

NO SPACE FOR US



Too few teachers
Too few classrooms
Too many learners

**UNDERSTANDING OVERCROWDING
IN GAUTENG'S SCHOOLS**

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ABBREVIATIONS

ACT

Alternative Construction Technology

DBE

Department of Basic Education

EE

Equal Education

ELRC

Education Labour Relations Council

HoD

Head of Department

EMIS

Education Management Information Systems

GDE

Gauteng Department of Education

NPEP

National Policy On Equitable Provision of an Enabling School Physical Teaching and Learning Environment

NPPPR

National Policy for Promotion and Progression Requirements

PAM

Personnel Administrative Measures

PED

Provincial Education Department

PPN

Post Provisioning Norms

SASA

South African Schools Act

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SUMMARY

Between September 2019 and June 2020, Equal Education's (EE) Gauteng office conducted research into the causes and effects of overcrowding in Gauteng schools.

We began our research at the school level, in nine schools in the Etwatwa area of Ekurhuleni, South Africa.

WE COLLECTED DATA ON



751 classes¹

MEASURED AND INSPECTED



105 classrooms

CONDUCTED OPEN-ENDED INTERVIEWS WITH



51 school community members

In the process of conducting that research, we came to see that school overcrowding needs to be understood in a way that is relational, by looking at the relationship between its different components such as 'too few teachers' and 'too few classrooms', and contextual, by looking at how the effects of overcrowding play out differently in different learning environments.

As our understanding of overcrowding deepened, we drew on the insight of EE high school members (Equalisers), government officials, academics, and researchers in the civil society space to understand the policies and practices that inform how school resources are provided to schools – and why policies that are supposed to distribute resources equitably still lead to persistent overcrowding in many low-resourced schools. Where necessary, we returned to the sample of schools that we visited to supplement our data.

OUR FOUR MAIN RESEARCH

QUESTIONS, AND A SNAPSHOT

OF OUR FINDINGS, ARE:

01 What is school overcrowding in the South African context?

The conditions that exist at any given school are affected by two factors:

- the number of school resources that a school has, such as teachers and infrastructure; and
- the policies and practices that determine whether a school can adapt to changes in enrolment numbers, which we term 'school autonomy'.

A school can be considered overcrowded when – due to a shortage of school resources and/or a lack of school autonomy – at least some class sizes grow to the extent that teachers' and learners' ability to create an effective learning environment is limited.

A shortage of school resources can arise because:

- there are not enough resources to make sure that every class has enough of each resource; or
- the resources that do exist are divided unequally between different classes and schools.

02 Are schools in Gauteng overcrowded?

While the Department of Basic Education (DBE) and the Gauteng Department of Education (GDE) policies are vague, they include guidelines for:

- class sizes, the highest ideal maximum being 40 learners;²
- classroom sizes, which should be big enough so that each learner has 1 m² of space and each teacher has 7 m² of space,³ with no classroom holding more than 40 learners; and
- the amount of time teachers should work, which should average 43 hours each week (1 800 hours each year).⁴



We found that learners are learning in classes that are too big, without enough classrooms of the right size, furniture or teachers.

Overcrowded classes were found at all nine schools.

- Of all the classes assessed across the nine schools, 751 in total, 74% (557) of these have over 40 learners.

At least six of the nine schools have a classroom shortage.

- All nine schools are using classrooms too small for the number of learners they hold.
- 66% (69 of 105) of all classrooms measured are too small.
- Six of the nine schools have to make use of other spaces for teaching, even after mobile classrooms have been added.
- Seven of nine schools reported a classroom shortage.

All schools have teachers that are overworked.

- At least 65% (17 of 26) of all teachers interviewed are overworked based on their teaching schedule.

65% OF TEACHERS
ARE OVERWORKED

Seven of the nine schools visited have an enrolment of at least 15% more learners than the original building was built to hold.

Eight of the nine schools have too little furniture.

- 82% (86 of 105) of classrooms inspected have too little furniture.

82% OF CLASSROOMS
LACK FURNITURE

1. For the purpose of this report, a class is a group of learners who learn together for a specific period. A classroom is the physical building space in which lessons take place. **2.** Annexure A.1. Post distribution model for the allocation of educator posts to schools ('Post-provisioning Norms' or 'PPN') found in Employment of Educators Act: Personnel Administrative Measures: Consolidation of terms and conditions of employment of educators. GN R170 GG 39684, 12 February 2016 ('PAM'). **3.** South African School Act: Regulations Relating to Minimum Uniform Norms and Standards for Public School Infrastructure, GN R920 GG 37081, 29 November 2019 ('School Infrastructure Norms') s 9. **4.** PAM (note 2 above) The 1800 expectation is discussed at A.4.1.5 and C.71.3. The expected teaching time is discussed at A.4.3.

When comparing the situation we encountered in schools with the statistics reported by the GDE and DBE, we learned that **the measurements used by the DBE and GDE to assess whether there is a shortage of resources, and to allocate more resources to schools, are inadequate and do not reflect the reality in schools.**

The DBE and GDE method of measuring whether schools are overcrowded shows:

None of the nine schools have class sizes that are too big. The average learner-teacher ratio⁵ across the schools is 30 learners to one teacher.

Five of the nine schools have a classroom shortage. The average learner-classroom ratio⁶ across the schools is 41 learners to one classroom.

There is only a small teacher shortage. Only 35% of teachers in all the schools are teaching more than the scheduled teaching time.

THESE STATISTICS ARE USED BY THE GDE TO CLAIM THAT - WHILE THERE IS A CLASSROOM SHORTAGE - SCHOOLS HAVE ENOUGH TEACHERS, CLASSES ARE THE RIGHT SIZE, AND SCHOOLS ARE GENERALLY NOT OVERCROWDED.



03 What are the causes of overcrowding in Gauteng schools?

A school becomes overcrowded when it has insufficient teachers or infrastructure to serve the number of learners enrolled, or when the school is unable to adapt to changes in learner numbers.

- The shortage of teachers at most schools is mainly a result of the unequal distribution of teachers between schools in the province. The method used to allocate teachers, outlined in the Post Provisioning Norms (PPN),⁷ claims to distribute teachers equitably but does not achieve this in reality.
- The shortage of infrastructure is due, in a large part, to the failure of the DBE and the GDE to effectively plan and implement infrastructure projects. However, it is also the result of gaps in the Norms and Standards for Public School Infrastructure ('School Infrastructure Norms')⁸ that, for example, determine the number of classrooms that a school needs based on the assumption that all classes are made up of 40 learners or fewer.
- Schools are also limited in their ability to respond to overcrowding in the way that they think is best. For example, if school leadership turns away excess learners to maintain manageable class sizes they risk losing teachers and other resources.

The PPN, the School Infrastructure Norms and other policies divide resources based on simplified measurements that do not detect overcrowding in schools.

If we continue to divide resources based on these models, schools will likely stay overcrowded even when there are enough teachers, classrooms and other resources in the education system. In addition, the policies on admissions and curriculum mean that some schools receive too many applications and can turn learners away, while others have to accept as many learners as they can so that their enrolment does not decrease, causing them to lose resources.

04 What effects does overcrowding have on Gauteng school communities?

- Overcrowding affects the **physical environment** of the classroom and school by making it impossible for teachers to move around the class, causing furniture and infrastructure to deteriorate quickly, and leading to shortages of food available through the National School Nutrition Programme (NSNP).
- It affects **behaviour** by making it difficult for teachers to provide learners with the attention they need. Instead, teachers spend their time addressing disruptive behaviour, meaning that some learners inevitably fall behind and fail. Learners also experience higher levels of peer pressure in overcrowded spaces. As a result, they avoid speaking up in class and often act in a disruptive way.
- Persistent overcrowding leads to negative **psychological effects**. Teachers who are unable to cope with the workload lose confidence in, and commitment to, their teaching. Learners feel neglected and become disengaged from their studies.

02 The GDE must publish a comprehensive and forward-looking infrastructure development plan that explains and justifies the GDE's decision to focus on adding new classrooms to existing schools as well as the steps it will take to prevent overcrowding and the overuse of infrastructure in those schools.

This infrastructure plan must also explicitly include predicted future growth in learner numbers and in areas where learners come from; it must prioritise the urgent implementation of infrastructure projects to overcrowded schools; and it must include measures for the placement and transportation of unplaced learners at the beginning of each academic year.

03 The GDE must publish a comprehensive list of overcrowded schools, similar to the one contemplated in sections 78-82 of the National Norms and Standards for School Funding, to be used for targeted spending aimed at eradicating overcrowding in schools. When determining whether a school is overcrowded, the various components of overcrowding must be taken into account in a relational way, including:

- a) class sizes in different grades and subjects,
- b) teacher workload and spread;
- c) predicted growth in learner numbers; and
- d) school building capacity.

RECOMMENDATIONS

01 The Department of Basic Education (DBE) must develop and publish uniform minimum norms and standards for school capacity that:

- a) are binding,
- b) include deadlines by which to meet minimum requirements, and
- c) measure overcrowding by taking into account the relational nature of school resources and the actual conditions in which learning takes place.

04 The GDE must ensure that the 5% poverty redress posts are always allocated and that the percentage of posts allocated are reported on and justified. Further, it must

ensure that 15% of personnel funding is spent on non-teaching staff each year, in line with the School Funding Norms, and that the majority of non-teaching staff are placed in schools that are in need of school-based administrative support. The distribution of non-teaching staff between schools and offices must be reported on and justified.

5. The learner-teacher ratio shows the number of learners a school has for every teacher employed there. It is sometimes used as a way to estimate how big class sizes are in that school. 6. The learner-classroom ratio is the number of learners a school has for every classroom there. It is sometimes used as a way to estimate whether a school has enough classrooms so that no classroom has more than 40 learners in it. 7. PPN (note 2 above). 8. School Infrastructure Norms (note 3 above).

INTRODUCTION

Equal Education (EE) is a movement of learners, post-school youth, parents, and community members advocating for quality and equality in the South African education system.

EE uses the mass-mobilisation of youth, as well as research and litigation, to build campaigns for pro-poor budgets, equitable policies, and timeous implementation of policies relating to education in South Africa.

Beginning in 2018, EE learner members, called Equalisers, in Gauteng province identified overcrowding as an important obstacle to quality teaching and learning in their schools. Towards the end of 2019, EE's Gauteng team decided to investigate overcrowding in Gauteng schools.

We drew on the expertise of Equalisers, researchers, academics, and government officials at different stages throughout the process, and we returned to schools when we felt that we needed more information.

In the process of conducting our research we began to see that overcrowding was not understood and experienced as one thing, but rather as the relationship between different factors that made up the school environment.

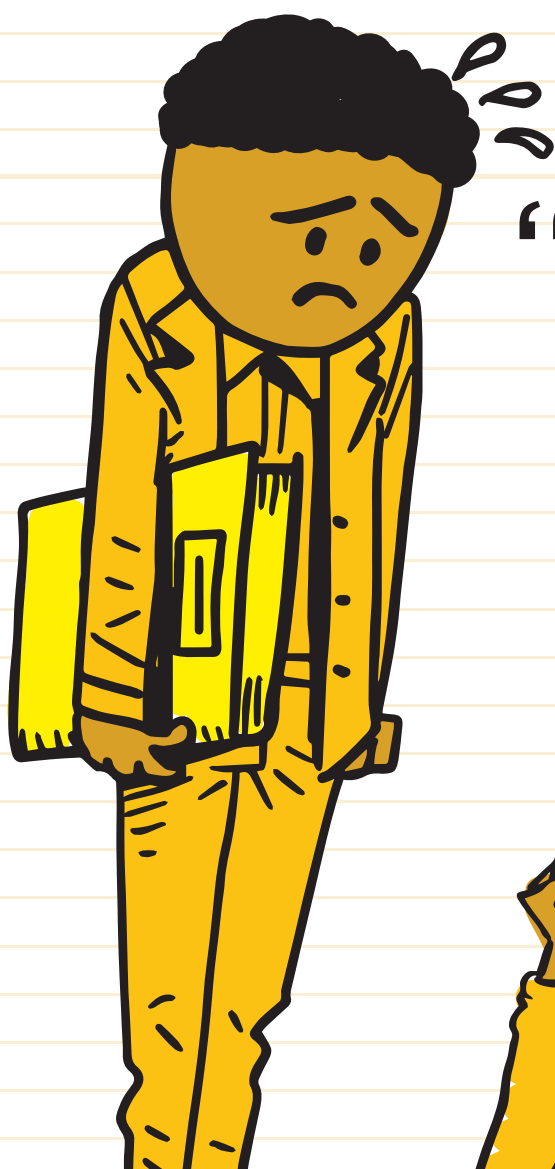
The team carried out research in nine schools in Etwatwa, while simultaneously reviewing existing research on the issue of overcrowding in order to better understand the complex issue.



We created four research questions that aimed to develop a useful and comprehensive understanding of what school overcrowding is.

- Q1** → What is school overcrowding in the South African context?
- Q2** → Is overcrowding a problem in Gauteng schools?
- Q3** → If so, what are the causes of overcrowding in Gauteng schools?
- Q4** → What effects does overcrowding have on Gauteng school communities?

This report aims to consolidate and structure some of the main issues we identified over that period so that we can develop informed campaign goals.



“ We began to see that overcrowding was not understood and experienced as one thing, but rather as the relationship between different factors that made up the school environment.”



BACKGROUND

Education in Etwatwa was always a political issue – reluctantly provided by the apartheid government when it had no other choice, but always at a lower standard.

Etwatwa is an area in Ekurhuleni Metropolitan Municipality in the East Rand of Gauteng.

As of 2011, it spanned 21km², with a population of 151 866 (7 292 people per km²) divided between 43 483 households.

Etwatwa first formed as an informal settlement expanding out of Daveyton, a formal settlement established during apartheid to provide labour to the mines and other white-run industries.⁹

Far from services and difficult to access, Daveyton and its surrounding populations have consistently made a significant contribution to Gauteng's economy, but have always been excluded from the benefits of its economic development.¹⁰ Education in Etwatwa was always a political issue – reluctantly provided by the apartheid government when it had no other choice, but always at a lower standard.

Both colonial administrators and the apartheid government used the unequal provision of schools and teachers to ensure that education of a different quality was delivered to different race and linguistic groups. The 1984 Education Act was introduced after large-scale political unrest relating to the unequal provision of education for Black South Africans.

The Act aimed to equalise the provision of education in South Africa.¹¹ Around the same time, with the end of policies and practices that restricted the movement of Black people into urban spaces, Black urban residents who used

to be considered 'illegal' began to make legitimate claims to the government for the provision of education.¹²

The government soon realised, however, that it could not afford to offer education facilities of the same standard to all South Africans as it was offering to White South Africans. In 1989 it abandoned the plans outlined in the Education Act and reverted back to having different norms and standards for schools for different groups.¹³ The government argued that a "school must be acceptable to the community it serves."¹⁴ Brick buildings, it claimed, would "look out of place" in shack settlements, where "they would be vandalised or stripped in order to provide building material".¹⁵

The government concluded that it would be "unwise" to have the same standard of building in an informal settlement and a high-income area.¹⁶

In formal settlements, the education authorities decided that in more densely populated areas – areas where people lived on smaller plots – class sizes could be bigger and schools could be more crowded. Rather than expanding the number of schools to cater for the large population of children in formal settlements, the government reasoned that learners living in such conditions would be used to more crowded spaces, and that the school could reflect this.

9. Roberts, S. (2006) Sustainable Manufacturing?: The Case of South Africa and Ekurhuleni. Juta & Co. Ltd: Cape Town p. 144. 10. As above p. 148. 11. Jacklin, H. (1991) Shack Schools for Shack Settlements: A Study of DET Policies and Practices Relating to the Provision of School Facilities in Shack Settlements in the PWV Area. Master's thesis. University of the Witwatersrand p. 15., 12. Jacklin (note 11 above) p.18. 13. As above p.25. 14. As above. 15. As above p.32. 16. As above p.15.

Furthermore, the government assumed that those living in more densely populated areas would be less likely to progress to secondary school. Thus, dense areas were seen to need fewer high schools compared to primary schools, and the design of all schools and the materials used to build them were cheaper.¹⁷ **Sporting grounds and other ‘non-necessities’ were deemed luxurious for these schools, so there was no available land for additional classrooms as the schools grew.**¹⁸

Informal settlements, on the other hand, were not planned for at all – their emergence was seen as a ‘crisis’ that had to be dealt with at the local level, not a predictable outcome of residential growth that required centralised planning.¹⁹ Even as apartheid came to an end, policy-makers continued to think of residents of informal settlements like Etwatwa as illegal squatters and “outsiders”, so they never thought it was necessary or even “appropriate” to provide quality services to the populations living there.²⁰ In the context of limited resources, “shack dwellers were not only placed at the end of the queue for schools; they were placed in a separate queue where different rules applied”.²¹

The first secondary school established in Etwatwa was B. B. Myathaza Secondary school, which opened in 1988 and initially only offered grades 8 and 9.²² As the only secondary school in Etwatwa, it was severely overcrowded.²³

In 1995, a second senior school, Vezukhono Secondary School, was established.²⁴ The population of Etwatwa increased quicker than the number of schools: in 1998, it was determined that the area needed 23 primary schools. Only sixteen plots of land had been provided for primary schools to be built, and only nine had actually been built.²⁵ That same year, the area supposedly needed nine high schools, but only five plots had been set aside and used for new high schools.²⁶

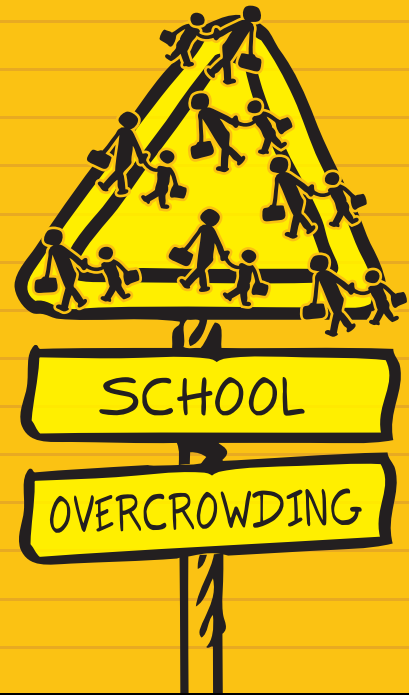
Research into teachers’ experience of teaching in **Etwatwa at that time found that teachers were concerned about a shortage of classrooms and secondary schools.**²⁷

Teachers emphasised that the demographic profile of the Etwatwa informal settlement was different from the already well-established area of Daveyton, stating that the Etwatwa community “is and will still be growing, whereas the Daveyton community may stabilise”.²⁸ In contrast to what the teachers predicted, government planning “assumed stable, predictable, population growth and movement”²⁹ and was not able to accommodate any unpredicted changes.³⁰ **The failure to effectively plan for the education of Black South Africans had long-lasting effects. In 1996, the average learner-teacher ratio in schools serving White learners was 20:1. For Indian learners it was 35:1, for Coloured learners it was 40:1, and for Black learners it was 75:1.**³¹

Around the same time, an analysis of nationwide data by Anne Case and Angus Deaton found that, even when the effects of family income, family education levels, and other factors that usually influence learning outcomes were taken into account, there was a strong, significant effect of learner-teacher ratios on enrolment rates, levels of educational achievement, and educational outcomes – especially in mathematics.³² They ultimately predicted that by the time Black learners reached fourteen years old, they had lost an equivalent of a year and a half of learning due to their large class sizes, as compared to if they had had smaller classes throughout their schooling.³³ Overcrowding remained a problem in Etwatwa schools into democracy. Another study, written in 2001, reported that teachers in Etwatwa schools brought up the issue of overcrowding and said that it demotivated them.³⁴ Despite this history, overcrowding has not been a central feature of education debates in post-apartheid South Africa, and has instead been reduced to issues around infrastructure and teacher supply.

17. As above pp. 33, 54. 18. Although it must be noted that the use of sports facilities and other space for extra classrooms is not preferable, as those spaces then become unavailable for general use. 19. Jacklin (note 11 above) p. 36. 20. As above p. 2. 21. As above p. 37. 22. Morifi, K. (1999) The Role of Guidance in Addressing Community Issues in Etwatwa Informal Settlement. Master’s Thesis. Rand Afrikaans University. 23. As above p. 23. 24. As above. 25. Malinga, S. (2000) The development of informal settlements in South Africa, with particular reference to informal settlements around Daveyton on the East Rand, 1970-1999. Doctoral Thesis. Rand Afrikaans University p. 261. 26. As above. 27. Mkhombo, J. (1999) Perceptions on how informal settlements affect the quality of education in secondary schools. Master’s thesis. Rand Afrikaans University p. 42. 28. As above. 29. Jacklin (note 11 above) p. 31. 30. As above. 31. Muthusamy, N. (2015) Teachers’ experiences with overcrowded classrooms in a mainstream school. Master’s thesis. University of KwaZulu-Natal p. 2. 32. Case, A. & Deaton, A. (1999) ‘School inputs and educational outcomes in South Africa.’ Quarterly Journal of Economics. 114 (3) p. 1077. While learner-teacher ratios are a rough indicator for class size, that was all that was available in the nationwide data set. 33. As above pp. 1071 – 1072. A reduction in class size by 20 learners throughout their schooling career would have resulted in learners having increased educational attainment of a year and a half. 34. Maseko, F. (2001) Community Views on Certain Socio-Economical Environmental Factors in the Etwatwa Informal Settlement. Master’s Thesis. Rand Afrikaans University p. 43.

EXISTING RESEARCH ON SCHOOL OVERCROWDING



Once we understand the changes that teachers and learners make in response to overcrowding, we need to investigate the impact that all these changes have on the quality of teaching and learning.

When Equalisers identified overcrowding as an issue in their schools, they were not simply talking about large class sizes. Schools that serve too many learners for the space and staff available to them will likely end up with large class sizes, but overcrowding can also play out in other ways: **furniture and infrastructure may deteriorate quickly** when a building is housing more people than it was built for; **learners in higher grades may be forced to stick with subjects that they do not understand** because the school does not have the space or number of teachers to allow a large number of learners to change subjects and to add new classes where necessary; or **teachers may end up providing little to no feedback on homework because they have too much marking to do.**

Research on overcrowding in schools has historically reduced the problem of overcrowding to an issue of class size, and then tried to trace a clear *causal relationship*³⁵ between class size and learning outcomes.³⁶ Recent large-scale reviews of such studies in low and middle-income countries have found that, in general, as class size increases, learning outcomes decrease modestly.³⁷

However, so much depends on how class size interacts with other aspects of the learning environment – such as whether teachers are trained to teach larger groups.

35. A causal relationship exists when it can be shown as a fact that one thing happening resulted in the other thing happening. In the case of class size, a causal relationship would exist between class size and learner outcomes if it could be proven that learning in a larger class specifically, without considering other things like teacher quality or language of instruction, made learners do worse at school. 36. For a recent example of this approach in South Africa, see: Köhler, T. (2020) 'Socioeconomic Status and Class Size in South African Secondary Schools'. Stellenbosch Working Paper Series No. WP01/2020. 37. Glewwe, P. et al. 'School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010'. National Bureau of Economic Research, Working Paper 17554; Benbow, J. et al. (2007). 'Large classes in a developing world: What do we know and what can we do?' US Agency for International Development, USAID; Hattie, J. (2009) Visible Learning – A synthesis of over 800 meta-analyses relating to achievement. Routledge: London, New York.

Research with teachers consistently shows that:

“[Teachers] tend to believe that class size has a major effect on what they do and on the effectiveness of what they do, for example in their relationships with pupils, in the amount of time they can give to individual pupil guidance and assessment and in the use of supplementary text and enrichment materials.”³⁸



Even those findings should be treated with caution, because most of them require that teachers treat class size as an isolated issue influencing their teaching, instead of as one factor among many that influence their teaching practices.³⁹

In a large-scale review of overcrowding research, David Pedder argues that understanding “class size effects in classrooms then requires detailed studies of complex classroom processes that might mediate the impact of class size on pupils’ learning”.⁴⁰

Rather than looking for a clear trend that links bigger classes to lower learning outcomes, we should instead investigate how teachers and learners are limited in what they can do because of the big classes.⁴¹

For example, a teacher may abandon an exciting lesson idea that involves learners getting into teams and moving around the classroom because there would not be enough space; a learner who would usually take notes may stop doing so when they are sharing a desk with two others and there is no space to put their notebook; or teachers who would usually put up educational posters around their classroom may decide not to because the shortage of classrooms means that they do not have one set classroom as their own.

^{38.} Pedder, D. (2009) 'Are Small Classes Better? Understanding Relationships between Class Size, Classroom Processes and Pupils' Oxford Review of Education 32(2) p. 219. ^{39.} As above p. 220. ^{40.} As above p. 215. ^{41.} As above p. 225.

Once we understand the changes that teachers and learners make in response to overcrowding, we need to investigate the impact that all these changes have on the quality of teaching and learning.

Research that takes this contextual approach shows that large class sizes significantly impact the teaching and learning experience.⁴²

A 2007 review titled *“Large Class Sizes in the Developing World: What Do We Know and What Can We Do?”* found that large classrooms negatively affect the amount of teaching time available to teachers and their classroom management practices.⁴³

It also negatively impacts both learner and teacher motivation and engagement.⁴⁴ These themes have been well documented across the continent,⁴⁵ including in studies in Malawi,⁴⁶ Kenya,⁴⁷ Nigeria,⁴⁸ Namibia,⁴⁹ Uganda,⁵⁰ and South Africa.⁵¹ An analysis of existing research titled *“School Resources and Educational Outcomes in Developing Countries: A review of the literature from 1990 to*

2010” found that **“INCREASES IN CLASS SIZE USUALLY HAVE NEGATIVE IMPACTS ON STUDENT LEARNING”**

but it also detected the negative impact of shortages in infrastructure, furniture, textbooks and qualified teachers; of teacher and learner absenteeism; and of insufficient or unmonitored homework – all of which are common in overcrowded schools.⁵²

Other studies have shown that classroom environmental factors associated with overcrowded schools – such as poor air ventilation and a bad state of infrastructure – have an impact on learning outcomes.⁵³

Pedder concludes his review by stating that “[c]lass size research needs to attend to the contexts within which class size variation occurs by investigating the different ways class size interacts with other key variables”.⁵⁴

CLASS SIZE WILL HAVE A DIFFERENT EFFECT DEPENDING ON THE RESOURCES AT A SCHOOL, THE MODE OF INSTRUCTION THAT THE CURRICULUM IMAGINES, HOW MUCH TECHNOLOGY IS RELIED UPON, AND MANY OTHER FACTORS.

Our research shows the Pedder’s approach should be expanded to cover more than just class size.

The various conditions associated with overcrowding – including large classes, over-extended teachers, and inadequate space – should be studied in relation to each other and the context in which teaching and learning occurs.

42. Holloway, J. (2002) Do Smaller Classes Change Instruction? *Educational Leadership* pp. 91-92; Wilson, V. (2006). “Does Small Really Make a Difference? An Update: A Review of the Literature on the Effects of Class Size on Teaching Practice and Pupils’ Behaviour and Attainment.” SCRE Research Report No. 123; Ehrenberg, R., Brewer, D., Gamoran, A., & Willms, D. (2001). “Class Size and Student Achievement.” *Psychological Science in the Public Interest* 2(1); Shah, J., & Inamullah, H.M. (2012). “Overcrowded classrooms: A serious problem for teachers.” *The Journal of Educational Strategies*, 5(1), 772-789; Nirashnee, M. (2015) Teachers’ experience with overcrowded classrooms in a mainstream school. Master’s thesis, University of KwaZulu-Natal. 43. Benbow (note 37 above). 44. Finn, J., Pannozzo, G., & Achilles, C. (2003). “The ‘Why’s’ of Class Size: Student Behavior in Small Classes.” *Review of Educational Research*, 73 pp. 321-268. 45. Ruff, R. R. (2016). “The impacts of retention, expenditures and class size on primary school completion in Sub-Saharan Africa: a cross-national analysis.” *International Journal of Education Policy and Leadership*, 11(8) pp. 1–13. 46. Mtika, P. (2010). “Trainee teachers’ experiences of teaching practicum. Issues, challenges and new possibilities.” *Africa Education Review* 8(3) pp. 551-567. 47. Mweru, M. (2010). “Why are Kenyan teachers still using Corporal punishment eight years after a ban on corporal punishment.” *Child Abuse Review* (19) pp. 248-258. 48. Olaleye, F. O., Ajayi, A., & Oyebola, B. O. (2017) “Impact of Overcrowded Classroom on Academic Performance of Students in Selected Public Secondary Schools in Surulere Local Government of Lagos State.” *International Journal of Higher Education Research*, 7(1) pp. 110-132. 49. Ipinge, S. (2005). “Quality education and access to education in Namibia: Goals of education after years.” *Education Review* 3(1) pp. 115-125. 50. Jones, S. (2016) “How does classroom composition affect learning outcomes in Ugandan primary schools?” *International Journal of Educational Development*, 48 pp. 66 – 78. 51. Marais, P. (2016) “We can’t believe what we see”: Overcrowded classrooms through the eyes of student teachers” *South African Journal of Education*, 36(2). 52. Glewwe and others (note 38 above). 53. Schneider, M. (2002) “Do School Facilities Affect Academic Outcomes?” ERIC Publications; Branham, D. (2004) “The Wise Man Builds His House Upon the Rock: The Effects of Inadequate School Building Infrastructure on Student Attendance” *Social Science Quarterly* 85(5). 54. Pedder (note 40 above) p. 231.

LEGISLATIVE FRAMEWORK FUNDING



Provincial governments are allocated money to run their province by the National Treasury through the equitable share formula, the formula that determines how much money a province should get each year.

The equitable share formula considers the various expenses provinces have and allocates a certain amount for each. However, **provinces are not required to spend the money in the way that the formula anticipates.** Provinces can also raise their own money.

In addition to the equitable share, the National Treasury also distributes conditional grants – grants that require that provinces spend the money on a specific purpose – directly to certain provincial departments. **The major conditional grants that are reserved for specific educational projects are: the Education Infrastructure Grant; the Learners with Profound Intellectual Disabilities Grant; the Maths, Science and Technology Grant; and the National School Nutrition Programme Grant, which are allocated to Provincial Education Departments (PEDs); and the School Infrastructure Backlogs Grant, which is allocated to the national Department of Basic Education (DBE).**⁵⁵

PEDs get most of their funding from their provinces' equitable share (over 95%) and a small amount from conditional grants. PEDs bear the primary obligation of establishing and running public schools, guided by the South African Schools Act (SASA). They allocate the funds that they are given from their provincial treasury to different programmes: administration,

public ordinary schools, private schools, special education schools, early childhood development, infrastructure, and examinations. Most of their budget, around 77% for the GDE, is spent on public ordinary schools.⁵⁶

The National Norms and Standard for School Funding ('School Funding Norms') set a 'policy target' of spending 80% of the education allocation on personnel (teachers and administrative staff) and 20% on other parts of school management across all programmes.⁵⁷ The 80% of the education budget that is reserved for personnel should ideally be divided again between teachers, who should account for 85% of personnel spending, and other administrative and support staff who should account for the remaining 15%. The School Funding Norms state that the Minister of Basic Education should set norms for how spending on teachers and non-teaching personnel should be spent equitably, but the Minister has so far only developed norms for spending on teachers.

The remaining 20% of the education budget is spent on programmes such as scholar transport or is given to schools directly for their every day operations, including paying for things like textbooks, furniture, building maintenance, and stationary.⁵⁸

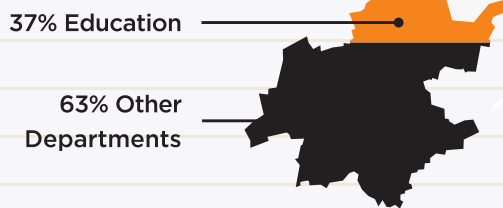
⁵⁵. Frameworks for Conditional Grants to Provinces GN R634 GG 43495, 3 July 2019. ⁵⁶. Department of Education, Province of Gauteng 'Vote 5 - Education: Annual Report 2018/2019 Financial' p. 16. ⁵⁷. National Norms and Standards for School Funding, GN 2362, GG 19347, 12 October 1998; Amended National Norms and Standards for School Funding, GN 869, GG 29179, 31 August 2006 sections 21. ⁵⁸. As above section 23.

The school allocation is distributed equitably, which means that schools that are in lower income areas and do not charge school fees are given more money per learner than schools in higher income areas that do charge fees.

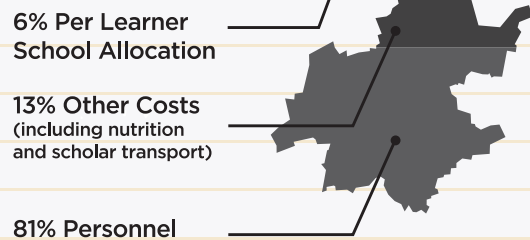
However, as is illustrated below, the percentage of school funding that is distributed equitably in Gauteng is very small. School allocation makes up only 6% of the GDE's total education spending each year.

The GDE's 2018/2019 distribution of funds is illustrated below:

Provincial Budget



Public Ordinary Schools Budget



Education Budget

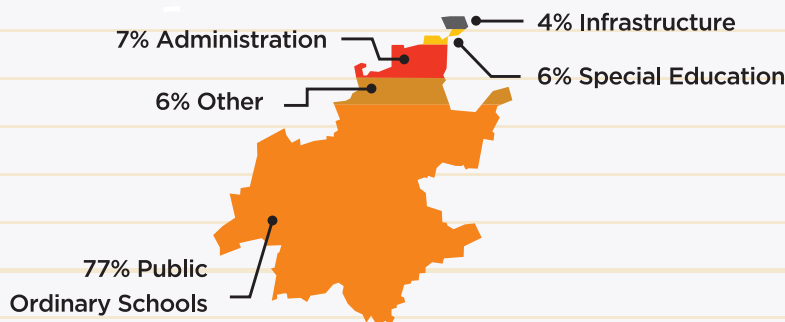


Chart 1: The GDE's 2018/2019 Budget Distribution of Funds

Provincial Budget: 37% on education; 63% on other departments.

Education Budget:⁵⁹ 77% on public ordinary schools; 7% on administration; 6% on special education schools; 4% on infrastructure; 6% on other programmes.⁶⁰

Public Ordinary Schools Budget: 81% of the budget was spent on personnel.⁶¹ The remaining 19% is divided between per-learner school allocations (6%)⁶² and other costs (including nutrition and scholar transport).⁶³

59. This chart suggests that all the GDE's funding comes from the provincial budget, but in fact in 2016/2017 96% came from the provincial budget and 4% came from conditional grants. See International Budget Partnership (2017) "Processes for Financing Public Basic Education in South Africa" p. 25. 60. GDE 2018/2019 Annual Report (note 56 above) p. 192. 61. GDE Annual Report (note 56 above) p. 209. 62. As above, p. 308. 63. As above.

TEACHERS

PEDs are responsible for determining how many teachers a province will hire and hiring those teachers.

The Employment of Educators Act⁶⁴ and its associated regulations, the Personnel Administrative Measures (PAM), govern all matters relating to teachers' employment.⁶⁵ The Post Provisioning and Grading Norms, Workload and Job Descriptions ('Post-provisioning Norms' or 'PPN') contained within the PAM, provide 'ideals'

for how many teachers at different levels of seniority should be hired; how many and what type of responsibilities teachers should be assigned; as well as how many classes each teacher will work. PEDs should be guided by these 'ideals' when deciding how many teachers to hire each year.⁶⁶

The first important guideline contained in PAM is the ideal maximum class size for different grades:

Grades R – 4 should have a maximum class size of **35** learners.

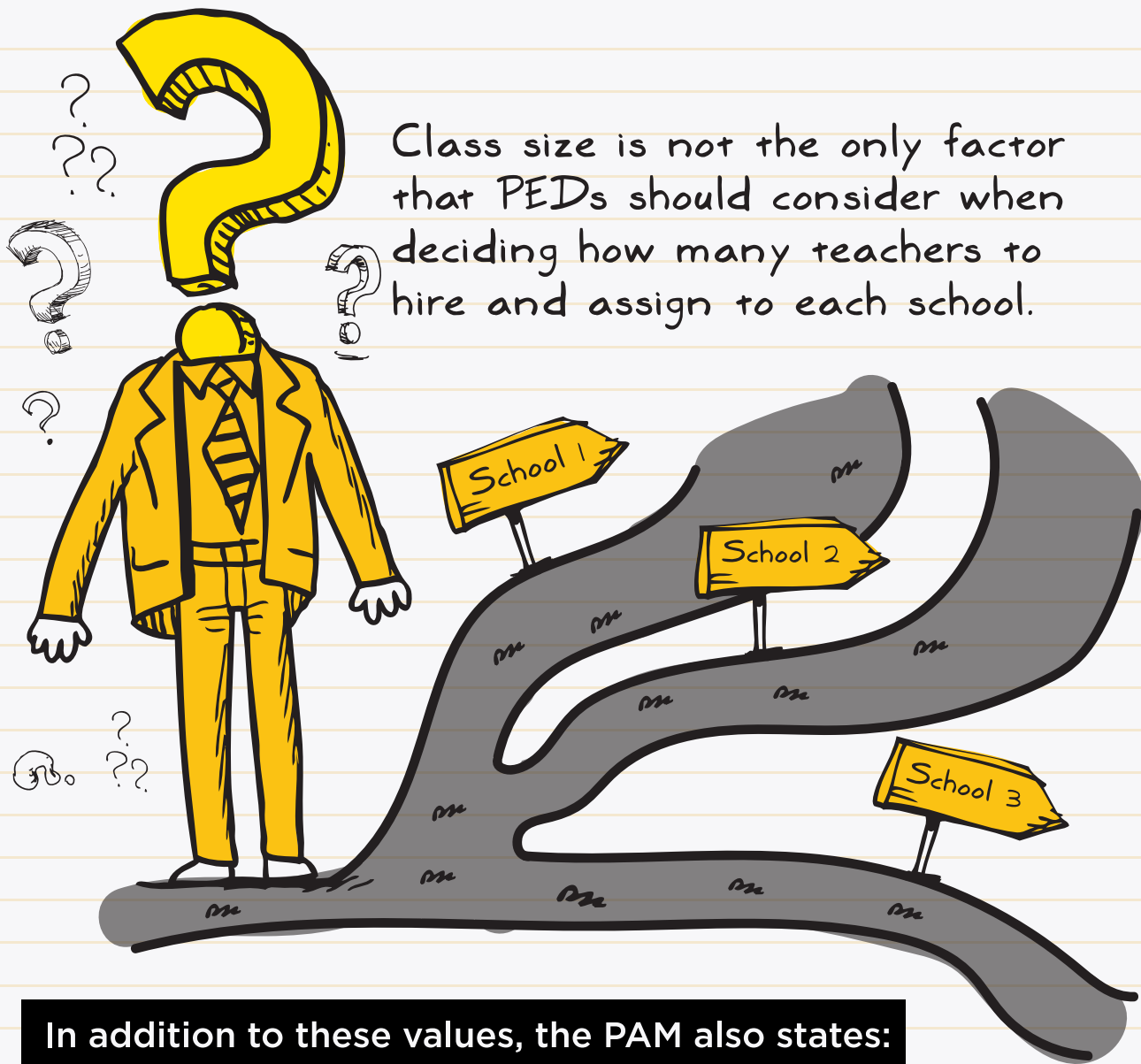
Grades 5 – 6 should have a maximum class size of **40** learners.

Grades 7 – 9 should have a maximum class size of **37** learners.

Grades 10 – 12 classes have different maximum class sizes depending on the subject, ranging from 6 learners for music to **37** learners for languages, life orientation and most elective subjects.



64, 76 of 1998 65. PAM (note 2 above) 66. As above Annexure A.1.



Class size is not the only factor that PEDs should consider when deciding how many teachers to hire and assign to each school.

In addition to these values, the PAM also states:

“ Although the situation in South Africa is such that ideal maximum class sizes cannot be complied with, these ideal values form a basis of comparison between the requirements of all the learning areas and grades.”⁶⁷

Class size is not the only factor that PEDs should consider when deciding how many teachers to hire and assign to each school. To ensure teachers are allocated to schools in a fair way, the Post Distribution Model for the Allocation of Educator Posts to Schools ('PPN formula') was developed. Instead of each learner in South Africa being counted as 'one', the PPN formula

assigns an extra value to certain learners who need more educational support, so that when teachers are divided amongst schools, those learners' schools will be counted as having more learners than they actually do, and their school will be given a greater share of the teachers available.

67. As above. 68. Dual medium schools operate all school activities and teach all subjects in two languages simultaneously. 69. A school quintile is used to measure the wealth/resources of a school in comparison to all other schools in South Africa. Schools are divided into five groups - ranging from quintile 1, which is the least resourced schools, to quintile 5, which is the most resourced schools. A school's quintile is determined by looking at the average wealth of the people who live in the area where the school is, which means it sometimes does not reflect the actual wealth of the learners there. 70. Section A.4.3.3. lists guidelines for the 'scheduled teaching time' (percentage of teaching hours worked) but in other places PAM discusses 'period load' (percentage of periods worked). While they likely correlate, we will use scheduled teaching time, as clearer guidelines are given there. 71. Phases are groups of grades that together make up different stages of basic education. Foundation phase is grade R to 3, intermediate phase is grade 4 to 6, senior phase is grade 7 to 9, and further education and training phase is grade 10 to 12. 72. This becomes confusing when teachers teach classes in the foundation phase and the intermediate phase. When we encountered that scenario we used the higher teaching demands of intermediate teachers as our threshold value. 73. Post levels refer to different categories of educator jobs, each with different duties and responsibilities. 74. PAM (see note 2) A.4.1.4

This process is called ‘weighting’ and it is supposed to increase the number of teachers allocated to schools that need more support. This could be due to a school running all activities in two languages (dual medium);⁶⁸ because it has subjects or grades that require more teachers; or because it serves learners living with disabilities. Each school’s weighted value must also be adjusted slightly depending on the quintile⁶⁹ of the school, so that schools in lower quintiles can be supported with extra teachers (up to 5% of teachers are supposed to be reserved for poverty redress).

PEDs then use the final weighting of each school in the province to divide teacher posts between the schools. PEDs can also choose to keep some ‘ad hoc’ posts out of this calculation so that some teachers are not assigned to a school and can be assigned at a later stage in response to unexpected changes in learner enrolment.

Another factor that is listed in the PAM is the scheduled teaching time teachers should be assigned,⁷⁰ which is the number of hours teachers are assigned to teach compared to the total number of hours learners are in class each week (23 hours for foundation phase⁷¹ and 27.5 hours for all the rest).⁷²

The PAM also states that by supplementing their teaching time with other assigned duties, teachers are to account for 1 800 hours of work each year. Based on a 2019 teacher’s calendar, this equates to an average of 43 hours per week. Furthermore, while different teaching posts come with different responsibilities,

PAM states that work should be divided equitably amongst all teachers so that some teachers are not overburdened.⁷⁴

1

Primary school teachers, post level 1⁷³

**85% - 90%
teaching time.**

2

Primary school teachers, post level 2

**85% - 92%
teaching time.**

3

Primary school deputy principals

**60%
teaching time.**

4

Primary school principals

**10% - 92%
teaching time.**

5

Secondary school teachers, post level 1

**85% - 90%
teaching time.**

6

Secondary school teachers, post level 2

**85%
teaching time.**

7

Secondary school deputy principals

**85%
teaching time.**

8

Secondary school principals

**5% - 60%
teaching time.**

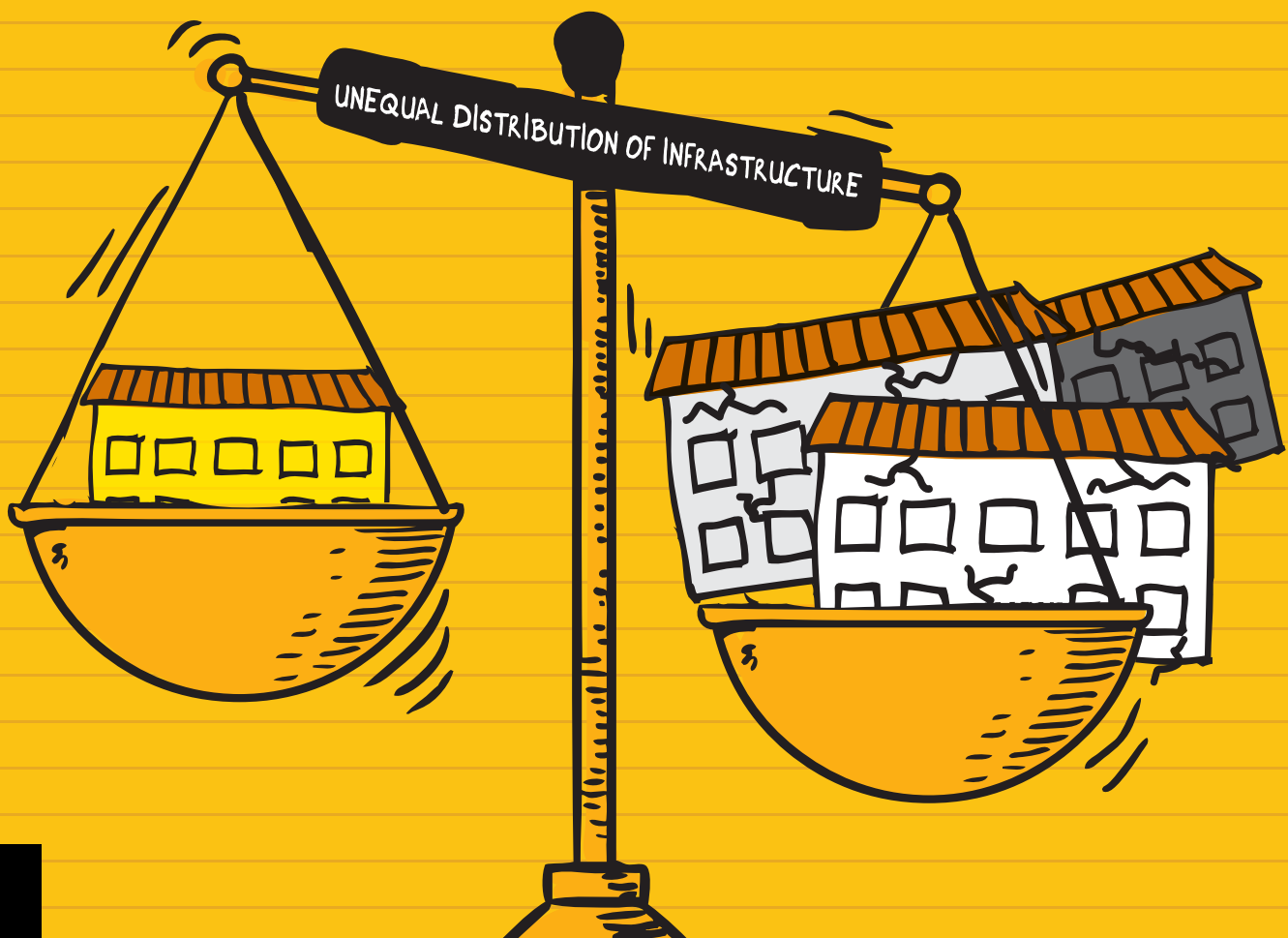
INFRASTRUCTURE AND FURNITURE

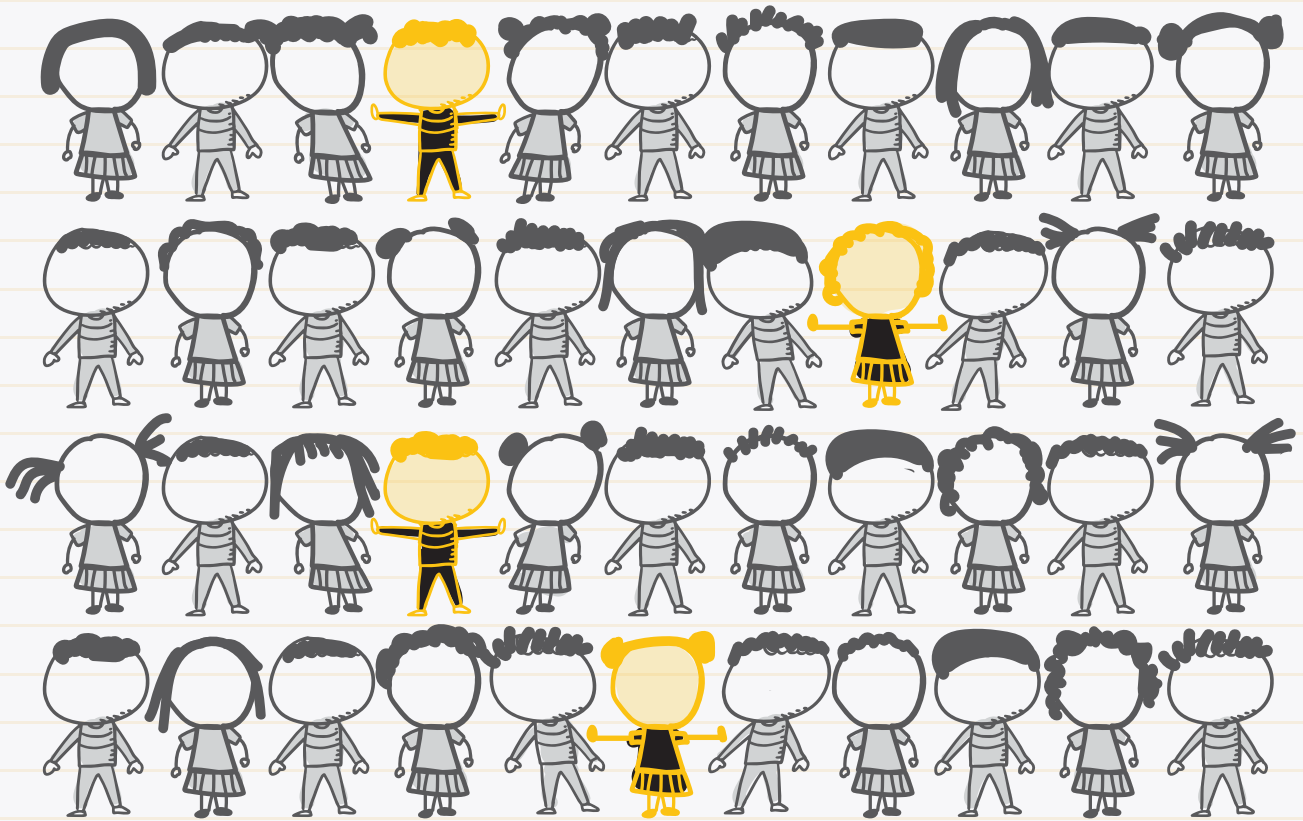
PEDs are responsible for most school infrastructure projects.⁷⁵

THE SCHOOL FUNDING NORMS REQUIRE THAT PEDS PRIORITISE THE CONSTRUCTION OF CLASSROOMS OR SCHOOLS WHERE THERE IS THE GREATEST 'NEED' - WITH NEED DEFINED AS A SHORTAGE OF SCHOOLS OR AS OVERCROWDED SCHOOLS.⁷⁶

The School Funding Norms state that PEDs must decide what counts as 'overcrowded' using different measurements based on the context of their province.⁷⁷ The Norms go on to state that PEDs should aim to address the unequal distribution of

infrastructure between schools by giving preference to the **"extension [of] existing schools, rather than new schools"** except where such extensions would mean that schools are not conducive to effective teaching and learning.⁷⁸





Section 5A(1) of SASA, which was added to the Act in a 2007 amendment, empowers the Minister of Education to introduce legislation that sets a minimum standard for school infrastructure (including classrooms, electricity, water, sanitation, libraries, laboratories, sports facilities, electronic connectivity, and security); **school capacity** (the number of learners a school can admit, taking into account teacher numbers, class sizes, quality of performance, curriculum and after-school activities, classroom size, and how classrooms are used); **and learning and teaching support materials** (stationary, learning material, teaching equipment, electronic equipment, and furniture).⁷⁹

The School Infrastructure Norms require, among other things, that all schools be allocated one classroom for every 40 enrolled learners – regardless of how the learners are divided within the school.

75. The DBE is responsible for building or renovating schools where there is a severe backlog, such as where schools are without water, sanitation and electricity, or built of mud, wood, or asbestos. 76. School Funding Norms (note 57 above) sections 72-77 & section 8. 77. As above section 79. Lists should be "based on provincial norms and verifiable crowding and distance indicators". 78. As above. 79. South African Schools Act 84 of 1996 (SASA) section 5A (1)(a).

Section 58C also requires that provinces comply with whatever norms are set. In 2010 the National Policy on Equitable Provision of an Enabling School Physical Teaching and Learning Environment (NPEP)⁸⁰ was introduced which again provided for the development of school infrastructure norms. Mass activism in the years following, led by EE, resulted in the promulgation of legally binding Norms and Standards for Public School Infrastructure in 2013. **The School Infrastructure Norms require, among other things, that all schools be allocated one classroom for every 40 enrolled learners – regardless of how the learners are divided within the school.**

THE SCHOOL INFRASTRUCTURE NORMS LIST THE REQUIRED SIZE OF DIFFERENT EDUCATIONAL SPACES:

- 1** → Grade R classrooms should have at least 1.6 m² per learner and 7 m² per teacher. They should be a minimum size of 60 m² and have a maximum of 30 learners per classroom.
- 2** → Grade 1-12 classrooms should have at least 1 m² per learner and 7 m² per teacher. They should be a minimum size of 48 m² and have a maximum of 40 learners per classroom.
- 3** → Learners with disabilities must have 2 m² each.

These requirements for classroom size and availability must be met at all schools within seven years of the promulgation of the School Infrastructure Norms, a deadline which passed on 29 November 2020.⁸¹

The NPEP states that provinces can adapt the School Infrastructure Norms to their contexts as long as they do not set standards below those in the School Infrastructure Norms.⁸²

There are still no norms for school capacity. The Constitutional Court has emphasised that school capacity norms and standards “would provide significant guidance” in the face of admissions-related challenges.⁸³

The draft School Infrastructure Norms listed a maximum school capacity of

PRIMARY SCHOOLS

930 LEARNERS MAXIMUM CAPACITY

HIGH SCHOOLS⁸⁴

1000 LEARNERS MAXIMUM CAPACITY

These limits were left out of the final School Infrastructure Norms.

80. National Policy On Equitable Provision of an Enabling School Physical Teaching and Learning Environment Act 27 of 1996 (NPEP). 81. School Infrastructure Norms (note 3 above) section 4(1)(b)(iii). 82. Section 1,14.3. of the NPEP states that ‘Provinces may adapt national norms and standards to their contexts without prejudice to set minimums.’ 83. MEC for Education in Gauteng Province and Other v Governing Body of Rivonia Primary School and Others 2013 (6) SA 582 (CC). 84. South African Schools Act 84 of 1996: Call for comments on National Minimum Uniform Norms and Standards for School Infrastructure, GN 1439, GG 31616, 21 November 2008 s 3.1.3.

The School Infrastructure Norms include space-related provisions such as classroom size and the number of other learning spaces that a school should have, but do not provide guidelines for school capacity limits; how PEDs must ensure that enrolment remains within a school's capacity or that enrolment above capacity is planned for in advance; and the need to add new or strengthen existing infrastructure in anticipation of a change in enrolment.

There are also no norms for learning and teaching support materials. Despite the lack of norms, a recent court case against the Eastern Cape Department of Education confirmed that the state's obligation to provide basic education is not confined to making a place in a school available to every learner.

The obligation also includes the provision of a 'range of educational resources', including furniture.⁸⁵

Furthermore, the DBE's Guidelines for Conducting Condition Assessment of Education Facilities state that the condition of furniture in a school will only be considered 'good' if furniture is available for every individual who uses the school.⁸⁶



⁸⁵. Madzodzo and Others v Minister of Basic Education & Others (2014) (3) SA 441 (ECM). ⁸⁶. Department of Basic Education (2018) Guidelines for Conducting Condition Assessment of Education Facilities 168.

METHODS USED

EE set out to investigate

- Q1** → What is school overcrowding in the South African context?
-
- Q2** → Is overcrowding a problem in Gauteng schools?
-
- Q3** → If so, what is the cause of overcrowding in Gauteng schools?
-
- Q4** → What effects does overcrowding have on Gauteng school communities?
-

We began our research at the school level, in

9 SCHOOLS

in the area of Etwatwa in Ekurhuleni, South Africa.⁸⁷

We collected information on

757 CLASSES⁸⁸

Measured & Inspected

105 CLASS ROOMS

Conducted semi-structured interviews with

57 COMMUNITY MEMBERS

⁸⁷ The nine schools chosen were schools that EE had organised in before, or that we otherwise had a relationship with. ⁸⁸ For the purpose of this report, a class is a group of learners who learn together for a specific period. A classroom is the physical building space in which lessons take place.

The first component of our research sought to understand whether the physical space in which teaching took place was big enough, and contained enough furniture, for the number of learners being taught there. **For capacity reasons, we decided to collect general data for the whole school and in-depth data for two grades at each school: grades 8 and 10 in high schools and grades 1 and 4 in primary schools.**

We collected information on each school's original capacity (how many learners it was meant to have when it was built) and current enrolment (how many learners are enrolled now); the number of learners in each class; the number of permanent and mobile classrooms; the size of all classrooms serving our focus grades; and the furniture that was available in those classrooms.

The second component involved semi-structured interviews with (at a minimum) each school's principal or deputy principal, a member of the school governing body (SGB), two teachers (one from each focus grade), and, in the case of high schools, two learners (again, one from each focus grade).

The people we interviewed were asked whether they believe overcrowding is an issue at their school and, if so, what effects it has on teachers, learners, and the general school community.



They were also asked **what they think the causes of overcrowding are, what needs to be done to fix it, who has the power to fix it** and whether anyone has made an attempt to fix overcrowding in the past at their school. **Teachers were asked additional questions about the subjects they teach.** At the end of each school visit, the survey team completed a reflection during which we added our own insights from observation. We also drew on the insight of Equalisers and other experts drawn from civil society, academia and provincial and national government to deepen our understanding of the issue. **Furthermore, we returned to the schools when we believed that we needed more information.**

FINDINGS AND ANALYSIS

WHAT IS SCHOOL OVERCROWDING IN THE SOUTH AFRICAN CONTEXT?

The people we interviewed defined overcrowding as many learners placed together in a classroom that was too small to hold them, without enough furniture to serve them, and being taught by only one teacher who could not effectively teach a group of that size.

We were told that overcrowding means

“Having a higher number of learners than the carrying capacity.”⁸⁹

This “puts a burden on resources (learning materials) and infrastructure”⁹⁰ and means that educators are “unable to reach learners with difficulties and barriers in education”.⁹¹ Ultimately, “time becomes limited, as classrooms are disrupted and teachers must ask and call for order”.⁹²

In the following quote, Mr Masanguana, a teacher and SGB member at Phakamani Secondary School, illustrates how infrastructure and furniture shortages combine with large learner numbers to create a situation of overcrowding in which teaching and learning suffer:

“ [Overcrowding] means not having sufficient space to perform whatever duty is required. If I relate it to the classroom, overcrowding would mean I cannot move around the classroom.

I cannot have individual attention with learners. It takes me a very long time to check their books and check their homework.


Also, learners are positioned or seated too close to where I need to have my own space and my movement... Obviously, it means ventilation will be affected. There is more heat in the classroom... When there are no ceiling fans and air conditioners, it will affect the performance and concentration of the learners and how I teach... This is what I have observed in my experience.”⁹³

89. Teacher at Vezukhono Secondary School (S9P4). 90. T. Tshonisa, acting principal of Thopodi Primary School (S6P1). 91. Principal of one of the sample schools (S7P1). 92. Teacher at one of the sample schools (S4P1). 93. X Masanguana, SGB member at Phakamani Secondary School (S3P4). 94. Black, S. (n.d.) An analytic model for conceptualising school overcrowding: exploring relations between (mal) distribution and (inadequate) provision at different scales. Working paper. Accessed from www.sarabblack.co.za. 95. Black, S. (2020) The tyranny of timespace: examining the timetable of schooling activities as the interface between policy and everyday rhythms. Unpublished doctoral thesis: University of Cape Town.

What emerged from our interviews is the idea that overcrowding does not just depend on one thing.

It depends on:

- the number of **learners** in each class, in a school, and in an area;
- the number of **classrooms** and other infrastructure in a school, and the number of schools in an area; and
- the number of **teachers** in a school and how they are distributed between schools.

 **Importantly, it depends on the relationship between all of these factors.⁹⁴**

Organising a school in such a way that classrooms are not crowded, teachers are not overworked, and the school can respond to expected and unexpected changes is very difficult. It requires that schools have enough resources. Sara Black studies the process of developing a school timetable to show that schools can only 'run smoothly' when they have elasticity⁹⁵ in the resources available to them.

For example, when a learner gets into an accident there are one or two teachers free to help her, so that her class teacher does not need to disrupt their lesson

to do so; or when a test runs over into the next period, preventing the next group from entering the classroom, there is a classroom free for that group to use instead.

In addition to enough resources, the people we interviewed emphasised that schools also need to be able to respond to changes in school enrolment without worrying that if they do, they may have certain resources taken away from them. We call this 'school autonomy'.

A school can be considered overcrowded when – due to a shortage of school resources and/or a lack of school autonomy – at least some class sizes grow to the extent that teachers' and learners' ability to create an effective learning environment is limited.

A shortage of school resources can arise either because there are not enough of a particular resource in the education system, or because the resources that do exist are distributed unequally between schools and classes.

How can we tell whether a school is overcrowded?

What is a good way to measure it?




P.T.O.

The DBE and the GDE do not consider overcrowding in the holistic way discussed here, and so there is no standard measurement we can check schools against to assess whether they are overcrowded or not.

The DBE and GDE think of each different school resource (e.g. teachers, learning materials, buildings) separately and decide how much of each resource a school should have based on separate models, without considering how the different resources relate to and affect the fulfilment of the others.

To measure whether schools are overcrowded we would ideally look at what the minimum standards required by law are.

The School Infrastructure Norms is one of the only laws to actually provide binding minimum requirements that all provinces have to meet. For example, a secondary school of 800-1000 learners must have 30 toilets.⁹⁶

All other relevant legislation, including the School Funding Norms and the PPN, only provide guidelines for PEDs.

More than a third of the people we interviewed thought that classes were legally required to have 35 learners or less, but the criteria in the PPN are not strict requirements, and therefore are not binding.⁹⁷ Another problem is that the different regulations do not explain how these minimum and maximum guidelines were decided on, and they do not take into account how a 'sufficient' number of one resource will depend on how many other resources a school has, as well as the context of the particular school.

**TOO FEW TEACHERS + TOO FEW CLASSROOMS
+ TOO MANY LEARNERS
= OVERCROWDING**

Our analysis shows that overcrowding needs to be understood in a way that is relational, by looking at the relationship between its different components such as 'too few teachers' and 'too few classrooms', and contextual, by looking at how the effects of overcrowding play out differently in different learning environments.

⁹⁶. School Infrastructure Norms (Note 3 above) Annexure G, ⁹⁷. Even though we never brought up the PPN or other legislation, many people relied on the 35:1 ratio that it supposedly contains in order to explain what overcrowding was. This is a worrying sign because as of yet there is no right of learners, or schools, to that ratio. It also shows that the government's overreliance on the learner-teacher ratio as the only measurement of overcrowding within a class likely influences how we as the public perceive the issue.

ARE SCHOOLS IN GAUTENG OVERCROWDED?

This section provides an analysis of the data collected to assess whether overcrowding exists in the nine schools sampled. In order to measure whether the schools we visited were overcrowded, we looked at class sizes, teacher workload, school building capacity,

classroom numbers and size, and furniture numbers. For each resource, we first looked at how the DBE and GDE measure the availability of that resource, and then we present the results that we actually encountered in schools.

TEACHERS

CLASS SIZE

Class size /klass/ /size/ adj. 1. The number of learners that make up a given learning group.

PAM states that the ideal maximum class size for

Grades R to 4 is **35**

Grades 7 to 9 is **37**

Grades 4 to 5 is **40**

Grades 10 to 12 is **37***



*Dependant on subject

The highest ideal class size listed is **40**.

The primary measurement that the GDE and DBE use to measure whether a school has enough teachers is the learner-teacher ratio, which shows the number of learners a school has for every teacher employed there.

The learner-teacher ratio is calculated by dividing the number of learners in a school with the number of teachers. **The learner-teacher ratio tells you how big classes in a school would be if all teachers were teaching all the time, and if all classes had the same number of learners.**

The DBE and GDE use a school's learner-teacher ratio to determine whether class sizes are too big, and whether schools need more teachers. If the learner-teacher ratio is less than 40 learners for each teacher, they assume that a school has enough teachers. However, class size is very different to the learner-teacher ratio.

The chart on the next page compares the learner-teacher ratio of the nine schools we visited to the actual class size we encountered in the nine schools. Class sizes are usually supposed to be between 35 and 40 learners, depending on the grade and subject. We have used the maximum ideal class size of 40.

Class sizes are usually supposed to be between 35 and 40 learners, depending on the grade and subject.

ARE CLASS SIZES IN ETWATWA TOO BIG?

School	Maximum ideal class size allowed by PPN	Data from DBE/GDE records (EMIS data)		Data from EE school visits			
		Learner-teacher ratio	Is there a teacher shortage?	Actual class size in focus grades (median) ⁹⁸	Classes that are too big		Is there a teacher shortage?
					Number	Percent	
S1	40	32	No	49	74 of 92	80%	Yes
S2	40	29	No	41	52 of 96	54%	Yes
S3	40	29	No	50	66 of 80	83%	Yes
S4	40	28	No	46	63 of 92	68%	Yes
S5	40	30	No	47	109 of 145	75%	Yes
S6	40	28	No	40 (48)**	40 of 40	100%	Yes
S7	40	35	No	46	40 of 50	80%	Yes
S8	40	31	No	35	0 of 30	0%	No
S9	40	34	No	53	113 of 126	90%	Yes
Total/average	40	30	0% (0 of 9)	47	557 of 751	74%	89% (8 of 9)

Table 1. Median class size at nine school compared to official learner-teacher ratio and maximum class size prescribed by PPN. *The learner-teacher ratio does not give specific information about different classes, only about the school as a whole. When the DBE/GDE rely on it, they assume that all classes in a school are of a similar size. ** School 6 is a full service school that serves learners with special education needs. Those learners are weighted more in PPN calculations. The number in brackets is the effective weight of the 40 learners if the number is adjusted accordingly.

Of the 751 classes for which we collected data, 557 (or 74%) consist of over 40 learners. The overcrowded classes are spread across eight of the nine schools. This is what we found, even though all the schools that were visited are recorded on the DBE’s Education Management Information System (EMIS) as having learner-teacher ratios well below 40. The difference is partly explained by the fact that all teachers are not in front of a class all the time.

Teachers, especially those in senior positions, spend a significant portion of the day completing managerial tasks. Yet, even if every teacher was teaching every hour of the school day in a school with a learner-teacher ratio of 30:1, like our sample schools, there would still likely be overcrowding. **Every class needs one teacher – meaning that even those elective subjects or languages that are not popular in a particular school will use at least one teacher.**

If a school that is allocated exactly enough teachers to reach a learner-teacher ratio of 30:1, for example, has a class of twelve learners, then other classes will need to be much larger to accommodate the extra learners. Furthermore, **when schools are provided with only just enough teachers to serve their learner body, it becomes impossible to organise the different class groups in a relatively equal way: if two grade 10 classes, 10a and 10b, are free for isiZulu at the same time – but only one teacher is free – the classes may have to join.** If the other grade 10 isiZulu class, 10c, has its lesson later on in the day, it will have the teacher all to itself. **Many teachers we spoke to taught the same subject to two different classes where one class was more than double the size of the other.** The learners in each class will have completely different learning experiences. **The graph on the next page illustrates the large variation in class size.**

⁹⁸ The median is the number that falls in the middle when you arrange a set of numbers from smallest to biggest. It is often used instead of the average when there are some numbers that are so different from the rest that they would make the average inaccurate. For example, some of our sample schools used large halls or libraries as classrooms. In our section on classroom size, if we included the measurements of those spaces in a calculation of the average we would end up with a size much bigger than what most classrooms are.

FREQUENCY OF DIFFERENT CLASS SIZES IN THE 9 ETWATWA SCHOOLS

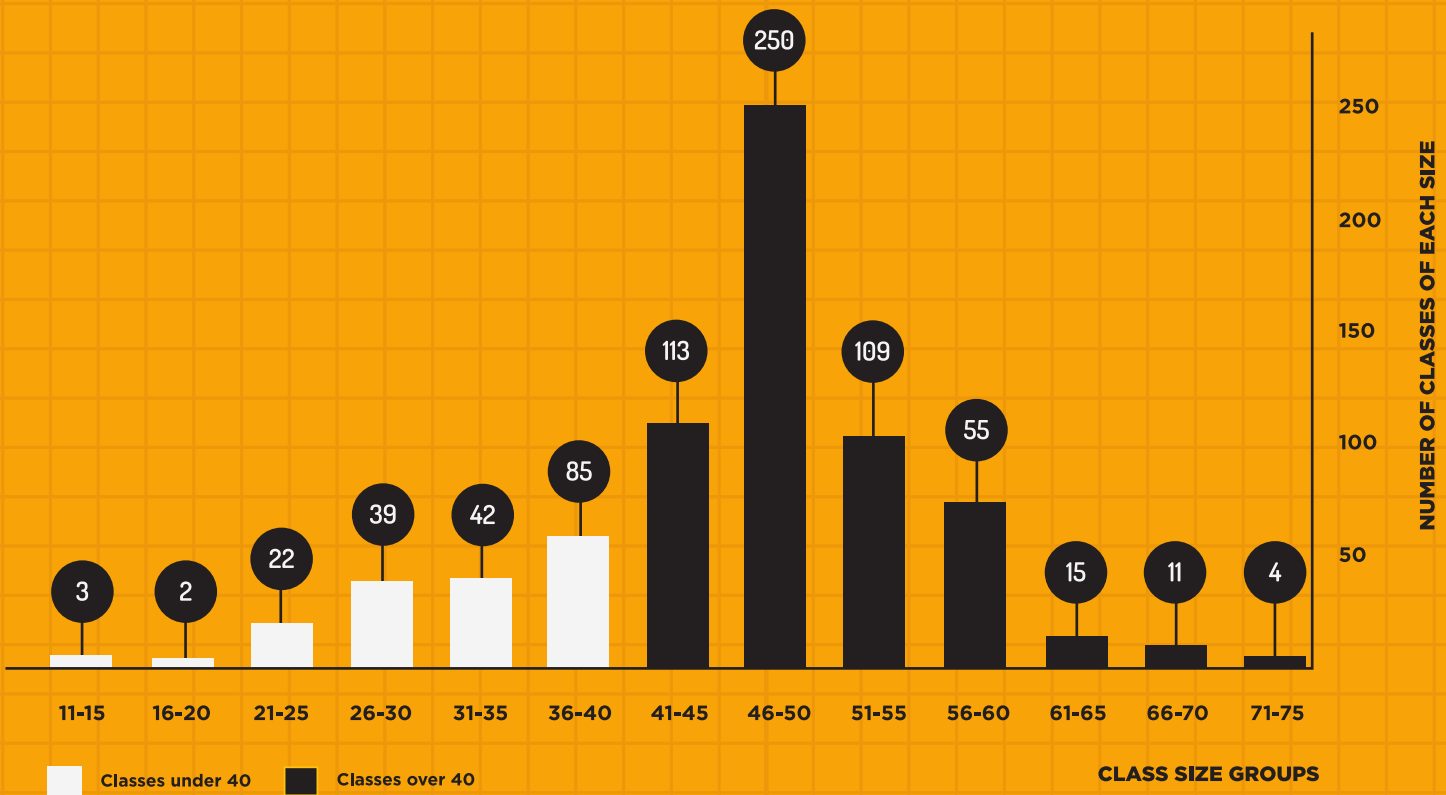


Chart 2: The frequency of different class sizes in the nine schools

What is noteworthy here is not only that most classes have over 40 learners, as shown in black, but also that there is a large variation in class size. The DBE and GDE model for measuring whether classes are too big effectively imagines a single long bar extending above the 30-35 size category, with only a handful of classes that are smaller for specialised subjects that are meant to take place in smaller groups.

The EMIS data that is used to develop learner-teacher ratios for entire schools is unable to account for the huge variations in class sizes within a single school due to elective subject choices, language choices, grade failure and other factors.

Our data shows that if we judge whether a school has enough teachers based on its learner-teacher ratio alone, we are likely to miss significant levels of overcrowding.

TEACHERS



WORKLOAD

Workload /'wɜːk/ /ləʊd/ adj. 1. The amount of work or of working time expected or assigned.

“ At one stage, at the school where I come from there was one teacher for Tshivenda. That teacher taught grades 10 to 12, but you will find that in grade 8 she has two learners, in grade 9 she has three learners. The timetable is full, but the teacher in question is only dealing with 50 learners – which is unreasonable... One language teacher may teach 20 learners total and another may teach 200, with all these tasks – and their remuneration is the same. So equalising out teaching demands [is important]. ”⁹⁹

The learner-teacher ratio relied upon by the DBE and GDE does not accurately show the class sizes at schools, which makes it difficult to compare a school's supply of teachers with the ideals listed in the PPN in order to assess whether it has a shortage of teachers.

Depending on the position, most teachers are required to teach between 85 to 92% of the time that learners are in class. Principals and Deputy Principals are expected to teach less, depending on how many other responsibilities they have.

The DBE and GDE do not seem to look at teachers' actual teaching time when determining if a school needs more teachers.

The table to the right provides estimates of the weekly scheduled teaching time of the 26 teachers we interviewed, and for whom we have accurate data. We did not have information for the pay band/level of the teachers we interviewed, so we used the maximum class time suggested for teachers at each phase.



⁹⁹. A teacher at Amos Maphanga Secondary School. ¹⁰⁰. This applies to grade 4 – 12 teachers. For a foundation phase teacher 79% prescribed class time would be 18 hours, but because only one of our respondents taught foundation phase exclusively, this average should not be extrapolated to foundation phase teachers.

TEACHING TIME OF 26 TEACHERS IN THE NINE ETWATWA SCHOOLS

Teacher	Required teaching time (PAMs)		Actual teaching time		Teacher	Required teaching time (PAMs)		Actual teaching time	
	Hours	Percent	Hours	Percent		Hours	Percent	Hours	Percent
S1P1	25h	90%	18h	65%	S5P2	25h	90%	23.5h	85%
S1P2	25h	90%	18h	65%	S5P3	25h	90%	30h	100% *
S1P3	25h	90%	24h	87%	S6P2	25h	92%	28h	100% *
S1P4	25h	90%	15h	55%	S6P3	21h**	92%	23.5h	100%
S2P2	25h	90%	22.5h	82%	S6P4	25h	92%	7h	30%
S2P3	25h	90%	20h	73%	S7P2	25h	92%	33h	100%*
S3P1	25h	90%	22.5h	82%	S7P3	25h	92%	22.5h	82%
S3P4	25h	90%	29h	100%*	S7P4	25h	92%	23.5h	85%
S3P6	25h	90%	12.5h	45%	S8P1	25h	92%	26.5h	96%
S4P1	25h	90%	29h	100%	S8P2	16.5h	60% ***	18h	65%
S4P4	25h	90%	20	73%	S9P2	25h	90%	19h	69%
S4P6	25h	90%	18	65%	S9P4	25h	90%	17h	62%
S5P1	25h	90%	20	73%	S9P5	25h	90%	28h	100% *
					Average	24h	90%	20h	75%

Table 2: Teacher scheduled class time compared to class time required by PAM. *Some teachers' class time amounted to more than the total hours of teaching in a school week. Because it is impossible to teach more hours than actually exist, we capped those percentages at 100%. Presumably, these teachers joined their classes informally (i.e. without it reflecting on the timetable) or made another arrangement. **This teacher is a foundation phase teacher, therefore their work hours are considered as a percentage of 23 hour total class time per week. ***This respondent is the deputy principal of their school and thus has a reduced teaching time expectation.

The 26 teachers we interviewed were teaching a class, on average, 75% of scheduled teaching time, or 20 hours per week.¹⁰⁰ Only nine (35%) were working above the maximum suggested teaching time for their phase, but those nine teachers were spread across eight of the nine schools. The teachers we spoke to, however, described being overwhelmed by their workload. **Twenty-two of the 26 teachers we interviewed (85%) had over 40 learners in most of their classes, while 12 teachers (46%) had more than 40 learners in all of their classes. At the same time, teachers' efforts were spread across multiple grades and subjects, and 15 teachers (58%) were teaching at least one subject or phase that they were not qualified to teach.**

As with the learner-teacher ratio, looking at the prescribed teaching time alone does not allow us to understand how teaching time interacts with other features of the school environment – such as learner enrolment and subject choices – to shape teachers' workload. Most obviously, teachers with large classes will have significantly more marking to do, and often spend time after school sitting with learners that they could not get to in class. In addition, when schools have the exact number of

teachers for the number of learners enrolled, they end up having to assign teachers unfavourable class combinations: teachers may be required to teach multiple different subjects in multiple different grades and phases. **In terms of workload, it is far more difficult to teach multiple grades and multiple subjects than to teach the same subject to a few classes in the same grade.** For each different subject and each different grade, teachers have to create a different lesson plan, set different tests and write different memos.

The extra burden of teaching across multiple grades and subjects is likely larger for teachers who are required to teach subjects or learning phases that they did not specialise in while studying, as was the case for 58% of the teachers we interviewed.

Teachers also explained how infrastructure shortages affect their workload – when classrooms are limited, schools cannot assign teachers a set classroom because there are not enough. This means that teachers must move between classes for different subjects. The teachers we spoke to felt that not having a set work desk, or a safe space to leave teaching material, was a major administrative burden. The 'scheduled teaching time' does not account for any of these factors.

FINDINGS AND ANALYSIS

The PAM also states that teachers are expected to work 1800 hours each year.¹⁰¹ Based on a 2019 teacher's calendar, that would mean an average of 43 hours per week.

There are many things that we cannot count. For example, teachers' non-teaching time is not protected, which means they can be pulled in to stand in for an absent teacher or fulfil another role at senior management's request, even if they have marking or other work to do. When this happens, teachers often end up taking their marking home and finishing it after hours. However, we can try to calculate the work that we know teachers must do. In addition to teaching their classes, teachers must prepare for each unique subject or grade and mark learners' work. This means any accurate formula needs to look at scheduled teaching time (the number of hours that teachers are assigned to teach each week) as well as lesson spread (how teachers' assigned classes are spread across different grades and subjects) and class size for each class taught. Liang, Yin and Guan developed a formula for measuring teacher's workload that takes into account:¹⁰²

1. P_s = Average amount of preparation time per week for each subject taught. 2. T_s = The number of teaching (contact) hours per week per class for a subject. 3. C_s = The number of classes (different groups) taught for this subject. 4. M_s = The time per learners per week spent on marking and compiling the marks. 5. L_s = The total number of learners taught for that subject.

$$\text{WORKLOAD}_s = P_s + (T_s \times C_s) + M_s \times L_s$$

A teacher's total workload is the sum of the workload (WORKLOAD_s) for each subject they teach. While this equation is not able to account for things like extra classes after school or teachers' administrative duties, it allows us to see how having large classes as well as teaching classes across different subjects and grades increases teachers' workload. The amount of teaching time that teachers are assigned (scheduled teaching time) is only one of the factors that determine a teacher's overall workload.

The table below shows the workload for the 26 teachers we interviewed. We collected data on each teacher's teaching hours per week, the number of subjects they taught, the number of classes they taught, and the number of learners in each class. Unfortunately, we did not ask teachers about the time they spend preparing for each different subject, or how much time they spend on marking each week. So for the purpose of the formula below, we assumed that teachers spend only one hour every week preparing for each subject they teach,¹⁰³ and that each week they spend just six minutes on marking for each learner they teach.

Considering class size as well as lesson spread, in addition to scheduled teaching time, illustrates the distinct impact that overcrowded conditions have on teachers' workload. In our sample size, seventeen of the twenty-six teachers (65%) now appear to have a workload above the expected 43 hours per week – and this is without taking into consideration other duties.

WORKLOAD OF 26 TEACHERS IN THE NINE ETWATWA SCHOOLS

Teacher code	Required work load (PAM) (hours)	Lesson spread C=classes G=grades S=subjects			Classes over 40 learners	Actual workload (hours)	Teacher code	Required work load (PAM) (hours)	Lesson spread C=classes G=grades S=subjects			Classes over 40 learners	Actual workload (hours)
		C	G	S					C	G	S		
S1P1	43h	5	3	2	2 of 5	41h	S5P2	43h	8	3	2	6 of 8	58h
S1P2	43h	7	2	2	4 of 7	54h	S5P3	43h	7	2	1	7 of 7	47h
S1P3	43h	6	3	1	4 of 6	53h	S6P2	43h	9	3	3	9 of 9	72h
S1P4	43h	5	2	2	2 of 5	37h	S6P3	43h	7	1	7	7 of 7	63h
S2P2	43h	7	5	5	6 of 7	59h	S6P4	43h	2	1	1	2 of 2	21h
S2P3	43h	5	2	2	4 of 5	41h	S7P2	43h	6	1	2	6 of 6	61h
S3P1	43h	5	2	2	4 of 5	36h	S7P3	43h	5	1	1	5 of 5	43h
S3P4	43h	9	5	3	5 of 9	76h	S7P4	43h	4	1	4	4 of 4	47h
S3P6	43h	3	2	2	2 of 3	32h	S8P1	43h	7	3	2	2 of 7	57h
S4P1	43h	8	4	2	8 of 8	83h	S8P2	43h	3	2	1	3 of 3	34h
S4P4	43h	7	2	2	5 of 5	64h	S9P2	43h	5	4	4	4 of 5	48h
S4P6	43h	7	2	2	N/A	61h	S9P4	43h	4	3	2	4 of 4	42h
S5P1	43h	10	2	1	9 of 10	66h	S9P5	43h	14	2	1	7 of 14	83h
						Average		43h	11	2	2	8 of 11	53h

Table 3: Teacher teaching time compared to workload.

The teachers we interviewed explained that when their school is under-staffed, principals often assign a good teacher to numerous classes, even those that they are not qualified to teach. The chart below highlights the difference in workload that arises when schools take that approach:

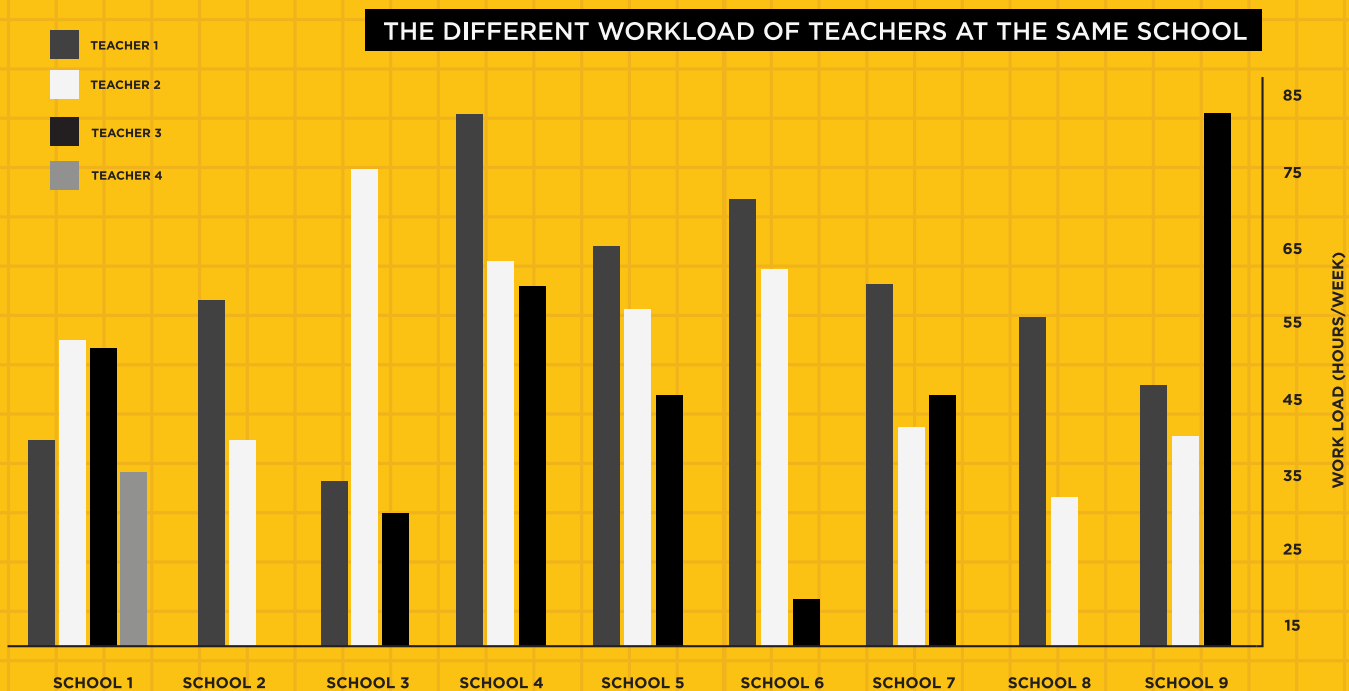


Chart 3: Teacher workload for 18 teachers at the nine schools

The differences are massive – with some teachers working more than double the hours of their colleagues in the same school, even though PAM states that work should be divided equitably between teachers at a given school, regardless of who is more senior.¹⁰⁴ **Some of these working weeks are completely unsustainable, and likely result in teachers neglecting planning almost entirely, compromising on marking, and experiencing burn-out. Other factors, such as the availability of support staff, are not considered here but impact workload as well.**

The only measurement that the DBE and GDE consider when assessing whether a school has a teacher shortage is the learner-teacher ratio. The PPN formula that the GDE uses to assign teachers to schools uses the ideal maximum class size for a subject and the current teaching load of teachers of that subject and phase, but these values barely affect the final number of teachers that a school is entitled to. It seems that beyond the formula, the DBE and GDE never measure the actual class sizes and scheduled teaching times for teachers at different schools to see whether they need more teachers.

These are not values that schools are required to report on. The workload, as we have calculated above, does not feature at all.

The PAM does not even provide any guidelines or norms that can be used to assess whether a school’s teaching staff is overworked, besides the single mention of the expected work hours per year.

The table on the next page summarises the findings above and shows whether teachers are overworked based on the learner-teacher ratio, the scheduled teaching time, and the workload.

Class sizes are usually supposed to be between 35 and 40 learners, depending on the grade and subject. We have used the maximum ideal class size of 40. While we know that the learner-teacher ratio for a whole school is not a good reflection of the actual size of different classes in that school, the GDE and DBE still rely on the learner-teacher ratio to measure teacher shortage so we have included it here to be used for a comparison with the other measurements provided thereafter.

The scheduled teaching time differs for different phases and teaching levels, we have used the maximum for each phase here.

101. PAM (note 2 above). 102. We have changed the symbols used in the function to ones that are easier to make sense of. See Liang, O., Yin, T. & Guan, K. (1985) "Measures of Teachers' Workload" Singapore Journal of Education 7(1). 103. In the formula, the same subject taught to a different grade is considered a different subject, as the preparation is distinct. 104. PAM (note 2 above) section A.4.1.4.

FINDINGS AND ANALYSIS

Using the expected hours of work for a teacher per year, we can state that teachers should work on average 43 hours per week. We have used that here as a standard for teachers' workload per week. In our calculation of workload above, we used very small estimates for how much time teachers spend preparing (1 hour per subject) and marking

(6 minutes per learner) each week and did not include other administrative duties like filling in for absent teachers or running after-school activities.

For all these reasons, the results in the table below are more likely to under-estimate than over-estimate whether the teachers sampled are overworked.

ARE TEACHERS IN ETWATWA OVERWORKED?						
Teacher	Learner-teacher ratio (no. of learners per teacher)		Scheduled teaching time (% of overall class time that teacher teaches)		Workload (no. of hours worked per week)	
	Required	Actual	Required	Actual	Required	Actual
S1P1	40	32	90%	65%	43h	41h
S1P2	40	32	90%	65%	43h	54h
S1P3	40	32	90%	87%	43h	53h
S1P4	40	32	90%	55%	43h	37h
S2P2	40	29	90%	82%	43h	59h
S2P3	40	29	90%	73%	43h	41h
S3P1	40	29	90%	82%	43h	36h
S3P4	40	29	90%	100%	43h	76h
S3P6	40	29	90%	45%	43h	32h
S4P1	40	28	90%	100%	43h	83h
S4P4	40	28	90%	73%	43h	64h
S4P6	40	28	90%	65%	43h	61h
S5P1	40	30	90%	73%	43h	66h
S5P2	40	30	90%	85%	43h	58h
S5P3	40	30	90%	100%	43h	47h
S6P2	40	28	92%	100%	43h	72h
S6P3	40	28	92%	100%	43h	63h
S6P4	40	28	92%	30%	43h	21h
S7P2	40	35	92%	100%	43h	61h
S7P3	40	35	92%	82%	43h	43h
S7P4	40	35	92%	85%	43h	47h
S8P1	40	31	92%	96%	43h	57h
S8P2	40	31	60%	65%	43h	34h
S9P2	40	34	90%	69%	43h	48h
S9P4	40	34	90%	62%	43h	42h
S9P5	40	34	90%	100%	43h	83h
Total	0/26 (0%) overworked		9/26 (35%) overworked		17/26 (65%) overworked	

Table 4: Comparing learner-teacher ratio, scheduled teaching time and workload as measurements for whether teachers are overworked

The table above shows that if we only relied on the learner-teacher ratio to measure whether the teachers in the schools we visited are overworked, we would think that none of the teachers in any of the schools is overworked.

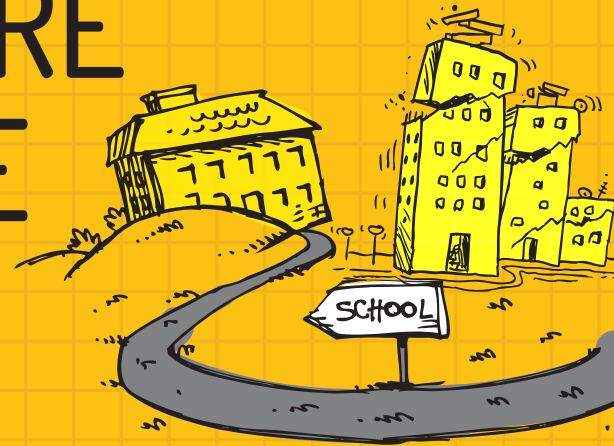
If we look at scheduled class time – the number of hours each week that teachers are assigned to teach – we would think that only nine of the 26 teachers (35%) are overworked.

However, to understand whether teachers are overworked we also have to consider the number of learners in their classes (as this adds to marking time, among other things) and the number of different subjects and grades they teach

(as different subjects and grades require different planning). **An approach that takes into account some of these different factors shows that at least seventeen of the 26 teachers (65%) are **overworked**.**

INFRASTRUCTURE AND FURNITURE

SCHOOL BUILDINGS



SASA empowers the Minister of Education to introduce uniform minimum norms and standards for school capacity.

Section 5A(2) says that these norms must state the number of learners a school can admit depending on the number of teachers it has, its class sizes, the quality of the school's performance, the number of subjects and after-school activities it offers, and how many classrooms it uses. The norms can also consider other relevant factors that affect school capacity. The Minister has not yet introduced these norms. **Without these norms, it is difficult to measure whether a school has too many learners enrolled in total.**

The draft School Infrastructure Norms listed a

930 MAXIMUM LEARNERS CAPACITY
for primary schools

1000 MAXIMUM LEARNERS CAPACITY
for high schools¹⁰⁵

If those limits had made it into the final School Infrastructure Norms, seven of our nine sample schools would have more learners than what would have been legally allowed.

Without any norms or maximum school enrolment limits, it seems as though the DBE and GDE do not pay attention to when school enrolment increases far beyond the number of learners that buildings were designed to hold.

The Centre for Child Law reports that, in the context of a reduced infrastructure budget, the GDE has made a decision to prioritise expanding existing schools instead of building new schools.¹⁰⁶

The table on the next page compares the number of learners that the nine schools were originally built to hold with the actual number of learners enrolled there now. It also lists any changes that the school has had to make as a result of over-enrolment.

¹⁰⁵, South African Schools act 84 of 1996: Call for comments on National Minimum Uniform Norms and Standards for School Infrastructure, GN 1439, GG 31616, 21 November 2008 s 3.1.3. ¹⁰⁶, Centre for Child Law (2019) Provision of School Infrastructure in Gauteng 15.

ORIGINAL CAPACITY AND CURRENT ENROLMENT AT THE NINE ETWATWA SCHOOLS				
School	Original school capacity	Current school enrolment	Difference (%)	Accommodations made
S1	800	1054	32%	None
S2	1400	945	-33%	3 labs and 1 library used as classrooms
S3	900	1036	15%	2 mobile classrooms added; 2 labs used as classrooms
S4	760	1237	63%	3 mobile classrooms added (now broken & not used); 4 brick classrooms added; 2 labs used as classrooms
S5	900	1586	76%	7 mobile classrooms added
S6	910	1215	34%	5 mobile classrooms added
S7	1200	1679	40%	14 mobile classrooms added; library used as classroom
S8	900	774	-14%	Library and computer centre used as classrooms
S9	900	1461	62%	13 mobile classrooms added; 1 library and 1 lab used as classrooms
Average	963	1221	27%	

Table 5: Original school capacity compared to current school enrolment at nine schools

Seven of the nine schools visited have a learner body at least 15% larger than the original building capacity. Interestingly, those that are below capacity are close to other schools that are far above. For example, school six and school eight, both primary schools, are approximately 500 metres apart. The differences in enrolment between schools that are close to each other is likely the result of subject and language offerings – this will be discussed later on in this report.

CLASSROOMS



The School Infrastructure Norms list what infrastructure a school should have depending on the size of the school. They state that the maximum number of learners that any classroom can hold is 40.

To measure whether a school has a classroom shortage, the GDE and DBE look at the learner-classroom ratio, which is the number of learners a school has for every classroom there.

It is calculated by dividing the total number of learners at a school with the number of classrooms at a school.

The learner-classroom ratio tells you how many learners would be in each classroom if all classrooms were being used all the time, and if all classes had the same number of learners. If the learner-classroom ratio is less than 40 learners for each classroom, the GDE and DBE assume that a school has enough classrooms.

The table on the next page compares the learner-classroom ratio of the nine schools we visited to the actual number of learners that we encountered in each classroom in the nine schools.

ARE CLASSROOMS IN ETWATWA HOLDING TOO MANY LEARNERS?

School	Maximum Learners per classroom	Data from DBE/GDE records (EMIS data)		Data from EE school visits			
		Learner-classroom ratio	Is there a classroom shortage?	Actual number of learners in each classroom in focus grades (median)	Classrooms that have too many learners		Is there a classroom shortage?
					Number	Percent	
S1	40	41	Yes	48	9 of 12	75%	Yes
S2	40	39	No	41	7 of 13	54%	Yes
S3	40	43	Yes	49	8 of 10	80%	Yes
S4	40	40	No	45	8 of 12	67%	Yes
S5	40	41	Yes	47	14 of 18	78%	Yes
S6	40	39	No	42 (47)**	8 of 8	100%	Yes
S7	40	42	Yes	47	8 of 10	80%	Yes
S8	40	37	No	33	0 of 6	0%	No
S9	40	46	Yes	53	14 of 16	88%	Yes
Total/Average	40	41	56% (5 of 9)	46	76 of 105	72%	89% (8 of 9)

Table 6: Whether classrooms are big enough for the number of learners they hold **School 6 is a full service school that serves learners with special education needs. Those learners are weighted more in PPN calculations. The number in brackets is the effective weight of the 36 learners if the number is adjusted accordingly.

Of the 105 classrooms we inspected, 76 (or 72%) have classes of more than 40 learners most of the time (i.e. the stream or class that is usually taught in that classroom is made up of more than 40 learners). In eight of the nine schools (89%) at least half of the classrooms measured had too many learners, even though the learner-classroom ratio shows a shortage in five of the schools (56%).

As is shown above, the overall learner-classroom ratio does not actually show how many learners are in each classroom. The learner-classroom ratio assumes that a learner population of a school is always divided perfectly into groups of 40.

It does not take account of the differences in the number of learners per grade or per class. For example, one classroom might be used for the 17 grade 11 learners that take Physical Science, meaning that the large History class of 54 learners will have to squeeze into another classroom.

The learner-classroom ratio also does not consider that for certain subjects, such as languages, grades will often split into more groups than usual in order to accommodate

the many subject choices offered, and this will require more classrooms.

The School Infrastructure Norms also provide guidelines on the size that classrooms should be, depending on how many learners make up a class. Grade 1 to 12 classrooms should have at least 2 m² for every learner with a disability, 1 m² for every other learner, and 7 m² for every teacher, and no class should be less than 48 m². These size requirements also provide a helpful measurement of whether classes are overcrowded. The GDE and DBE assume that no class is bigger than 40 learners.

So instead of measuring if specific classrooms are big enough for the group of learners that learns there, they seem to just measure whether a classroom is big enough for a hypothetical class of 40 ordinary learners, which would be 48 m². The DBE and GDE do not seem to record this information.

The table below shows whether the 105 classrooms we measured were big enough according to the DBE and GDE approach which assumes a maximum of 40 learners per class and requires a minimum of 48m².

It then shows whether the classrooms are big enough for the number of learners they actually served most of the time (i.e. for the stream or class that usually is taught in that classroom).

When measuring classroom sizes we included laboratories and libraries that were being used regularly as classrooms in our measurements - and so some of the classes marked as adequate in size were instead makeshift classrooms that technically should not be used for that purpose.

CLASSROOM SIZE IN THE NINE ETWATWA SCHOOLS										
	DBE/GDE approach					Data from EE schools visits				
	Assumed class size	Minimum acceptable classroom size* (48 m ² or measure per learner)	Classrooms that are too small		Are classrooms too small?	Learners in each class-room	Minimum acceptable classroom size (48 m ² or measure per learner)	Classrooms that are too small as per actual measurements		Are classrooms too small?
			Number	Percent				Number	Percent	
S1	40	48 m ²	0 of 12	0%	No	25 - 67	48 - 74 m ²	8 of 12	67%	Yes
S2	40	48 m ²	0 of 13	0%	No	28 - 46	48 - 53 m ²	5 of 13	38%	Yes
S3	40	48 m ²	0 of 10	0%	No	23 - 57	48 - 64 m ²	7 of 10	70%	Yes
S4	40	48 m ²	0 of 12	0%	No	27 - 63	48 - 70 m ²	2 of 12	17%	Yes
S5	40	48 m ²	10 of 18	56%	Yes	33 - 50	48 - 57 m ²	18 of 18	100%	Yes
S6	40	48 m ²	0 of 8	0%	No	34(43)-46(62)	50 - 69 m ²	7 of 8	88%	Yes
S7	40	48 m ²	1 of 10	10%	Yes	28 - 50	48 - 57 m ²	6 of 10	60%	Yes
S8	40	48 m ²	3 of 6	50%	Yes	28 - 37	48 m ²	3 of 6	50%	Yes
S9	40	48 m ²	12 of 16	75%	Yes	37 - 62	48 - 69 m ²	16 of 16	100%	Yes
Total/ average			26 of 105	25%	22% (4 of 9)			72 of 105	69%	100% (9 of 9)

Table 7: Median class size at nine schools compared to the required classroom size and the actual classroom size *While the Norms and Standards measurement requirements (1 m² per learner and 7 m² per teacher) may in some cases lead to a smaller required class size, the Norms and Standards also state that no classroom can be smaller than 48 m².

Of the 105 classrooms we measured, 79 (75%) were at least 48 m². That number is promising, because it shows that a large number of classrooms in the nine schools would be big enough if they were serving class groups of 40 learners or less. **As we have seen in table six above, classrooms usually have more than 40 learners, meaning that 48 m² classrooms are not big enough and do not comply with the space requirements outlined in the School Infrastructure Norms.** Similarly to the issue of allocating teachers to schools, if we allocate classrooms to schools based on an overall ratio of learners to classrooms, without leaving any extra space for the uneven distribution of learners, many classrooms will still be overcrowded in practice.

The table on the next page summarises these findings and also adds two columns detailing **(1) whether the school reported having a classroom shortage and (2) whether the school was using other facilities, such as libraries, as classrooms.**

Classrooms are supposed to have a maximum 40 learners in them. While we know that the learner-classroom ratio for a whole school is not a good reflection of the actual number of learners in each classroom, the GDE and DBE still rely on learner-classroom ratio as the main measure of whether a school needs more classrooms, so we have provided it in the first column to be used for a comparison with the other measurements provided thereafter.

IS THERE A SHORTAGE OF CLASSROOMS IN ETWATWA SCHOOLS?

	Learner-classroom ratio (max 40)	Actual number of classrooms with too many learners (max 40)	Actual number of classrooms that are too small (48 m ² min, 2 m ² learners with disabilities, 1 m ² other learners, 7 m ² teachers)	Did school report a shortage?	Does school use other spaces as classrooms?
S1	41	9 of 12	8 of 12	Yes	No
S2	39	7 of 13	5 of 13	Yes	Yes
S3	43	8 of 10	7 of 10	Yes	Yes
S4	40	8 of 12	2 of 12	Yes	Yes
S5	41	14 of 18	18 of 18	No	No
S6	39	8 of 8	7 of 8	No	No
S7	42	8 of 10	6 of 10	Yes	Yes
S8	37	0 of 6	3 of 6	Yes	Yes
S9	46	14 of 16	16 of 16	Yes	Yes
Total/average	5/9 schools (56%) have shortage	8/9 schools (89%) have shortage	9/9 schools (100%) have shortage	78% (7 of 9)	67% (6 of 9)

Table 8: Comparing learner-classroom ratio, learner numbers in each classroom, classroom sizes, schools' reported shortage, and schools' use of other spaces as measurements for whether a school has a classroom shortage

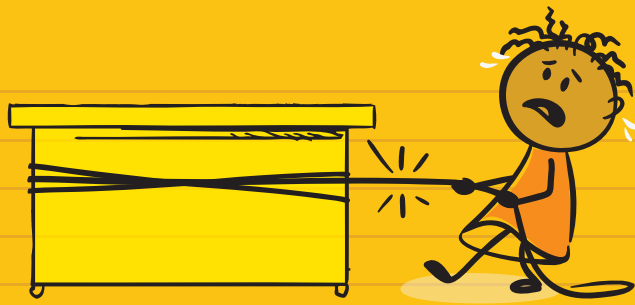
The table above shows that if we only relied on the learner-classroom ratio to measure whether schools need more classrooms, we would think that only five of the nine schools we visited have a classroom shortage.

In reality, we found that in eight of the nine schools, most classrooms have more than 40 learners. This shows there is a classroom shortage. In all nine schools, some classrooms are too small for the number of learners that learn there. In two schools, every classroom we measured was too small. This also shows a classroom shortage. In addition, seven of nine schools reported that they had a classroom shortage, and six of nine reported that they had to make use of other spaces such as halls and libraries for teaching.

To understand whether schools have a classroom shortage we have to take into account the uneven way that learners are divided between classrooms and the fact that for some subjects, grades break up into smaller groups that each need their own classroom.

All these factors mean that schools end up converting other spaces, such as halls into classrooms, often with a make-shift wall separating the space into two, and learners' access to libraries, halls, laboratories and other spaces is cut off. Ideally, classrooms would be big enough to fit the maximum number of learners that will be taught there over the course of the school week, and schools would have enough classrooms to be able to split up into smaller groups for different subjects.

FURNITURE



SASA empowers the Minister of Education to introduce uniform minimum norms and standards for the provision of learning and teaching support material.

Section 5A(2) says that these norms must list requirements for the availability of stationary, teaching and learning material, electronic equipment, school furniture and other equipment, but can also include other things.

The Minister has not yet introduced these norms, but a previous court case¹⁰⁷ and other government documents¹⁰⁸ make it clear that the expectation is that each learner will have a place at a desk and their own seat (so that a two-seater desk would be suitable for two learners).

If the DBE and GDE were to measure whether a school has a furniture shortage, they would likely do so by looking at the total number of desks and chairs a school has and comparing it to the total number of learners enrolled in the school.

As we know, learners are divided unevenly between different subjects and grades. If a school has exactly enough chairs and tables per learner at that school, it means learners will need to drag desks and chairs to certain classrooms when popular subjects are being taught there.

Even if the school is organised so that learners stay seated in their classroom most of the day while teachers rotate, there will always be certain periods where the learners are divided differently.

For example, a classroom that usually holds a class of 28 learners may need to hold more learners during the 'Maths Literacy' period because learners from other streams may prefer to take Maths Literacy instead of Maths.

If there is only exactly one desk and chair for each learner at the school, the learners moving to the Maths Literacy class will need to drag their furniture with them.

We collected data on the number of desks and chairs that were actually in the 105 classrooms that we inspected, and the number of learners being taught there most of the time.

The table on the next page shows the usual number of learners in the classrooms we inspected and then the usual number of desks and chairs in those classrooms. Since the actual number of desks and chairs differs in each classroom, the most significant column in the table is the one that indicates the number and percentage of classrooms without enough furniture.

Of the 105 classes inspected, 82% had too little furniture, and the classrooms with a furniture shortage were spread across eight of the nine schools.

IS THERE A FURNITURE SHORTAGE IN ETWATWA SCHOOLS?

School code	Learners in each classroom	Desks per classroom (median)*	Chairs per classroom (median)	Classrooms without enough furniture		Is there a shortage?
				Number	Percent	
S1	25 - 67	37	37	11 of 12	92%	Yes
S2	28 - 46	36	37	10 of 13	77%	Yes
S3	23 - 57	22	38	10 of 10	100%	Yes
S4	27 - 63	36	43	11 of 12	92%	Yes
S5	33 - 50	26	42	16 of 18	89%	Yes
S6	34(43)-46 (62)	20	42	8 of 8	100%	Yes
S7	28 - 50	45	46	4 of 10	40%	Yes
S8	28 - 37	42	41	0 of 6	0%	No
S9	37 - 62	25	41	16 of 16	100%	Yes
Average	46	32	39	86 of 105	82%	89% (8 of 9)

Table 8: Median furniture provision at the nine schools. *Where a desk and a chair were joined, they were counted as one desk and one chair. Where a two-person desk was joined to a two-person bench, it was counted as two desks and two chairs.

In most cases, learners make do by sharing or bringing in furniture from other classrooms that have fewer learners in them during that period. Even these results do not provide clarity on whether schools have a furniture shortage, because learners were constantly moving furniture between classrooms to where it was needed, and we do not have school-wide snapshots of which classrooms were missing furniture during any specific period. The people we interviewed explained that this process takes significant time away from teaching.

Once again, if furniture is provided on the assumption that each classroom will hold the same number of learners as the school's overall learner-classroom ratio, learners in the classes that are larger will need to drag furniture along with them as they move and class numbers fluctuate - wasting time and wearing down furniture. Ideally, schools should have enough desks and chairs in each classroom for the maximum number of learners that will be taught in that classroom throughout the week.

Then learners would be able to move between classes without worrying that there will not be furniture in other classrooms. For this to be the case, schools would need more desks and chairs than the actual number of learners.

107. Madzodzo and Others v Minister of Basic Education & Others (2014) (3) SA 441 (ECM). 108. Department of Basic Education (2018) Guidelines for Conducting Condition Assessment of Education Facilities p. 168.

Rethinking how we understand school overcrowding

Our results show that all schools in our sample size were overcrowded.



For example, 557 of the 751 classes we collected data for had over 40 learners, and 69 of the 105 classrooms we measured were too small for the number of learners they served.

These shortages, however, are difficult to detect using the methods employed by the DBE and GDE. For example, the DBE and GDE approach would lead one to believe that none of the 751 classes have over 40 learners, and only 26 of the 105 classrooms are too small.

By critically investigating how the DBE and GDE measure overcrowding and comparing

it to the data collected in schools, this section highlights major flaws in the DBE and GDE's approach to supplying schools with resources.

The current measurements that are used – most prominently the ‘learner-teacher ratio’ and the ‘learner-classroom ratio’ – do not adequately reflect the reality in classrooms.

Our results show that, to determine whether there is a shortage of a specific resource, it is necessary to:

1. Take into account the way that learners are divided in a school

(for example, a school-wide average of 30 desks per classroom could mask the fact that seven classrooms have only a handful of desks each and others have too many).

2. Investigate the availability of the resource in relation to other resources

(for example, knowing that a classroom has 30 desks will not tell you much about whether it has enough desks unless you also know how many learners learn in that classroom).

To better understand and address overcrowding in Etwatwa and elsewhere, individual measurements of overcrowding need to be thought of in a more comprehensive way, one that centres the actual conditions in which learning takes place and the relationship between different resources.

WHAT LEADS TO OVERCROWDING SCHOOLS?

The chart below lists the most common themes that emerged from our interviews with teachers, learners, SGB members and principals at each school, all of whom have different understandings of how school management decisions are made and who is responsible for the status quo.

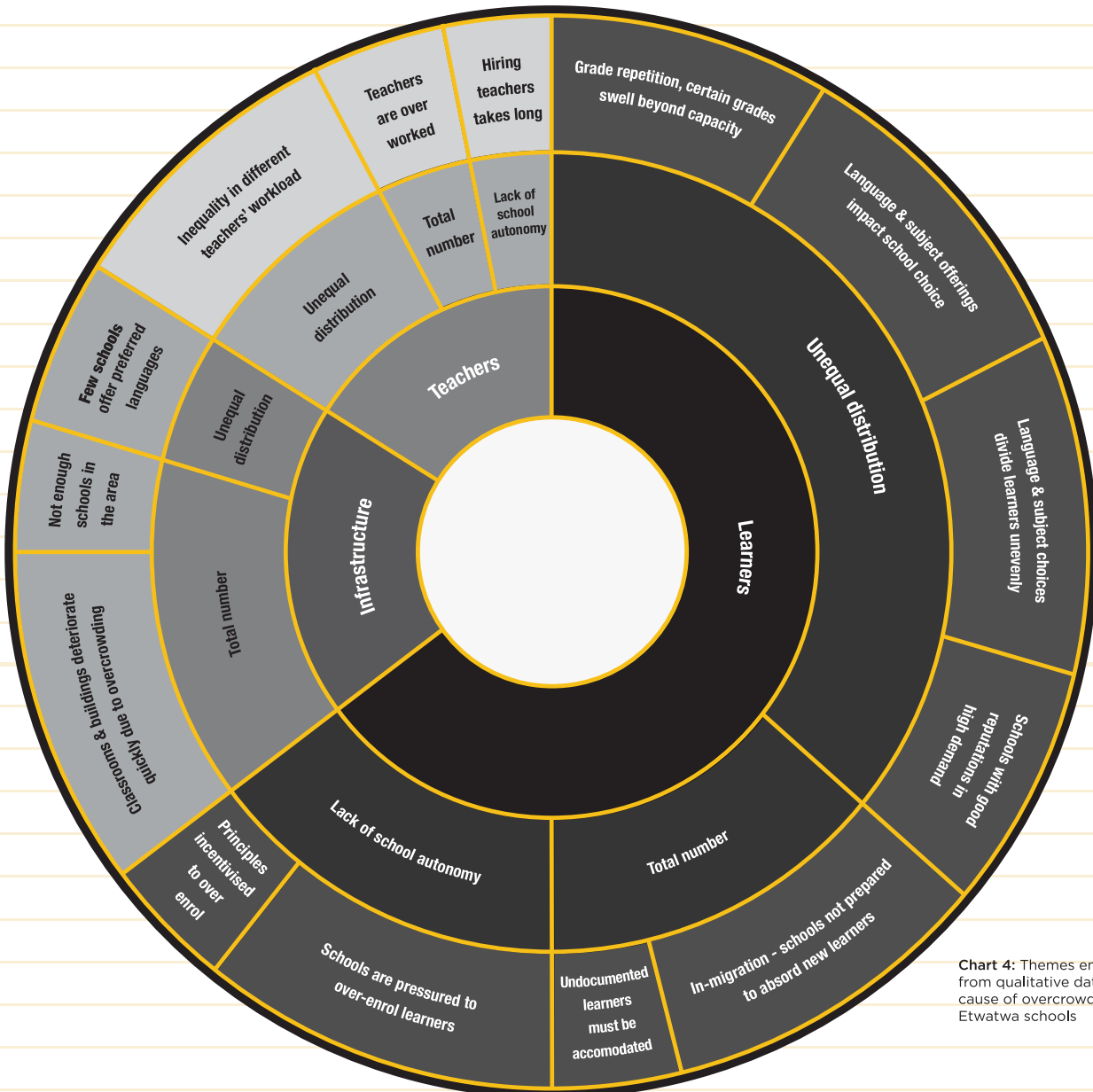


Chart 4: Themes emerging from qualitative data on the cause of overcrowding in Etwatwa schools



Overcrowding emerges both from a shortage of resources – including the number of schools in an area and the amount of infrastructure and teachers at a school – and from the absence of school autonomy which prevents schools from planning for, and minimising the effect of, changes in learner numbers. **A shortage of resources can be the result of an insufficient supply of a resource or the unequal distribution of the resource between schools and classes.**

The smallest ring in the chart on the previous page divides responses into those relating to either learner numbers, teacher numbers or infrastructure availability.

The second ring shows our team’s attempt to code responses as either relating to the overall shortage of a resource, the unequal distribution of a resource, or the inability of schools to use their resources to respond to changes in enrolment (lack of school autonomy).

The outer ring represents actual responses to our open-ended questions, and the size of the section reflects the number of people who spoke about that issue.

Each cause can be read from the outside in. For instance, looking at the top right, **the fact that language and subject offerings distribute learners unequally within their grade, contributes to the unequal distribution of learners within the school.** Or, at the top centre, the fact it takes long to appoint teachers when a post opens up helps explain why schools can experience a shortage of teachers even when, in theory, enough teachers exist in the system. The distinctions help for our own analysis, but in reality each factor informs the other.

For example, the in-migration of learners to the province (on the bottom right) affects the total number of learners in the system, contributing to overcrowding, but only if there are not enough schools to serve those learners (on the left).

Recognising the relational nature of overcrowding is essential to understanding the causes of it. While the people we interviewed initially mentioned population growth in the area as the cause of overcrowding, it became clear as the interviews progressed that most of them do not consider ‘learner numbers’ in an area as something that could (or should) be controlled to alleviate overcrowding.

Rather, there seemed to be a recognition that the population of Etwatwa is growing rapidly and that, therefore, **overcrowding is the result of a failure to adapt to the population growth** – to build enough schools, hire enough teachers, and to generally operate at the provincial, district and school level in such a way that is prepared for change.¹⁰⁹

109. This finding supports the Centre for Child Law’s finding (note 106 above) that the lack of population based planning is at the centre of learner placement shortages in Gauteng province.

SCHOOL RESOURCES ARE ALLOCATED UNEQUALLY

“We are a full service school. This means we cater for all learners regardless of their ability. We have two or three learners who can't hear per class and this makes it difficult for us to reach every learner. They need special attention and you cannot give them the same activities, they need their own activities.”¹¹⁰

Infrastructure, including furniture, and teacher numbers emerged as the most important resources that, when lacking in comparison to learner numbers, lead to a situation of overcrowding. The analysis presented here looks briefly at what causes a shortage in the overall number of these resources, but also focuses on what causes these resources to be divided unequally between schools within a province. The unequal distribution of infrastructure, learners and teachers within an education system is a poorly understood cause of overcrowding. If policies do not address this unequal distribution, overcrowding will continue to be a problem in most classrooms even when there is a sufficient supply of all educational resources in an education system.

TEACHERS

Shortages in the number of teachers available for hire is not usually a problem for Gauteng, but where there is a shortage in teachers for specific subjects, it may be attributed to two factors. First, some people choose not to enter the profession because many universities and colleges have stopped offering teaching qualifications,¹¹¹ or because teachers' potential earnings do not compare well with opportunities available to other graduates.¹¹² Second, PEDs often take a long time to establish posts and hire teachers when the need arises.¹¹³ Sometimes they approve a new teaching post for a school, because they know it is understaffed, even when they cannot afford to hire that teacher. If they do have the funds to hire that teacher, they might still be reluctant to do so in case their budget is cut the following year and they find themselves unable to keep teachers' salaries the same, which would be a violation of the PPN.¹¹⁴ The PPN requires PEDs to maintain the conditions of work for a teacher once they are hired, including their salary expectations. In a context of budget instability, PEDs may play it

safe and hire fewer teachers to avoid violating that requirement.

Gauteng Province is the third lowest spender on education in terms of proportion of overall budget.

In the 2018/2019 financial year, the province spent 37% of its budget on education.¹¹⁵ Over the next years the GDE's budget is set to be cut by R9.8 billion – which is predicted to have negative effects on the number of teachers that the province is able to hire.¹¹⁶

Another important factor contributing to teacher shortages in most schools is the uneven distribution of teachers between schools and within a school.

A large majority of education spending goes to hiring teachers and support staff. Personnel spending thus arguably offers the biggest opportunity for redistributing resources equitably within the schooling system, which remains extremely unequal. Our findings suggest that even if there were enough qualified teachers in South Africa, and the GDE's budget was such that it could hire as many teachers as it thought necessary to meet the PPN, many classrooms would still be overcrowded, especially those in historically under-resourced schools. This is because the current method for determining how many teachers a school needs, the post-provisioning model, does not take into account many of the most relevant factors about that school, such as the class sizes in different grades and subjects.

To determine how many teachers a school needs, PEDs use a formula developed by the DBE and contained in the PPN.¹¹⁷ Among other things, the PPN formula takes into account the number of learners at a school, the number of subjects a school offers, and the number of teachers of different employment levels the school currently employs. The formula is also designed so that schools will be allocated a few more teachers if they fall into a category of schools that need more support, such as schools that run in two languages (dual medium schools).¹¹⁸

Different provinces use the PPN differently to determine how many overall posts they will allocate.

¹¹⁰. An SGB member at one of our sample schools. ¹¹¹. Paterson, A. & Arends, F. (2009) Teacher graduate production in South Africa. ¹¹². Armstrong, P. (2015) Teachers in the South African education system: An economic perspective. Doctoral thesis, Stellenbosch University. ¹¹³. Section 27 (2017) Basic Education Rights Handbook p. 249. ¹¹⁴. As above. ¹¹⁵. Centre for Child Law (2019) (note 106 above). ¹¹⁶. Department of Basic Education. PPN Summative Report. 12 November 2019. ¹¹⁷. PPN (note 2 above). ¹¹⁸. Dual medium schools operate all school activities and teach all subjects in two languages simultaneously.

Some start with the desired learner-teacher ratio (for example, 35 learners to one teacher) and put that in the PPN formula, along with some other information, to determine how many overall posts they will need to allocate in order to ensure that they meet that learner-teacher ratio.

Others start with the number of teachers currently employed by the province and then try to keep that number the same the following year, calculating the learner-teacher ratio that will allow them to do so.¹¹⁹

However, these methods often mean that provinces end up awarding more posts than they can actually afford. Some PEDs then spend too much on teachers, and they have less left over for other expenses such as non-teaching staff and infrastructure projects.¹²⁰

The GDE uses the PPN differently:

- The Gauteng Provincial Treasury determines how much of its provincial budget it will allocate to education (usually between 37% - 38%).¹²¹ This amount plus the amount that the GDE receives directly in conditional grants make up the GDE's education budget.
- The GDE then determines the personnel versus non-personnel budget split. According to the School Funding Norms, this split should be 80:20. Taking the personnel portion, the GDE determines the teaching versus non-teaching staff budget split. According to the School Funding Norms, this split should be 85:15.
- Taking the teacher portion, the GDE divides it by the average cost of a teacher¹²² to arrive at the province's post establishment - the total number of teachers the province can employ.
- Taking the province's post establishment, the GDE uses the DBE's PPN formula (including the 5% redistribution allowance) to calculate each school's post establishment - the number of teachers that will be allocated to each school.

As such, the GDE determines how many teachers it can employ based only on its budget for teachers and the average cost of employing a teacher. Once it knows how many teachers it can employ, it then uses the PPN formula to decide how it will distribute those teachers amongst all the schools in the province. The PPN does not determine *how many* posts the GDE will establish, but rather

the *distribution* of its posts between schools. This way of approaching the PPN is seen as preferable because it ensures that provinces do not allocate schools teacher posts that they cannot afford to fill.¹²³ By taking the average cost of a teacher as fixed, and then determining how many teachers can be hired at that cost, the GDE also avoids the risk of violating the PAM, which prohibits MECs from changing teachers' 'terms of employment' - including salary - from one year to the next.

However, this way of allocating teacher posts means that the number of teachers the province employs is determined by what it can afford, rather than the real need identified in schools. Furthermore, if the GDE's budget is cut from one year to the next, it will find itself with a smaller post establishment than before. In that case, it would likely need to draw funds from other projects to continue to pay all the teachers it had employed the previous year, because PEDs cannot simply terminate teachers' contracts from one year to the next because of budget cuts.¹²⁴

The size of the GDE's total education budget determines the number of teachers that are employed by the GDE, and therefore has an important impact on teacher numbers allocated to individual schools. Another factor that impacts teacher numbers at the school level is the PPN formula. The PPN formula determines how the total number of teachers in a province should be divided between schools. The PPN formula is supposed to divide teachers equitably, allocating more teachers where the need is greatest. However, in reality, when PEDs make use of the formula they end up employing more teachers to schools in wealthier areas (quintiles 4 and 5) than to schools in low-income areas (quintiles 1 - 3).¹²⁵

The GDE usually meets the various policy guidelines for education spending (80:20 split between personnel and non-personnel costs; 85:15 split between teaching and non-teaching staff) and it then distributes its teachers using the PPN formula exactly as it is was designed by the DBE - which automatically includes the 5% 'poverty redress' posts.

119. Deloitte (2014) "National Report: Assessment of National Implementation of Post Provisioning System" UNICEF Commissioned report p. 38. 120. As above p. 40. 121. Centre for Child Law (2019) note 106 above p. 47. 122. The average cost of an educator should be determined with the objective of narrowing the gap between 'the lowest salary notch and highest salary notch within the same act of appointment' Gauteng Department of Education (2020) Post Provisioning Workshop accessed here: <https://irp-cdn.multiscreensite.com/c0cc1c10/files/uploaded/Mr%20Moila%20-%20Post%20Provisioning%20PAM%202020.pdf> 123. Deloitte (note 119 above) p. 39. 124. ELRC Collective Agreement 2/2003. PEDs can declare a group of teachers in excess, but they are not freed of their financial responsibility towards them. They must prioritise the excess teachers for any new teaching or non-teaching position in the Department, or, if there is none, offer them a severance package. 125. Department of Basic Education (2018) Per learner spending inequities in 2016. NB: The quintile system is an inadequate indicator of current school resourcing needs. Unfortunately, the DBE report cited here, and all DBE and GDE reporting on inequalities, uses the quintile system. In reality, most quintile 4 and 5 schools cannot collect funding, so they are also understaffed and in need of major infrastructure upgrades. 126. Calculated from PPN note 2 above Annexure A.1. In a hypothetical situation with five schools and 100 teachers, each would get 19 teachers and the remaining five would be redistributed. 30% of the redistribution posts should go to quintile 1 schools, 27.5% to quintile 2 schools, 22.5% to quintile 3 schools, 15% to quintile 4 schools and 5% to quintile 5 schools. The quintile 1 school would get an extra 1.5 teachers (30% of five); quintile 2 would get an extra 1.4 teachers (27.5% of five), quintile 3 would get 1.1 teachers (22.5% of five), quintile 4 would get 0.75 of a teacher (15% of five), and quintile 5 would get 0.25 of a teacher (5% of five). Quintile 1 would end up with 20.5 teachers, six percent more than quintile 5, with only 19.25 teachers. 127. Department of Basic Education (note 116 above) p. 13.

Nevertheless, an analysis of 2016 data found that in Gauteng, quintile 1 schools have 4% fewer government-funded teachers than quintile 5 schools.¹²⁶ The GDE does not only hire more teachers in higher quintile schools, it also pays those teachers more than their colleagues in lower quintile schools: On average, each quintile 5 teacher costs 7% more than their quintile 1 colleagues.

This difference in pay is not simply a matter of higher quintile schools attracting more experienced teachers, because that same inequitable pattern persisted even when only level one educators are considered.¹²⁷

The inequitable distribution of teachers and salaries is the result of both shortcomings in the PPN model, detailed below, as well as problems with implementation that are difficult to trace, such as the ability of SGBs, principals or unions to influence decisions about teacher appointments.

The 2016 study found that the inequalities in funding for non-teaching staff in schools was even higher, perhaps because provinces are not required to use a redistributive formula like the PPN when allocating non-teaching staff.¹²⁸ **On average, the salaries of the GDE's quintile 5 support staff were 65% higher than those of their colleagues working similar jobs in quintile 1 schools.**

The study found that Gauteng was unique amongst all the provinces in that even when the significantly pro-poor per learner school allocation to schools is taken into account,¹²⁹ the GDE's spending was still regressive (pro-rich).

To refer back to the chart presented on page 13:

The GDE's budgets are divided between **public ordinary schools (77%)** and other spending such as **administration (7%), special education (6%), infrastructure (4%)** and **private schools, early childhood development, and examinations (together 6%)**.

Outside of public ordinary schools, most programmes are not designed to enhance equity in our education system. If they end up enhancing equity, it is an accident not by design.

Equity is said to be furthered primarily by spending on **public ordinary schools**. However, an analysis of around 87% of the GDE's public ordinary school spending (**teachers and non-teaching staff and per learner school allocations**)¹³⁰ found that in 2016 it spent 7% more on quintile 5 schools than on quintile 1 schools.

Other non-personnel costs were not included in this calculation because data about how that funding is allocated at the school level is difficult to find. Some of these other costs, such as school nutrition, are spent in a pro-poor way because only quintile one to three schools qualify. So while the GDE has followed the PPN formula relatively well,¹³¹ the formula has in fact facilitated a pro-rich distribution of teachers. The model has many faults:

(1) THE FORMULA ASSUMES THAT ALL CLASSES WILL BE A SIMILAR SIZE TO THE SCHOOL-WIDE LEARNER-TEACHER RATIO.

While the PPN formula discusses 'ideal class size', it essentially produces a school-wide learner-teacher ratio for a school. In reality, language choice, subject choice in older grades, repetition rates, and other timetabling complications mean that some classes are much smaller than those envisioned in the formula and others, therefore, are much larger. When schools are given just enough teachers to match the groupings imagined by the PPN, they are not able to respond to unequal distribution within their school. Mr Mabasa, the Deputy Principal of Amos Maphanga Secondary School, explained the predicament schools face:

*"When you look at the learning areas, take for instance grade ten to twelve. When learners are choosing streams, there are streams that are not followed by the majority of learners. Now it places a burden on the teachers who are teaching the other streams. Because if there are only a few learners taking Accounting and Business, it means that the majority of learners will be going to the 'General' stream and the 'Science' stream. Therefore, those streams will be overcrowded. And you cannot accommodate Accounting and Science in one class... At the school the learner-teacher ratio is correct but classrooms are overcrowded. This is because our building is small and our streams are uneven: some subjects have more learners than others. Accounting in grade twelve has only eleven learners and that overcrowds other streams that have to carry the rest. If you have few learners doing Accounting, for instance, that teacher teaching only eleven learners is short of quite a few learners who are pushed into other streams where the teacher-pupil ratio is one to 50, or one to 60."*¹³²

Despite this, government officials still report on school-wide learner-teacher ratios as if they indicate class size.

¹²⁸. Non-teaching staff include administrative staff and support staff and are essential for ensuring schools run smoothly. When a school has a shortage of non-teaching staff, teachers must take on administrative duties such as photocopying. ¹²⁹. The school allocation is given to schools to cover their every-day operation costs. In 2016, in GP it was R1,177 per learner in quintile 1-3 schools and R590 per learner in quintile 4 & 5 schools. ¹³⁰. Other sub-programmes that contribute to non-personnel spending are transport and nutrition, but information on spending on these sub-programmes is not available at the school level. The NSNP and, to a lesser extent, other sub-programmes are pro-poor in their spending. ¹³¹. In 2019, it had an overall personnel:non-personnel split of 79.95/20.05, and a province-wide learner:educator ratio of 35:1. ¹³². A learner at Amos Maphanga Secondary School.

A senior GDE official, relying on this logic, stated in an interview, “In terms of teachers, there’s no problem. No schools have bad ratios, one to 33 or one to 34. If there were enough classes, there wouldn’t be overcrowding”.¹³³ As recently as 2018, the Portfolio Committee on Education was left flustered and confused after an article by Nic Spaull cited class size averages significantly higher than the learner-teacher ratios to which government documents usually refer.¹³⁴

(2) THE ‘REDRESS’ REQUIREMENT IN THE PPN IS INSUFFICIENT.

The PPN states that:

*“The head of a provincial department must set aside a certain percentage of its available posts for poverty redress based on the department’s relative level of internal inequality. The Minister may from time to time set the maximum percentage that provincial departments may use for this purpose. Until this limit is revised, it is set at 5%.”*¹³⁵

- a) The redress requirement has been interpreted as ‘optional,’ even though the language used clearly requires that at least some teachers be reserved for this purpose. Provinces are not required to report on whether they have reserved redress posts or not. According to a DBE official working on post-provisioning, some PEDs had not even heard of this requirement until recently.¹³⁶
- b) The Minister has not raised the maximum redress allowance since the PPN was introduced in 1998, despite being empowered to do so, and despite the persistent inequality in class sizes between schools.
- c) The PPN includes a required ‘maximum’ percent to be spent on redress posts, rather than a minimum, which limits PEDs’ ability to redress inequalities. Provinces should be able to increase that percent as much as is necessary, depending on their levels of inequality and their proportion of fee-charging and no-fee schools.
- d) The poverty redress requirement only makes provision for the redistribution of posts within a province. However, in poorer provinces, where there are large teacher shortages across all schools, using the five percent redress posts will simply reorganise posts from one low-resource setting to another. The redress mechanism should instead operate nationally, so that a certain percentage of teachers will be reserved for allocation in a way that benefits the worst off schools across the country.

These factors have minimised the impact of the redress requirement.

(3) THE PPN DOES NOT INCLUDE NORMS AND STANDARDS FOR ALLOCATING NON-TEACHING SUPPORT STAFF.

The School Funding Norms state that “[t]he allocation of non-teaching staff to schools, including administrative and support staff, is extremely uneven” which has placed a significant extra burden on teaching staff at low-resourced schools.¹³⁷ These teachers end up having to spend a lot of their time doing things like photocopying, dealing with sick or injured learners, and keeping records of which students are frequently absent. In order to address this, the School Funding Norms set a ‘target’ of 15% of all education personnel funding to go to non-teaching administrative and support staff, but they state that the “Minister of Education is responsible for determining norms for the provision of non-educator personnel”.¹³⁸ The latest amendment to the PAM in 2016, released almost 10 years after the School Funding Norms were promulgated, still fails to provide norms for non-teaching staff.

Given the absence of these norms and standards:

- a) PEDs regularly spend less than the 15% target on non-teaching staff. There is only a ‘target’ and no binding minimum norms.
- b) The non-teaching staff they do hire are spread unequally between schools. There is no formula, similar to the PPN formula for teaching staff, that determines how non-teaching staff should be spread across schools. There is also no minimum standard for how many non-teaching staff each school must have (for example, one staff member for every x number of learners).
- c) The non-teaching staff that are hired are not working in schools, where they are most needed. There are no guidelines for how non-teaching staff funding should be divided between office-based staff and school-based staff at the provincial level. Office-based staff are more likely to be higher paid and work higher up in PEDs, and are more removed from day-to-day school administration. This shift to spending more on office-based staff likely has negative implications for equity, but because there are no guidelines or reporting requirements it is difficult for the public to hold the GDE accountable for such choices. **In 2020, the GDE increased its office-based non-teaching posts by 24, bringing its total of 2 322 office-based educators to more than double the average of 822 posts across all provinces. At the same time it decreased its school-based non-teaching posts by 120.**

To return to the chart presented on page 13: **80% of funding across all programmes should be spent on personnel, and 15% of that should be spent on non-teaching staff.**

¹³⁴, PMG (2018) Meeting Summary: Department of Basic Education 2018/19 Budget & Annual Performance Plan, 17 April 2018. ¹³⁵, PPN (note 2 above) at A-16, Emphasis added. ¹³⁶, DBE Post-Provisioning Meeting 27 Feb 2020. ¹³⁷, School Funding Norms (note 57 above) sections 72-77, 8. ¹³⁸, As above. ¹³⁹, PPN (note 2 above) p. 20, Emphasis added. ¹⁴⁰, X. Masanguana SGB member at Phakamani Secondary School. ¹⁴¹, The principal of one of our sample schools. ¹⁴², Deloitte (note 119 above) at 5. ¹⁴³, DBE (2020) “School Realities 2019”. Values calculated by comparing the School Realities reports from 2014 – 2019. ¹⁴⁴, DBE (not 116 above) p. 10.

The chart shows an even distribution of teaching and non-teaching staff across all GDE programmes.

However, a PED could easily meet that requirement by hiring a smaller number of higher paid **non-teaching staff** and placing them in programmes like 'administration' or 'examinations' and spending almost nothing on employing non-teaching staff to work in public ordinary schools or special education schools.

Thus, it is difficult to ensure that the target level of 15% funding to non-teaching staff is met; that schools have access to non-teaching staff to at least a minimum level (for example, one staff member for every x number of learners); or that funding for non-teaching staff is spent in a pro-poor way. While the norms relating to the provisioning of non-teaching staff do not technically need to form part of the PPN, many of the same learner and school-specific characteristics that are included in the PPN formula - including poverty indicators - should inform the non-teaching staff norms too. It seems preferable that they are considered together.

(4) THE MODEL DOES NOT PRESCRIBE LIMITS TO TEACHERS' WORKLOAD AND WORK SPREAD.

The PPN does not include any consideration of teachers' workload. The PPN formula uses the average teaching time for teachers of different subjects and grades in its calculations, but it says that: 'The norms used in this regard are based on average prevailing practices and do not represent a workload policy'.¹³⁹ The regulations do state that teachers are expected to show that they have worked 1800 hours per year, roughly 43 hours per week, but it appears as though that number does not affect assessments of teacher shortages.

Elsewhere in the regulations there are only vague guidelines on ideal scheduled teaching time for teachers. Scheduled teaching time bears little relation to workload, especially in low resource settings, because workload is affected by the size of the classes taught (due to greater marking obligations), and by teachers' lessons being spread across grades and subjects (due to having to plan separately for each different subject). The PPN does not provide guidelines for acceptable lesson spread across grades and subjects, and how class size should impact a teacher's prescribed class time. At present teachers can be assigned to teach subjects and phases that they are not qualified to teach.

There are also no guidelines for non-teaching time, so teachers can be made to do any activity falling within their job description, forcing them to do marking and lesson planning after hours. These dynamics are highlighted in the two quotes below:

"Proper profiling of teachers is not done well. In terms of Maths educators, 60% of teachers are

*qualified to teach Maths, but some are not confident to teach it so they will be slotted to do another subject."*¹⁴⁰

*"Teachers have to plan classes and monitor learners, but the design of education includes a lot of work and paperwork. There is no reinforcement [of ideal scheduled class time]. Educators are never consulted. There are lots of marking tasks and exams, which has a bad impact. Different teachers teach different class sizes, which can be unfair."*¹⁴¹

(5) THE WEIGHTING MECHANISM IN THE PPN AIMS TO ENSURE THE EQUITABLE SHARE OF THE NUMBER OF TEACHERS ACROSS A PROVINCE'S SCHOOLS, NOT OF THE COST OF TEACHERS.

The School Funding Norms state that 80% of education spending should be spent on personnel. The PPN switches from talking about equitable spending to talking about equitable numbers of teachers. If all teachers were paid the same, then distributing teachers equitably between schools would automatically mean spending in an equitable way. However, if better resourced schools are able to attract more experienced teachers, or negotiate better salaries for the teachers they hire, PEDs will end up spending more on personnel costs for those schools than schools that cannot attract such teachers, like rural schools. **Even when experience is not at play, we know that across South Africa an entry-level teacher in a quintile five school will, on average, be paid 5% more than an entry-level teacher in a quintile one school.**¹⁴² The focus, then, needs to shift from providing an equitable number of teachers to equitable spending on teachers.

(6) THE FACTORS THAT THE PPN FORMULA ASSIGNS EXTRA WEIGHT TO, AND THE FACTORS THAT IT DOES NOT CONSIDER, ALSO CONTRIBUTE TO INEQUALITY:

The PPN does not take into account any prediction of the growth in learner numbers in a province, even though certain provinces' learner population grows consistently each year. A school is allocated a certain number of teachers based on the number of learners it had the previous year. In the first two weeks of the school year a survey is done to check if adjustments in teacher numbers are required, but if a PED has a limited number of teaching posts available, and enrolment increases are not dramatic, it is unlikely that schools will be sent extra teachers. **Despite the fact that the GDE's learner population grows on average two to three percent each year,¹⁴³ the GDE planned to employ the same number of staff members in 2020 as in 2019.** It also did not increase its number of ad hoc posts - extra posts which could be allocated in January to schools

that were required to accept extra unplaced learners.¹⁴⁴

- b) The PPN recognises that offering many subject choices to learners in grades 10 to 12 requires more teachers, because the same group of learners may divide into more groups when electives are taught. However, the PPN does not take into account the same considerations for languages (home language and first additional language) even though learners often break up into smaller groups than too. So there is no extra ‘weight’ given to schools that offer many language electives.
- c) The PPN is only able to weigh the special needs of learners with disabilities if those learners have been professionally assessed. In rural or low-income settings, many schools and families are not able to arrange for an assessment for learners living with disabilities, so those learners’ special education needs are not counted, and schools do not benefit from the extra support.
- d) The PPN recognises that high school teachers should have less scheduled teaching time because they teach specific subjects, not whole grades, so more teachers are needed to cover all the subjects. Primary schools are increasingly following this approach (including the primary schools we researched), even for lower grades, because teachers are not confident in teaching all subjects. Primary schools then also need more teachers to cover all the subjects offered. However, the PPN formula does not consider this fact, meaning primary schools are only assigned one teacher for every class and it is expected that they will teach that class every subject.

(7) FINALLY, PAM PLACES NO BINDING OBLIGATIONS ON PEDS TO PROVIDE ENOUGH TEACHERS AND TO DISTRIBUTE THEM EQUITABLY.

The Education Labour Relations Council (ELRC) Collective Agreement 4 of 1995, from which the current PPN emerges, contained a fixed deadline by which the required learner-teacher ratio had to be met. It states that by 1 April 2000 all primary schools must have a learner-educator ratio of 40:1 or lower and all high schools a ratio of 35:1 or lower. However, that time-bound requirement has fallen away in newer versions of the PPN. Furthermore, PEDs are not required to report on any aspect of teacher supply and distribution besides the average learner-teacher ratio for the whole province –

which tells us very little about whether there are enough teachers and tells us nothing about whether teachers are distributed equitably.

Commenting on the inequities in teacher provisioning, a DBE report notes that ‘[i]t seems very likely that the underlying problems are difficulties in recruiting teachers to disadvantaged areas.’¹⁴⁵ Elsewhere in its ‘Action Plan to 2019’ the DBE writes that ‘[t]he under-supply of teachers is a part of the problem, but poor management of teaching time within schools also exacerbates the situation’.¹⁴⁶ Our analysis has shown that while these issues may contribute to the problem, better recruiting and time management will not solve the problem of overcrowded classes and overworked teachers. The PPN formula distributes teachers in a simplistic way, making it very likely that allocating teachers using that formula alone will not lead to the desired reduction in class sizes.

This section has shown that to reduce overcrowding that is the result of teacher shortages, there is a need to (1) increase the overall education budget and (2) reimagine the formula that distributes teachers between schools by remedying the seven faults outlined above.

INFRASTRUCTURE AND FURNITURE

Absolute shortages in infrastructure in Gauteng can be attributed primarily to the failure on the part of the GDE and the DBE to plan effectively and to repair, replace and supplement the province’s unequally distributed school infrastructure at a rate that can accommodate the rapidly growing learner population of Gauteng.¹⁴⁷ EE, along with other civil society organisations and academics, has carried out extensive research and activism on the state’s failure to deliver infrastructure.¹⁴⁸

Despite significant legislative and budgetary commitments to providing safe school infrastructure – including the introduction of time-bound School Infrastructure Norms as well as two grants dedicated specifically to eradicating backlogs in school infrastructure projects – the delivery of new infrastructure by the DBE and PEDs has been shamefully slow and characterised by financial mismanagement.¹⁴⁹ For example, in the 2017/2018 financial year the GDE spent 99% of its R1.5 billion

144. DBE (not 116 above) p.10, 145. As above at 2, 146. Department of Basic Education (2015) Action Plan to 2019: Towards the Realisation of Schooling 2030 at 68, 147. Centre for Child Law (2019) (note 106 above), 148. See EE’s website: <https://equaleducation.org.za/campaigns/school-infrastructure/> 149. Financial and Fiscal Commission (2019) Assessing the Efficiency of Provincial Infrastructure Programmes: The case of health, education and public transport. 150. Select Committee On Appropriations (2018) The Education Infrastructure Grant Expenditure As At Fourth Quarter 2017/18 Financial Year, 22 August 2018 2. The GDE did complete more maintenance projects than it had projected, but not enough to justify the failure to build schools. 151. See here for two examples of the ACT classrooms that are built: <http://www.fsm.co.za/> and <https://www.kwikspace.co.za/building-types/classrooms/>. The list of successful bidders for the GDE’s ACT classroom construction can be found here <https://etenders.treasury.gov.za/field-collection/field-etender-awarded-to/28501>. 152. Gauteng Province (2017) Status Report – Implementation of the Regulations Relating to the Minimum Uniform Norms and Standards for Public School Infrastructure.

allocation from the Education Infrastructure Grant, the grant awarded to PEDs for infrastructure provisioning, but it built only one of the twelve new schools it had planned to build.¹⁵⁰ In January 2019, the GDE reported a classroom backlog of 4 103 and stated that it planned to focus exclusively on the distribution of mobile and Alternative Construction Technology (ACT) classrooms – what are commonly known as ‘prefabricated’ or ‘prefab’ classrooms¹⁵¹ – to try to lower that number before the 29 Nov 2020 School Infrastructure Norms deadline. It predicted, however, that it would still have a shortage of 2 963 classrooms when the deadline passed.¹⁵²

In addition to the overall shortage of schools and classrooms, the overcrowding experienced in schools is also made worse by the way that infrastructure is distributed between schools. The model for providing school infrastructure that has developed in response to the School Infrastructure Norms has some faults:

(1) THE SCHOOL INFRASTRUCTURE NORMS ASSUME THAT ALL CLASSROOMS WILL HOLD A SIMILAR NUMBER OF LEARNERS TO THE SCHOOL-WIDE LEARNER-CLASSROOM RATIO, AND THAT NO CLASSROOMS WILL HOLD MORE THAN 40 LEARNERS.

- a) The vast majority of classes are made up of more than 40 learners (72% in our sample), yet the GDE continues to provide classrooms based on the assumption that all classes are a maximum of 40 learners. This means that learners are learning in classrooms that are built for 40 learners maximum, and are too small for the actual classes that learn there.
- b) The model does not take into account the fact that for some subjects, such as languages, grades may break up into smaller groups due to the diversity in language and subject choices. Each subject needs its own classroom. If a grade only has one classroom for every 40 learners, when it breaks up into smaller groups it will not have enough classrooms.

(2) THE SCHOOL INFRASTRUCTURE NORMS ARE NOT FORWARD-LOOKING.

The School Infrastructure Norms list deadlines after which all schools have to have different resources, depending on the number of learners there (for example, a secondary school of 800-1000 learners must have 30 toilets). After years of neglect, the scramble to meet the minimum requirements contained in the School Infrastructure Norms has led to a ‘bare minimum’ approach to infrastructure provisioning. PEDs respond to clear cases of

infrastructure shortages by adding on the least amount of infrastructure needed to bring that school back in line with the minimum requirements contained in the School Infrastructure Norms. This reactive approach, coupled with slow project implementation, means that schools with increasing learner populations will constantly be overcrowded as they wait for more infrastructure. In practice, it seems like schools cannot qualify for more infrastructure until they are already overcrowded.

The GDE, like other PEDs, only reports on their planning for how to deal with the most extreme violations of the School Infrastructure Norms – and shows no evidence of long-term planning for increasing learner populations. Both the School Funding Norms and the School Infrastructure Norms allow PEDs to adapt the norms to best suit their particular needs. Given that Gauteng’s school-going population increases each year, with certain areas growing in a predictable way, the GDE could easily adapt its infrastructure planning model based on a prediction of future shortages in certain areas.¹⁵³ Doing so would require a commitment to long-term planning.

(3) THERE ARE NO GUIDELINES FOR SCHOOLS CAPACITY.

Given the huge cost of building a new school, the unexplained delays to those projects, and decreasing education budgets, the GDE has chosen to focus on expanding existing schools using mobile and prefabricated classrooms rather than building new schools. While in the short-term this may be desirable, just so that each learner has a place in a school, it is a worrying strategy in the long-term.

Gauteng has an average school enrolment of 1 039 learners, making it the only province with an average school enrolment of over 1000 learners. Western Cape has the second highest with 823 learners per school, and the country-wide average is 543.¹⁵⁴ There are still no school capacity norms in place to ensure that schools are not expanded to enrolment levels that are not conducive to teaching and learning – as required by the NPEP.

Without School Capacity Norms, classrooms are added to schools in an unorganised way:

- a) There are no commitments to whether, and when, mobile and prefabricated classrooms will be replaced with permanent classrooms. The School Infrastructure Norms simply state that where alternative building technologies are being used, permission must be obtained from Agrément South Africa¹⁵⁵ – an organisation

¹⁵³. For example of how the GDE might do so, see Centre for Child Law (2016) Budgets and Bricks: Progress with School Infrastructure following the Rivonia Primary School Case 15.
¹⁵⁴. DBE (note 146 above). ¹⁵⁵. School Infrastructure Norms (note 3 above) section 18(15).

formed within the Department of Public Works that approves alternative construction projects.

- b) When a new school is opened it is equipped with furniture and other teaching material, but thereafter schools pay for their own furniture and teaching materials. It is unclear whether new classrooms are always delivered with furniture and teaching materials, in the way that a new school would be. This could place a significant burden on schools that are asked to expand.¹⁵⁶
- c) The GDE does not seem to have a plan for how it will add other infrastructure (such as toilets and halls) to schools that get mobile and prefabricated classrooms in a uniform and efficient way, so that as the school enrolment increases the amount of other infrastructure available increases too.
- d) The system of constantly expanding schools costs more in the long term. According to the GDE's Deputy Director General for Strategic Planning:

"The real pressure around placement is in township schools. GDE is able to get teachers, budget for furniture and materials. GDE puts in an order for new schools called Alternative Construction Technology (ACT) Classrooms which can be assembled very quickly and are better than mobiles. [In 2017] the GDE placed an order of almost 400 mobile classrooms. The problem is that GDE is taking capital money and building a large infrastructure that is not bricks and mortar simply to meet the demand. The classrooms do not have the same life span as the bricks and mortar classrooms. The cost of bussing learners from a whole school from another area is equivalent to building a new school after three and a half years."¹⁵⁷

This section has shown that to reduce overcrowding that is the result of infrastructure shortages, there is a need to (1) increase funding for school infrastructure, (2) improve implementation of the School Infrastructure Norms, and (3) rethink the School Infrastructure Norms and the way they are understood so that school infrastructure planning reflects the reality in schools and the predicted changes in learner numbers.

LEARNERS

The unequal distribution of learners is largely a result of poor planning on the part of the GDE to ensure that enough infrastructure and teachers are placed in areas that consistently experience population growth. However, learner distribution is also affected by school admissions policies and by

the different subject offerings that different schools have.

(1) THE GDE SCHOOL ADMISSIONS POLICY ENCOURAGES SCHOOLS TO ACCEPT MORE LEARNERS THAN THEIR LIMIT.

Many schools feel pressure to maintain or increase their enrolment levels to avoid losing teachers and other resources. In Gauteng, school admissions are now coordinated now by the GDE, instead of by individual schools.

Learners apply to up to three schools (now increased to five) in whose feeder zone they fall through a centralised system, and then get placed in one of them. School feeder zones have also been expanded to a 30km radius. If it worked well, the new system would help keep school enrolment at individual schools stable, equalise school sizes across the province, and prevent schools from excluding learners from low income households. However, the application process takes place online and learners' chances of getting a place in their preferred school increase if they apply early. This means that wealthier families who have better access to information and the internet end up applying early and securing their preferred schools.

The Deputy Principal of B. B. Myathaza, explained:

"Schools are a brand, and this school's performance is its brand. The school had to move learners and educators to different new schools, and initially parents were upset but they eventually saw the convenience and became willing."¹⁵⁸

Popular schools have far too many applicants, and other schools have far fewer. Because each learner's application is sent to multiple schools, it seems as though schools are not certain that all the learners they accept will end up enrolling there. Less popular schools end up accepting more applicants than their capacity, just in case some of the learners they accept end up choosing a different school. They do not want to drop below their enrolment limit for fear of losing teachers. One respondent explained:

"The challenge is: Tebogo may apply for three schools. His name is at the three schools. Each of the three schools thinks he's coming...[T]here's 270 applications, but only 240 actually join."¹⁵⁹

(2) THE GDE PLACES UNPLACED LEARNERS IN ALREADY UNDER-RESOURCED SCHOOLS.

SGBs create school admissions policies and set enrolment maximums, but final decisions about the

¹⁵⁶. Department of Education (2003) Report to the Minister: A review of the financing, resourcing and costs of education in public schools. ¹⁵⁷. PMG (2018) Meeting Summary: Provincial Education Departments Performance Indicators: roundtable discussion, 06 February 2018. ¹⁵⁸. S2P1. ¹⁵⁹. S3P3 ¹⁶⁰. Hlangani, A (2019) "14 000 Gauteng students still unplaced for 2020 school year" News24. Accessed at: <https://www.news24.com/parent/Learn/Learning-difficulties/14-000-students-still-unplaced-for-2020-school-year-in-gauteng-20191120>. ¹⁶¹. A learner from Amos Maphanga Secondary School (S1P5). ¹⁶². Phandimfundo Secondary School (S5p5). ¹⁶³. Hall, K. (2018). "Grade progression: statistics on children in South Africa." Children's Institute.

admission of a learner to a school rests with the PED's Head of Department (HoD). The PED ultimately determines a school's capacity, and, if there are extra learners that need to be placed, the PED can place a learner wherever it wants.

Low-resourced schools end up accepting most of the learners who were not placed into a school during the standard admissions cycle. One explanation for this is that better resourced schools seem to have more bargaining power with the GDE, and they refuse to enrol learners above their capacity. Another reason is that it costs the GDE a significant amount to transport learners to schools further away, so the department tries to place them in nearby schools, even when those schools are full.

On 19 November 2019, in addition to the over 27 000 learners who had not submitted all the required documents for applying to school in Gauteng, there were still over 14 000 applicants who had completed their application but had not been placed in schools. That day, MEC Panyaza Lesufi tweeted: "We're now pushing schools to increase class sizes to accommodate additional unplaced learners by the 30th Nov."¹⁶⁰

The people we interviewed had experience with this:

"The district asks schools to accept learners. We accept more learners than our original number because when learners aren't placed they go to the district and the district places them here. It depends on the area - in informal settlements people come to live wherever there is space and of course the learners will always go to the closer school, because they are walking to school...We don't get new teachers in time unless the principal has to motivate and it's a long process, so in the meantime we end up teaching more classes. Teachers for older grades will sometimes be used to teach younger grades."¹⁶¹

"The school is unable to do anything about it, but they report numbers and such to the district. The district office is in charge, and they know, but they can't do anything and have no other option. They say time and budget does not allow for schools to be built. We are controlled by our district offices, they know the principal of each school. These are the people that report to the Head Office (and then) to the national office."¹⁶²

(3) THE NATIONAL POLICY FOR PROMOTION AND PROGRESSION REQUIREMENTS (NPPPR) AFFECTS LEARNER DISTRIBUTION WITHIN AND BETWEEN SCHOOLS IN THE FOLLOWING WAYS:

- a) The current way in which teachers and classrooms are allocated means that schools with few teachers and classrooms will offer as few subjects as they can (languages and, in grades ten to twelve, subject electives). Some learners will leave to find other schools if they wish to pursue certain subjects, whereas others may stick with subject combinations that they struggle to understand.
- b) Schools try to minimise the number of languages they offer, because they do not get a special teacher allowance for offering more languages. This has a hugely detrimental effect on the progression of learners, who need to pass their first additional language in order to progress to the next grade.
- c) When schools offer limited language and elective subject choices, they also usually cannot allow learners to change their subjects in the middle of the year. For example, if a learner decides to drop Accounting for Geography in April of their grade eleven year, they may have to wait until grade twelve to change. This means that they will start Geography even more behind than had they switched immediately.
- d) For these reasons and others, the vast majority of learners do not move through the schooling system from year to year as NPPPR expects, creating under-enrolled grades (especially grades eleven and twelve) and over-enrolled grades.¹⁶³

Many of the issues relating to learner distribution would be solved if infrastructure and teacher allocation and distribution took place in a more equitable, contextual way that recognised the need for elasticity in resources.

SCHOOLS ARE NOT GIVEN THE ROOM TO MANAGE OVERCROWDING



A strong theme to emerge from the interviews was a feeling from members of school communities that schools are not able to respond to expected and unexpected enrolment changes in the way that is best for teachers and learners, because they either do not have enough teachers or classrooms to do so, or because they are concerned that doing so might have repercussions. Schools in our sample do not feel like they have school autonomy, which means that they see overcrowded classrooms and other spaces in their school, but do not feel like they can take steps to organise the school differently. We use school autonomy to mean the ability of members of a school community to run their school in the way they would like. School autonomy is the result of both the school's capacity to run on its own, and the external limits placed on the school by the GDE and legislation.

THE RISK OF LOSING RESOURCES

Many people interviewed expressed fear that any changes in the number of learners enrolled at their school would mean that their school no longer qualifies for certain resources. This fear had a strong influence on decisions taken by school leadership, even when they felt that those decisions were against the best interests of the learner body.

Some interview excerpts below show this tension:

*"For a school to get more funding, more resources, more teachers, you need numbers as well. If you don't have numbers, you could lose teachers, which are already few."*¹⁶⁴

*"In terms of learner numbers, the SGB has said it is too many, but the principal says that reducing numbers will make us lose educators."*¹⁶⁵

*"It is a school management issue. The principal is admitting more learners (for example, 266 in five classes). The more learners, the more money that you are getting. This is a major cause of overcrowding."*¹⁶⁶

School leadership is constantly trying to organise their school in a way that benefits from the existing policies on allocating school resources. Sometimes this means, for example, that they are only interested in getting more classrooms or offering extra subjects because they hope it will qualify them for more teachers:

*"Buildings are relevant to the number of personnel, so if we build more schools and classrooms, we get more teachers."*¹⁶⁷

*"Mobile classes would come in handy – they would make a difference and get more teachers."*¹⁶⁸

*"If we were to add another language, we could get another specialised teacher, but then we'd have to admit more learners... but we don't have that space, so we make do with the number of teachers we have."*¹⁶⁹

This constant concern for how school management decisions will affect school resource allocations limits schools' ability to make decisions that they feel are in the best interest of their school.

The principal of a primary school we visited explained that, after receiving suggestions from the school staff, he decided to enrol three grade 1 classes instead of four one year, to see whether it would be more manageable. That grade 1 group with only three classes is now in grade 4.

The principal said that he feels as though he is now paying the price for making that decision three years ago. He now has to enrol extra learners in grade one each year to try maintain the overall school enrolment and not loose teachers:

*"[W]ith overcrowding, you must understand it from the ratio. If there are four grade one classes, it will be $40 \times 4 = 160$ learners. When the district allocates learners they don't look at the grade, they look at intake of the school (overall enrolment)... So, numbers of each grade should not be isolated from the rest of the school."*¹⁷⁰

164. S. Jele, Senior HOD at George Mbilase Primary School (S8P2). 165. X. Masanguana, SGB member at Phakamani Secondary School (S3P4). 166. As above. 167. S5P5. 168. Teacher at Topodi Primary School (S6P4). 169. Deputy Principal of B.B. Myataza Secondary School (S2P1). 170. T. Tshonisa, acting principal of Topodi Primary School (S6P1). 171. S. Senene, SGB member at Vezukhono Secondary School (S9P2). 172. S. Jele, Senior HOD at George Mbilase Primary School (S8P2). 173. S5P5. 174. Interview with EE researcher Zuwaina Ateig, on 23 June 2020. 175. As above. 176. Deputy Principal of B.B. Myataza Secondary School (S2P1). 177. M. Phahlamohlaka, teacher at Vezukhono Secondary School (S9p5). 178. S. Senene SGB member at Vezukhono Secondary School (S9P2).

THE LACK OF POWER TO MAKE DECISIONS ABOUT THEIR SCHOOL

Schools are also prevented from responding to overcrowding because the GDE, or school districts operating on the GDE's instruction, often override any decisions they make. Sometimes, decisions that are supposed to be made at the school level, are made by the GDE:

*"The district knows schools are full, but the policies contradict themselves ('don't be overcrowded' but 'don't chase learners away'). Schools must admit extra learners. Government does not provide scholar transport to allow learners to go to other schools... [T]his school teaches isiXhosa. We were asked to get rid of isiXhosa by the district and lower the number of languages because the province didn't want to pay for teachers if the classes weren't full, but parents were angry even though government said it would provide transport to Daveyton. Parents said transport only lasts for the first few months. The district decided to keep isiXhosa and keep learners and teachers."*¹⁷¹

Mostly, schools' frustration with the lack of autonomy was expressed in relation to enrolment limits:

*"The policy says that if a learner wants to attend the school, you can't turn them away. The indicator that you're full usually means you just get more teachers. The district is the one that decides if you're full (and the mark is very high). On the learners' issue, the school cannot say it is full or say no to learners. If you're overcrowded, you just have to apply for more teachers, which does work."*¹⁷²

*"Schools cannot say they are full. Where are they going to be accommodated if you refuse them? The district will give quotas that are too high, even if the school is overloaded. For this school to accommodate 1600... This school is not meant for that number of learners. The district is packing the schools. The district divides learners among the schools that are around. It is a large population, and not enough schools."*¹⁷³

EE's discussions with GDE officials suggest that schools' complaints are valid. One GDE official who works at the district level explained that, when presented with unplaced learners, they first assess a school's claim that it is full. He said, **"Sometimes if a school looks full you will see that some streams are not full. That's when GDE intervenes". If the school resists they ask the school, "Where will the child go?"**¹⁷⁴

If the school cannot accommodate the learners, they look for three other schools within a five kilometre radius that might accept the learners, checking if all schools have reached a learner-teacher ratio of 1:35 or 1:40. If all schools are at capacity, they place the learners in schools that are only just above their capacity:

"If you exceed by one child, you exceed by two, three, or four, that's still reasonable. Principals must not be rigid. The GDE says 'no, let's see if something can work out.' There are those schools that say they're not budging. It seems like some schools are being forced, but we're not doing that. We're just saying, 'be reasonable.' Schools must lean towards understanding the parents... We negotiate. We send some of our best negotiators to schools because people are fighting."

The frustrations at the lack of autonomy also played out in schools having to convince GDE officials that they needed the resources they were requesting. Some people expressed frustration that they were always told to adapt to whatever the GDE gave them, but the GDE and district officials did not understand the reality in their schools:

*"Both the district and the [GDE] don't really see first hand the effects of overcrowding. They should come and sit and get a sense of what is happening inside the classrooms and get in touch. If they came and saw, they would go ahead and provision more teachers."*¹⁷⁵

*"Finance is always a problem, the school is not receiving enough to maintain the school and jump through the barriers."*¹⁷⁶

*"We received temporary classrooms, but members of the community stole the windows at night. Also, those classrooms don't have electricity. We have written to the district about improving infrastructure. The district says, 'At least you have classes. Some schools don't have classes at all.'"*¹⁷⁷

*"The school has been trying to apply for more teachers, but the district says they have enough according to a ratio."*¹⁷⁸

The current way that resources are divided between schools leads to schools having limited resources and not having the autonomy to use those resources in the way that they feel is best. Schools are forced to organise classes in a rigid way that cannot adapt to expected and unexpected changes in school enrolment.

WHAT ARE THE EFFECTS OF OVERCROWDING IN GAUTENG SCHOOLS?

We show the most popular responses¹⁷⁹ we received to open-ended questions on the effects of overcrowding.

The responses are **divided into themes to show that overcrowding does not just have a temporary effect on the physical learning environment, forcing learners to share desks and making it hard for teachers to walk around and monitor work.** Overcrowding also impacts how learners and teachers act in the space, generally leading to less engagement in the learning process from both sides, many disruptions, and little learning. In addition, it has a significant psychological effect - teachers lose confidence in their ability to teach, learners feel self-conscious and shy to interact. The responses we received, some of which are included below, powerfully illustrate the link between the number of resources a school has and the quality of teaching and learning that takes place there.

The responses also show that many of the complaints teachers commonly have about learners, such as poor discipline, and those that learners have about teachers, such as their failure to mark tests on time and provide feedback, are partly caused by overcrowding.



BEHAVIOURAL RESPONSES



Overwhelmed with marking, teachers provide little commentary & often submit work late.



Learners are rowdy, unfocused & lack discipline.



Learners fall behind, leading to high failure rates.



Learners don't get individual attention.



Learners engage in bullying, gambling, drugs, gangs & missing school.



Teachers and learners don't build a relationship.

¹⁷⁹. Because this question depended heavily on the experience in the classroom, the responses were weighted to ensure that learner responses counted equally to educator responses.



ENVIRONMENTAL RESPONSES

40
RESPONSES

Infrastructure is over-used, breaks quickly



31
RESPONSES

Learners share furniture & school books, which get worn out quickly.



23
RESPONSES

The NSNP runs out of food, long queues, fights break out in line.



13
RESPONSES

Classrooms, especially mobile classrooms, are hot, with little ventilation.



10
RESPONSES

Teachers can't move around to supervise work.



10
RESPONSES

The air is stuffy, odorous.



PSYCHOLOGICAL RESPONSES

19
RESPONSES

Teachers feel exhausted & overwhelmed



14
RESPONSES

Learners feel neglected, disengage from learning.



14
RESPONSES

Teachers lose confidence and motivation.



12
RESPONSES

Learners feel heightened pressure to conform, risk ridicule by a large group.



6
RESPONSES

Anxious learners lose confidence to participate.



6
RESPONSES

Teachers feel scared to discipline learners.



A deeper look at the effects of overcrowding shows that teachers and learners experience its negative effects similarly.



BEHAVIOURAL EFFECTS

When asked about overcrowding, the vast majority of people we interviewed mentioned that it prevents teachers from providing enough attention to learners, especially to those who need it most, and it allows for high levels of disruption.

*"They're not receiving individual attention, especially struggling learners. When it is overcrowded, some play and it's difficult for the teacher to identify those issues – some will be busy with their cell phones, one learner will be distracted by another. Some kid might make a funny sound and while you are reprimanding that kid another starts. Disrupted classrooms can't concentrate or listen, leading to discipline issues."*¹⁸⁰

*"Special individual attention cannot be given to learners. For example, learners with reading problems are not attended to because of the large number of learners."*¹⁸¹

*"We are facing behavioural challenges. Also, we want to have one-on-one sessions with learners, because they need a foundation especially when they come from other schools and can't grab information. If it's overcrowded, how can you assist learners with behavioural problems?"*¹⁸²

"It is too much work for teachers, there is a lot of paperwork and at the same time you have to make sure that the forms of

learners who cannot cope are filled.

*You end up not coping as a teacher. In the classroom in particular, you are trying to teach, the noise level affects you and is overwhelming. Those who cope will be done with their activities and end up not knowing what to do with their time as we have to wait for learners who find it hard to cope. You end up having to assist learners who find it hard to perform. When you have to fail a learner you have to produce supporting documents stating what you have done as a teacher to assist them."*¹⁸³

Respondents also overwhelmingly highlighted the fact that teachers are left with no time to mark and correct learners' work. Of course, this has a major knock-on effect for learning outcomes.

*"Teachers do not get time to finish marking and they do not have time to give us our papers to see how we performed. Personally, I am affected as I am not able to ask the teacher to explain things that I do not understand. The teachers will also be overwhelmed by the amount of papers they have to mark."*¹⁸⁴

*"Teachers do not have time to mark so they just sign and do not mark, so it is difficult to identify which learners are struggling. Some learners do not get attention and cannot read and write and get pushed by the district into the next grade even if they are not performing well."*¹⁸⁵

"It affects performance, lack of discipline. You can't reach disruptive learners, and the classes that are overcrowded always have poor performance.

¹⁸⁰. D. Zandile, teacher at Amos Maphanga Secondary School (S1P3) ¹⁸¹. Deputy Principal of B.B. Myataza Secondary School (S2P1). ¹⁸². A respondent from Thopodi Primary School (S6P2). ¹⁸³. As above. ¹⁸⁴. Learner at Phandimfundo Secondary School (S5P7). ¹⁸⁵. An SGB member at one of our sample schools (S4P6). ¹⁸⁶. A respondent from Vezukhono Secondary School (S9P1). ¹⁸⁷. S. Jele, Senior HOD at George Mbilase Primary School (S8P2).

High rate of absenteeism among learners - learners don't care because they know many other learners are absent as well. A boy in the back you can't reach is trying to disrupt the class. Results are always poor, you can see it's because of overcrowding.”¹⁸⁶

“Lots of disruptions and less order in the classroom, 10% of time is used to keep learners quiet. Monitoring learners' work is hard, and so teachers' morale is low. Teachers are overworked, and they will experience a lot of stress and be absent from school. At the end of the day, we need results, and it is just not possible because of the numbers. The cost is learning and education. Output and performance is severely affected. It's very sad, because we feel we are doing our utmost best, but it is not enough and it won't work.”¹⁸⁷



The NPEP emphasises the negative effects of a poor school environment on learners. These effects include irregular attendance and higher drop-out rates. Importantly, the NPEP also recognises the detrimental effects of inadequate school infrastructure on teachers. Working in demoralising, unhygienic and often unsafe environments can lead to teachers missing school often, moving between schools frequently, and eventually leaving the teaching profession altogether.¹⁸⁸

International studies have traced the negative impact of air quality in mobile classrooms, and the negative effect that poor infrastructure and large class size has on school attendance.¹⁸⁹ The people we interviewed felt similarly that mobile and prefab classrooms were not conducive to teaching and learning.

“With our infrastructure in summer it is terrible - when it is hot it gets too hot. It has an impact on learning outcomes. For you to achieve the objective of the lesson an environment needs to be conducive for learners to listen attentively and be given special attention, if it comes to a push, one-on-one... After break, in the summer, because it is hot and they have eaten, learners will come look for permission to leave. They will fake that they are sick. So it's not only teachers who are affected. Learners and teachers don't want to be at school. Sometimes they fall asleep in class. There is heat and because there is too little furniture some have to stand or sit on a table. Furniture breaks because of overcrowding - they fight for a chair and then it breaks and now we're always repairing. Some learners might not have a chair the entire day.”¹⁹⁰

“There is use of prefab/mobile classes. In summer, classes can get scorching hot, and learners struggle to concentrate. In winter, the classes are cold.”¹⁹¹

“There is not sufficient time to attend to every child and understand their background and aptitude. Learners can hide behind other learners. Because of overcrowding, mobile classes are brought for capacity, but they can be too hot and stuffy or too cold. It also affects pass rate and performance.”¹⁹²

188. Section 27 (note 113 above) p. 238. 189. Branham (note 53 above); Schneider (note 53 above). 190. A learner at Amos Maphanga Secondary School (S1P5). 191. H. Tshabalala, teacher at Phandimfundo Secondary School (S5P2). 192. Deputy Principal at one of our sample schools (S4P5).

Other grievances related to the classroom space, the feeding scheme, and the fact that under-resourced schools do not have enough classrooms to allocate teachers their own classroom, meaning teachers have to roam for each lesson:

*“There are many classes where you can’t move in between. You just stand in the front like you are a preacher.”*¹⁹³

*“Feeding scheme gets full and it takes time for everyone to get food. Other times we do not get food as the lines will be long. This also depends on the menu of the day.”*¹⁹⁴

*“In terms of educators rotating, educators have tried to advocate for learners rotating because it brings so much discipline and management and organization and stops confusion of educators. Teachers would feel like they have it together.”*¹⁹⁵



PSYCHOLOGICAL EFFECTS

School is also a vital time for learner self-development and nurturing self-confidence. In an overcrowded classroom, this process becomes more difficult:

*“Learners feel neglected, especially learners that need more attention and learners that get lost during the lesson. Smart learners benefit, but learners that struggle will resort to disrupting the class to get your attention. Learners can get lost and not submit their assignments.”*¹⁹⁶

*“Learners cannot express themselves clearly or openly. With lots of people watching, judging, saying things...people end up acting in a certain way for their public image.”*¹⁹⁷

*“Learners can experience anxiety and may find it difficult and overwhelming to be in spaces with many people around making noise...Shy learners are affected the most.”*¹⁹⁸

Teachers get exhausted and are clearly overwhelmed by the workload:

*“In the long run for them, having too many learners in the classroom affects them... Learners do not ask many questions and do not have their questions fully answered. This affects [teachers’] love for and engagement with a subject, which would obviously impact their performance in the long run.”*¹⁹⁹

*“One teacher is nervous in grade eight because there are too many learners, too many personalities. He is a structured person. In the grade eight class he teaches, there are 52 learners. The tables are not suitable for even two learners, but three will share one table. There’s not enough chairs. Learners break furniture.”*²⁰⁰

As a result, teachers may also disengage from the teaching process:

*“Teachers are overworked, and they will experience a lot of stress and be absent from school.”*²⁰¹

¹⁹³. S. Senene SGB member at Vezukhono Secondary School (S9P2). ¹⁹⁴. A learner at Phandimfundo Secondary School (S5p7) ¹⁹⁵. Xolani Masanguana, an SGB teacher member from Phakamani Secondary School. ¹⁹⁶. Mrs. Khumalo, teacher at B.B. Myatata Secondary School (S2P2). ¹⁹⁷. SIPI. ¹⁹⁸. Learner from B.B. Myatata Secondary School (S2P5). ¹⁹⁹. X. Masanguana, SGB member at Phakamani Secondary School (S3P4).

*“Some teachers are overworked. When learners are many, [classes] aren’t controllable. **Teachers are reluctant to teach such classes. You see it by the amount of leave people take, and you hear them on a Friday – they can’t wait to go home!**”*²⁰²

*“**Teachers are unable to teach most of the time, reason being teachers are afraid of some students.** Teachers normally bunk classes simply because they can’t discipline students.”*²⁰³



This section has shown that overcrowded classrooms and schools limit learners and teachers’ ability to contribute meaningfully to creating a conducive learning environment. As a result, teaching and learning suffer.

200. As above. 201. S. Jele, Senior HOD at George Mbilase Primary School (S8P2) 201. Deputy Principal at Amos Maphanga Secondary School (S1P5). 203. A learner at Phandimfundo Secondary School (S5P4).

CONCLUSION

“ Provide additional proper secure classes and furniture. It's a long process to change [a] district's policies, it could even go to parliament, but start with building more classes, which means more learners, and also means more teachers. The district must stick to the teacher-pupil ratio. It's also an issue of home language, which makes it difficult. You get teachers based off total number of learners (regardless of subject), so it doesn't mean each subject has enough teachers (math and accounting for example). The teacher formula is currently too simple.”²⁰⁴

The nine Etwatwa schools we visited were undoubtedly overcrowded. When spending time at the schools, one gets the feeling that if these schools just had a little more – a few more teachers, a few extra classrooms, and the financial resources to cover unexpected costs – as well as the autonomy to respond to changes in learner numbers in the way they thought was best, they would be able to run how South Africa's education policies imagine they do. Instead, they find that trying to draw up a stable and sustainable school timetable and teaching schedule becomes an impossible task because there are not enough resources to do so.

The result is that, in an attempt to free up classrooms and teachers, learners are bunched together in large groups, in stuffy classrooms, and a great deal of energy is spent on controlling rather than teaching learners.

School communities have known about the inadequacy of existing models for providing schools with resources for a long time, and expressed frustration at being told, after reporting overcrowding in their schools, that "the district does not see it that way."²⁰⁵

IMPROVEMENTS WITHIN THE CONFINES OF EXISTING LAWS

PEDs that want to address overcrowding in their schools can make use of the flexibility of existing laws to channel more resources to overcrowded schools and areas. A PED can tweak the PPN model to suit its needs, so long as it adheres to the 'intent and spirit' of the PPN. Thus far, most PEDs simply run the PPN formula as it is given to them, failing to manipulate it to the special needs of their province.

A PED can tailor the PPN formula to the needs of its province by ensuring that the 5% poverty redress posts are always allocated, and reserving enough ad hoc teachers each year to match the number of unplaced learners that must be placed in schools at the beginning of each year.

Further, provinces can ensure that 15% of personnel funding is spent on non-teaching staff each year, in line with the School Funding Norms, and that spending on non-teaching staff prioritises schools in need of school-based administrative support.

The School Infrastructure Norms also allows provinces to adapt the framework to their own needs. In the Gauteng context, it is important to recognise that very rarely is the GDE provisioning resources to a completely new school.

²⁰⁴. S. Senene, teacher at Vezukhono Secondary School (S9P5). ²⁰⁵. Mrs. Khumal, teacher at B.B Myataza Secondary School (S2P2)

Usually, the GDE deals with existing schools. Resource provisioning models, then, need to be able to assess the actual existing conditions of a school – from the level of the class, classroom, or teacher – and judge need in that way. Provinces can create infrastructure development plans to prevent overcrowding in those schools and the overuse of their infrastructure.

An infrastructure development plan should ideally:

- a. prioritise the implementation of infrastructure projects to overcrowded schools, and
- b. aim to be proactive rather than merely reactive by explicitly including future predicted growth in learner numbers.

Provinces can also opt to spend more on education. The GDE is the third lowest spender on education in terms of proportion of overall budget.

All of these changes are already provided for in existing policy. However, as noted in this report, recognition of the inadequacy of current resource provisioning models is growing.

Ultimately, there is a need for a new resource provisioning model that considers all the various education inputs together, or at least different provisioning models that are connected and responsive to each other.

COMPREHENSIVE MEASUREMENT OF SCHOOL OVERCROWDING

The number of teachers, classrooms and other infrastructure allocated to schools is a result of how much the GDE can afford (its budget); whether the GDE believes there is a shortage of that resource in some schools (its assessment of need); and how much effort the GDE puts into ensuring that the resources reach schools in need (its political will).

This report has focused on the second issue, the assessment of need, because it is not well understood. We illustrated that measurements that are currently used by the DBE and GDE – most prominently the ‘learner-teacher ratio’ and the ‘learner-classroom ratio’ – do not adequately reflect the reality in classrooms and are unable to detect overcrowding that is caused by the unequal distribution of resources within a given schooling system. The reduction of the complex problem of overcrowding into two simple measurements is also a large part of why overcrowding exists even when schools’ learner-teacher ratio and learner-classroom ratio are below the maximum allowed in legislation.

Overcrowding needs to be measured using a formula that considers all the various components of school overcrowding together, and considers the context in which teaching and learning takes place. For example, instead of a ‘learner-teacher ratio’ that tells you nothing about teachers’ day-to-day teaching burden, teacher supply could be measured using a ‘teacher workload’ formula that takes into account the size of a teacher’s classes, and the number of different classes that each teacher must prepare for.

The teacher workload formula could also include things like the number of hours that a teacher is expected to do administrative work each week, which depends on the availability of non-teaching staff. By looking at the specific characteristics of each teacher’s role, we would get a much more accurate picture of whether a school is understaffed. Instead of a ‘learner-classroom ratio,’ classroom shortages could be assessed by looking at the actual characteristics, and anticipated future characteristics, of a school. Whether a school has a classroom shortage depends on other factors like the number of learners in different classes, the number of groups that different grades break up into during different periods, predicted changes in learner numbers between subjects and grades, and predicted changes in the total school enrolment.

Measuring overcrowding in this way would recognise the need for some elasticity in the number of staff and infrastructure available to a school so that it can run effectively and respond to changes in learner numbers.

A MOVE TOWARDS A RELATIONAL UNDERSTANDING OF SCHOOL RESOURCES

At the moment, the policies that determine how many resources a school gets – such as the PPN and the School Infrastructure Norms – deal with each resource on its own. **Our report illustrates that overcrowding is the result of an interaction between different components of schooling, including learner numbers, teacher numbers and the availability of infrastructure.** When setting minimum standards, policy makers must think of how one resource interacts with others.

One way that the allocation of different resources could be coordinated better would be through the introduction of school capacity norms. SASA states that the Minister of Education can introduce uniform minimum norms and standards for school capacity that must determine the number of learners a school can admit depending on the number of teachers it has, its class sizes, the quality of the school's performance, the number of subjects and after-school activities it offers, how many classrooms it uses, and other things that are considered important. The School Capacity Norms therefore have the potential to consider teacher numbers and teacher distribution, classroom numbers and classroom use, learner numbers and learner distribution, and other characteristics about a school together.

Another way to ensure that different resources are allocated in a relational way would be to change existing resource allocation models to fix the issues with them that we have highlighted throughout this report. Different stakeholders in education are starting to acknowledge that the current models are not distributing resources effectively.

The ELRC recently began a process of developing a new model for distributing teachers, one that recognises the 'critical dependency' between teacher and infrastructure numbers, and the need for their alignment.²⁰⁶ It also states that in addition to ideal learner-teacher ratios, "[i]ssues such as class size, period loads, scheduled time may need to be addressed".²⁰⁷ The proposed model makes many other positive suggestions – such as increasing the number of redress posts and distributing them across the country instead of by province, and setting a minimum requirement for teacher numbers that will allow schools to be compared across the country.

The School Infrastructure Norms are also being redesigned, and may result in norms that are more responsive to the actual situation in schools, and more conducive to forward-looking instead of reactionary infrastructure planning.

Furthermore, the GDE's new centralised school admissions model should mean that the GDE is better able to stabilise and equalise enrolment numbers across schools. At the least, the new model may allow for comparisons between the resources and learner numbers at different schools, which would make advocacy at the provincial level more impactful.

There is also clear room for advocacy on the introduction of norms relating to Learning and Teaching Support Material and norms relating to the distribution of non-teaching support staff to school, as this is also provided for in SASA.

A focus on overcrowding can help explain why teaching and learning is not happening at the required standard in our schools, even when the DBE and GDE records suggest that schools have enough resources to operate effectively.

206. ELRC (2018) PPN Commission Feedback, Education Indaba. 207. As above p. 13.

Recommendations



UNIFORM MINIMUM NORMS AND STANDARDS FOR SCHOOL CAPACITY

What is the problem?

On paper, schools are usually meeting the minimum standards set by various policies. However, in reality, schools have teacher and infrastructure shortages, overworked teachers, classrooms that are too small, and class sizes that are too big. **It is clear that overcrowding that is caused by the unequal distribution of resources within and between schools is not being detected.** As we have discovered through our research, there are multiple policies that determine how many resources a school gets, for example the Post Provisioning Norms (PPN) and Uniform Minimum Norms and Standards for School Infrastructure. **These regulations deal with each resource (such as teachers and classrooms) on its own and use simplified measurements to detect overcrowding in schools.**

What needs to be changed?

EE's report illustrates that overcrowding is the result of an interaction between different components of schooling, including learner numbers, teacher numbers and the availability of infrastructure, such as classrooms.

The SASA states that the Minister of Basic Education may create binding school capacity norms which must set a limit for the number of learners a school can admit. This limit must be determined by taking into consideration, amongst other things, the number of teachers a school has, its class sizes, the quality of the school's performance, the number of subjects and after school activities it offers, classroom sizes, and how many classrooms it uses.

By considering these factors, and any others that are important, it is possible that the School Capacity Norms could be a policy that views school resources in a way that better detects and measures overcrowding caused by unequal distribution of resources.

How can it be changed?

The Department of Basic Education (DBE) must –

- i. Develop and publish uniform minimum norms and standards for school capacity that:
 - a. are binding;
 - b. include deadlines by which to meet minimum requirements; and
 - c. measure overcrowding by taking into account the relational nature of school resources and the actual conditions in which learning takes place.



INFRASTRUCTURE DEVELOPMENT AND IMPLEMENTATION

What is the problem?

The GDE admits that population growth and in-migration in the province have increased school enrolment numbers. It is clear that over the last decade (at least) this growth has been anticipated. However, school infrastructure planning does not take this growth into account.

RECOMMENDATIONS

When classes break up unevenly into smaller groups for elective subject choices, furniture and classroom shortages become even clearer.

The GDE prioritises adding classrooms to schools rather than building new schools - particularly in areas where new infrastructure is greatly needed. This results in greater learner numbers and more strain on other resources such as sanitation facilities and even school furniture. This costs more in the long term than building a new school. **The Uniform Minimum Norms and Standards for School Infrastructure set minimum infrastructure requirements with deadlines by which time these requirements must be met.** In addition, the Norms and Standards for School Infrastructure are used to determine how school infrastructure is distributed. **The Norms assume that all classes are made up of 40 learners or less.**

What needs to be changed?

School infrastructure must be provided to a school in anticipation of it becoming overcrowded. If classrooms are added to schools, other resources that may take strain because of greater learner enrolment must be expanded or provided accordingly.

How can it be changed?

The GDE must -

- i. Publish a comprehensive and forward-looking infrastructure development plan that:
 - a. **explains and justifies the GDE's decision to focus on adding new classrooms to existing schools as well as the steps it will take to prevent overcrowding and the overuse of infrastructure in those schools;**
 - b. **explicitly includes predicted future growth in learner numbers and in areas where learners come from;**
 - c. **prioritises the urgent implementation of infrastructure projects to overcrowded schools; and**
 - d. **includes measures for the placement and transportation of unplaced learners at the beginning of each academic year.**



What is the problem?

The GDE does not have a big enough budget to resource schools sufficiently. This means that most schools either have too few of a specific resource, or the combination of resources that they do have means that they cannot adapt to changes in enrolment numbers and learner distribution. For example, if school leadership turns away excess learners to maintain manageable class sizes they risk losing teachers and other resources.

The amount that the GDE spends on hiring and allocating teachers, on adding and repairing infrastructure, and on resourcing schools more generally is determined by Gauteng province's education budget, rather than by the actual need in schools. The budget is not spent with a focus on eradicating overcrowding.

What needs to be changed?

When the GDE spends its budget, it must specifically focus on overcrowding. This means that it cannot simply meet a classroom ratio of one classroom for every 40 learners, or a teacher ratio of one teacher for every 40 learners. It has to take into account how school resources are related to each other.

How can it be changed?

The GDE must -

- i. Publish a comprehensive list of overcrowded schools, similar to the one contemplated in sections 78-82 of the National Norms and Standards for School Funding, to be used for targeted spending aimed at eradicating overcrowding in schools. When determining whether a school is overcrowded, the various components of overcrowding must be taken into account in a relational way, including:
 - a. **class sizes in different grades and subjects;**
 - b. **teacher workload and spread;**
 - c. **predicted growth in learner numbers; and**
 - d. **school building capacity.**



TEACHERS



What is the problem?

Despite statistics published on the EMIS showing that the nine schools Equal Education surveyed have a learner-teacher ratio of less than 40:1 and no teacher shortages, our findings show that, in reality, eight out of the nine schools had a teacher shortage and 74% of all classes surveyed were too big.

There is an uneven distribution of workload between teachers, resulting in many teachers working well beyond their expected teaching time.

The PPN states that a province must reserve up to 5% of its teacher posts for poverty redress so that lower quintile schools can be supported with extra teachers. This percentage should be determined based on the level of inequality within a province - the higher the level of inequality, the higher the percentage of posts that should be redistributed (up to a maximum of 5%).

The School Funding Norms state that 15% of a PEDs personnel budget should be spent on non-teaching staff.

A PED is free to decide how to divide this expenditure between office-based and school-based non-teaching staff. When PEDs place most of their non-teaching staff in offices away from schools, better resourced schools hire their own non-teaching support staff and teachers at under-resourced schools are forced to do administrative work.

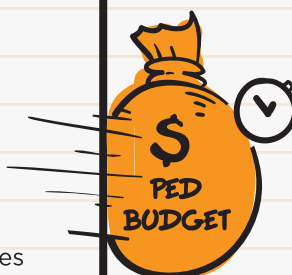
What needs to be changed?

Lower quintile schools must be supported with extra teachers. Teachers must be supported by school-based non-teaching staff.

How can it be changed?

The GDE must -

- i. Ensure that the 5% poverty redress posts are always allocated and that the percentage of posts allocated are reported on and justified.
- ii. Ensure that 15% of personnel funding is spent on non-teaching staff each year, in line with the School Funding Norms, and that the majority of non-teaching staff are placed in schools that are in need of school-based administrative support. The distribution of non-teaching staff between schools and offices must be reported on and justified.



REFERENCE LIST

Schools

Number	School Code	School Name
1	S1	Amos Maphanga Secondary School
2	S2	B.B. Myataza Secondary School
3	S3	Phakamani Secondary School
4	S4	[Confidential]
5	S5	[Confidential]
6	S6	Thopodi Primary School
7	S7	Sazakhela Primary School
8	S8	George Mbilase Primary School
9	S9	Vezukhono Secondary School

Individuals

Number	Code	Descriptor	Name
1	S1P1	SGB member	[Confidential]
2	S1P2	Teacher	N. Sosibo
3	S1P3	Teacher	D. Zandile
4	S1P4	Teacher	[Confidential]
5	S1P5	Gr 10 learner	[Confidential]
6	S1P6	Deputy principal	T. Mabasa
7	S1P7	Gr 8 learner	[Confidential]
8	S2P1	Deputy principal	[Confidential]
9	S2P2	Teacher	Mrs. Khumalo
10	S2P3	[Confidential]	[Confidential]
11	S2P4	Gr 8 learner	[Confidential]
12	S2P5	Gr 10 learner	[Confidential]
13	S2P6	Teacher	L. Peleza
14	S3P1	[Confidential]	[Confidential]
15	S3P2	Gr 10 learner	[Confidential]
16	S3P3	[Confidential]	[Confidential]
17	S3P4	SGB member	X. Masanguana
18	S3P5	Gr 8 learner	[Confidential]
19	S3P6	Teacher	N. Solwandle
20	S4P1	Teacher	[Confidential]
21	S4P2	Gr 8 learner	[Confidential]
22	S4P3	Gr 10 learner	[Confidential]
23	S4P4	Teacher	[Confidential]
24	S4P5	[Confidential]	[Confidential]
25	S4P6	[Confidential]	[Confidential]
26	S5P1	Teacher	N. Mahlangu
27	S5P2	Teacher	H. Tshabalala
28	S5P3	Teacher	[Confidential]
29	S5P4	Gr 10 learner	[Confidential]
30	S5P5	[Confidential]	[Confidential]
31	S5P6	[Confidential]	[Confidential]
32	S5P7	Gr 8 learner	[Confidential]
33	S6P1	Acting principal	T. Tshonisa
34	S6P2	[Confidential]	[Confidential]
35	S6P3	Teacher	Z. Makhanya
36	S6P4	Teacher	[Confidential]
37	S7P1	[Confidential]	[Confidential]
38	S7P2	Teacher	[Confidential]
39	S7P3	[Confidential]	[Confidential]
40	S7P4	Teacher	[Confidential]
41	S8P1	Teacher	[Confidential]
42	S8P2	Senior HOD	S. Jele
43	S8P3	SGB member	Khanyile

Individuals

Number	Code	Descriptor	Name
44	S8P4	Teacher	Moluli
45	S9P1	[Confidential]	[Confidential]
46	S9P2	SGB member	S. Senene
47	S9P3	Deputy principal	T. Zulu
48	S9P4	Teacher	[Confidential]
49	S9P5	Teacher	M. Phahlamohlaka
50	S9P6	Gr 8 learner	[Confidential]
51	S9P7	Gr 10 learner	[Confidential]

Legislation, policy documents and case law

Amended National Norms and Standards for School Funding, GN 869, GG 29179, 31 August 2006

Deloitte (2014) "National Report: Assessment of National Implementation of Post Provisioning System" UNICEF Commissioned report

Department of Basic Education (2015) Action Plan to 2019: Towards the Realisation of Schooling 2030.

Department of Basic Education (2018) Guidelines for Conducting Condition Assessment of Education Facilities.

Department of Basic Education (2019) PPN Summative Report.12 November 2019.

Department of Basic Education (2020) "School Realities 2019".

Department of Education, Province of Gauteng 'Vote 5 - Education: Annual Report 2018/2019 Financial'

Employment of Educators Act: Personnel Administrative Measures: Consolidation of terms and conditions of employment of educators GN R170 GG 39684, 12 February 2016.

Frameworks for Conditional Grants to Provinces GN R634 GG 43495, 3 July 2019.

Gauteng Department of Education (2020) Post Provisioning Workshop accessed here: <https://irp-cdn.multiscreensite.com/c0cc1c10/files/uploaded/Mr%20Moila%20-%20Post%20Provisioning%20PAM%202020.pdf>

Gauteng Legislature (2019) Infrastructure Development Portfolio Committee Oversight Report on the Budget Vote 15 for the 2019/20.

Gauteng Province (2017) Status Report - Implementation of the Regulations Relating to the Minimum Uniform Norms and Standards for Public School Infrastructure.

Financial and Fiscal Commission (2019) Assessing the Efficiency of Provincial Infrastructure Programmes: The case of health, education and public transport.

Madzodzo and Others v Minister of Basic Education & Others (2014) (3) SA 441 (ECM)

MEC for Education in Gauteng Province and Other v Governing Body of Rivonia Primary School and Others 2013 (6) SA 582 (CC).

National Norms and Standards for School Funding, GN 2362, GG 19347, 12 October 1998

National Policy On Equitable Provision of an Enabling School Physical Teaching and Learning Environment Act 27 of 1996.

PMG(2018) Meeting Summary: Department of Basic Education 2018/19 Budget & Annual Performance Plan, 17 April 2018.

PMG (2018) Meeting Summary: Provincial Education Departments Performance Indicators: roundtable discussion. 06 February 2018.

Select Committee On Appropriations (2018) The Education Infrastructure Grant Expenditure As At Fourth Quarter 2017/18 Financial Year, 22 August 2018.

South African Schools act 84 of 1996: Call for comments on National Minimum Uniform Norms and Standards for School Infrastructure, GN 1439, GG 31616, 21 November 2008 s 3.1.3

South African School Act: Regulations Relating to Minimum Uniform Norms and Standards for Public School Infrastructure. GN R920 GG 37081, 29 November 2019.

Journal articles and manuscripts

Armstrong, P. (2015) Teachers in the South African education system: An economic perspective. Doctoral thesis, Stellenbosch University.

Benbow, J. e al. (2007). 'Large classes in a developing world: What do we know and what can we do?' US Agency for International Development. USAID.

Black, S. (n.d.) An analytic model for conceptualising school overcrowding: exploring relations between (mal)distribution and (inadequate) provision at different scales. Working paper. Accessed from www.sarablack.co.za.

Black, S. (2020) The tyranny of timespace: examining the timetable of schooling activities as the interface between policy and everyday rhythms. Unpublished doctoral thesis: University of Cape Town.

Branham, D. (2004) "The Wise Man Builds His House Upon the Rock: The Effects of Inadequate School Building Infrastructure on Student Attendance" *Social Science Quarterly* 85(5).

Case, A. & Deaton, A. (1999) 'School inputs and educational outcomes in South Africa.' *Quarterly Journal of Economics*. 114 (3)

Centre for Child Law (2019) Provision of School Infrastructure in Gauteng.

Centre for Child Law (2016) Budgets and Bricks: Progress with School Infrastructure following the Rivonia Primary School Case.

Ehrenberg, R., Brewer, D., Gamoran, A., & Willms, D. (2001). "Class Size and Student Achievement" *Psychological Science in the Public Interest* 2(1)

Finn, J., Pannozzo, G., & Achilles, C. (2003). 'The "Why's" of Class Size: Student Behavior in Small Classes,' *Review of Educational Research*.

Glewwe, P. et al. 'School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010.' National Bureau of Economic Research. Working Paper 17554.

Hall, K. (2018). "Grade progression: statistics on children in South Africa." Children's Institute.

Hattie, J (2009) *Visible Learning - A synthesis of over 800 meta-analyses relating to achievement*. Routledge: London, New York.

Holloway, J. (2002) "Do Smaller Classes Change Instruction?" *Educational Leadership*.

Ipinge, S. (2005). 'Quality education and access to education in Namibia: Goals of education after years.' *Education Review* 3(1).

115-125. Jones, S. (2016) 'How does classroom composition affect learning outcomes in Ugandan primary schools?' *International*

Journal of Educational Development. 48.

Jacklin, H. (1991) *Shack Schools for Shack Settlements: A Study of DET Policies and Practices Relating to the Provision of School Facilities in Shack Settlements in the PWV Area*. Master's thesis. University of the Witwatersrand.

Köhler, T. (2020) 'Socioeconomic Status and Class Size in South African Secondary Schools' Stellenbosch Working Paper Series No. WP01/2020.

Liang, O. , Yin, T. & Guan, K. (1985) "Measures of Teachers' Workload" *Singapore Journal of Education* 7(1).

Malinga, S. (2000) The development of informal settlements in South Africa, with particular reference to informal settlements around Daveyton on the East Rand, 1970-1999. Doctoral Thesis. Rand Afrikaans University.

Marais, P. (2016) "We can't believe what we see": Overcrowded classrooms through the eyes of student teachers' *South African Journal of Education*. 36(2).

Maseko, F. (2001) *Community Views on Certain Socio-Economic Environmental Factors in the Etwatwa Informal Settlement*.- Master's Thesis. Rand Afrikaans University.

Mkhombo, J. (1999) Perceptions on how informal settlements affect the quality of education in secondary schools. Master's thesis. Rand Afrikaans University.

Morifi, K. (1999) *The Role of Guidance in Addressing Community Issues in Etwatwa Informal Settlement*. Master's Thesis. Rand Afrikaans University.

Mweru, M. (2010). 'Why are Kenyan teachers still using Corporal punishment eight years after a ban on corporal punishment.' *Child Abuse Review* (19).

Mtika, P. (2010). 'Trainee teachers' experiences of teaching practicum. Issues, challenges and new possibilities.' *Africa Education Review* 8(3).

Mthusamy, N. (2015) Teachers' experiences with overcrowded classrooms in a mainstream school. Master's thesis. University of KwaZulu-Natal.

Nirashnee, M. (2015) Teachers' experience with overcrowded classrooms in a mainstream school. Master's thesis. University of KwaZulu-Natal.

Olaleye, F. O., Ajayi, A., & Oyebola, B. O. (2017) 'Impact of Overcrowded Classroom on Academic Performance of Students in Selected Public Secondary Schools in Surulere Local Government of Lagos State' *International Journal of Higher Education-Research*. 7(1).

Paterson, A. & Arends, F. (2009) *Teacher graduate production in South Africa*.

Pedder, D. (2009) 'Are Small Classes Better? Understanding Relationships between Class Size, Classroom Processes and Pupils' *Oxford Review of Education* 32(2).

Roberts, S. (2006) *Sustainable Manufacturing?: The Case of South Africa and Ekurhuleni*. Juta & Co. Ltd: Cape Town.

Ruff, R. R. (2016). The impacts of retention, expenditures and class size on primary school completion in Sub-Saharan Africa: a cross-national analysis. *International Journal of Education Policy and Leadership*. 11(8).

Schneider, M. (2002) "Do School Facilities Affect Academic Outcomes?" ERIC Publications.

Chimombo, J (2005) "Issues in Basic Education in Developing Countries: An Exploration of Policy Options for Improved Delivery,"

Journal of International Cooperation in Education (8)1.

Section27 (2017) *Basic Education Rights Handbook*.

Shah, J., & Inamullah, H.M. (2012). "Overcrowded classrooms: A serious problem for teachers." *The Journal of Educational Strategies*, 5(1), 772-789

Wilson, V. (2006). "Does Small Really Make a Difference? An Update: A Review of the Literature on the Effects of Class Size on Teaching Practice and Pupils' Behaviour and Attainment." SCRE Research Report No. 123.

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