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Avoiding inaccuracy: How should learner disability status be identified in EMIS?

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RESEP Research Note

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We report on the quality and completeness of disability-disaggregated enrolment data in the education management information system (EMIS) in two provinces in South Africa. We show there has been a **dramatic decline** in the number of learners with disabilities enrolled in schools in Gauteng from 2017 to 2023. Initial results of Census 2022 also show a decline in enrolment of 5- to 24-year-olds with disabilities, but the population estimates in the 2022 Census may not be accurate enough for official use [1]. We believe the observed decline in EMIS data is too steep to be credible and is largely the result of a substantial decline in the reporting of disabilities in ordinary schools in Gauteng. **We provide two explanations for the decline in reporting of learner disability status:** the effects of the COVID-crisis and the mismatch in disability categories in EMIS and in school assessment forms. **We make recommendations** on how indicators of disability status in EMIS could be improved, to encourage more widespread reporting and avoid inaccurate enrolment data in the future.

1. Why is data on enrolment of learners with disabilities important?

More equitable access to education is key to reducing economic inequalities between people with and without disabilities[2]. In South Africa, total school enrolment of learners with disabilities is used as a key indicator of progress in disability inclusion in South Africa [3]. Enrolment of children with disabilities in

ordinary and special schools is measured every ten years in the census. If more regular data on enrolment of learners with disabilities in inclusive schools is required, this must come from the EMIS. As a result, it is important that this data on disability status in EMIS is accurate, complete, and reliable. The quality of EMIS data on disability status in EMIS has not been assessed in KwaZulu-Natal or Gauteng since the introduction of the new student-level EMIS (SA-SAMS).

2. How is disability identified in schools?

South African education policy adopts the biopsychosocial model of disability. Previous research [4], [5] has found that the disability indicators in the Screening, Identification, Assessment and Support (SIAS) Policy of 2014 are well-aligned with the biopsychosocial model.

Since 2008, the process of identifying learner disability status has been governed by a new SIAS processes. Formal assessment by a health professional is required for a learner to be identified as having a disability. The health professional rates the extent of the activity limitation in the following domains.

- Vision
- Hearing
- Mobility
- Developmental functioning/learning/intellectual disability
- Other mental disorders
- Neurodevelopmental and neurological disorders
- Communication, and
- Chronic health conditions.

The identification of disability is based on a functional assessment. The learner's medical diagnosis is one consideration. For example, for mobility, the health professional is asked to describe the degree of difficulty the learner experiences in getting in and out of bed/chair; walking or using a wheelchair, or climbing stairs (without assistance), rather than asking whether the child is an amputee, hemiplegic or diplegic.

In order to be consistent with policy, **the questions used to identify disability status in EMIS should be aligned with those in the SIAS Policy.** They should focus on levels of **functioning** and **participation** rather than on the **presence of specific health conditions.**



3. Declining enrolment of learners with disabilities in Gauteng

We recently analysed anonymised student-level EMIS data in Gauteng and KwaZulu-Natal from 2017 to 2023. The dataset covers 81% of schools in Gauteng and KwaZulu-Natal.

We uncovered some worrying trends in enrolment of learners with disabilities. Firstly, as shown in Table 1, the percentage of schools that reported enrolling at least one learner with a disability decreased dramatically over the period, particularly from 2022 onwards. By 2023, only 39% of Gauteng schools report enrolling any learners with disabilities compared to 64% of schools in KwaZulu-Natal.

In the same period, the **total reported number of learners with disabilities enrolled** in special, ordinary and independent schools declined sharply **in Gauteng** from approximately **44 000 learners in 2017 (2% disability prevalence) to approximately 28 000 in 2023 (1.2% disability prevalence)**. The decline in total reported enrolment was greatest among learners with **mild to moderate intellectual disability, whose numbers almost halved from 2017 to 2023.**

Table 1: Number of schools in Gauteng and KwaZulu-Natal reporting enrolment of learners with disabilities: 2017 to 2023.

Year	Gauteng		KwaZulu-Natal	
	No. (%) of schools in DDD-dataset	No.(%) of schools reporting enrolment of learners with disabilities	No. (%) of schools reporting (some data)	No.(%) of schools reporting enrolment of learners with disabilities
2017	2 535 (81)	1 866 (60)	4910 (81)	3895 (64)
2018	2 724 (87)	1 919 (61)	4910 (81)	3895 (64)
2019	2 783 (89)	1 900 (61)	4910 (81)	3895 (64)
2020	2 646 (85)	1 884 (60)	4910 (81)	3895 (64)
2021	2 769 (89)	1 807 (58)	4910 (81)	3895 (64)
2022	2 762 (88)	1 665 (53)	4910 (81)	3895 (64)
2023	2 685 (86)	1 053 (34)	4910 (81)	3895 (64)

Source: DDD longitudinal dataset, 2017 to 2023. Includes special and ordinary schools and some independent schools.

In both Gauteng and KZN we found strongly declining enrolment of learners with disabilities in Grade 1 over the period, as shown in Figure 2. Figure 2 also shows that in Gauteng, there was also a strong decline in Grades 2 and 3 (and in Grade 4 from 2019 onwards). This suggests one of the following: 1) delayed identification of less-visible disabilities in early grades, 2) dramatically reduced repetition in early grades among learners with disabilities or 3) a sudden decline in reporting of disability status in the foundation phase. Reduced repetition of Grade 1 seems a plausible explanation in KZN as Grade 2 and 3 enrolment increases in the same period. This is not the case in Gauteng.

Figure 1a: Total learners with disabilities in primary school, by grade and year: Gauteng

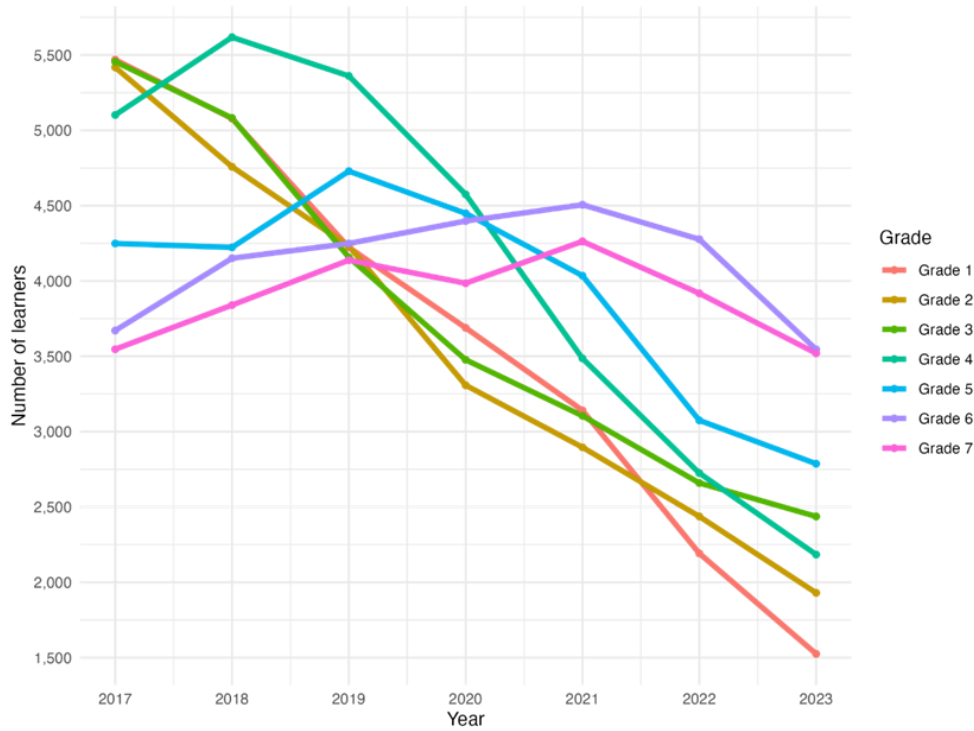
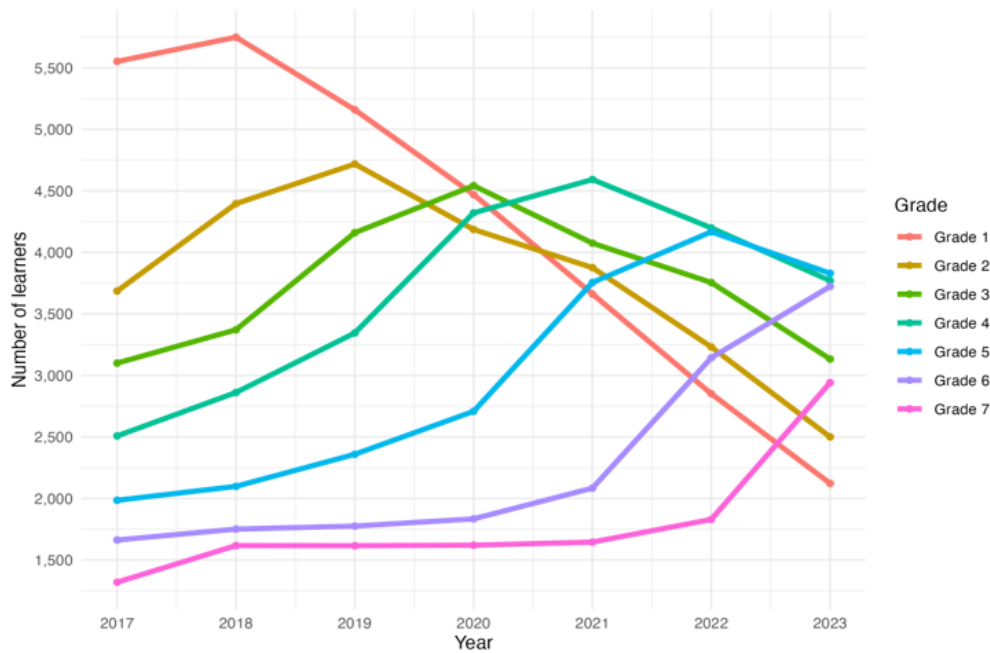


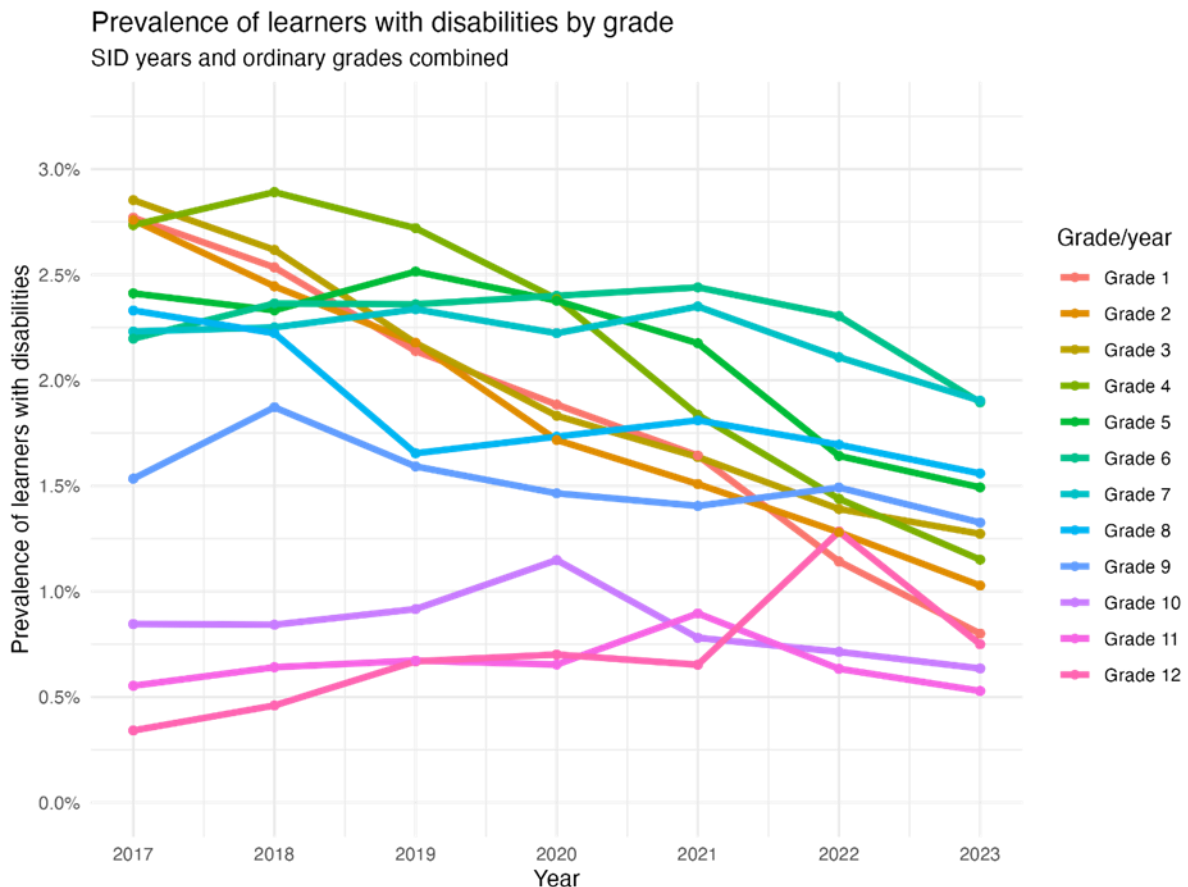
Figure 2b: Reported number of learners with disabilities, by grade: KwaZulu-Natal



Source: DDD longitudinal dataset, all primary school learners from 2017 to 2023. Notes: Ordinary grades and SID years combined. For example, learners in SID year 1 and those in ordinary grade 1 are grouped together and labelled *Grade 1*.

Disability prevalence declines from approximately 2.75% in Grade 1 to 4 in 2017 to between 1 and 1.5% in each of these grades by 2023. In the other grades, there is some instability, but no clear upward or downward trend over the period.

Figure 3: Disability prevalence by grade: Gauteng



Source: DDD longitudinal dataset, all primary school learners from 2017 to 2023. Notes: Ordinary grades and SID years combined.

Further analysis found that this was a strong decline in reporting in **ordinary schools** in particular, as shown in Table 2. In 2022 and 2023, enrolment of learners with disabilities was less than half of what it was in ordinary primary schools in Gauteng in 2018 or 2019. By contrast, reported enrolment in ordinary primary schools in KZN was fairly stable, except in 2023, where it also declined substantially. Enrolment in special schools is fairly stable

Table 2: Total learners with disabilities, by school type and year: Gauteng.

	Ordinary schools				Special schools			
	Gauteng		KwaZulu-Natal		Gauteng		KwaZulu-Natal	
	n	% repeating	n	% repeating	n	% repeating	n	% repeating
2018	18 951	23	20 003	23	7 854	35	2 775	29
2019	17 100	25	20 824	17	7 642	37	2 905	31
2020	14 432	27	20 424	18	6 582	40	2 985	36
2021	11 168	26	19 091	12	6 737	42	3 054	55
2022	7 755	30	17 036	17	6 496	51	2 739	46
2023	5 275	30	13 629	16	6 766	51	2 730	47

Source: DDD longitudinal dataset, all learners in Grade 1 to 7 in *public sector* schools from 2017 to 2023.

We believe that 2022 or 2023 enrolment reporting in Gauteng is incomplete. The scale of the decline in enrolment of learners with disabilities is too large to be credible. We cannot rule out reduced school enrolment of learners with disabilities, substantial increases in home schooling enrolment or substantial increase in enrolment into independent schools. But we believe that a collapse in reporting of disability data is the largest contributing factor for the trend observed.

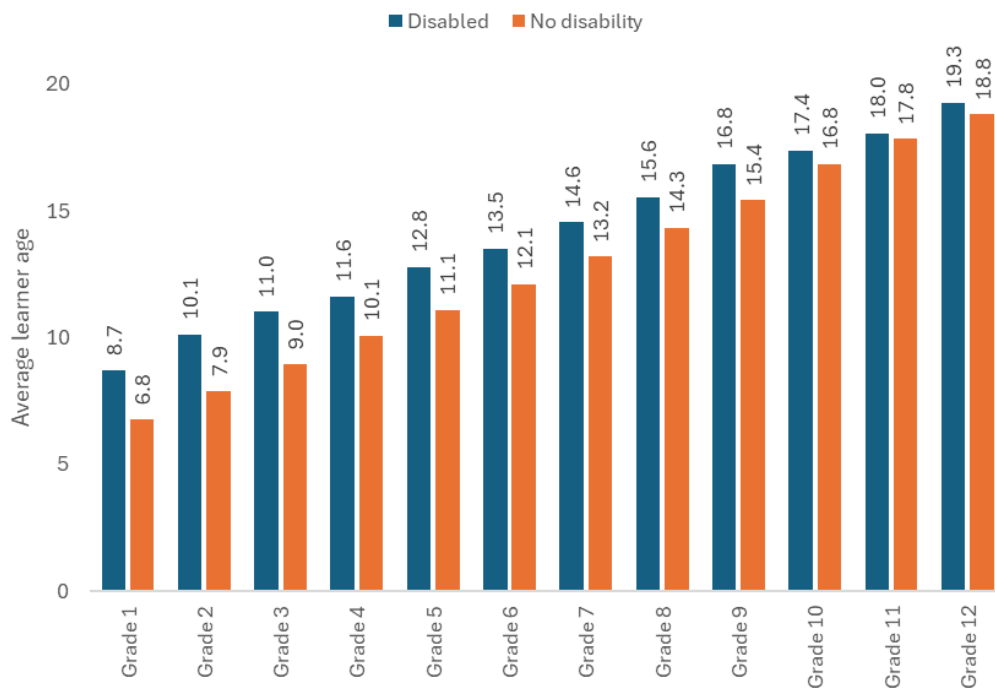
4. What are the implications for school-level enrolment data?

Incomplete reporting has two critical implications.

4.1. *Less widespread reporting introduces bias*

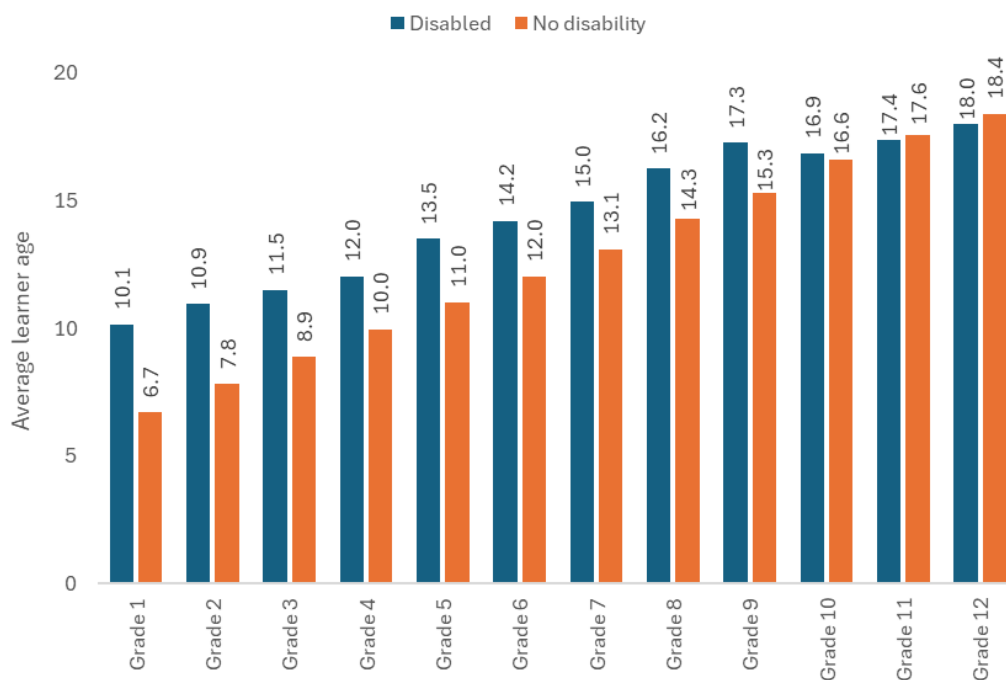
Firstly, analysing increasingly incomplete data could lead to misleading conclusions about disability inclusion. This is demonstrated by a comparison of age-for-grade analysis using 2018 and 2023 data in Gauteng. Analysis of the 2018 data shows that learners with disabilities were, on average, just more than 8 and a half years old in Grade 1 (11 months older than their peers). By 2023, however, learners with disabilities were, on average, over 10 years old in Grade 1 (3.4 years older than their peers).

Figure 4a: Disability prevalence by grade in Gauteng: 2018



Source: DDD longitudinal dataset, all learners (2018). Ordinary grades and SID years are combined.

Figure 4a: Disability prevalence by grade in Gauteng: 2023



Source: DDD longitudinal dataset, all learners (2023). Ordinary grades and SID years are combined.

This suggests a dramatic worsening of grade progression and an increase in late enrolment among learners with disabilities. While this is possible, it is unlikely that such dramatic changes have occurred in such a short time. It is more likely that data on disability status was only recorded for 1) learners with the most visible (and possibly most severe) disabilities or 2) learners with disabilities who were enrolled in special schools in 2023. Thus, the average level of support-need among learners with disabilities was much higher in 2023 than in 2018. The two groups of learners (Grade 1 in 2017 and 2023) are not comparable due to bias introduced by the decline in reporting in ordinary schools.

4.2. *Low estimates of disability prevalence*

Secondly, incomplete reporting leads to lower estimates of disability prevalence. In 2017, disability prevalence was 2% in Gauteng. This reduced to 1.2% in 2023. By comparison, Community Survey 2016 finds a disability prevalence rate of 2,3% in Gauteng in 2016ⁱ. Census 2022 [6] finds a national disability prevalence rate of 2.1% among 5- to 9-year-olds, and 2.3% among 10- to 19-year-oldsⁱⁱ. Provincial disability rates for these age groups have not yet been published. An underestimate of disability prevalence could lead to a false belief that learners with disabilities are a small group of learners whose needs can be accommodated with a small budget allocation.

5. Possible explanations for the rapid decline in enrolment

5.1. *The COVID-19 crisis*

The COVID-19 crisis is, at least in part, a cause of reduced reporting of learner disability status from 2021 onwards. Access to health services was radically curtailed during 2020 and 2021 [7], [8]. In Gauteng, Grade 1 health screening coverage fell from 37% in 2018 to 8% in 2020 and 23% in 2021 and Grade 8 screening from 28% in 2018 to 3% in 2020 and 20% in 2021 [9]. This would have impacted on the identification of disabilities, particularly in early grades.

In 2020, 54 to 60% of school days were lost in South Africa [10]. School days continued to be lost in 2021 due to rotational timetabling [11]. Reduced interaction with learners would have provided teachers with fewer opportunities

to identify children with learning difficulties in 2020 and 2021. The assessment processes which are necessary for learners to be classified as disabled in the South African school system were disrupted, hindering learners from obtaining a disability 'label' in the school system.

These findings demonstrates that there has **not been enough catch-up in health screening, assessment and access to diagnosis since the COVID-19 pandemic interrupted this process in schools**. Finally, due to the COVID-19 crisis, reporting in SA-SAMS may have been de-prioritised in schools.

The reported number of learners with disabilities had already begun to decline before 2020 in Gauteng. Other factors must play a role in this decline.

5.2. Identification of disability status in EMIS

The disability categories used in EMIS are still strongly focused on the presence of diagnosed medical conditions, rather than on the learner's domain of support-need or domain of disability (as recorded in screening and assessment forms in schools). Forty categories of impairment are recorded in EMIS data, which include:

- Autistic Spectrum Disorder
- Blind or partially sighted
- Deaf or hard of hearing
- Hemiplegic, paraplegic, impaired upper limb
- Cerebral palsied
- Conduct disorder
- Specific learning disorder
- Epilepsyⁱⁱⁱ

These categories are closely related to those listed in the 1998, post-provisioning norms. A call was made by Education White Paper 6 (2001) to reform these norms, so that they were based on a learner's level of support-need, rather than on medical diagnosis [12]. But the post-provisioning norms has still not been amended.

There is no simple way of matching the categories of disability in EMIS with those on the assessment forms (outlined in section 2). In many cases, the data clerk must make a fairly random choice of disability type in order to record disability status in SA-SAMS. We believe that this has compromised quality of disability enrolment data in schools and discouraged schools from reporting on disability status.

6. Recommendations : How should learner disability status be identified in EMIS?

We recommend two immediate actions. Firstly, we recommend that **EMIS and the post-provisioning norms should be updated to reflect the disability categories that are used in the screening, identification and assessment processes in schools**. Training on the use of these forms has been rolled out to schools and districts since 2014 [3], and teachers should now be familiar with these categories of disability. Secondly, we recommend that disability reporting in EMIS is promoted in all provincial education departments to sensitise schools on the importance of this data. We have not analysed data for the other seven provinces. The **reporting problems experienced in Gauteng may be occurring in other provinces as well**.

To further improve reporting, where **learners' level of additional support-need** (low-, moderate- or high-level) has been assessed by the district-based support team, this data **should be entered in EMIS**. Finally, **for learners with high-level support-needs**, data must be entered in EMIS on **which reasonable accommodations** these learners are **receiving** in school. This would allow learner-level monitoring of service delivery as recommended by the Global Education Monitoring Report [13].

Acknowledgements

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ⁱ author's own calculations, Community Survey 2016, weighted full sample, children aged 7 to 18 enrolled in any school

ⁱⁱ Using the UN Disability Index, where a person is categorised as disabled if they have some difficulty in two or more domains or a lot of difficulty (or are completely unable to function) in at least one domain.

ⁱⁱⁱ Language as stated in Department of Basic Education Post-Provisioning Norms (1998). Not the authors' own wording.