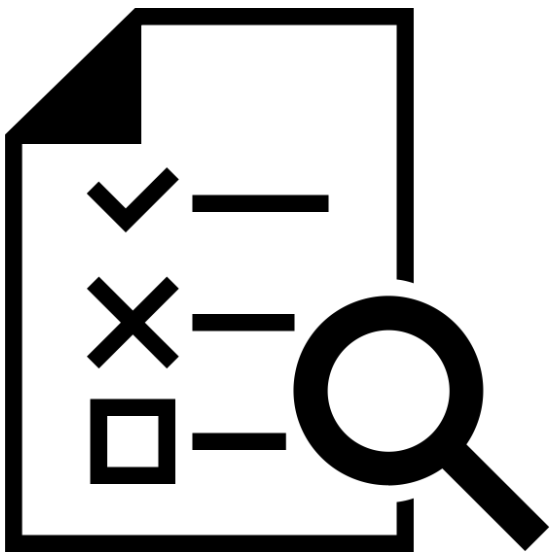


What are the matric marks of those entering ITE programmes?

Irene Pampallis (10 Nov 2022)



1. Overview

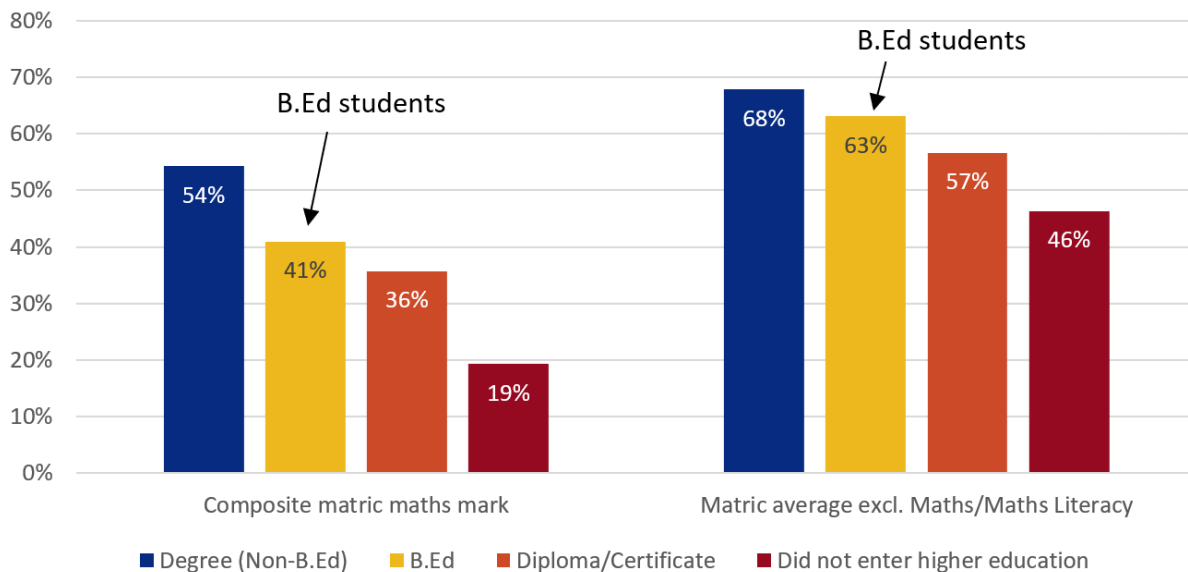
In devising recruitment plans to meet the projected teacher demand in the coming decade, it is helpful to consider who chooses to enter initial teacher education (ITE) programmes. An important metric to consider is how the high school results of education students compare to those of students in other degree programmes. This note compares the National Senior Certificate (NSC) results of Bachelor of Education (B.Ed) students to students in other degree programmes. Implications for the quality of teaching graduates are considered.

What are the NSC (matric) scores of those who choose to become teachers?

B.Ed students perform poorly in matric mathematics, particularly compared to those who enrol in other degree programmes. This can be seen in Figure 1, which shows the matric marks of B.Ed candidates compared to those in other programmes. Using data linking matric performance and university enrolment (HEMIS) for students from the 2008-2015 matric cohorts, one can see that those who enrolled in B.Ed degrees achieved an adjusted average of 41% for mathematics in matric, compared with 54% for students in other degree programmes and 36% for students in diploma or certificate programmes. These figures are based on a composite mathematics mark for all matriculants, which converts Mathematical Literacy marks into Mathematics-equivalent marks, so that all matriculants can be compared on the same scale.¹

There is a similar trend for other non-mathematics subjects although the difference is smaller: A similar pattern was apparent in the marks from candidates' other subjects, although as illustrated in Figure 1, the marks for other subjects were significantly higher than the mathematics marks. The difference between B.Ed candidates and other degree students is also smaller for these other subjects than for Mathematics, which suggests that students entering ITE are stronger in subjects other than Mathematics.

Figure 1: The matric marks of B.Ed candidates compared to those who enrol in other degrees, in non-degree programmes, or who do not enter higher education at all (2008-2015 matric cohorts)

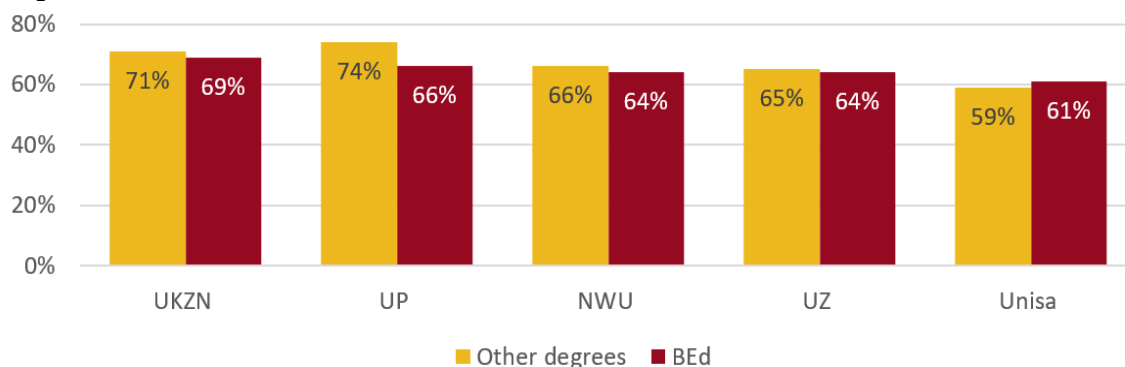


Source: NSC and DHET matched data from 2008-2017. The figures above are based on students who wrote matric in 2008-2015 and who started tertiary studies in or before 2017.

The trends above are confirmed if we consider the matric marks of incoming B.Ed students at the universities which produce the most B.Ed graduates. Figure 2 shows the average matric mark obtained by students enrolling in B.Eds and in other degrees at the five universities which produce the most B.Ed graduates: Unisa, the University of Zululand, North-West University, UKZN, and the University of Pretoria. Together, these five universities produce almost half of all B.Ed graduates in South Africa.² Figure 3 shows the percentage of incoming students at the same five universities who took Mathematics (not Mathematical Literacy) in matric and scored at least 50%. It is clear that while prospective teachers generally have similar academic results to other degree candidates, they are less likely to take mathematics (as opposed to mathematical literacy) and their mathematics results are far weaker. It is particularly alarming to note that at Unisa, which trains far more

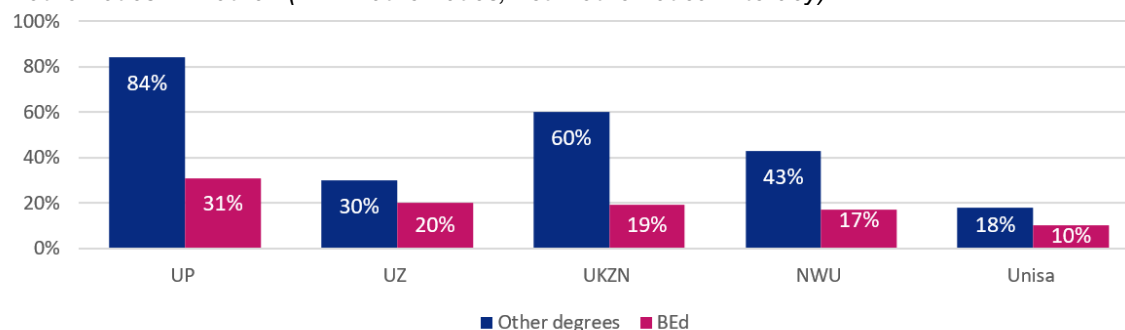
teachers than any other university, only 10% of incoming B.Ed students in the years 2014-2016 took Mathematics in matric and passed with at least 50%.

Figure 2: What was the average matric mark for incoming B.Ed students compared to teachers in other degrees?



Source: Van der Berg et al., 2020, pp. 102-103.³ Based on the 2013 matric cohort, enrolling for degrees in 2014-2016.

Figure 3: What percentage of incoming B.Ed students and other degree students scored 50% or more for Mathematics in matric? (NB: Mathematics, not Mathematical Literacy)

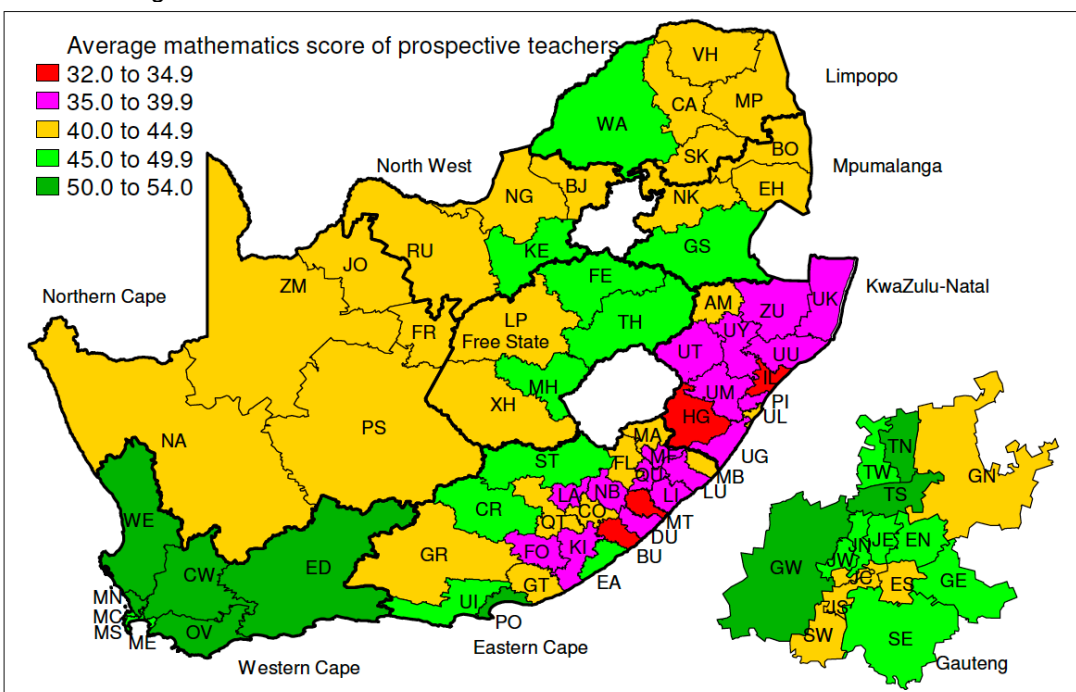


Source: Van der Berg et al., 2020, pp. 102-103. Based on the 2013 matric cohort, enrolling for degrees in 2014-2016.

Strong mathematics skills are vital for teachers, but we are unlikely to attract stronger mathematicians into teaching without improving the standard of matric results overall. Mathematics is essential for all Foundation Phase teachers, as well as teachers who teach mathematical, commercial or scientific subjects in other grades. Furthermore, all teachers require at least basic mathematical skills for assessing their learners. Although B.Ed students are drawn from the lower part of the degree-enrolled distribution at university, they are part of the top-performing matric candidates by virtue of being accepted at university: almost two-thirds of student teachers who took matric mathematics were in the top 25% of achievers in matric nationally.⁴ And as was seen in Figure 1, B.Ed students have higher matric marks than students completing diplomas and certificates, and much higher matric marks than students who wrote the matric exams but did not enter higher education at all. Taken together, these things suggest that there is a shallow pool of alternative high-quality candidates to attract into teaching, unless students that would previously have taken other courses of study choose instead to study teaching. It will be difficult to improve the academic calibre of our prospective teachers without improving matric outcomes more generally or drawing candidates into teaching who would otherwise not have chosen teaching. In the meantime, it is critical that universities address gaps in mathematical skills and mathematical confidence as a part of teacher training.

There is considerable geographic variation in the mathematics scores of matrics who go on to pursue teaching. Existing data linking matric and university data (HEMIS) can also be used to see the distribution of mathematics scores by matric location (i.e. where the student wrote their matric exam). Figure 4 shows that students enrolled in ITE programs who were originally from the Western Cape, Gauteng, and certain districts in other provinces score relatively highly on matric mathematics (again using the composite score which is based on Mathematical Literacy marks as well as Mathematics marks), while students from other parts of the country (notably KwaZulu-Natal and the eastern half of the Eastern Cape) achieve much lower mathematics grades.

Figure 4: Average mathematics scores of matrics who become teachers



Source: Department of Basic Education, 2018, p. 15. This includes people who matriculated in 2008-2011, and who entered Persal as teachers in 2013-2017.

Comparing university entry requirements

The entry requirements to B.Ed degrees are on the lower end of the spectrum when compared to other popular university degrees, especially in mathematics. This can be seen in Table 5, which shows the entry requirements of different degree programmes at three universities. The B.Ed is also one of very few degrees that does not require a minimum mark for mathematics or mathematical literacy at many universities (although as can be seen from the Unisa requirements, this is beginning to change). This may funnel students who are weaker academically into teaching programmes, because they do not meet the entry requirements for more selective programmes. These results highlight one possible explanation for the difference between the marks of incoming B.Ed candidates when compared to the marks of other degree candidates.

Table 5: Entry requirements to various degree programmes at three universities

	North-West University (2023 admissions)			University of Pretoria (2023 admissions)			Unisa (2023 admissions)		
	APS*	Maths/ M. Lit.	English	APS*	Maths/ M. Lit.	English	APS*	Maths/ M. Lit.	English
B.Ed FP	26	-	50%	28	-	50%	23	40% M 50% ML	50%
BCom Acc	24	40% M No MLit option	50%	34	70% M No MLit option	60%	21	50% M No MLit option	50%
BA	24**	-	50%	30	-	60%	20	-	50%
BEng#	34***	70% M No MLit option	60%	35***	70% No MLit option	60%	-	-	-
LLB	30	40% M (recommended but not required)	60%	32	-	60%	20	-	50%

*Admissions Points Score **BA Humanities ***Physical Sciences 70% also required #Unisa does not offer BEng degrees
 B.Ed FP: Bachelor of Education (Foundation Phase), BCom Acc: Bachelor of Commerce (Accounting Sciences), BA: Bachelor of Arts,
 BEng: Bachelor of Engineering, LLB: Bachelor of Laws
 Note: For NWU and Unisa other languages than English may also be accepted, depending on the campus and programme.
 Source: University websites and undergraduate prospectuses

Endnotes

¹ The process is outlined in Department of Basic Education (2018). *Grade 12 learners who become teachers: A linking of Matric and Porsal data 2008-2017*. Unpublished report. Pretoria.

² Van der Berg, S., Gustafsson, M., & Burger, C. (2020). *School Teacher Supply and Demand in South Africa in 2019 and Beyond*. Pretoria: Department of Higher Education and Training, pp. 102-103.

³ Van der Berg, S., Gustafsson, M., & Burger, C. (2020). *School Teacher Supply and Demand in South Africa in 2019 and Beyond*. Pretoria: Department of Higher Education and Training.

⁴ Department of Basic Education (2018). *Grade 12 learners who become teachers: A linking of Matric and Porsal data 2008-2017*. Unpublished report. Pretoria, p. 5.