A comprehensive view of full- and part-time NSC candidates 2014-2017

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This report investigates how many NSCs (and NSCs with a Bachelors-level pass) are produced each year during the 2014 to 2017 period, using NSC microdata which include *all* results, including supplementary and Multiple Examination Opportunity (MEO) results, and the subject results of part-time candidates. The analysis is a bit complex because youths repeat, some even obtaining the NSC more than once, meaning one has to track the reappearance of the same person in a later year. The conclusion is that over and above the 'headline' statistics released each year in the year-end examinations report of the DBE, currently around 35,000 additional NSCs are produced by the system (last column of Table 6 below). This figure removes the effect of duplicate NSCs, of which there are around 4,000 per year. This 35,000 achievement is largely 'under the radar' as there is virtually no public reporting on this. An aim of the current report is to bring the additional NSCs more integrally into national reporting systems. If one does not, we are essentially under-stating achievements.

What does the 35,000 figure consist of? Around half of this is due to part-time candidates qualifying for the NSC, while half comes out of the full-time candidates, though some of these full-time candidates are repeating as full-time candidates because they initially failed to obtain the NSC. Moreover, around 12,000 of the 35,000 achieve the NSC at the Bachelors level (Table 7).

1 Introduction

The current report aims to plug some important gaps with respect to our knowledge around the acquisition of the NSC. It is important to bear in mind that the number of 'Matrics' highlighted by the DBE, and widely quoted in the media, refers to *full-time candidates who obtained the NSC in their first attempt.* The high-profile published numbers exclude the impact of the supplementary examinations written early in the following year. They also exclude NSCs obtained by part-time students. The number of part-time examination candidates has increased dramatically in recent years, from around 1,000 in 2008 to around 173,000 in 2017. The current report thus attempts to answer a critical question: How many NSCs *in total* are obtained per year in recent years in the public examination system?

2 The data

For the analysis that follows, *complete* full-time *and part-time* results data were obtained. The data are complete in the sense that they include all changes arising out of disputes, all supplementary examination results, and all results obtained in the June examinations for 'MEO students' (applicable since the 2015 cycle). Specifically, the format of the data is known as Report 343.

3 Results

The first table provides headcounts from the eight data sources for the four years and for full-time (FT) and part-time (PT) students. The great majority of students have unique 13-digit national ID numbers. Overall, 96.5% do. Moreover, it is possible to construct unique 'pseudo-IDs' for nearly all the remaining students if one uses date of birth, surname, initials and gender. This leaves only 0.1% of students with no ID at all to allow for linking across datasets. The examination number of each student cannot be used for this as a new number is

issued when a student re-enrolls in another year. If one excludes the 0.1% of records with no ID at all, one finds that there are 2.6 million youths approximately who participated in the examinations in the 2014 to 2017 period (last column). The figure of just over 3 million in the first column is higher because it includes duplicates.

Table 1: Headcount summary

Data source	Count with duplicates	With 13-digit ID	With pseudo-ID	No ID	Count if first-time appearance (only if some ID available)
2014 FT	547,982	519,777	28,000	205	547,777
2014 PT	118,776	114,631	3,713	432	118,344
2015 FT	667,580	641,293	26,130	157	645,808
2015 PT	115,093	111,334	3,277	482	37,818
2016 FT	674,303	652,469	21,629	205	643,951
2016 PT	130,192	126,946	2,773	473	16,717
2017 FT	630,117	615,280	14,741	96	595,893
2017 PT	160,893	157,200	3,127	566	10,265
Totals	3,044,936	2,938,930	103,390	2,616	2,616,573

The next table (Table 2) illustrates how the same students repeat participation in different years. In each row, the first value is the number of students found in, say, the '2015 FT' data source – here the number is 667,423[1]. None of these students are found in the 2015 part-time data (as one would expect), hence the next column carries a value of zero, but they appear again in the full- and part-time data of the following two years. For instance, 76,260 were part-time students in 2016. In Table 2, the 0.1% of students with no ID are left out. There can be duplication of students across rows. For instance, some of the 667,423 students in the 2015 full-time examination would take the full-time examination again in 2016, and would thus be included in the 674,098 figure in the row '2016 FT'.

Table 2: Examination writers* with *duplication across data sources

	2014 FT	2014 PT	2015 FT	2015 PT	2016 FT	2016 PT	2017 FT	2017 PT
2014 FT	547,777	0	20,106	59,847	4,642	26,774	2,738	16,374
2014 PT		118,344	1,509	16,946	1,197	7,667	655	4,034
2015 FT			667,423	0	24,602	76,260	6,300	38,718
2015 PT				114,611	1,221	16,490	1,344	8,337
2016 FT					674,098	0	24,932	92,419
2016 PT						129,719	1,486	19,398
2017 FT							630,021	0
2017 PT								160,327

↓ Row headings indicate year *first* appearing.
→ Column headings indicate all years appearing.

If one counts within each row of the table learners appearing for the first time only, one gets the next table (Table 3). Here the number of 2015 full-time examination writers is 645,808. The 21,615 difference between this and 667,423 from the previous table represents repeaters, meaning students who participated in both the 2014 and 2015 full-time examinations.

[1] This 667,423 is the 667,580 from Table 1, minus the 157 students with no ID.

Table 3: Examination writers* without *duplication across rows

	2014 FT	2014 PT	2015 FT	2015 PT	2016 FT	2016 PT	2017 FT	2017 PT
2014 FT	547,777	0	20,106	59,847	4,642	26,774	2,738	16,374
2014 PT		118,344	1,509	16,946	1,197	7,667	655	4,034
2015 FT			645,808	0	24,088	74,292	6,063	37,381
2015 PT				37,818	220	4,269	260	2,049
2016 FT					643,951	0	24,309	88,620
2016 PT						16,717	103	1,604
2017 FT							595,893	0
2017 PT								10,265
Total	547,777	118,344	667,423	114,611	674,098	129,719	630,021	160,327

↓ Row headings indicate year *first* appearing.
→ Column headings indicate all years appearing.

Table 3 provides numbers of NSCs obtained. All NSCs obtained more than once by the same student are excluded. There are a significant number of cases where a student obtains the NSC more than once – for instance 4,497 obtained the NSC as full-time students in both 2014 and 2015[2]. In Table 4 the *first* occurrence only is counted. Totals are provided in Table 5. Total NSCs obtained in the full and part-time cycles is thus 1.8 million. Importantly, the NSCs obtained as a result of a part-time participation were calculated specifically for this report using the three NSC criteria[3], as there is no data on when the NSC is obtained in the part-time data. This continues to be a major gap in the available data. Where the relevant data are situated has been documented previously. Thus the part-time NSC figures seen in the following tables reflect *qualifying* for an NSC, not necessarily *obtaining* the NSC. A student may not know that he or she qualifies, or may for some other reason not formally apply for the certificate. When part-time NSC results were calculated, obviously subject results from all previous years (but going back to 2014 only), whether in the full- or part-time data, were taken into account. Of course, the fact that data before 2014 are not considered would mean that part-time successes would be under-estimated as earlier subject-specific credits would not be taken into account.

***Table 4: NSCs obtained* with no duplication**

	2014 FT	2014 PT	2015 FT	2015 PT	2016 FT	2016 PT	2017 FT	2017 PT
2014 FT	412,705	0	9,599	4,115	2,527	2,759	1,559	1,177
2014 PT		581	1,179	98	941	95	516	31
2015 FT			461,556	0	10,910	4,387	3,308	2,919
2015 PT				5,075	759	1,289	917	500
2016 FT					455,344	0	10,363	4,046
2016 PT						7,484	766	1,557
2017 FT							406,864	0
2017 PT								8,086
Total	412,705	581	472,334	9,288	470,481	16,014	424,293	18,316
Official	**403,874**		**455,825**		**442,672**		**401,435**	

↓ Row headings indicate year *first* appearing.
→ Column headings indicate when the NSC was obtained.

[2] A key reason for doing this would be to improve one's marks.
[3] Home language mark of at least 40, at least 40 in at least two other subjects, at least 30 in altogether six subjects (meaning one may fail one subject). The 'manual' calculation of NSCs for part-time students was also performed for full-time only students, and results matched almost perfectly. There are some cases where the full-time results data indicate an NSC obtained when the calculation does not. This was where some form of condonation occurred as students were close to fulfilling the three criteria. These condonations were not implemented for part-time students, meaning the results for part-timers reported here would be a slight under-statement.

Table 5: Total NSCs from Table 4

	Full-time columns only counted	Part-time columns only counted	Total
2014 FT	426,390	8,051	434,441
2014 PT	2,636	805	3,441
2015 FT	475,774	7,306	483,080
2015 PT	1,676	6,864	8,540
2016 FT	465,707	4,046	469,753
2016 PT	766	9,041	9,807
2017 FT	406,864	0	406,864
2017 PT	0	8,086	8,086
Total	1,779,813	44,199	1,824,012

So what do these figures tell us? The officially announced full-time passes for the four years come to 1,703,806 NSCs – this is sum of the four figures in the last row of Table 4, and is also seen in Table 6 below. If one counts full-time students who obtained the NSC in the *same* year, one gets a total of 1,736,469, which is 32,663 higher than the official total for the four years (this difference appears in Table 6). This reflects students who improve their results through the supplementary examinations, or the special examinations for Multiple Examination Opportunity (MEO) students available since 2015. This 32,663 is an under-statement, because the 1,703,806 is an *over*-statement insofar as some students are counted more than once, specifically those who obtained the NSC more than once. If one then also adds students enrolling first as full-time students, but where the NSC is obtained in a subsequent year, either via full-time or part-time participation, one arrives at an additional 57,669 students. At this point one can say that the official figures under-stated the number of NSCs by 90,332. This figure would increase in future years as students enrolled first in 2017 (or even earlier) achieve the NSC. Finally, if one adds students whose first appearance in the data is as part-time students, one gets an additional 29,874 NSCs. This then gives one the final grand total of 1,824,012 seen in both the previous and next table. This is 120,206 higher than the official total for the four years. This is the number of NSCs that have, in a sense, been 'under the radar' as far as public reporting is concerned. Again, an important caveat is needed. One would need to verify the degree to which the 44,199 part-timers qualifying for the NSC (see Table 5) actually obtained the certificate. On the other hand, this 44,199 is an *under*-statement insofar as it does not take into account any condonations, and does not take into account results from years before 2014.

Table 6: Difference between official and final actual

	Official (contains duplicates across years)	Add additional NSCs for full-time in same year	Add additional NSCs obtained in later years (full-time or past-time in later years)	Add students whose first occurrence is part-time in this year	Total without any duplicate NSCs	Difference between previous and first column
2014	403,874	8,831	21,736	3,441	437,882	34,008
2015	455,825	5,731	21,524	8,540	491,620	35,795
2016	442,672	12,672	14,409	9,807	479,560	36,888
2017	401,435	5,429	0	8,086	414,950	13,515
Total	1,703,806	32,663	57,669	29,874	1,824,012	120,206

The final column of Table 6 indicates that around 35,000 'under-the-radar' NSCs are 'produced' each year. The 2017 row reflects a lower value, of 13,515, simply because many students first enrolling for the examinations in 2017 have not obtained their NSC yet.

However, patterns for the previous years suggest that as soon as in the 2018 examination cycle, this 13,515 figure will rise to around 35,000. Importantly, around 17,000 students per year end up obtaining (or at least qualifying for) the NSC as part-time students (see the figures 16,014 and 18,316 in the second-last row of Table 4). Thus we can say that around half of the 35,000 under-the-radar figure is accounted for by students achieving the NSC through part-time participation.

Finally, Table 7 is like the previous table, except here only NSCs with a Bachelors-level (the level required to enter Bachelors studies at a university) are counted. The procedure for arriving at this table is along the lines of the procedures which led to Table 6. The under-statement represented by the official figures came to around 8% for the years 2014 to 2016, whether one focusses on NSCs in general, or just NSCs with a Bachelors-level. Around 12,000 additional Bachelors-level passes per year are found if one takes into account all ways of obtaining the NSC.

Table 7: Difference between official and final actual (Bachelors-level only)

	Official (contains duplicates across years)	Add additional for full-time in same year	Add additional obtained in later years (full-time or past-time in later years)	Add students whose first occurrence is part-time in this year	Total without any duplicates	Difference between previous and first column
2014	150,752	917	9,486	1,067	162,222	11,470
2015	166,263	972	8,540	4,329	180,104	13,841
2016	162,374	1,161	6,284	4,611	174,430	12,056
2017	153,650	-773	0	3,650	156,527	2,877
Total	633,039	2,277	24,310	13,657	673,283	40,244