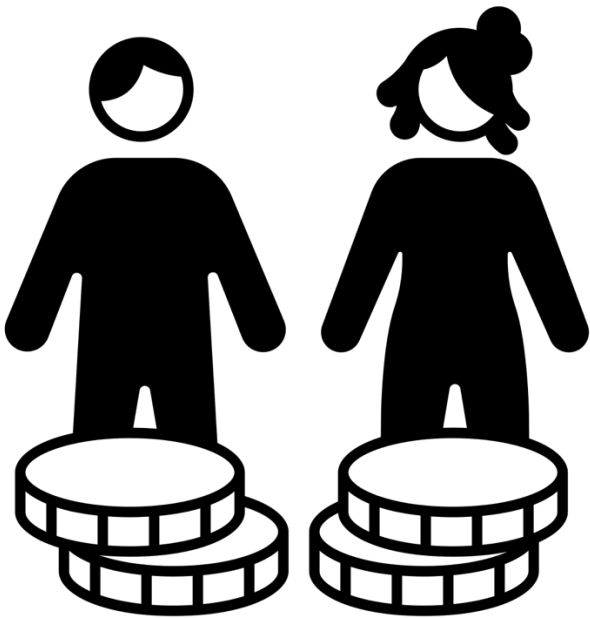


# Where do teachers fall relative to others in the labour market?

Debra Shepherd & Nic Spull (10 Nov 2022)



**Teacher retirements and the relative position of teachers in the labour market.** If there are a large number of teacher retirements in the coming decade, many more teachers will need to be recruited and trained to take their place. Understanding the relative position of teachers in the labour market and how this has changed over time is therefore important if one is to develop strategies to recruit more students (and higher achieving students) into teaching. The cost of teacher salaries and benefits is also important to understand relative to overall budgets allocated to education since increases in salaries and benefits without similar increases in education budgets can erode provinces' abilities to hire more teachers.

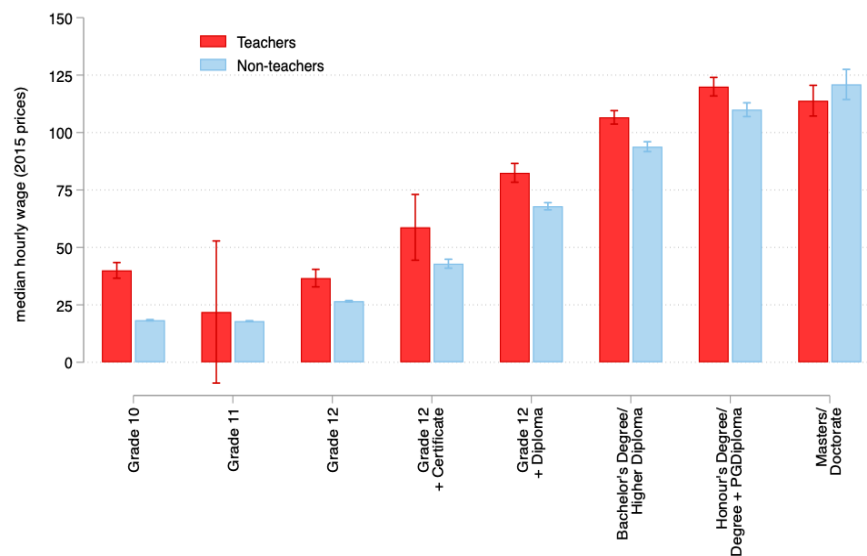
**The average teacher in South Africa is in the top 5% of the income distribution.** Analysis using the teacher salary database (PERSAL) shows that the income of the average publicly employed teacher is R42,668 per month or R512,016 per year in 2019 (inclusive of benefits and before tax, see Note 7). Recent research combining both survey data and SARS tax data shows that in 2016 rands, the income of the top 5% of South Africans was R25,826 per month, and R36,129 for the top 3%.<sup>1</sup> Adjusting for StatsSA headline CPI figures for 2016 and 2019 inflation,<sup>2</sup> the income of the top 5% of earners is R29,596 in 2019 Rands and R41,402 for the top 3% (all pre-tax). This shows that the average teacher's total income and benefits in 2019 was well within the top 5% nationally. It should be noted, however, that South Africa is very unequal with the poorest 60% of the population earning no income from the labour market and only about 30% of South African adults earn income in the formal sector.

**According to the Quarterly Labour Force Survey (QLFS), teachers earn higher hourly<sup>3</sup> median wages than non-teachers for almost all levels of education.** The QLFS data from 2012-2017 show that teachers' median hourly wages are higher than non-teachers for all levels of education except for those with a masters or PhD degree (Figure 1). The vast majority of teachers in the sample (78%) have 14, 15 or 16 years of education. The differences in median hourly wages here are statistically significantly higher for teachers compared to non-teachers.

**Figure 1: Median hourly wages of teachers compared to non-teachers by level of education (QLFS 2012-2017)**

Source: own calculations using PALMS data, 2012 Q3 - 2017 Q4.

Notes: Sample includes individuals aged 21-64 years old with at least 10 years of education. The sample excludes informal sector workers, those earning more than R200,000 per month (2015 prices), the self-employed, and outliers as flagged in the PALMS. Data are weighted.



<sup>1</sup> Bassier, I., & Woolard, I. 2021. Exclusive Growth? Rapidly increasing top incomes amid low national growth in South Africa. UNU-WIDER Working Paper. Available: <https://www.wider.unu.edu/publication/exclusive-growth>, Table 3 (p 8). Note that all annualized figures have been presented as monthly totals to make them comparable.

<sup>2</sup> Available: <https://www.statssa.gov.za/publications/P0141/CPIHistory.pdf>

<sup>3</sup> Hourly wages are chosen to be consistent with prior work on this topic: Armstrong, P. (2015). Teacher pay in South Africa: How attractive is the teaching profession? Department of Economics Working Paper, (04/09). Stellenbosch: Stellenbosch University; Van der Berg, S., & Burger, R. (2010). Teacher pay in South Africa. Department of Economics Working Paper, (26/10). Stellenbosch: Stellenbosch University.

**Using survey data (QLFS) to compare earnings across professions is possible but certain measurement issues must be taken into account.** Most notable of these are under-reporting and imputation.<sup>4</sup> Earnings reported in household surveys tend to be lower, more so in the private sector and at the top end of the earnings distribution where benefits and tax are largest.<sup>5</sup> Changes to the imputation method adopted by StatsSA across the Labour Force Survey (LFS) and QLFSs has complicated cross-time comparisons of earnings.<sup>6</sup> For both these reasons, we can expect teachers' reported earnings in the labour force data to differ from that reflected in PERSAL. We could assume that these issues are no less or more likely to affect teachers' reported earnings than that of others in paid employment. We would still proceed with caution, particularly if the imputation method has introduced systemic bias in earnings estimates.<sup>7</sup>

### **Where do teachers fall relative to other employees in the formal sector and other professionals?**

Trends in average and median earnings disguises an important factor in teachers' pay: what induces an individual graduate to enter the teaching profession is not only pay in teaching but *relative* pay when comparing earnings in teaching with potential 'foregone' earnings associated with an alternative career. The Post-Apartheid Labour Market Series (PALMS)<sup>8</sup> that harmonizes the LFSs and QLFSs is used to compare the relative position of teachers and other public-sector and private-sector employees. Figure 2 below shows that, on average, teachers had higher hourly wages than at least 70% of all formal sector paid-employed people in South Africa in 2017.<sup>9</sup> According to the South African Standard Classification of Occupations (SASCO), teachers fall into either Professional or Associate Professional (PAP) occupation levels. If one compares teachers to other PAPs — for example, engineers, lawyers, architects, nurses, doctors, scientists, accountants, journalists, bookkeepers, clerks, and technicians — we can see that the average teacher lies higher in the wage distribution than the average worker from this broadly classified group of occupations. Compared with *degreed* PAPs — that is, those with a degree or a post-bachelor's qualification — teachers' average position has improved over time and by 2017 had converged on this group's average position.

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<sup>4</sup> Kerr, A., & Wittenberg, M. (2021). Union wage premia and wage inequality in South Africa. *Economic Modelling*, 97, 255-271.

<sup>5</sup> Wittenberg, M. (2017). Wages and wage inequality in South Africa 1994–2011. Part 1: Wage measurement and trends. *South African Journal of Economics*, 85(2), 279–97.

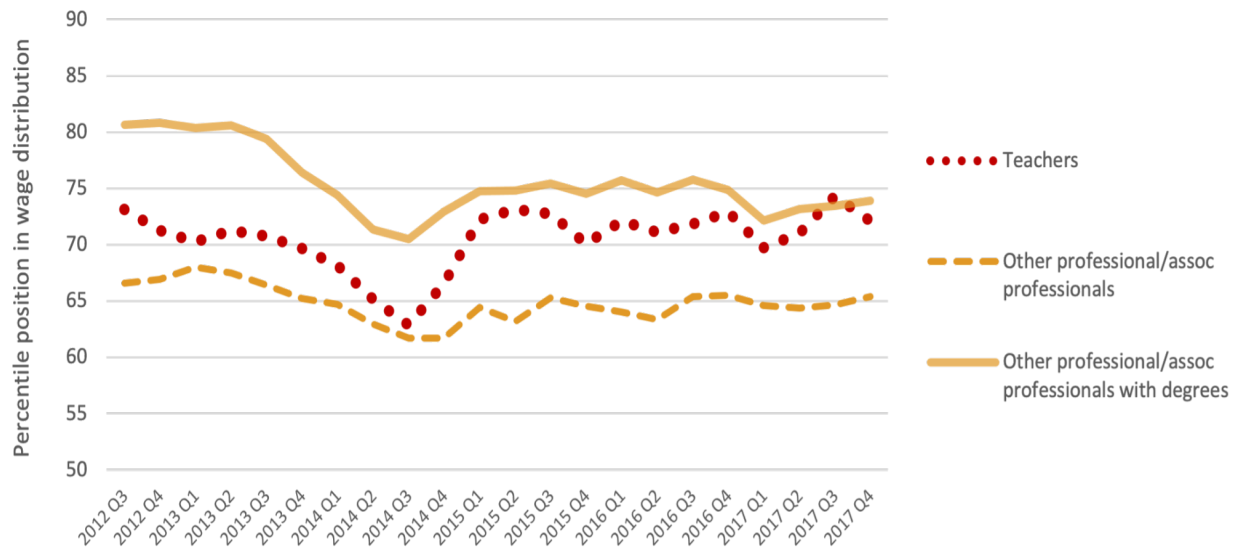
<sup>6</sup> Earnings data in the LFSs are unimputed, whilst data for the QLFSs collected since 2021 Q3 is partially imputed. There is no indication in the data which of the latter is imputed or unimputed.

<sup>7</sup> Requests will be made to access the unimputed QLFS data so that the analysis shown here can be performed excluding imputed data and running consistent imputations for all data.

<sup>8</sup> Kerr, A., Lam, D., and Wittenberg, M. (2019). Post-Apartheid Labour Market Series [dataset]. Version 3.3. Cape Town: DataFirst, University of Cape Town.

<sup>9</sup> We also restrict the analysis to those individuals with at least 10 years of education, which excludes about 15% of the formal sector employed, in predominantly elementary occupations.

**Figure 2: Teachers' and professionals' unconditional pay positions relative to all formal sector wage workers**



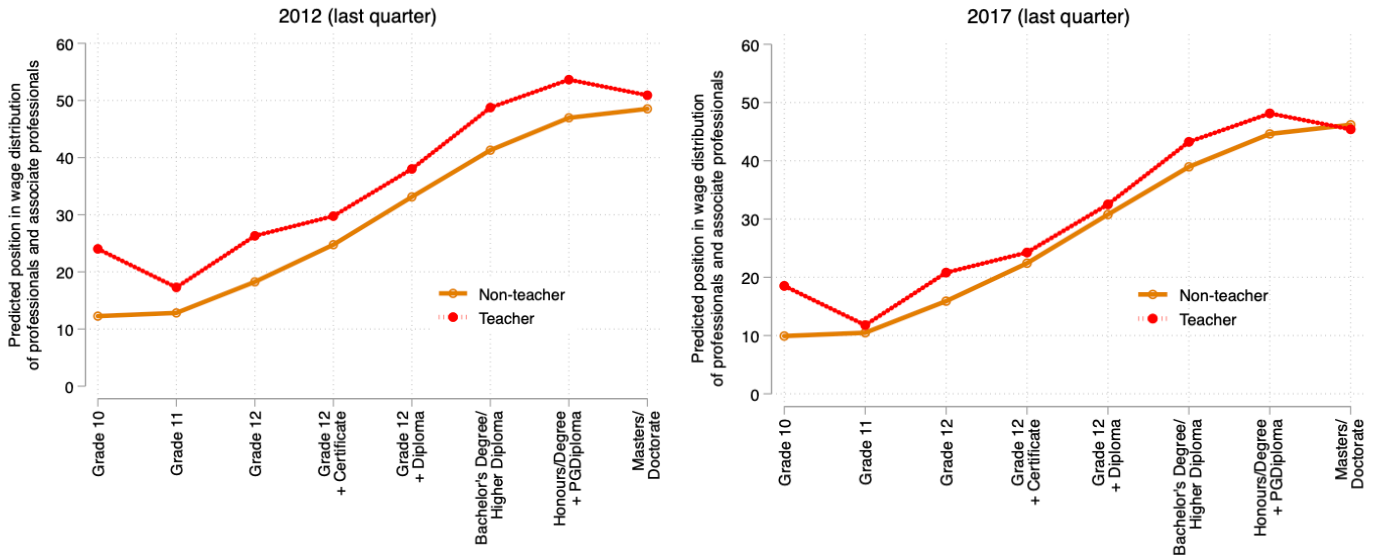
Source: own calculations using PALMS data, 2012 Q3 – 2017 Q4.

Notes: Sample includes individuals aged 21-64 years old with at least 10 years of education. The sample excludes informal sector workers, those earning more than R200,000 per month (2015 prices), the self-employed, and outliers as flagged in the PALMS. Data are weighted.

The trends shown in Figure 2 are unconditional. This means they do not take into account differences in productive and other characteristics. Teachers, especially those teaching in secondary schools, are generally more educated than other workers, even PAPs. Teachers are also older and more likely to be unionised. These characteristics should, on average, put teachers in a favourable earnings position when compared to non-teachers. The demographic profile of teachers also differs in terms of race (greater share of black African and coloured people) and gender (greater share of women), and teachers are less likely to reside in metro areas and more likely to reside in rural areas, especially when compared to those employed in the private sector.

**Adjusting for these differences, teachers' expected position in the wage distribution of professionals and associate professionals (PAP) is not significantly different from what is expected for non-teachers** (Figure 3). This is true for teachers at all levels of education. Teachers with some post-secondary – but not degree equivalent – qualification lie at the 24<sup>th</sup>-32<sup>nd</sup> percentile of the PAP wage distribution; 30% of primary school teachers fall into this education category. Teachers with a degree or postgraduate qualification lie 20 percentage points higher; more than half of primary school teachers and almost all secondary school teachers are at this level of education. The convergence seen in Figure 2 is likely due to an increase in the share of teachers' with higher levels of education. The position of teachers relative to non-teacher PAPs worsened slightly ( $\pm$  3-4 percentage points) between 2012 and 2017 although this change is not statistically significant.

**Figure 3: Teachers' conditional pay positions relative to professionals and associate professionals, 2012 Q4 vs 2017 Q4**



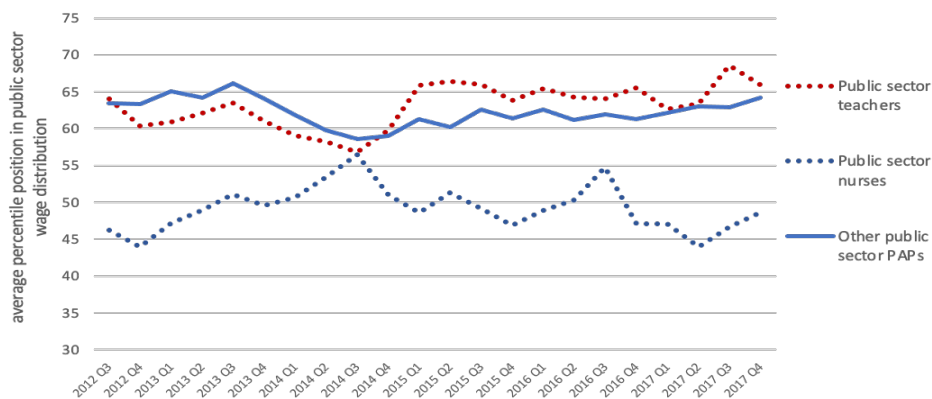
Source: own calculations using PALMS data, 2012 – 2017.

Notes: Sample includes individuals aged 21-64 years old with at least 10 years of education, and employed as a professional or associate professional (PAP). The sample excludes informal sector workers, those earning more than R200,000 per month (2015 prices), the self-employed, and outliers as flagged in the PALMS. Data are weighted. Predictive margins are computed from a tobit regression (lower limit = 0, upper limit = 100), where the dependent variables is the individual's position in the wage distribution of professional and associate professionals as dependent variable, and controls include survey wave, teacher, gender, race, marital status, union status, sector of employment, geographic location type, province, and level of education dummies, as well as potential experience (age - 6 - years of education) mean centered around 10 years.

**Where do teachers fall relative to other public-sector employees and other public-sector professionals?**

If one ranks all public sector employees, the average teacher is at the 65<sup>th</sup> percentile of government employees. The ranking of nurses has tended to oscillate around the 50<sup>th</sup> percentile, whereas other public sector PAPs rank very similarly to teachers. The relative position of teachers increased between 2013/14 and 2015-2017.

**Figure 4: Teachers', nurses' and other professionals' unconditional pay positions relative to all public sector wage workers**



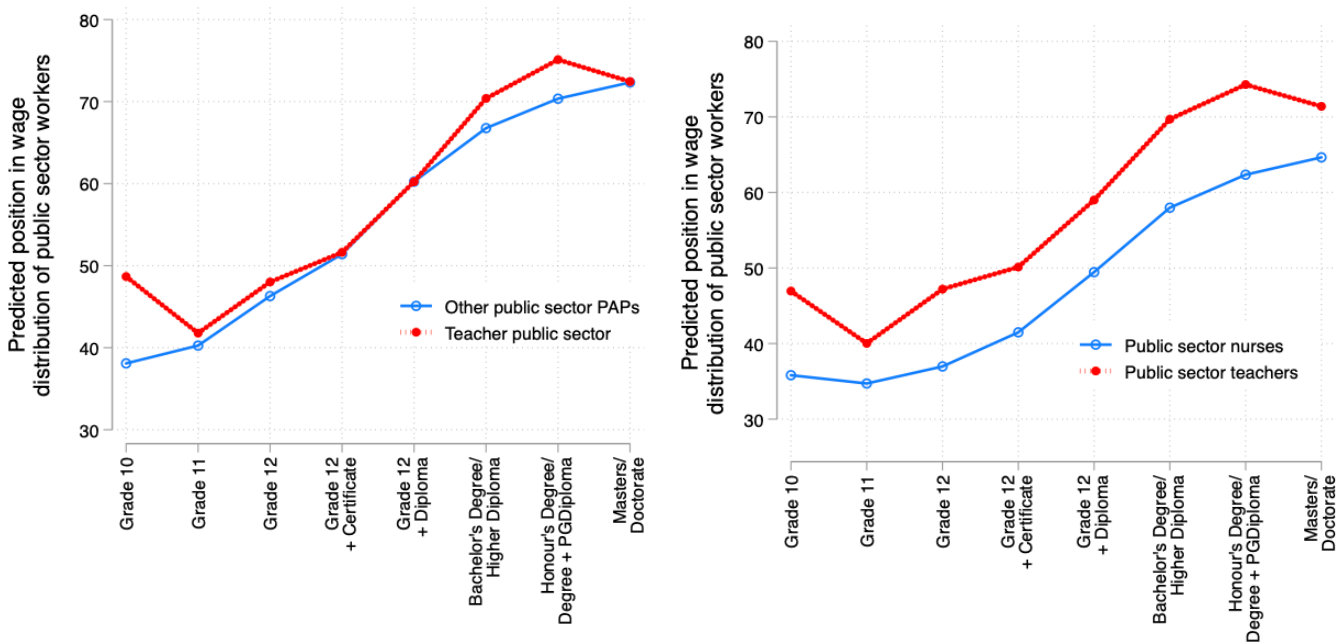
Source: own calculations using PALMS data, 2012 Q3 – 2017 Q4.

Notes: Sample includes individuals aged 21-64 years old with at least 10 years of education and employed in the public sector. The sample excludes informal sector workers, those earning more than R200,000 per month (2015 prices), the self-employed, and outliers as flagged in the PALMS. Data are weighted.

Similar to Figure 3, Figure 5 shows the expected pay position of teachers in the public sector wage distribution after adjusting for differences in productive and sociodemographic characteristics. The average teacher ranks

quite a bit higher in this distribution than they did in the wage distribution of PAPs. **A teacher is not expected to earn any differently from other public sector PAPs with the same level of education**, but the differences between teachers and nurses from "Grade 12 + Diploma" to "Honour's Degree/Degree + PGDiploma" are statistically significant. Put differently, for a given level of education, and similar experience, demographics and geographic location, the average teacher is higher up in the wage distribution than the average nurse.

**Figure 5: Teachers' conditional pay positions relative to other public sector professionals and associate professionals, 2017 Q4**



Source: own calculations using PALMS data, 2012 – 2017.

Notes: Sample includes individuals aged 21-64 years old with at least 10 years of education, and employed in a professional or associate professional (PAP) occupation in the public sector. The sample excludes informal sector workers, those earning more than R200,000 per month (2015 prices), the self-employed, and outliers as flagged in the PALMS. Data are weighted. Predictive margins are computed from a tobit regression (lower limit = 0, upper limit = 100), where the dependent variables is the individual's position in the wage distribution of professional and associate professionals as dependent variable, and controls include survey wave, teacher, gender, race, marital status, union status, sector of employment, geographic location type, province, and level of education dummies, as well as potential experience (age - 6 - years of education) mean centered around 10 years.

**Overall, teachers fall in the 70<sup>th</sup>-75<sup>th</sup> percentile of formal sector pay, and they are expected to rank similarly to other professionals and associate professionals** — both in the private and public sectors — with similar levels of education, experience and demographic characteristics. Earlier analyses<sup>10</sup> of labour force survey data for the 2000-2007 period found the advantage of entering the teaching profession to diminish with educational attainment. This could have served as a disincentive to acquire higher qualifications or remain in teaching. Using more recent labour survey data, this no longer appears to be the case.

<sup>10</sup> Van der Berg, S., & Burger, R. (2010). Teacher pay in South Africa. Department of Economics Working Paper, (26/10). Stellenbosch: Stellenbosch University.