

DEPARTMENT OF HIGHER EDUCATION AND TRAINING

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Director: HEMIS
Department of Higher Education and Training

3/08/201

HEMIS Institute August 201



2000 TO 2014 FIRST TIME ENTERING UNDERGRADUATE COHORT STUDIES FOR PUBLIC HIGHER EDUCATION INSTITUTIONS

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HEMIS DATA COLLECTION

- HEMIS collects unit record data rather than aggregated or tabular data. Universities are required to submit audited data to the Department in a specified format by the 31st July each year for the prior academic year. This enables universities to identify all their graduates for the prior year having completing their final examinations and where applicable supplementary examinations and to audit their data before submission to the Department. The data submitted to the Department are a subset of the data from the universities' production database.
- The Department has provided the universities with PC software which enables them to validate their data and correct critical errors prior to submitting to the Department.
- Universities are required to have their data audited by their external auditors before submitting to the Department at the 31st July each year.
 Once the department receives the final audited data, further validations and checks are undertaken before aggregated tables data are published.

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METHODOLOGY

- Cohort studies are the study of first time entering undergraduate students, who are tracked over a 10 year period to determine the percentage of students that have dropped out from their studies or who have completed their studies. The purpose of extending the study over a 10 year period is to take cognisance of the distance education method of educational provisioning.
- Records are extracted from the HEMIS database for the base year data and filtered to only render the first-time entering undergraduate students. This includes students enrolled for three and four year undergraduate programmes. Only South African citizens are tracked, all the records containing non-valid South African National Identity numbers are removed from the dataset. The South African Identity number is used to track the progress of students.

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METHODOLOGY

- The data for the base year consist of data fields for race, gender, field of study, graduation status, qualification type and the South African Identity number. Subsequent years do not need all these fields and only includes graduation status, qualification type and South African Identity number. It is assumed that the other fields remain the same throughout the study.
- The second level of data cleaning is eliminating duplicate South African Identity numbers. The records are evaluated according to the following logic;
 - The graduation status reflects a finish within the logical period of three years or four years depending upon the qualification type, not earlier. An earlier finish indicates a non-first-time entering student that was wrongfully enrolled as a first-time entering student and the record is removed from the tracking process.
 - Where there are multiple fields of study, one is selected by choice should both records seem legitimate.

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METHODOLOGY

- The third level of data cleaning looks at the multiple graduation status.
 Records are cleaned by removing the graduations after the first graduation status. This is to eliminate multiple graduation counts and false dropout counts.
- The dataset is now ready for the calculations to be done. The
 calculations are done for all qualification types combined (three and four
 year qualifications) first and then it is done for the three and four year
 qualifications separately.
- Dropouts are calculated by counting all the blank fields from one year in the table. Blank fields represent no student record and are regarded as a dropout. The total number of graduates in prior years has to be subtracted from this total to get the final dropout number. The difference between the sum of dropouts + graduates will be students who are still studying.

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METHODOLOGY

- If a student drops out from one university and enters another institution then the student is not treated as a dropout. A student who changes courses is not treated as a dropout and student who dropouts and returns at a later stage is accounted for in the study, and is not counted as a dropout.
- For the National Student Financial Aid Scheme (NSFAS) cohort study, data from NSFAS are matched with the filtered HEMIS data following the same criteria as with the mainstream cohort. The year in which the student received the loan does not influence the cohort, neither the number of years the student received a loan. All first time entering undergraduate students, who received a loan during their studies, are tracked, irrespective of the loan year or number of years.

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METHODOLOGY

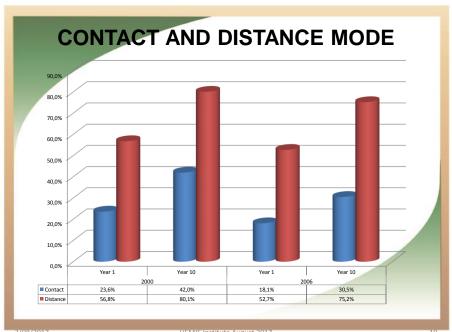
- During 2003 to 2005 the public higher education landscape underwent a
 transformation with the merger of a number of institutions taking place.
 During this process the number of public higher education institutions
 decreased to 23. At this time there were instances where course codes
 and entrance categories were changed and South African Identity
 numbers were not useable. In this study these records were taken out of
 the equation.
- In 2013, two new universities, Sol Plaatje University (SPU) in the Northern Cape Province and the University of Mpumalanga (UMP) in Mpumalanga Province, were established as comprehensive universities with their first intake of students in 2014. A third comprehensive university, Sefako Makgatho Health Sciences University (SMU) was established in 2014, and opened its doors in 2015 to its first cohort of students. The MEDUNSA campus of the University of Limpopo was incorporated into SMU. The first cohorts of SPU and UMP are included in the 2014 first time entering cohorts.

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CONTACT AND DISTANCE MODE

- The cohort studies reveals in very stark terms that students entering into distance higher education, while gaining access to higher education, have a very low chance of success.
- It is acknowledged that students entering into distance education are most likely to be studying part time, and therefore will take longer than the minimum time to complete the qualification. Taking this into account ten years of data is required.
- The latest year for which 10 years of data is available is 2006, therefore while the tables all show the cohort data up to the 2014 cohort, the 2006, cohort is taken as a point of comparison



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CONTACT AND DISTANCE MODE

- While the drop out rates has improved (decreased) for both contact and distance mode of delivery, the dropout rate for distance education is unacceptably high. The extremely low throughput in distance tuition qualifications after 10 years of study is a cause for grave concern, especially given that the proportion of enrolments in distance education are high.
- Distance education and new open learning modes have been identified
 as a possible way to enable growth in the higher education sector and to
 create greater access to post-secondary education studies at universities
 and technical and vocational education and training colleges. However,
 access without a reasonable chance of success is not productive for the
 individual or the country.
- It will be important to understand the factors influencing the poor throughput rates in distance education. The public distance education providers, particularly UNISA, must undertake research to understand the underlying causes of the high dropout rate and to indentify interventions that must be implemented to improve it.

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QUALIFICATION TYPES

National total % dropout and graduates for 3 year diplomas (contact and distance)

NATIONAL TOT	AL: CONTAC	T + DISTA	NCE						
Intake year				DRO	POUTS (%)			
(Year 1)	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2000	42.2	49.3	53.3	56.1	57.4	58.7	58.7	58.0	58.0
2001	43.1	54.1	56.4	58.1	61.5	62.0	61.4	61.4	60.5
2002	44.9	50.4	50.0	56.6	57.9	57.8	57.8	56.6	55.9
2003	33.5	43.9	49.0	53.1	53.9	53.8	52.4	51.5	51.0
2004	35.0	45.9	48.2	51.8	52.5	51.4	51.0	50.3	49.1
2005	33.4	43.4	44.3	46.9	47.0	46.7	46.1	45.0	45.3
2006	35.6	43.9	44.2	46.3	46.6	46.6	45.6	45.9	45.5
2007	33.6	40.9	40.7	43.7	44.3	43.8	44.1	43.8	
2008	31.6	38.5	39.2	42.1	42.4	43.0	42.6		
2009	24.7	32.5	33.2	35.2	36.7	36.9			
2010	23.9	33.1	31.4	35.5	36.9				
2011	25.0	32.2	32.6	35.8					
2012	23.3	33.0	32.5			D	ata not av	ailable	
2013	22.4	29.6							
2014	22.2								
2015									

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Intake year	GRADUATES (%)										
(Year 1)	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10			
2000	12.2	20.2	25.4	28.2	30.3	31.8	33.0	34.1			
2001	12.0	19.1	23.1	26.2	28.0	29.5	30.6	31.6			
2002	15.4	22.0	27.4	30.3	32.2	33.7	34.9	36.1			
2003	15.5	24.8	30.6	33.8	35.9	37.4	39.0	40.2			
2004	15.0	24.4	30.8	34.6	37.0	38.9	40.4	41.7			
2005	15.3	25.9	33.3	37.7	40.6	42.6	44.4	45.9			
2006	15.3	26.0	33.2	37.7	40.6	42.8	44.6	46.2			
2007	14.9	25.6	33.4	38.2	41.6	44.3	46.4				
2008	13.7	25.4	33.8	39.3	43.1	45.8					
2009	15.4	29.4	39.2	45.7	49.7						
2010	17.2	30.9	40.8	46.7							
2011	16.8	30.8	40.6								
2012	17.0	30.9			D	ata not av	ailable				
2013	20.9										
2014											

distance		•		graduat		•	•	•	
NATIONAL TOT	AL: CONTAC	T + DISTAN	ICE						
ntake year				DRO	POUTS (%)			
(Year 1)	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2000	24.5	27.5	32.0	35.2	37.0	38.2	39.4	39.6	39.9
2001	21.0	28.5	33.4	36.8	39.0	40.8	41.3	41.3	41.3
2002	23.5	31.3	35.8	39.1	41.5	42.5	42.9	42.5	42.5
2003	22.5	29.9	34.4	38.3	40.4	41.1	40.8	40.7	40.9
2004	22.3	29.4	33.9	36.9	38.3	38.5	38.6	38.8	38.2
2005	20.7	28.0	31.1	33.1	33.9	34.8	35.2	34.5	35.2
2006	23.0	28.6	31.4	33.0	34.0	34.8	34.3	35.2	35.5
2007	22.6	27.5	29.8	32.0	33.4	33.3	34.7	35.0	
2008	20.7	25.8	28.0	29.8	30.2	31.9	32.4		
2009	20.1	25.4	28.1	28.6	30.8	31.6			
2010	18.6	24.2	25.5	28.1	29.1				
2011	19.7	23.4	27.3	29.4					
2012	16.7	23.3	25.9						
2013	17.5	22.4			D	ata not av	ailable		
2014	17.0								

Intake year	GRADUATES (%)									
(Year 1)	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10		
2000	19.2	33.9	42.7	47.1	49.7	51.2	52.4	53.4		
2001	19.4	32.6	40.9	45.2	47.6	49.2	50.5	51.4		
2002	19.3	32.5	40.8	44.8	47.2	48.6	49.7	50.6		
2003	18.9	32.9	41.0	45.3	47.7	49.3	50.6	51.6		
2004	19.7	33.7	42.4	46.7	49.3	51.0	52.3	53.5		
2005	21.9	37.1	46.2	50.7	53.5	55.1	56.5	57.6		
2006	20.3	35.1	44.4	49.1	51.9	54.0	55.8	57.1		
2007	19.2	34.0	43.9	49.0	52.5	54.7	56.4			
2008	20.5	36.1	46.2	51.9	55.3	57.5				
2009	18.8	35.1	46.0	52.0	55.7					
2010	21.5	39.0	50.3	55.8						
2011	20.9	38.0	48.9							
2012	22.9	40.5								
2013	26.6				ata not av	ailable				
2014										
2015										

minimum	duration	1 OT 4 YE	ears or n	nore (Co	ontact a	na Dista	ince		
ntake year				DRO	POUTS (%)			
Year 1)	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2000	22.5	28.4	33.5	36.5	36.8	38.0	38.6	38.2	38.3
2001	21.7	28.9	32.4	35.2	37.1	38.1	37.7	37.7	36.9
2002	18.9	26.5	29.3	32.9	34.7	34.8	34.6	33.9	33.6
2003	20.6	27.3	30.2	33.2	34.6	34.6	33.9	33.8	33.3
2004	18.1	23.8	27.2	29.4	30.5	30.3	30.1	30.1	29.4
2005	17.0	23.8	27.0	29.3	30.1	30.8	31.0	30.2	30.8
2006	19.6	24.2	26.6	27.8	28.5	28.6	28.0	28.5	28.2
2007	19.2	23.3	25.2	27.0	27.6	27.3	27.8	27.8	
2008	16.6	20.2	21.7	23.1	23.2	24.3	24.1		
2009	16.8	20.9	22.4	23.4	25.1	25.6			
2010	16.5	21.4	23.0	25.8	27.2				
2011	18.4	22.5	26.5	28.7					
2012	16.6	24.5	27.7						
2013	16.2	21.5			D	ata not av	ailable		
2014	16.1								

Intake year	GRADUATES (%)										
(Year 1)	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10			
2000		31.3	41.2	48.5	51.6	53.4	54.7	55.8			
2001		30.6	41.3	48.6	51.8	53.6	55.0	56.1			
2002		32.9	44.9	52.0	55.2	57.2	58.6	59.6			
2003		32.0	44.3	51.9	55.3	57.2	58.6	59.7			
2004		32.9	46.9	55.5	59.4	61.5	62.8	64.0			
2005		31.4	45.2	53.2	57.0	59.0	60.8	62.2			
2006		33.0	47.0	55.9	60.0	62.3	64.3	65.7			
2007		32.6	47.0	55.8	60.2	63.0	64.9				
2008		35.5	50.9	60.4	65.0	67.6					
2009		33.3	48.7	58.2	63.1						
2010		31.8	46.5	56.2							
2011		29.0	43.4								
2012		29.5									
2013				D	ata not ava	ailable					
2014											
2015											

QUALIFICATION TYPES

- It is noted that students entering degree studies have better throughput rates than their counterparts entering 3 year diploma and the students entering degree studies of 4 or more years outperform their counterparts entering 3 year degree studies.
- The 4 or more year degrees include programmes such as law, engineering and medicine. Competition for places are high and students with high level results in their school leaving qualifications are accepted into these programmes.
- It is noted that the throughput rates of the African and Coloured students are markedly lower than that of their Indian and White counterparts and as a result this is of major concern to the department. This is a major transformation issue for the system.

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SPECIFIC QUALIFICATIONS

- The cohort study also covers three specific professional and/or technical qualifications, the Bachelor of Education, the engineering qualifications and the MBChB.
- The MBChB qualification has very high throughput rates when compared to all other qualifications. We still need to expand this study to look at the throughput by population group and gender, however it is not expected that the results of such a study would differ significantly as it is recognised that the entry requirements for the MBChB are demanding and only school leavers with excellent school leaving results gain access.
- In comparision the Bachelor of Education, which is the four year professional qualification for teaching, shows a much lower throughput rate than the MBChB. However, it does still have a better throughput rate than the overall throughput rate for the 4 year bachelor's degrees.

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SPECIFIC QUALIFICATIONS

- The engineering qualifications are broken into 3 year qualifications (mainly diplomas) and the 4 year professional qualification. The 3 year qualifications have a much lower throughput rate than the 4 year professional qualification. All cohorts in the 4 year professional engineering degree, while having a lower throughput rate than their counterparts in the MBChB, have higher throughput rates than those of the Bachelor of Education.
- Students in the life and physical science cohorts outperform their counterparts in the general 3 year qualifications but have significantly lower throughput rates than students in the 4 year life and physical science degrees.
- These cohort studies are limited because they do not provide disaggregated data by mode of delivery, population group and gender. Such work is necessary to really identify blockages to success and to ascertain effective interventions to work towards improved success and efficiencies in the system.

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NSFAS National total % dropout and graduates for students who received DHET NSFAS funding (contact and distance) NATIONAL TOTAL: CONTACT + DISTANCE DROPOUTS (%) Intake year (Year 1) Year 7 Year 8 Year 2 Year 4 Year 5 Year 6 Year 9 Year 10 2000 2001 2002 2003 2004 32.6 2005 16.7 23.4 27.9 31.2 31.3 31.8 17.7 22.9 25.1 28.3 28.5 29.2 28.5 2006 29.2 29.7 27.3 27.8 2007 17.8 21.1 22.7 26.0 27.5 27.4 2008 14.7 18.5 20.2 23.5 24.3 25.4 25.2 2009 14.1 17.9 19.6 21.3 23.5 24.0 2010 12.1 16.4 16.2 20.3 22.1 16.6 2011 12.8 18.4 21.7 18.3 2012 11.4 17.7 2013 11.9 15.7 Data not available

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2014 2015

	100		110	FAS						
Intake year	GRADUATES (%)									
(Year 1)	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10		
2000										
2001										
2002										
2003										
2004										
2005	11.6	29.6	42.0	48.6	52.5	55.1	57.2	59.		
2006	13.0	31.7	44.0	50.9	55.2	58.2	60.6	62.		
2007	12.8	31.2	44.6	52.2	57.2	60.5	63.0			
2008	12.9	32.9	47.2	55.4	60.2	63.5				
2009	13.5	35.3	49.9	58.3	63.1					
2010	16.6	39.0	54.2	62.2						
2011	15.3	38.6	53.5							
2012	16.8	40.8								
2013	18.9				ata not av	ailable				
2014										

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NSFAS COHORT STUDY

- Two studies were undertaken, one looking at DHET NSFAS funding and the other the Thuthuka funding. In comparing the dropouts and throughputs of the students who received DHET NSFAS funding with the students who received Thuthuka funding, a stark difference is noted.
- 26.2% of the students in the 2006 cohort who received Thuthuka funding had graduated after 3 years of study, 78.7% after 6 years of study, and 85.8% after 10 years of study. In comparison 50.9% of students in the 2006 cohort who received DHET NSFAS funding had graduated after 6 years of study, and 62.5% after 10 years of study.
- This study has shown that the throughput of students who as some point in time received financial assistance have performed better than the national cohort.

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CONCLUSION

- The report shows that there is a marked difference in the dropout and throughput rates in contact and distance education and highlights the need for further research to properly understand the reasons behind the very poor chances of success for students registered on distance education programmes. If it is contemplated that in order to reach the NDP targets of 2030, distance and open learning could be utilised to grow enrolments in the system, interventions will need to be identified that will ensure that access to higher education is matched with a reasonable chance of success.
- Transformation imperatives in the system are also challenged by the differential success according population groups, with African and Coloured students fairing very poorly when compared to their White and Indian counterparts.
- The differential performance by gender, with female students outperforming male students in all undergraduate cohort studies has also been highlighted in the study.

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CONCLUSION

- In most instances there has been an improvement in the throughput rates and it should be noted that a number of interventions have been implemented by the Department and other role-players to address the high dropout and low throughput rates in recent years. These interventions range from:
 - increased NSFAS funding;
 - significant investments in infrastructure, including student housing;
 - foundation provision to enable extended programmes;
 - teaching development grants (phasing out December 2017) directed towards activities to enhance student success, for example the first year experience programmes implemented by many universities; academic development programmes and tutorial and mentoring programmes;7
 - going forward in 2018 the University Capacity Development Grant (UCDG).

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CONCLUSION

- Planning a supplementary report which will analysed further the population and gender cohort studies by mode of tuition.
- The specific studies on the qualifications will also be analysed further by mode of tuition
- The specific studies by the classification of educational subject matter, that is by Business and Commerce, Humanities, etc will also need to be analysed by mode of tuition.

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