CEMIS data to determine trends in the number of learners for whom CEMIS data was available for the period 2007-2014, by year and grade.
- A longitudinal analysis was undertaken to identify flow through rates by cohort for the period of 2007-2014. The following cohorts were identified for analysis:
 - *Within the primary school* the Grade 1 learners of 2007 (including repeaters from the previous year²) were followed as a cohort over a period of 7 years.
 - *Across the latter part of the primary and all of the secondary school system*, the Grade 6 cohort of 2007 was also tracked over a period of 7 years, which means that it was possible to follow some of those learners to matric. Starting at Grade 6 (a few grades earlier than the secondary phase that begins in Grade 8) and following the cohort to the end of the school cycle (Grade 12) thus is the longest range of grades that any group could be followed to the end of the school phase. However, starting in Grade 6 in 2007 meant that it was not possible to determine whether some of those learners had repeated Grade 6 or earlier, thus both new entrants and repeaters were followed. This same procedure was followed in all cases except where specifically stated otherwise, i.e. new entrants were not separately identified and tracked.
 - *Focusing on the transition between the primary and secondary phase*, the Grade 7 learners from two cohorts, 2007 and 2012, were followed into Grade 8 in the next year. This made it possible to determine the trends in the transition phase from primary to secondary school. The proportion of Grade 7 learners promoted to Grade 8 who switched quintiles could then be calculated.
 - As there is such a great deal of repetition and dropout in Grade 9, Grade 9 learners from 2007 to 2010 were also identified as separate cohorts and followed for 4 years to Grade 12.
 - The repeaters of Grade 9 of 2007 and of 2010 were next identified as separate cohorts and followed over a period of 4 years until they were supposed to reach Grade 12, their final year of school.
 - Repeaters of the Grade 1 cohort of 2008³ (within the Foundation Phase) were identified as a cohort and followed over a period of 4 years till the beginning of the Intermediate Phase (Grade 4) to determine how much repetition there is in this phase.
 - Repeaters of the Grade 4 cohort of 2008 (within the Intermediate Phase) were identified as a cohort and followed over a period of 4 years till the beginning of the

² The data starts with children recorded in 2007 in schools and ends in 2013. This means that it is possible to track learners from Grade 1 to Grade 7, i.e. throughout all of the primary school. However, for 2007, the first year for which data is available, no information exists about whether the learners are new entrants into any particular grade, or repeating. For this reason, the full cohort, including repeaters, had to be tracked in any tracking that starts with the 2007 CEMIS data.

³ Tracking the 2008 cohort of Grade 1 learners makes it possible to eliminate repeaters from this group and to only look at those who have not repeated the grade before, as information on repetition in 2007 in that grade is available. The same does not apply for tracking the 2007 cohort.

Senior Primary Phase (Grade 7) to determine how much repetition there is in this phase.

- Repeaters of the Grade 7 cohort of 2008 (Junior Secondary Phase) were identified as a cohort and followed over a period of 4 years till the beginning of the Senior Secondary Phase (Grade 10) to determine how much repetition there is in this phase.
- New entrants of Grade 1 of 2008 (within the foundation phase), Grade 4 of 2008 (within the intermediate phase) and Grade 7 of 2008 (within the junior secondary phase) were followed until all these learners reached the beginning of the next phase.

Patterns of Enrolment of Learners recorded in CEMIS in Western Cape Public Schools by Grade and Year

Cross-sectional analysis of CEMIS data (2007-2014)

Table 1 provides a summary of all learners in the public education system in the Western Cape as derived from the CEMIS by grade for the years 2007-2014. Some of the flow-through trends that can be observed in the Western Cape Education Department (WCED) are graphically illustrated by Figure 1, based on the data in Table 1. Although the graph is a series of cross sections (it does not follow the same cohort of learners, but only gives the number of learners in each grade for each year), the overall picture gives a good indication of the trends and patterns in the entire education cycle in the Western Cape. The patterns appear to be quite stable, as indicated by Figure 1. During the first part of the education cycle, grades 1 to grade 10, the system seems to be successful in keeping learners in school, with a high dropout of learners after grade 10. This is typical of the school system of South Africa, which is successful in retaining learners in primary school but experiences a high dropout rate in the secondary phase.

Table 1: Enrolment in the Western Cape for public ordinary schools based on CEMIS data

Year	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11	GR12	Total
2007	92 731	82 044	83 606	89 571	78 316	77 633	72 251	66 364	80 474	86 273	61 405	42 921	913 589
2008	91 153	83 063	79 158	85 564	86 849	77 963	75 923	71 497	73 041	79 181	63 933	43 770	911 095
2009	93 604	82 206	80 428	83 233	82 466	85 681	76 357	75 285	79 842	68 616	61 009	44 324	913 051
2010	98 149	83 109	79 243	84 346	80 402	81 506	82 870	75 450	85 239	70 849	54 004	45 060	920 227
2011	100 761	85 163	79 518	83 451	80 140	78 940	77 913	81 399	84 112	73 368	56 753	39 060	920 578
2012	103 283	88 505	81 363	83 891	79 861	78 379	76 410	77 333	90 972	73 015	59 090	43 322	935 424
2013	104 633	93 470	85 743	85 602	79 178	78 423	76 210	75 692	87 334	79 129	56 374	46 321	948 109
2014	106 915	97 645	89 392	90 625	81 451	76 699	74 729	76 000	82 714	75 839	64 620	46 847	963 476

Another observation from Figure 1 is the consistent increase in the number of learners from Grade 3 to Grade 4 for all the years from 2007 to 2014. Overall there are more learners in Grade 4 than in Grade 3 the previous year. The explanation for this is that Grade 4 contains more than one cohort of children as a result of repetition. It may be related to decisions taken at school level in this grade, the start of the intermediate phase in Grade 4, which follows the end of the foundation phase in Grade 3. After Grade 4 the number of learners stabilizes to a large extent up to Grade 7, the exit point of the primary school phase.

Table 1 further shows that there is an increase in enrolment in Grade 1 from 92 731 in 2007 to 106 915 in 2014, a growth rate of 15%. Whereas growth at the primary phases was of a roughly similar magnitude, the number of Grade 12 learners increased by only 9% over the period, suggesting worsening progression to matric. However, as repetition is fairly high for the first grade, it is important to ascertain if this Grade 1 growth was simply a result of repetition in Grade 1 or was indeed mainly growth of new entrants. Table 2 shows that after

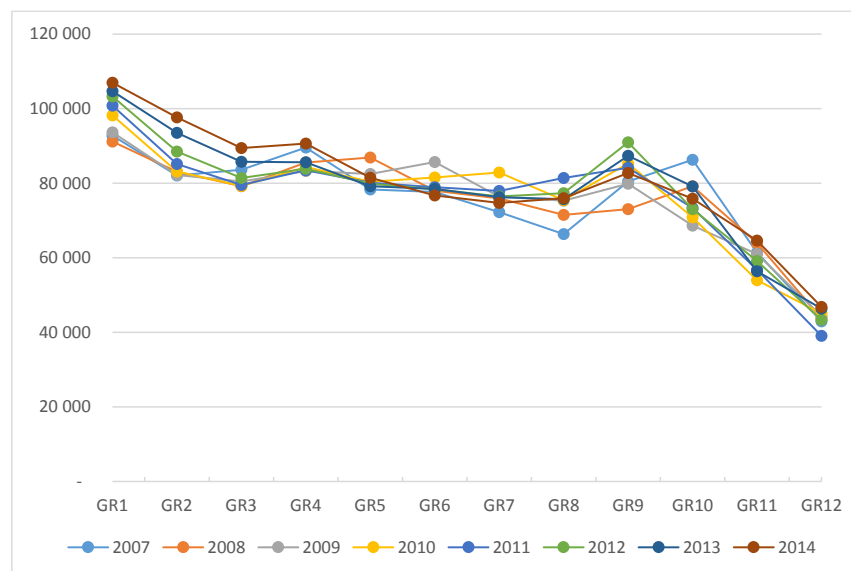
deducting repeaters from the total Grade 1 numbers in a specific year, new entrants to Grade 1 increased from 74 939 in 2008 to 91 483 in 2014, an even more rapid actual growth rate of 22%.⁴

Table 2: Repetition and new entrants in Grade 1 by Year

Years	Gr 1 repeaters	New Gr 1 learners	Total Gr 1 learners	% new entrants
2008	16 214	74 939	91 153	82.2%
2009	16 718	76 886	93 604	82.1%
2010	17 665	80 484	98 149	82.0%
2011	19 018	81 743	100 761	81.1%
2012	19 588	83 695	103 283	81.0%
2013	16 505	88 128	104 633	84.2%
2014	15 432	91 483	106 915	85.6%

Table 1 also indicates that when learners progress from primary school to high school between Grade 7 and Grade 8 the numbers drop again, although the magnitude of this drop is rather small. However, between Grade 8 and Grade 9 the number of learners on average increases by 10%. There are more learners in the system in grade 9 than in grade 8 the previous year. This is again the result of repetition, which is more common in Grade 9. Figure 1 suggests a high dropout of learners from the Western Cape public education system after grade 9, and probably from the school system altogether. The enrolment in all grades captured in CEMIS, thus including Grade 1 to Grade 12, increased from 913 589 in 2007 to 963 476 in 2014, a growth rate of 5%.

Figure 1: Enrolment in Public Schools in the Western Cape by Grade and Year, 2007-2014



Although the graph (Figure 1) does not follow the same learners, i.e. it does not show actual cohorts of learners, the overall picture gives a good indication of the trends and patterns in

⁴ The numbers could not be calculated for the full period 2007 to 2014 because it is not possible to ascertain how many of the 2007 learners repeated and how many were new entrants, as that was the first year CEMIS data was collected.

the entire education cycle. The number of learners decreases quite substantially between Grade 1 and Grade 2 and then stabilises to a large extent for the rest of the primary school phase. For the whole period 2007-2014 the number of Grade 7 learners is on average almost 79% of the learners in Grade 1. Apart from the first two years of the foundation phase in the primary school, the system seems to be successful in keeping the learners in school. However, the same cannot be said about the secondary school phase. The number of learners in Grade 12 is on average less than 57% of the learners in Grade 7.

Figure 2: Enrolment in Public Schools in the Western Cape by Year and Grade, 2007-2014

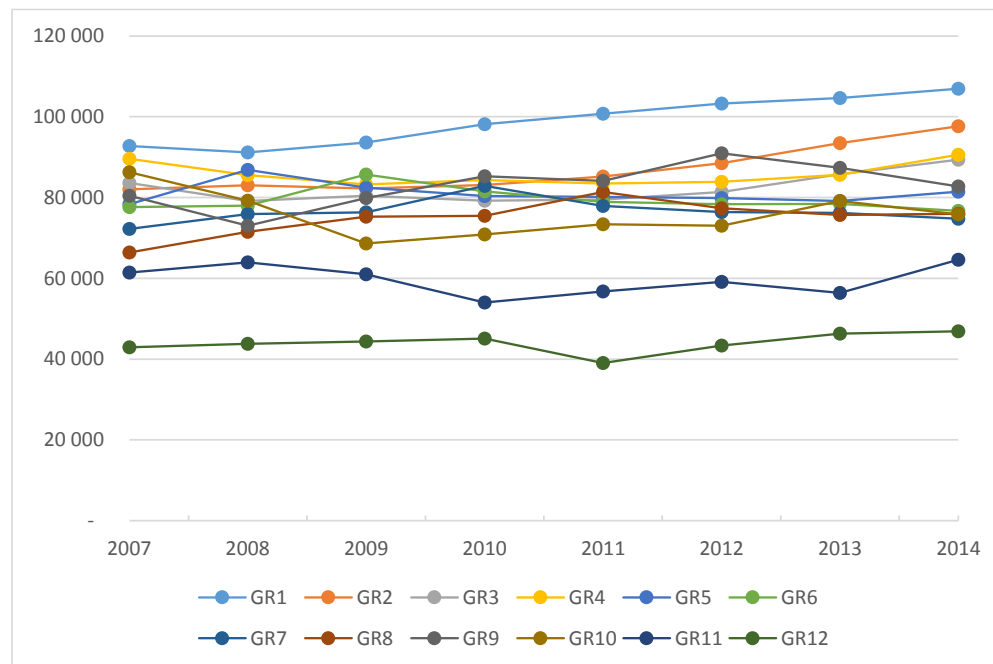


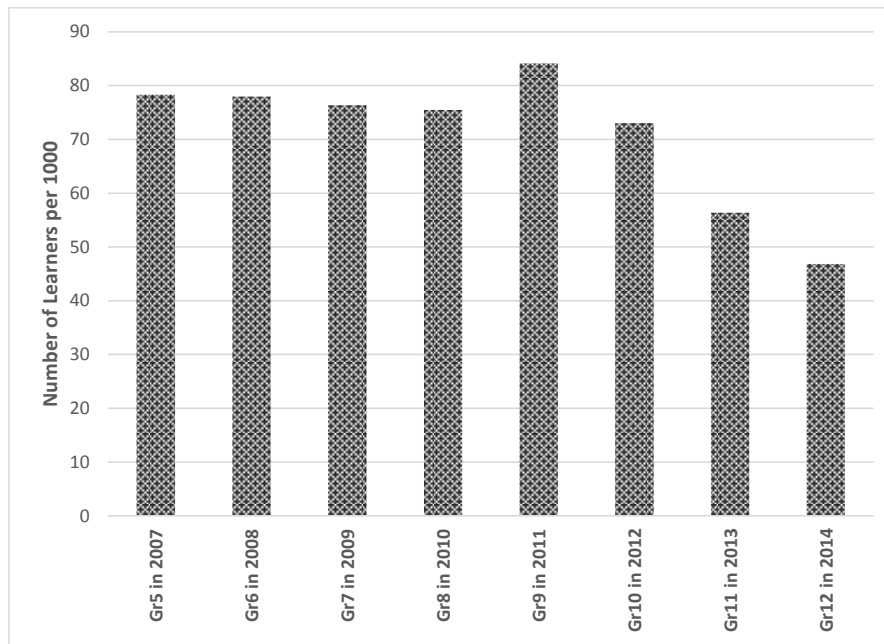
Figure 2 indicates that the number of Grade 1 learners is steadily increasing over time. Although the reasons are not fully clear – some demographic analysis may be required –, it has important planning implications.

Using Pseudo-cohorts in analysing the CEMIS data (2007-2014)

Pseudo-cohorts are artificially created data sets constructed from repeated cross-sections such as those highlighted in Table 1. Although the individual learners in a true cohort will differ from a pseudo cohort, because of repetition and dropout, the pseudo cohort provides useful information on the enrolment patterns in the school enrolment and is representative enough of the full education cycle, particularly when only aggregated data is available. Figure 3, which was created from the data in Table 1, is a presentation of the pseudo flow of learners from grade 5 (grade 5 in 2007) through to the end of the cycle (grade 12 in 2014). The reason why the cohort tracked to matric starts with Grade 5 in 2007 is because that is the first year when CEMIS data became available for all the schools in the Western Cape.

Figure 1 emphasises the pseudo progression of learners and shows the high dropout rate between grade 9 and grade 12 in the Western Cape. The blip is again clearly visible at grade 9. It seems that there are more learners in grade 9 in 2011 than learners in grade 8 in 2010. A possible reason for this could be the exceptionally high repeater rate in grade 9, as discussed later in this paper.

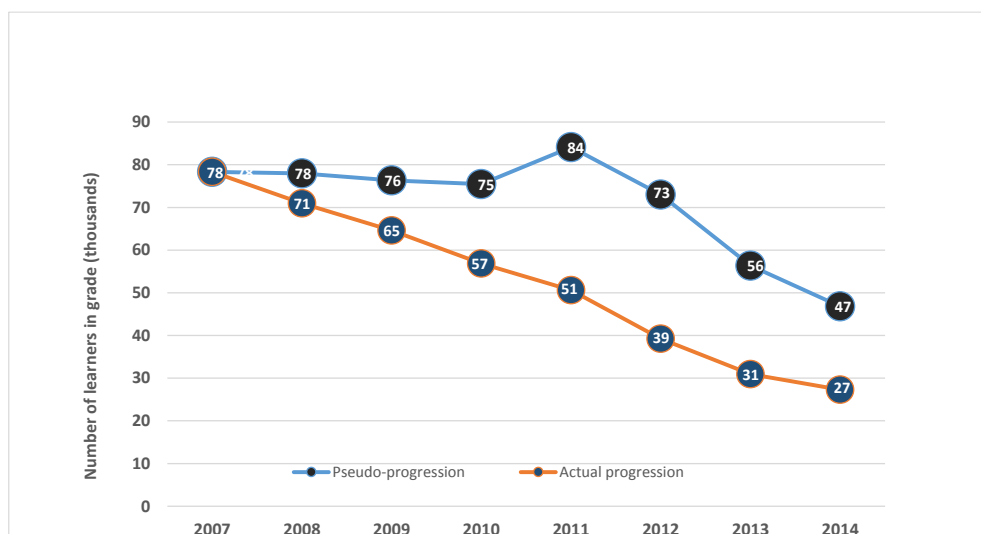
Figure 3: Pseudo grade progression for the 2007 Gr 5 cohort



Pseudo vs actual “on track” grade progression for the 2007 Gr 6 cohort

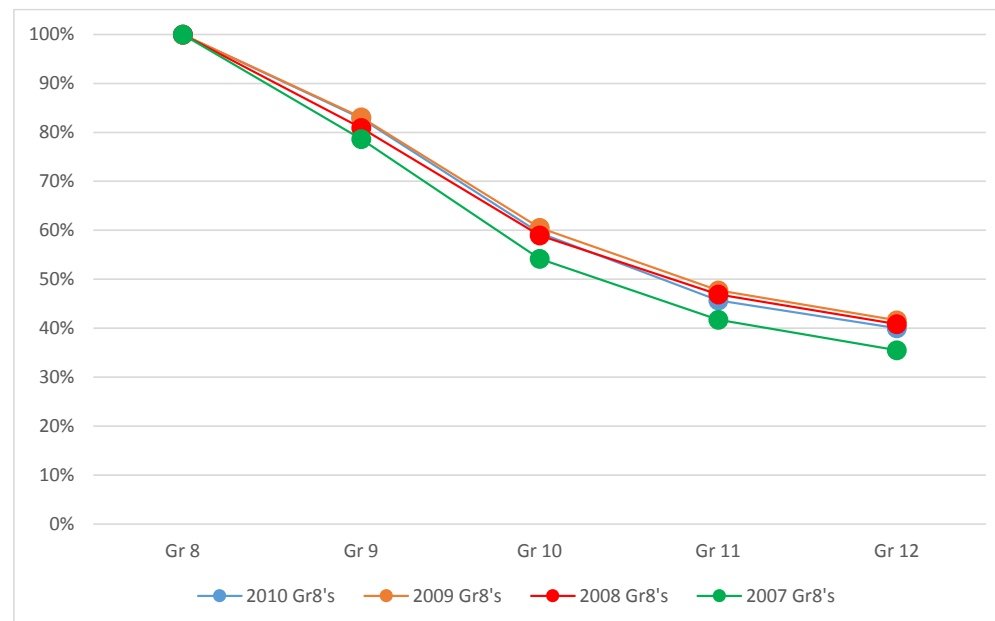
Figure 4 indicates that using learner-unit records is a much better indicator of on-track learners than when using pseudo cohort analysis. The figure shows the big difference in on-track learner progression between longitudinal cohort tracking and pseudo cohort tracking. Longitudinal cohort tracking can provide a more complete picture and a truer reflection of progress of learners through the system. Figure 4 shows that when tracking individual learners from Grade 4 to matric only ± 27000 learners of the original cohort reach Grade 12 in the appropriate time in comparison with ± 47000 when pseudo cohort tracking is applied. The graph clearly shows that longitudinal cohort tracking is a much better method of identifying on track learner progress. On track progression is defined as learners progressing through the system without repeating a grade and being at any given point in time in the appropriate grade.

Figure 4: Pseudo vs actual “on track” grade progression for the 2007 Gr 5 cohort



Furthermore, cohort tracking allows researchers and administrators to examine and compare the progress of learners of different cohorts, as indicated in Figure 5. For example, Figure 5 shows the progression of grade 8 learners during a four-year period (2007 to 2010). In this example it is clear that the 2007 grade 8 cohort has the lowest on track progression rate. Longitudinal cohort analysis can help an education department to improve their understanding of the actual patterns (dropout and repetition) of learner progression.

Figure 5: On track progression among the 2007 - 2010 Grade 8 cohorts



Longitudinal Cohort Analysis

In this part of the paper progression of learners in the primary school and secondary school is discussed. First a general picture is presented and then specific sections are devoted to those learners that have been successful in all the grades of a particular school phase, those that have repeated at least once in this phase and those that have dropped out of the system. This analysis is first undertaken for primary learners, then repeated for the transition between primary and secondary school, and then it is again repeated for the secondary school phase.

Progression of Learners within Primary Schools

In analysing the progress of learners in the primary school phase, Grade 1 learners of 2007 were considered as a cohort and tracked through the school system by using the CEMIS data. Table 3 gives a summary of how these learners progressed through the system. In 2007, 92 731 learners started in Grade 1 or repeated that grade. In 2008, 71 069 of those learners were in Grade 2, in other words they had progressed successfully, while 16 214 remained in Grade 1, in other words they repeated Grade 1 in 2008. In total, 87 283 learners of the 2007 Grade 1 cohort were still in the school system. This means that a full 5 448 Grade 1 learners had dropped out of the Western Cape public school system between 2007 and 2008. This is a surprising large dropping out of the school system and needs further investigation. It is possible that some of these children initially enrolled and then dropped out before returning the next year, but that would imply that the CEMIS numbers allocated to them were not again used when they re-entered. Alternatively, a proportion of these children could have transferred to private schools, and some may have moved province.

However, there is no obvious reason why this would occur on a bigger scale in Grade 1 than in most other grades. These trends are also depicted in Figure 6.

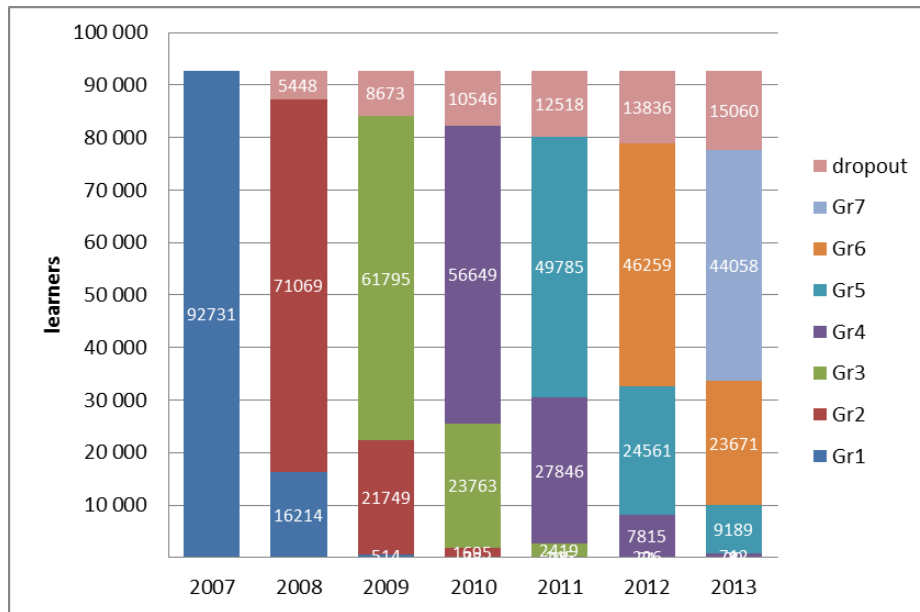
Table 3: Progression of learners that enrolled in Grade 1 in 2007 for the period 2007-2013

Description	2007	2008	2009	2010	2011	2012	2013
GR1	92 731	16 214	514	78	18	3	4
GR2	0	71 069	21 749	1 695	145	31	8
GR3	0	0	61 795	23 763	2 419	226	29
GR4	0	0	0	56 649	27 846	7 815	712
GR5	0	0	0	0	49 785	24,561	9 189
Gr6	0	0	0	0	0	46 259	23 671
Gr7	0	0	0	0	0	0	44 058
Still in school	92 731	87 283	84 058	82 185	80 213	78 895	77 671
Repeaters	0	16 214	22 263	25 536	30 428	32 636	33 613
Dropout	0	5 448	3 225	1 873	1 972	1 318	1 224
Cum. Dropout	0	5 448	8 673	10 546	12 518	13 836	15 060

By 2009, 61 795 of the original 2007 Grade 1 cohort had successfully progressed to Grade 3. Of the 16 214 repeaters in Grade 1 in 2008, 514 again repeated Grade 1. In 2009 there were 21 749 of the 2007 Grade 1 cohort in cohort – they had repeated either Grade 1 or Grade 2. These could thus be from the 71 069 learners of this cohort who had passed Grade 1 who then repeated Grade 2, or they could be from the 16 214 repeaters in Grade 1 in 2008 who then passed Grade 1 in 2008. A further 3 225 learners dropped out of the school system, so that the cumulative dropouts for these two years was a total 8 673. This means that no less than 9.4% of the original 2007 Grade 1 cohort had left the Western Cape public school system within two years.

The same explanation applies for subsequent years up to 2013. For example, by 2013 44 058 learners of the 2007 Grade 1 cohort had progressed to Grade 7 without any repetition and were therefore still in their appropriate grade. In 2013 there were 33 613 learners from the 2007 Grade 1 cohort still in the system who had repeated once or more. Of these repeaters, 23 671 were in Grade 6, i.e. one year behind, 9 189 were in Grade 5 (two years behind), 712 in Grade 4 (three years behind), 29 in Grade 3 (four years behind) and 8 in grade 2 (five years behind) and 4 still in Grade 1 (six years behind). These small numbers who had repeated multiple times likely reflect data errors due to imperfections in the CEMIS number system. This progress of learners through the primary school is graphically illustrated in Figure 6.

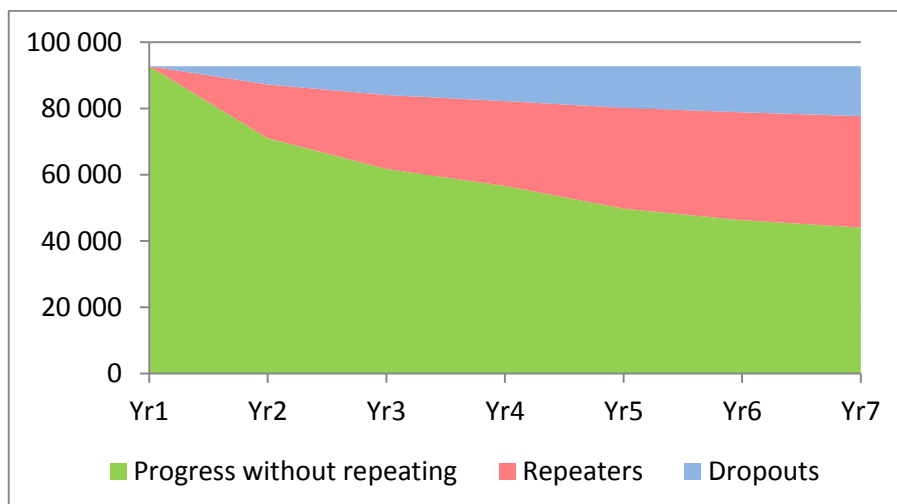
Figure 6: Progression of the 2007 Grade 1 cohort from 2007-2013



As Table 3 shows, 44 058 of the original Grade 1 cohort group in 2007 or 48% of the original cohort had successfully progressed to Grade 7 within the normal 6 years, i.e. they had progressed on track without ever repeating. The 33 613 members of the 2007 grade 1 cohort that were still in the system but had repeated at least one grade constitute 36% of the original cohort group. This implies that 84% of the original cohort group of 2007 were still in the school system in 2013. Table 3 shows that 15 060 learners had dropped out of the Western Cape public school system, or 16% - a surprisingly high 'dropout' for primary school, something that needs further investigation.

Figure 7 is based on the data in Table 3 and shows the progression of the Grade 1 cohort of 2007 through the primary school phase for 7 years. It clearly indicates the high repetition in primary school. The majority of learners progressed through the system without repeating, but a surprisingly high proportion had dropped out of this system and a high percentage also repeated one or more grades but remained the system.

Figure 7: Progress of Grade 1 cohort of 2007 until 2013



As indicated in Table 2, 16 214 Grade 1 learners of the 2007 cohort repeated Grade 1 the following year (2008). These learners were excluded from the 2008 Grade 1 cohort to determine the frequency of repetitions of children through the foundation phase. Table 4 shows that 12% of learners dropped out without completing this phase. Another 57% (almost 43 000) reached Grade 4 in the expected 3 years. Of the remaining 31%, about 28% repeated once, whilst 1833 repeated twice, and 374 three times or more. Thus there were about 2 200 cases where children repeated more than once in the foundation phase, contrary to policy.

Table 4: Progression of new entrants in Grade 1 (2008 cohort) through the Primary Phase

	Number	%
Dropped out	9 061	12%
3 years (reach Gr 4 in 2011)	42 645	57%
4 years (reach Gr 4 in 2012)	21 026	28%
5 years or more (reach Gr 4 in 2013)	1 833	2%
6 years or more (have not yet reached Gr 4 in 2013)	374	0%
Total	74 939	100%

A similar analysis is possible for the Intermediate Phase, and shows a much smaller frequency of learners repeating twice (777) in the phase. An analysis for the Junior Secondary phase is kept for a later section where secondary school flow-through is considered.

Table 5: Progression of new entrants in Grade 4 (2008 cohort) through the Intermediate Phase

	Number	%
Dropped out	10 209	13%
3 years (reach Gr 7 in 2011)	56 436	71%
4 years (reach Gr 7 in 2012)	11 663	15%
5 years or more (reach Gr 7 in 2013)	777	1%
6 years or more (have not yet reached Gr 7 in 2013)	0	0%
Total	79 085	100%

The next sub-section continues to distinguish three groups, those that progressed through the system without repetition, those still in the system but who have failed at least one grade, and those that have dropped out of the Western Cape public school system. Here, however, they are further decomposed according to education district, gender, race, and school quintile. The graphs and discussions that follow are derived from Table 6.

Table 6: Progression of 2007 Grade 1 cohort to 2013 by school district, gender, race, former department and quintile

Learner characteristics	Learners In Gr.1 in 2007	Dropped out	Learners still in the system in 2013	
			Without repetition (Gr.7)	With repetition (below Gr.7)
Total	92 731	15 060 (16.2%)	44 058 (47.5%)	33 613 (36.2)
Education district				
Cape Winelands	13 873	1 425 (10.3%)	6 667 (48.1%)	5 781 (41.7%)
Eden & Central Karoo	11 643	1 391 (11.9%)	5 767 (49.5%)	4 485 (38.5%)
Metro Central	11 615	1 874 (16.1%)	6 376 (54.9%)	3 365 (28.9%)
Metro East	13 492	3 013 (22.3%)	6 687 (49.6%)	3 792 (28.1%)
Metro North	16 347	2 968 (18.2%)	6 873 (42.0%)	6 506 (39.8%)
Metro South	15 116	2 587 (17.1%)	7 633 (50.5%)	4 896 (32.4%)
Overberg	4 214	560 (13.3%)	1 615 (38.3%)	2 039 (48.4%)
West Coast	6 431	723 (11.2%)	2 440 (37.9%)	3 268 (50.8%)
Gender				
Male	48 283	8 168 (16.9%)	19 649 (40.7%)	20 466 (42.4%)
Female	44 448	6 373 (14.3%)	24 409 (54.9%)	13 666 (30.7%)
Race				
Black	25 532	8 431 (33.0%)	8 835 (34.6%)	8 266 (32.4%)
Coloured	58 284	4 524 (7.8%)	28 744 (49.3%)	25 016 (42.6%)
Indian/Asian	414	83 (20.0%)	265 (64.0%)	66 (15.9%)
White	6 830	1 164 (17.0%)	5 156 (75.5%)	510 (7.5%)
Other	1 671	339 (20.3%)	1 058 (63.3%)	274 (16.4%)
Ex-department				
CED	14 727	2 210 (15.0%)	10 470 (71.1%)	2 047 (13.9%)
DET	13 126	4 661 (35.5%)	4 554 (34.7%)	3 911 (29.8%)
HOD	263	42 (16.0%)	151 (57.4%)	70 (26.6%)
HOR	56 670	5 194 (9.2%)	26 498 (46.8%)	24 978 (44.1%)
WCED	7 945	2 434 (30.6%)	2 385 (30.0%)	3 126 (39.3%)
Quintile				
NQ1	11 073	1 873 (16.9%)	3 875 (35.0%)	5 325 (48.1%)
NQ2	14 303	3 692 (25.8%)	5 385 (37.6%)	5 226 (36.5%)
NQ3	14250	2 944 (20.7%)	5 500 (38.6%)	5 806 (40.7%)
NQ4	25 551	2 521 (9.9%)	11 500 (45.0%)	11 530 (45.1%)
NQ5	27 526	3 507 (12.7%)	17 790 (64.6%)	6 229 (22.6%)

Learners that progressed through primary school without repetition

From Figure 8 it is clear that learners from quintile 5 schools are by far the most successful. While just less than 48% of the total Grade 1 cohort in 2007 progressed through the system over the period under discussion without repetition, 65% of the quintile 5 learners did so. In quintile 4 schools, altogether 45% of learners progressed without repetition through the primary school system, but this percentage drops to below 40% for the other school quintiles and is as low as 35% in the quintile 1 schools.

Figure 8: Percentage of learners that progressed through primary school phase without repeating by school quintile

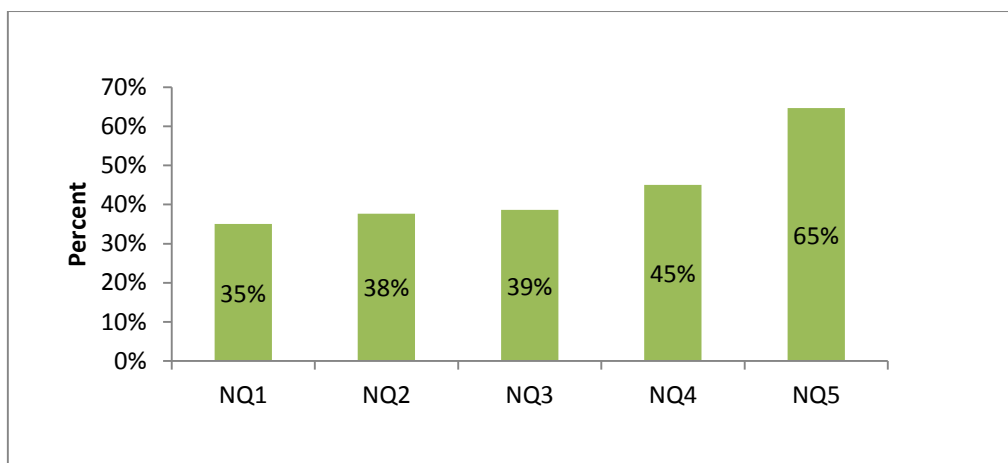
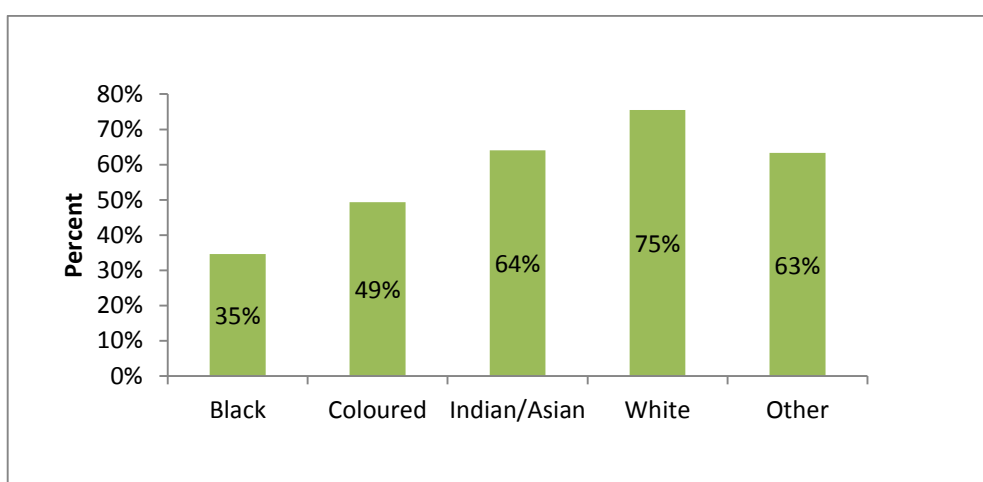


Figure 9: Percentage of learners that progressed through primary school without repeating by race



There is quite large variation between the different racial groups (See Figure 9). White learners had the highest percentage (75 per cent) that progressed without repetition, while this ratio was low for black and coloured learners.

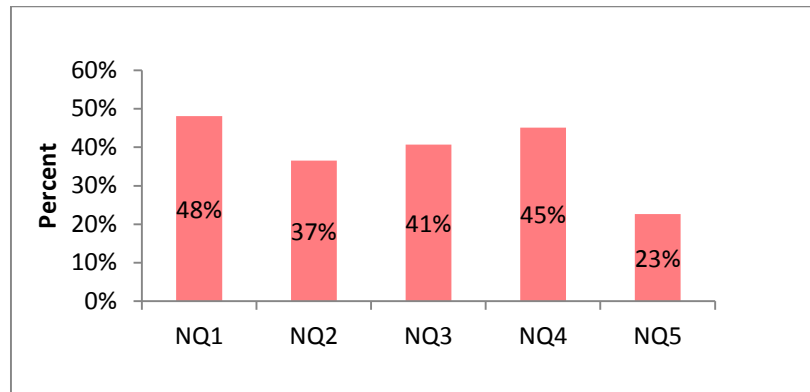
Female learners progressed much more successfully through primary school. While 55% of female learners reached Grade 7 in 6 years, only 41% of the original male learners of the 2007 Grade 1 cohort did.

Learners who repeated in primary school

The second group of learners are those that were still in the system by 2013, but have repeated at least one grade.⁵ The 6 229 learners who repeated of the original cohort group that started in quintile 5 schools represent 23% of those who started (See Figure 10). Schools in other quintiles fared much worse, and 48% of the original cohort group of quintile 1 schools had repeated sometime during primary school.

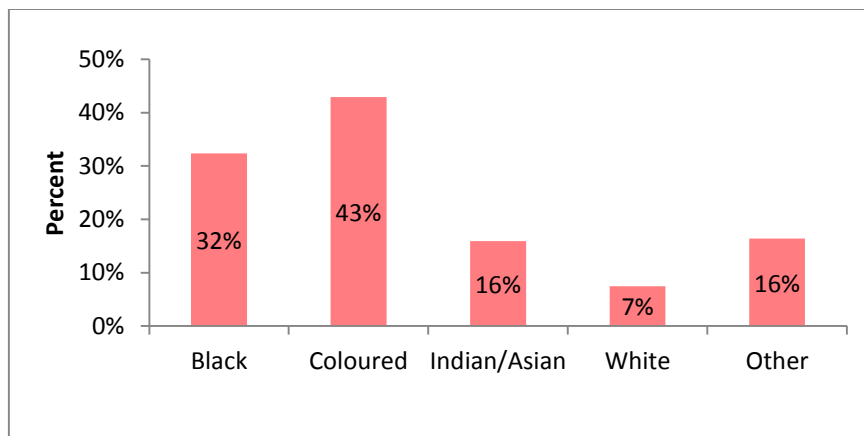
⁵ This figure is likely to be a slight under-estimate of repetition during primary school, as some of the Grade 1 learners who had been followed from 2007 may already have been repeaters in 2007, but the data does not allow them to be identified as such.

Figure 10: Percentage of learners who repeated during the primary school phase by school quintile



The percentage of learners in the primary school progressing with repetition differs substantially according to race as depicted in Figure 11. Only 7% of the original white Grade 1 cohort in 2007 progressed with repetition by 2013. The percentage of black and coloured learners that progressed with repetition is much higher.

Figure 11: Percentage of learners who repeated during the primary school phase by race



Learners that dropped out of the Western Cape school system in the primary school phase

Another group identified is those learners of the Grade 1 cohort group in 2007 that dropped out of the Western Cape public school system by 2013. While this percentage was 16% of the full grade 1 cohort, this percentage was much lower in quintile 5 (13%) and quintile 4 (10%). The somewhat higher proportion of such dropping out in quintile 5 compared to quintile 4 might in part reflect a choice for children to leave the public school system to enter private schools, something that is likely to occur most in more affluent schools (see Figure 12). Indeed, Table 3 shows that there is a rise in the number of children in independent schools in higher grades, suggesting some in-migration of learners into such schools from the public school system.

Figure 12: Percentage of learners that dropped out of the primary school by school quintile

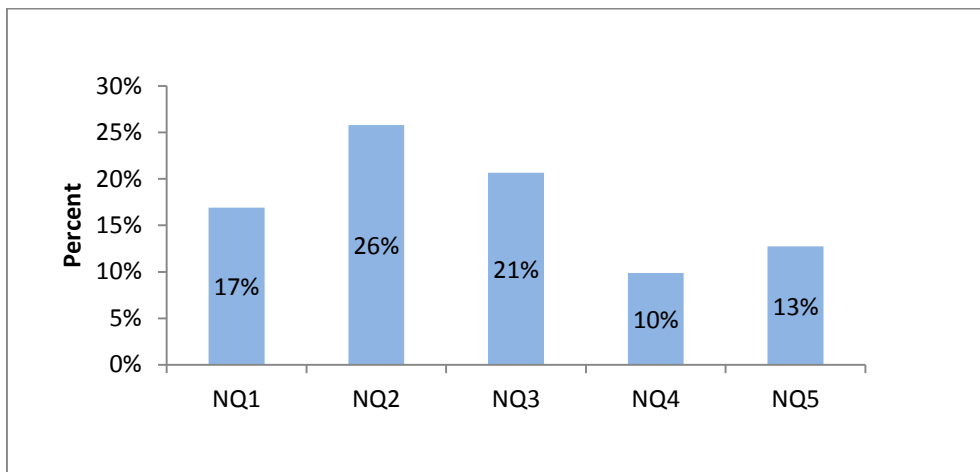
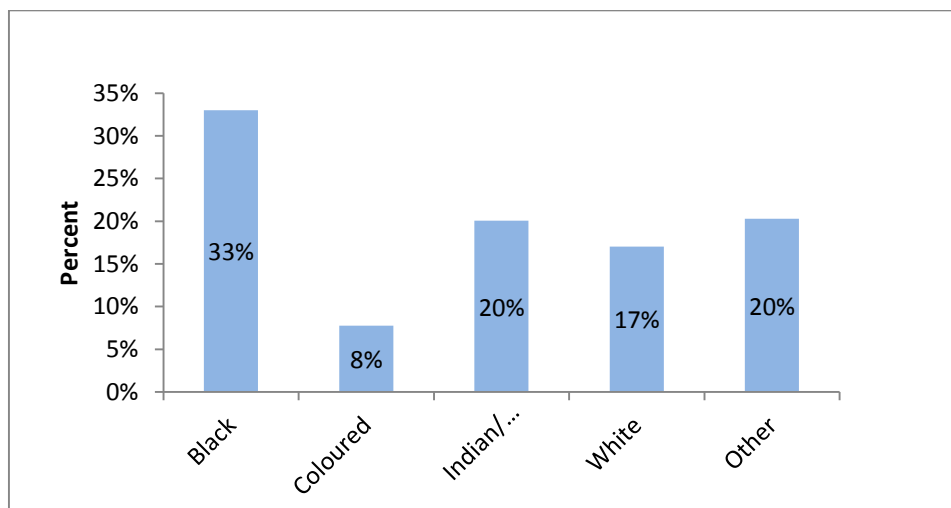


Figure 13: Percentage of learners that dropped out of the primary school phase by race



The highest dropout is recorded for black learners, amongst whom 33% of the original Grade 1 cohort of 2007 dropped out (see Figure 13). Indian and white learners both recorded about a 20% dropout rate, but only 8% of coloured learners dropped out of the system. Although a large percentage of coloured learners failed, they tend to stay in the Western Cape public school system. Although they have the highest rate of learners who repeat a grade during primary school (43%), they also have the lowest dropout rate of any racial group. The high rate amongst the black population may suggest greater inter-provincial movement of learners.

Progression of learners from Grade 6 to Matric

The next cohort that will be discussed is the Grade 6 cohort of 2007. This cohort was chosen as the CEMIS data makes it possible to follow non-repeaters from Grade 6 in 2007 to Grade 12, the end of the school cycle, in 2013. The progress of these learners is summarised in Table 7.

In 2007, 77 633 learners were in Grade 6. Of these, 69 863 passed Grade 6, 3 680 failed the grade but stayed in the system and 4 090 learners dropped out of Western Cape public schools before the next year. By 2009, 59 844 of the original Grade 6 cohort group of 2007 had progressed without repetition to Grade 8. There were 5 772 still in Grade 7 (in other

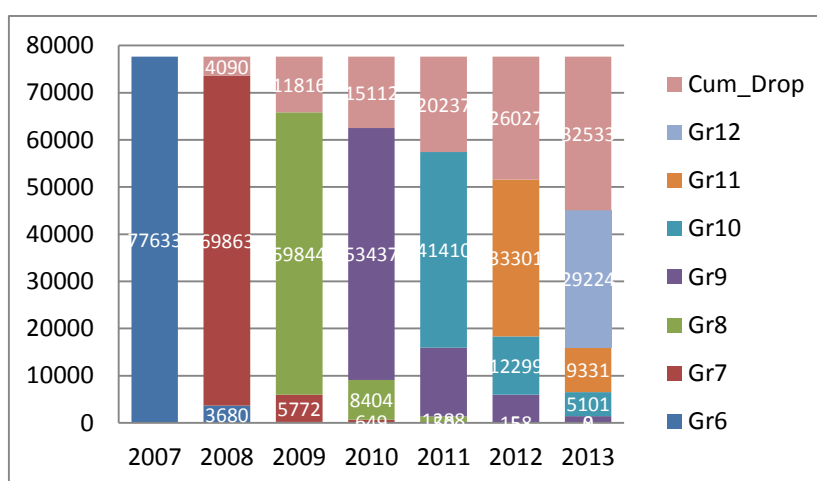
words they had repeated once) and they came from the 3 680 repeaters in Grade 6 in 2008 or from the 69 863 successful Grade 7 learners of 2007 that failed Grade 2 in 2008. A further 7 726 dropped out of the system, bringing the cumulative dropouts to 11 816.

Table 7: Progression of learners that enrolled in Grade 6 in 2007 for the period 2007-2013

Description	2007	2008	2009	2010	2011	2012	2013
GR6	77 633	3 680	201	31	3	1	1
GR7	0	69 863	5 772	649	50	5	0
GR8	0	0	59 844	8 404	1 288	158	8
GR9	0	0	0	53 437	14 645	5 842	1 435
GR10	0	0	0	0	41 410	12 299	5 101
Gr11	0	0	0	0	0	33 301	9 331
Gr12	0	0	0	0	0	0	29 224
Still in school	77 633	73 543	65 817	62 521	57 396	51 606	45 100
Repeaters	0	3 680	5 973	9 084	15 986	18 305	15 876
Dropout	0	4 090	7 726	3 296	5 125	5 790	6 506
Cum. Dropout	0	4 090	11 816	15 112	20 237	26 027	32 533

Considering the full period, only 29 224 of the 2007 Grade 6 cohort are “on-track” and progressed appropriately to Grade 12 without any repetition. In that year, 2013, there were 15 876 of this cohort still in the system who had repeated once or more. Of these repeaters 9 331 were in Grade 11, i.e. one year behind, 5 101 were in Grade 10, i.e. two years behind, etc. The cumulative number of learners from the 2007 Grade 6 cohort that had dropped out of Western Cape public schools by 2013 was 32 533. This progress of learners through the last seven school grades – Grades 6 to 12 – is graphically illustrated in Figure 14.

Figure 14: Progression of 2007 Grade 6 cohort over 7 years (2007-2013)



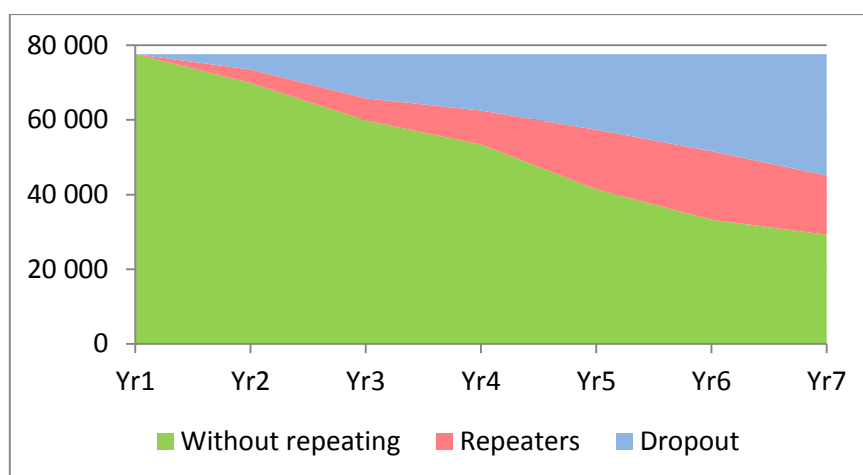
One other observation from Table 7 is that the largest number of learners that drop out in a single year is at the end of 2008, when most learners from this cohort switch from primary to secondary school. It is possible that this may be in part a data error – the 7726 that drop out between primary and secondary schools seems inordinately high. One possibility is that this may be an age at which more children transition from public to private schools; another possibility is that there is more inter-provincial migration out of the Western Cape at the end

of primary school; and a third possibility is that at least some of the children entering secondary school in Grade 9 were erroneously given new CEMIS numbers by their new schools, and were thus not really dropping out but appear to be both 'dropping out' and then again 'dropping in' to the Western Cape education system in Grade 8. The second of these explanations seems least likely, as evidence suggests migration of secondary school learners to the Western Cape rather than out of the province.

High dropout rates are also recorded in the latter part of the high school. This results in a high recorded dropout rate (42%) of this cohort between Grades 6 and 12.

Figure 15 is based on the data in Table 7 and shows the progression of the Grade 6 cohort of 2007 through the school system for 7 years. It clearly indicates the high dropout in secondary school. This is in contrast with the primary school phase where a high repetition rate but a lower dropout was recorded.

Figure 15: Progression of Grade 6 cohort of 2007 to 2013



Once again a distinction is made between the progress of this cohort in terms of those learners that progressed without repetition, those that progressed with repetition and those that dropped out of the system. This is summarised in Table 8 along the dimensions of education district of schools, gender, race, former department and the school quintile.

Table 8: Progression of 2007 grade 6 cohort by school district, gender, race, former department and quintile and how they progressed by 2013

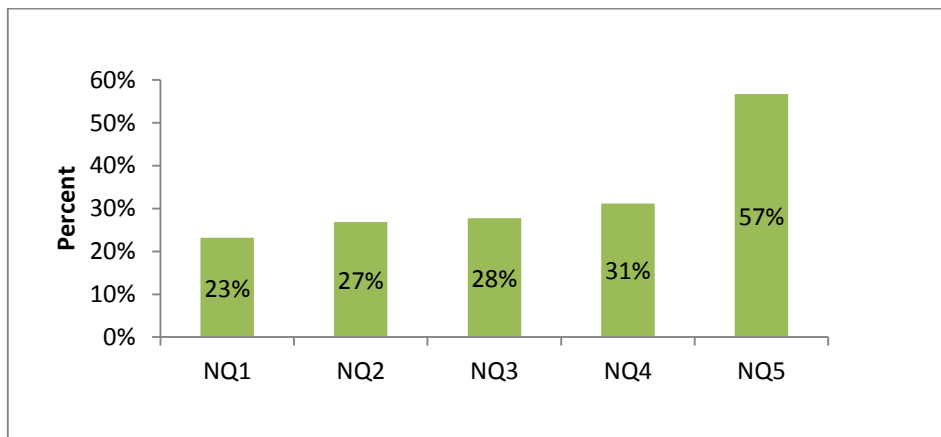
Learner characteristics	Learners 2007	Dropouts	Learners still in the system in 2013	
			Without repetition	With repetition
Total	77 633	32 533 (41.9%)	29 224 (37.6%)	15 876 (20.5%)
Education district				
Cape Winelands	11 163	4 418 (39.6%)	4 297 (38.5%)	2 448 (21.9%)
Eden and Central Karoo	9 480	4 068 (42.9%)	3 550 (37.4%)	1 862 (19.6%)

Metro Central	10 534	4 388 (41.7%)	4 101 (38.9%)	2 045 (19.4%)
Metro East	12 269	5 096 (41.5%)	4 420 (36.0%)	2 753 (22.4%)
Metro North	13 423	5 624 (41.9%)	5 286 (39.4%)	2 513 (16.0%)
Metro South	12 707	5 129 (40.4%)	4 896 (38.5%)	2 682 (21.1%)
Overberg	3 089	1 334 (43.2%)	1 059 (34.3)	696 (22.5%)
West Coast	4 968	2 476 (49.8%)	1 615 (32.5%)	877 (17.7%)
Gender				
Male	38 609	18 211 (47.2%)	12 212 (31.6%)	8 186 (21.2%)
Female	39 024	14 322 (36.7%)	17 012 (43.6%)	7 690 (19.7%)
Race				
Black	20 386	9 753 (47.8%)	5 322 (26.1%)	5 311 (26.1%)
Coloured	47 814	20 252 (42.4%)	17 486 (36.6%)	10 076 (21.1%)
Indian/Asian	531	169 (31.8%)	334 (62.9%)	28 (5.3%)
White	7 743	1 928 (24.9%)	5 537 (71.5%)	278 (3.6%)
Other	1 159	431 (37.2)	545 (47.0%)	183 (15.8%)
Ex-department				
CED	14 290	3 569 (25.0%)	9 713 (68.0%)	1 008 (7.0%)
DET	11 714	5 659 (48.3%)	2 870 (24.5%)	3 185 (27.2%)
HOD	282	78 (27.7%)	153 (54.3%)	51 (18.1%)
HOR	45 606	20 264 (44.4%)	15 043 (33.0%)	10 299 (22.6%)
WCED	5 741	2 963 (51.6%)	1 445 (25.2%)	1 333 (23.2%)

Grade 6 learners that progressed through the school system without repetition

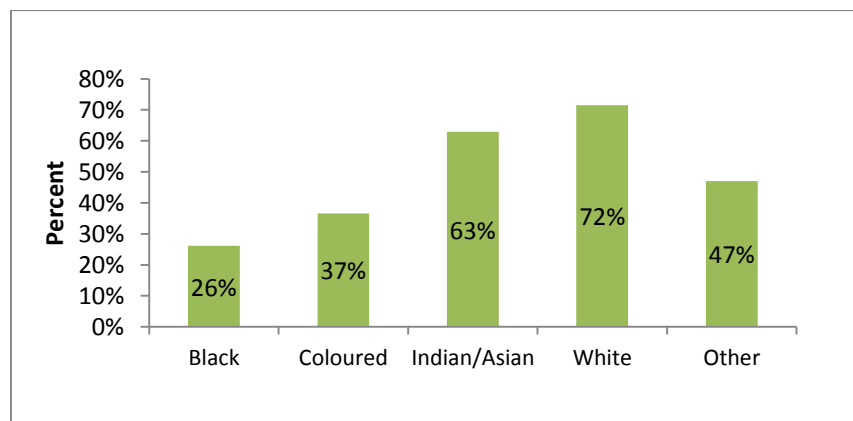
Learners starting in quintile 5 schools progressed much better up to grade 12 than any of the other school quintile. Figure 16 shows that the percentage of Grade 6 learners in quintile 5 schools that progressed to Grade 12 without repeating was double the rate recorded by other quintiles. Quintile 4 performs only slightly better than the poorest three quintiles.

Figure 16: Percentage of Grade 6 learners of 2007 that progressed to Grade 12



As was the case in the primary school phase, white learners progressed much more successfully from Grade 6 to 12. While 72% white learners of the 2007 Grade 6 cohort group reached Grade 12 without repeating, only 37% of coloured and 26% of black learners achieved this (see Figure 17). By gender, 44% of girls and only 32% of boys reached Grade 12 without repeating.

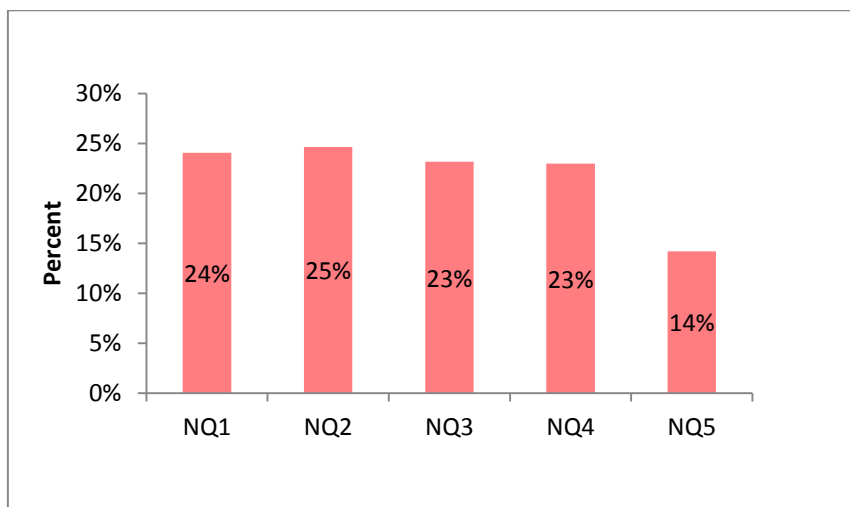
Figure 17: Percentage of Grade 6 learners of 2007 that progressed to Grade 12 without repeating by race



Grade 6 learners that repeated but remained in the school system until 2013

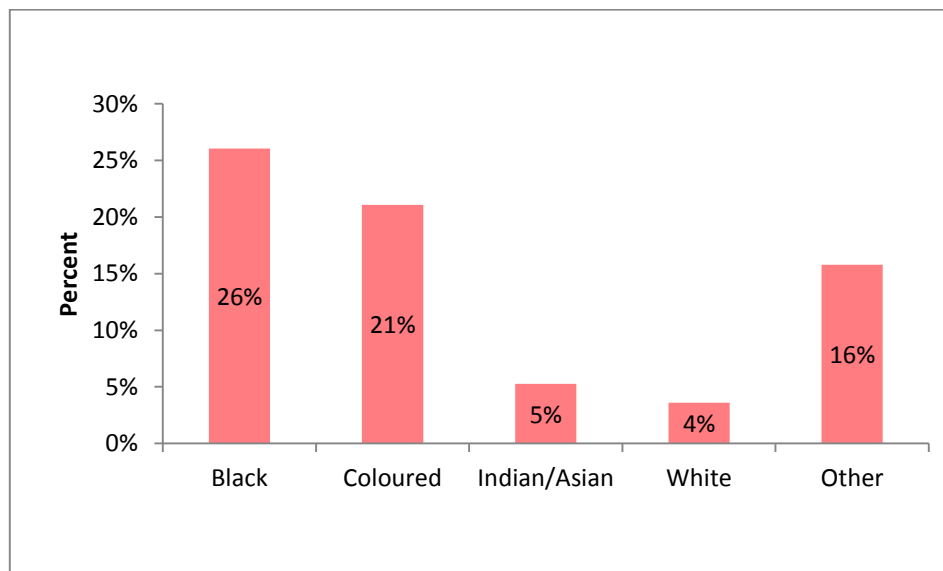
Learners of quintile 5 schools were much less likely to repeat a grade than any other quintile. About a quarter of the original Grade 6 learners in 2007 in quintile 1-4 remained in the system until 2013 but had repeated at least one grade, while this applied to only 14% of learners in quintile 5 schools.

Figure 18: Percentage of Grade 6 learners of 2007 that repeated but remained in the system until 2013 by school quintile



There is a sharp contrast between racial groups if one considers those remaining in the system till 2013 that have repeated one or more grades. Only 4% of white learners were in this category, compared to 21% for coloured and 26% for black learners (See Figure 19).

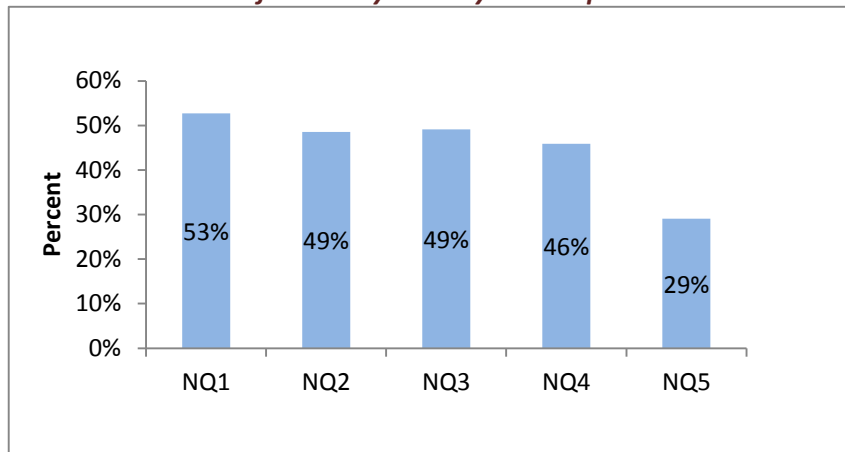
Figure 19: Percentage of Grade 6 learners of 2007 that repeated but remained in the system until 2013 by race



Grade 6 learners that dropped out of the school system

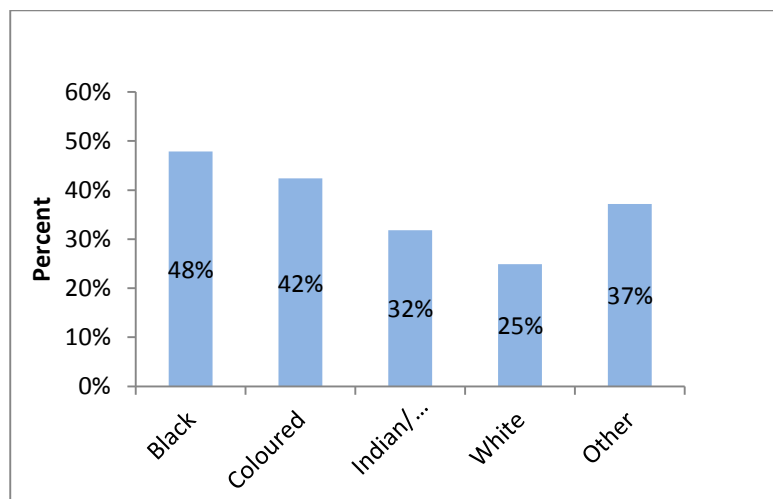
As can be seen from Figure 20, about 50% of the 2007 cohort of Grade 6 learners starting in quintile 1-4 schools had dropped out of the Western Cape public school system by 2013. The corresponding Figure for quintile 5 schools is much lower at 29%.

Figure 20: Percentage of Grade 6 learners of 2007 that dropped out of school by 2013 by school quintile



While only 25% of white Grade 6 learners of 2007 had dropped out by 2013, this figure is much higher for black and coloured learners (See Figure 21).

Figure 21: Percentage of Grade 6 learners of 2007 that dropped out of school by 2013 by race



With dropouts of the 2007 Grade 6 learners there is a noticeable difference in terms of gender. About 47% of Grade 6 boys but only 37% of the girls had dropped out of the system between 2007 and 2013.

Flow through patterns of grade 9 learners for 2007, 2008, 2009 and 2010 cohorts

The preceding analysis has shown a particularly high repetition rate of Grade 9 learners and a high dropout of learners after Grade 9. Hence, it is informative to follow a number of Grade 9 cohorts in order to determine the consistency of trends in repetition, dropout and completion over time. The trends presented in this section are based on 4 different grade 9 cohorts, namely cohorts that started Grade 9 in 2007, 2008, 2009 and 2010. Each of these Grade 9 learner cohorts is followed for 4 years. The flow-through trends of these cohorts are depicted in Table 9.

Table 9 shows a consistently high number of learners who started Grade 9 repeating that grade the next year. For example, 16 233 (20%) of the Grade 9 cohort of 2007 repeated Grade 9 in 2008. Similar levels of repetition are observed for the other years, as illustrated by Figure 22, i.e. 15 639 (21%) for the 2008 cohort, 17 406 (22%) for the 2009 cohort and 16 920 (20%) for the 2010 cohort. Table 9 indicates that 49 808 (62% of the original total) learners of the Grade 9 cohort of 2007 were still in the system three years later, of which only 30 577 (38%) were in the appropriate grade (Grade 12). The rest of that cohort was one or more grades behind. This trend repeats itself for all the cohorts.

Table 9: Progression and dropout of learners that enrolled in Grade 9 in

2007 Cohort					2008 Cohort			
Grades	2007	2008	2009	2010	2008	2009	2010	2011
9	80 474	16 233	4 690	1 151	73 041	15 639	4 957	934
10	0	51 219	16 186	6 085	0	42 977	13 406	5 021
11	0	0	36 304	11 995	0	0	31 236	9 831
12	0	0	0	30 577	0	0	0	25 922
Still in school	80 474	67 452	57 180	49 808	73 041	58 616	49 599	41 708
Repeaters	0	16 233	20 876	19 231	0	15 639	18 363	15 786
Dropout	0	13 022	10 272	7 372	0	14 425	9 017	7 891
Cum dropout	0	13 022	23 294	30 666	0	14 425	23 442	31 333

2009 Cohort					2010 Cohort			
Grades	2009	2010	2011	2012	2010	2011	2012	2013
9	79 842	17 406	4 645	949	85 239	16 920	4 690	838
10	0	49 399	14 592	5 453	0	53 879	16 147	5 499
11	0	0	37 261	10 924	0	0	40 024	11 682
12	0	0	0	31 778	0	0	0	34 237
Still in school	79 842	66 805	56 498	49 104	85 239	70 799	60 861	52 256
Repeaters	0	17 406	19 237	17 326	0	16 920	20 837	18 019
Dropout	0	13 037	10 307	7 394	0	14 440	9 938	8 605
Cum dropout	0	13 037	23 344	30 738	0	14 440	24 378	32 983

Figure 22: Learners who repeated Grade 9 by cohort

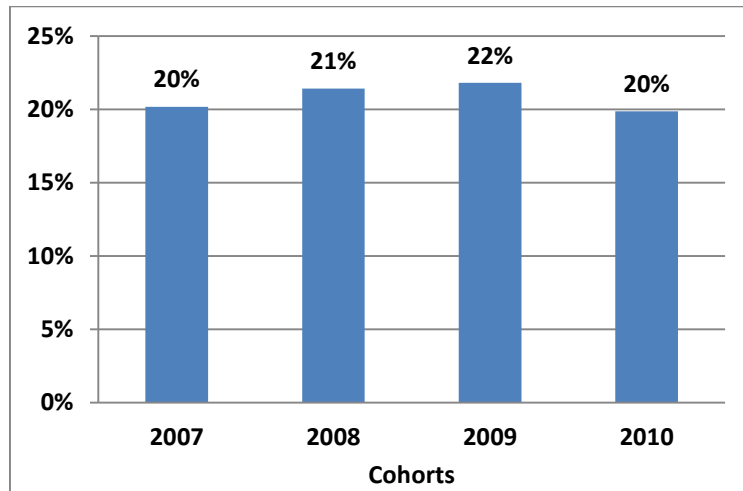
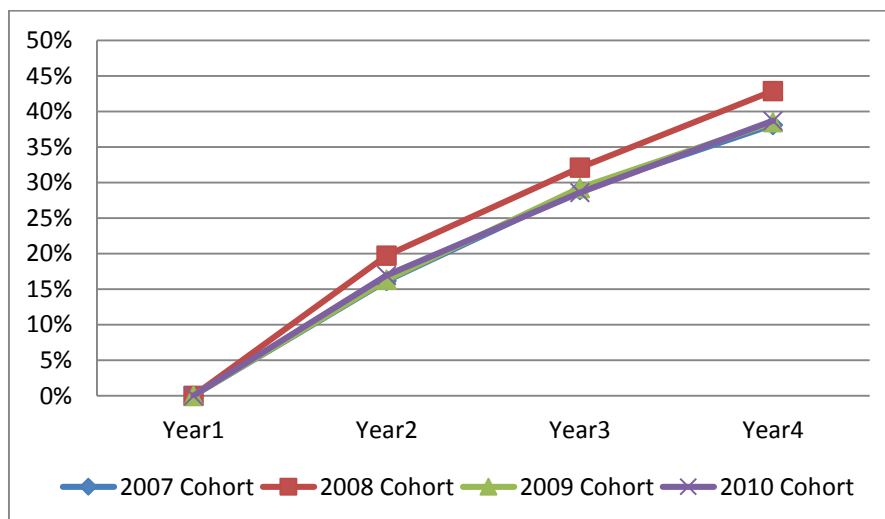


Table 9 shows that a high number of learners who were enrolled in Grade 9 in schools in the Western Cape left the public education system in the province without reaching Grade 12. It is likely that the great majority of this group actually dropped out of school altogether. A similar consistency as for repetition is seen in the dropout trends: a consistently high dropout rate from Grade 9 through Grade 12 for all cohorts, as depicted in Table 9 and Figure 23. The table shows the cumulative dropout for all the cohorts, i.e. 30 666 (38%) for the 2007 cohort, 31 333 (43%) for the 2008 cohort, 30 738 (38%) for the 2009 cohort and 32 983 (39%) for the 2010 cohort. Figure 24 illustrates the consistency of the cumulative dropout across the cohorts, with the exception of dropout for the Grade 9 cohort of 2008, which was higher.

Figure 23: Cumulative percentage drop out of grade 9 cohorts



Progression of Grade 9 repeaters

Given the high number of learners that failed Grade 9, the flow-through rates of these Grade 9 learners were further investigated. The repeaters of Grade 9 of 2007, 2008 and 2009 were tracked over the next four years until they were supposed to reach Grade 12, their final year of school. This reveals that only a small percentage of learners who repeated in Grade 9 did

not thereafter drop out or fall even further behind. Table 10 shows that at the end of a further 4 years, only 4 341 (27%) of the Grade 9 repeaters in 2008 were still in the system, and only 1 535 (9%) were in the appropriate grade (Grade 12), i.e. did not repeat again. Similar figures apply for the other cohorts.

Table 10: Progression of Grade 9 repeaters by cohort

Grade	Repeaters	In system after 4 years	In system after 4 years	In appropriate grade	Appropriate grade
Gr 9 in 2008	16 233	4 341	27%	1 535	9%
Gr 9 in 2009	15 639	3 961	25%	1 295	8%
Gr 9 in 2010	17 406	4 598	26%	1 685	10%

Grade 9 repetition seems to be a precursor to dropping out for most children who fail that grade. This has important implications for policy.

The age distribution in Table 11 for Grade 9s of 2007 who repeated that grade the next year shows that a high proportion of them were overage. This suggests that they may have already repeated earlier grades in previous school phases, unless they had started school at an older age than the normal 6 or 7. Only 13% of these repeaters were 15 or younger, the age one would expect children to be in Grade 9 if they had started school at the appropriate age and had never repeated.

Table 11: Age distribution of grade 9 learners in 2007 who repeated that grade the next year

Age	Frequency	Per cent	Cumulative %
15 and younger (appropriate age)	2 165	13%	13%
16	6 027	37%	50%
17	4 486	28%	78%
18 and older	3 555	22%	100%
Total	16 233	100%	

Repetition per phase in the foundation and intermediate phases was considered earlier (See Tables 4 & 5). Table 12 shows similar data, this time for the junior secondary phase, where the number of learners failing twice in the phase (1375) or more (1113) indicates quite substantial deviation from the policy that learners should not repeat more than once in a phase.

Table 12: Progression of new entrants in Grade 7 (2008 cohort) through the junior secondary phase (2910 repeaters excluded)

	Number	%
Dropped out	23310	32%
3 years (reach Gr 10 in 2011)	42115	58%
4 years (reach Gr 10 in 2012)	5100	7%
5 years or more (reach Gr 10 in 2013)	1375	2%
6 years or more (have not yet reached Gr 10 in 2013)	1113	2%
Total	73013	100%

Transition between primary and secondary school

Between the primary and secondary phase⁶, the two Grade 7 cohorts for each of the years 2007 and 2012 were tracked from Grade 7 to Grade 8 to learn more about the transition from primary to secondary school. The proportion of Grade 7 learners who had been promoted to Grade 8 and who switched quintiles is investigated.

The dropout for both of these cohorts is quite high in the transition between primary and secondary school, 9 121 (12.6%) for the 2007 cohort and 8 377 (11.0%) for the 2012 cohort (Table 13).⁷

Table 13: Progression of learners between Grades 7 and 8 for two Grade 7 cohorts

	2007 cohort	2012 cohort
Dropout	9 121	8 377
Repeat Grade 7	2 910	2 703
Progress to Grade 8	60 207	65 307
Total	72 238	76 387

Grade 7 learners promoted to Grade 8 who switched quintiles

The rows in Table 14 reflect the initial percentages while the columns reflect the final values. Quintile switching patterns amongst learners promoted from Grade 7 to Grade 8 are similar across the two cohorts observed. For example, 62.5% of the quintile 1 school learners in grade 7 in 2007 again attended quintile 1 schools in grade 8 the next year, compared to 61.8% of the 2012 cohort. The remaining 37.5% of the quintile 1 cohort in Grade 7 moved into higher quintile schools in Grade 8. Specifically, 5.8% of the 2007 cohort learners was now in quintile 2 compared to 6.8% from the 2012 cohort. Interestingly, the proportions moving to quintiles 3 (15.4%) and 4 (14.1%) are quite large.

Table 14: Quintile switching of learners progressing from Grade 7 to Grade 8

Quintile in Grade 7	Grade 7 cohorts	Quintile in Grade 8					Total
		1	2	3	4	5	
1	2007	62.5	5.8	15.4	14.1	2.2	100.0
	2012	61.8	6.8	13.9	15.1	2.5	100.0
2	2007	5.6	48.4	32.6	8.4	5.0	100.0
	2012	5.9	50.4	30.3	8.8	4.7	100.0
3	2007	0.6	8.3	75.8	10.1	5.3	100.0
	2012	1.5	10.4	73.1	10.6	4.4	100.0

⁶ Note that some schools straddle this usual divide between primary and secondary schools, i.e. they have both Grade 7 and Grade 8 classes. However, that is a less common pattern.

⁷ If there are a large number of instances where learners who enter secondary school have been erroneously given new CEMIS numbers even if they had progressed from primary schools in the WCED public system, this would go some way to explaining the high number of dropouts between Grade 7 and 8, and indeed also the high number of new entrants.

4	2007	0.3	0.9	4.8	71.0	23.0	100.0
	2012	0.4	1.3	4.5	70.6	23.2	100.0
5	2007	0.1	0.2	1.0	7.3	91.4	100.0
	2012	0.3	0.3	1.3	8.7	89.4	100.0
Total	2007	7.1	9.0	18.7	26.0	39.3	100.0
	2012	7.7	10.0	18.2	26.4	37.7	100.0

A similar analysis can be applied to the rest of the quintiles. Altogether 48.4% of quintile 2 learners of the 2007 Grade 1 cohort remained in quintile 2, while 75.8% of quintile 3 learners remained in quintile 3, 71.0% of quintile 4 remained in quintile 4 and 91.4% of quintile 5 remained in quintile 5 schools. A similar pattern appeared if the 2012 cohort is tracked, e.g. 50.4%, 73.1%, 70.6% and 89.4% of learners remained in quintiles 2, 3, 4 and 5 respectively.

Generally the pattern of switching is from lower quintile schools into higher quintile schools. A small proportion of learners migrated from higher quintile schools to lower quintile schools. For example, about 90% of learners remained in quintile 5 schools with less than 1% moving into quintile 1 and 2 schools.

Some of the mobility to higher quintile schools may simply be because more of the Western Cape's public high schools are in the higher quintiles compared to primary schools. Although there appears to be some mobility (also in grades other than the transition grades), the major conclusion to be drawn from these tables is that there is much stability in the system in terms of the quintiles of schools that children attend, and that there has been little change in patterns of transition between quintiles from 2007 to 2012.

Conclusions

In this paper we used cross-sectional analysis and longitudinal cohort analysis to analyse the data, with the focus mainly on flow of learners through the education system. Some important issues were raised that are of obvious concern. One issue is that of the deviations from the prescribed repetition policy, but perhaps more important is the clear evidence that repetition in Grade 9 is the precursor to almost inevitable dropping out of school without completing matric. That being the case, this issue clearly needs some policy attention.

Furthermore, the study shows the importance of unit-level records. With the availability of unit-level learner records key questions can be answered such as: "What is the profile of the learners who dropped out of the system, or what is the profile of the learners who progressed without any repetition?" When individual learner-unit records are available one can track learners as a group or cohort over a specified period of time. Longitudinal cohort tracking can provide a more complete picture and true reflection of the education system about the progress (dropout and repetition) of learners.