SUPPLEMENTARY MATERIAL TO: Le Roux and Feldman. S Afr J Sci. 2026;122(9/10), Art. #22365

HOW TO CITE:

Le Roux DB, Feldman J. Do school smartphone policies work? A multiple case study of five South African high schools [supplementary material]. S Afr J Sci. 2026;122(9/10), Art. #22365. https://doi.org/10.17159/sajs.2026/22365/suppl

---

Case descriptions

This section provides a basic overview of the case schools in our sample, indicating language of tuition, gender composition, size and location, as well as a descriptive summary of the school's policy position. Each case is identified by a pseudonym (HS1 to HS5). Using the information obtained from the interviews with the school management team (SMT), we categorised each school based on the strictness of their formulated policy with categories for 'moderate', 'strict' and 'very strict'. Two of the schools in our sample were categorised as moderate (HS2 and HS4), both English, girls-only schools in the Western Cape. The two Afrikaans, co-ed schools were categorised as strict (HS3 and HS5), while HS1, a boys-only, Afrikaans school in Gauteng, was categorised as very strict.

HS1

Language	Afrikaans
Gender	Boys
Number of staff	~90
Number of learners	~1450
Location	Urban, Gauteng
Smartphone policy position	Very strict

HS1 is an Afrikaans, boys-only high school located in a city in Gauteng. The school has for many years implemented a partial restrictive policy; in early 2024, in response to concerns about learner phone use, the SMT decided to impose a complete ban on phone use during the school day. While learners are still allowed to bring their phones to school, they may use them during class only if invited by a teacher for a specific activity. The SMT believes the new policy has been well-received by the school community. Although learners initially struggled with the ban, they believe that it has ultimately been embraced. Learners who break the rules are fined, with the amount escalating from ZAR 50 to ZAR 500 depending on the frequency of the violations, and phones are confiscated for up to 10 school days.

The SMT acknowledges that some parents have raised concerns about the phone ban, citing that their children need their phones to communicate with parents, make payments at the school tuck shop, and arrange transportation after school. However, the SMT noted that, over time, both parents and learners have largely accepted the new policy. Furthermore, the school staff have observed an increase in social interaction among learners during break times, which has been a positive outcome. Many parents have also expressed their appreciation for the school's firm stance on phone use. Nearly a year after the policy change, the SMT is confident that the revised policy is working effectively. Both parents and learners have adjusted to the new rules, and the policy is achieving its intended goals.

HS2

Language	English
Gender	Girls
Number of staff	~65
Number of learners	~950
Location	Urban, Western Cape
Smartphone policy position	Moderate

HS2 is an English, girls-only high school located in a city in the Western Cape. An initial policy was established in 2011 when the school began developing guidelines for acceptable Internet and social media use. Later, the policy was extended to cover smartphones, tablets and laptops, because all learners are required to bring a device to school that can access the Internet as teachers use Google Classroom for sharing learning material. The current school policy allows learners to bring smartphones to school and use them throughout the day, including before and after school, during breaks and between classes. Teachers set their own rules regarding smartphone use in lessons, leading to varying levels of restriction. If a learner uses their phone when asked not to, it is confiscated for the rest of the day and locked in the school strongroom until the end of the school day when the learner may collect their phone. The school does not keep phones overnight as many learners need to have their phones for safety reasons when using public transport. Learners are also expected to regularly check emails and messages from the school. The school's IT department monitors and controls learner Internet access at the school, blocking certain sites and limiting access for learners who visit inappropriate websites. According to the SMT, parents expect learners to have their phones on at all times so that parents can contact them. However, at the same time, some parents report feeling pressured by the school's requirement for learners to access Google Classroom, as learners use this to justify their access to smartphones at home. Discussing possible changes to the school smartphone policy, the SMT noted that they have considered a different smartphone policy for Grade-8 and -9 learners as many come from primary schools where smartphone use is prohibited. On arrival at high school, these younger learners struggle with the increased freedom at the school, which the SMT feels can impact their ability to focus on their schoolwork and self-regulate. Although the SMT acknowledges that the current policy has challenges, there are no immediate plans to change or adapt the current smartphone policy.

HS3

Language	Afrikaans
Gender	Co-ed
Number of staff	~60
Number of learners	~800
Location	Urban, Gauteng
Smartphone policy position	Strict

HS3 is an Afrikaans, co-ed high school located in a city in Gauteng. The current school policy permits learners to bring their phones to school and use them before and after school, as well as during break times. However, if a teacher observes a learner using their phone during class time without permission, the learner receives 50 debit points, which results in detention. The SMT acknowledges that these rules are not always applied consistently across all teachers, which has been an ongoing concern. Teachers may permit phone use for academic purposes during class. In addition, teachers use WhatsApp groups to share academic material and

communicate with learners about school activities. There are also WhatsApp groups for parents managed by the school governing body. The school recognises that this reliance on WhatsApp creates challenges, especially when encouraging learners to reduce their dependence on phones. An additional concern is the presence of private WhatsApp groups created by learners or parents that do not involve school staff. Information shared in these groups, sometimes including inappropriate messages, has raised concerns. Although these discussions typically occur outside of school hours, they can still have an impact on the school environment. The SMT also highlighted concerns regarding learners who contact their parents using their phones, bypassing the teachers and school. For instance, a learner may contact a parent asking to be picked up due to illness or injury, without the school being informed. In light of these challenges, the school is considering changing or revising its phone use policy. The SMT is unsure whether to embrace the use of phones at school and teach the learners to self-regulate or to implement a complete phone ban. Concerns around cyberbullying, exposure to inappropriate content, and the broader impact on student behaviour are key considerations, as the school seeks to find the best approach to support learners while addressing these issues.

HS4

Language	English
Gender	Girls
Number of staff	~60
Number of learners	~850
Location	Urban, Western Cape
Smartphone policy position	Moderate

HS4 is an English, girls-only high school located in a city in the Western Cape. The school has no formal policy specification on smartphone use; instead, the school has adopted a flexible “responsible use” approach. This approach has evolved over time, aiming to encourage self-regulation among learners. The general norms in the school dictate that learners may use their phones before and after school and during break times, but phone use inside the school building is allowed only with permission by a teacher. Teachers have discretion regarding learner phone use in their lessons. When learners use their phones without permission, they may be confiscated until the end of the day, and the learner may receive detention. However, the SMT acknowledges inconsistent enforcement of these rules, prompting them to consider changes to phone access during school hours. Since 2019, the school has phased in the compulsory use of iPads for each new Grade-8 cohort, providing Internet access for all learners. The SMT believes that with controlled iPad use, learners no longer need smartphones at school. They also encourage the use of Google Chat for communication with parents and peers. As a result, the SMT is considering restricting phone access to before and after school only, rather than allowing phone access during break times. The SMT’s primary concern about phone use revolves around the impact on learners’ mental health, particularly related to social media, cybersecurity and the constant flow of information and messages. Some members of the SMT believe that banning phones during school time, including break times, would provide learners with a necessary break from social media and the Internet, which they feel is necessary for learner well-being. However, other members feel that schools should teach learners to manage smartphone distractions, as not all learners receive this guidance outside of the school context. They argue that a total ban would not help learners learn how to self-regulate their phone use. As a result, the SMT is deliberating whether to enforce stricter phone usage policies.

HS5

Language	Afrikaans
Gender	Co-ed
Number of staff	~90
Number of learners	~1250
Location	Urban, Western Cape
Smartphone policy position	Strict

HS5 is an Afrikaans, co-ed high school located in a city in the Western Cape. The school is currently revising its smartphone policy, but staff are struggling to reach a consensus on the best approach. To aid in finalising the policy, the school is consulting with professional educational organisations. Under the current policy, learners are permitted to bring phones to school but must keep them out of sight during the school day, unless granted permission by a teacher to use them for academic purposes. Phones can be used before and after school, during breaks and between classes. If a student is found using their phone without permission, the device is confiscated. To retrieve it immediately, the student can pay a ZAR 50 fine. Otherwise, the phone is stored in the school safe for up to 7 days. However, this has led to complaints from parents who require their children to have access to phones for communication. In 2024, the school trialled a new approach in the English department, where learners must place their phones in a designated pocket at the front of the class at the start of each lesson. If the teacher decides to use phones for academic activities, learners retrieve them and return them to the phone pocket once the task is complete. The SMT reports that the trial has been successful, and plans are in place to extend this system schoolwide in 2025. Some educators at the school are advocating for a complete ban of phones, citing factors such social media use, cyberbullying, gaming, exposure to inappropriate content, phone addiction and decreased concentration due to phone use. However, the SMT believes that phones are an integral part of a teenager's life and is in favour of a policy that encourages responsible use and self-regulation.

Guide for interviews with school management teams

In all cases, the researchers followed the same interview guide, which consisted of the following questions:

1. Please explain your school's current smartphone policy to us.
2. When was this policy developed and what process was followed?
3. What were the key motivators for the development of the policy?
4. How strictly is the policy enforced by educators?
5. What are learners' attitudes towards the policy?
6. What are educators' attitudes towards the policy?
7. What are parents' attitudes towards the policy?
8. What are your future plans in terms of smartphone policy?

Data analysis plan

After completion of all data collection activities at each of the five schools, we commenced with analysis procedures. Recordings of the group interviews were transcribed and, if required, translated. These transcriptions, together with policy documentation provided by the schools, were used to develop case descriptions that informed contextualisation and interpretation of the findings at each school. Data collected through paper-based surveys were captured and combined with data from online surveys. Data sets from each of the schools were then cleaned and aggregated, before we proceeded to conduct analyses to address the research questions (RQ1 and RQ2).

To address RQ1, we used the educator data set to calculate descriptive statistics for key indicators at each school (in-class policy enactment, policy agreement, level of concern and frequency of use for teaching and learning), as well as bivariate correlations between these indicators. We then conducted analyses of variance (ANOVAs) to determine whether any observed differences in these indicators for the five schools were statistically significant. Thereafter, we calculated descriptive statistics for learners' in-school smartphone use patterns, including in-school smartphone vigilance, as well as bivariate correlations between these indicators. We then conducted ANOVAs to compare differences across the five cases. In the next step, we tested a multiple linear regression model to determine whether 'school' significantly predicts variance in in-school smartphone vigilance while controlling for gender and grade-level. Finally, we triangulated our three sources of evidence – the qualitative case descriptions, quantitative indicators of educators' attitudes and in-class policy enactment – and quantitative indicators of learners' in-school smartphone vigilance, to address RQ1.

To address RQ2, we conducted a hierarchical linear regression analysis to determine, firstly, whether learners' school, grade and gender predicted variance in their academic performance, and, secondly, whether their in-school smartphone vigilance predicted additional variance in academic performance. Again, the findings from these analyses were interpreted in relation to qualitative case descriptions for each school.

With the exception of four respondents who completed the survey on paper, all participants responded via the online survey platform that required completion of all items before submission, resulting in a data set with virtually no missing values. No outliers were removed from the analyses. Given the large sample size, the influence of any potential outliers was expected to be minimal, as confirmed by very low Cook's distance values (maximum = 0.07) across both regression models.

Assumption checks were performed for both multiple linear regression models using standard diagnostic procedures. For the model predicting in-school smartphone vigilance and the subsequent hierarchical regression predicting academic performance (with ISSV entered in the second step), the residuals versus fitted values plots showed no clear evidence of non-linearity or heteroscedasticity, Durbin–Watson tests indicated no significant autocorrelation (DW ≈ 2.00, $p > 0.80$), collinearity statistics were low (all VIFs < 1.30), and Cook's distances were minimal (maximum < 0.07), suggesting no influential outliers. However, Shapiro–Wilk tests revealed significant non-normality of residuals ($p < 0.001$) in both models, with Q-Q plots showing deviations primarily in the tails. These violations are expected given that both dependent variables (ISSV and academic performance) were measured using self-report instruments, which are inherently bounded. ISSV exhibited clustering at the lower end (many students reported minimal or no smartphone use during school hours). Despite these deviations, the large overall sample size ($N = 964$) ensures that parameter estimates and inference remain robust via the Central Limit Theorem. Therefore, both the original and hierarchical models were retained for interpretation.

Supplementary table 1: Survey response and coverage rates at each school

School	HS1	HS2	HS3	HS4	HS5
Number of educators	~90	~60	~60	~60	~90
Educator sample	39	45	34	35	50
Educator response rate	~43%	~75%	~57%	~58%	~56%
Number of learners	~1450	~950	~800	~850	~1250
Learner sample	282	137	165	143	236
Learner coverage rate	~19%	~14%	~21%	~17%	~19%

Supplementary table 2: Coefficients for linear regression model predicting in-school smartphone vigilance

Predictor	Estimate	SE	*t*	*p*	Std est	95% CI	
						Lower	Upper
Intercept[a]	1.63	0.09	18.16	<0.001			
Pseudo							
HS2 – HS1	0.50	0.10	5.08	<0.001	0.70	0.43	0.97
HS3 – HS1	0.18	0.08	2.44	0.015	0.26	0.05	0.46
HS4 – HS1	0.20	0.10	2.07	0.039	0.28	0.01	0.55
HS5 – HS1	0.37	0.07	5.22	<0.001	0.51	0.32	0.71
Grade							
Gr. 11 – Gr. 10	0.08	0.07	1.10	0.270	0.11	-0.09	0.30
Gr. 12 – Gr. 10	0.18	0.07	2.59	0.010	0.26	0.06	0.45
Gr. 8 – Gr. 10	-0.12	0.07	-1.71	0.087	-0.16	-0.35	0.02
Gr. 9 – Gr. 10	-0.02	0.07	-0.31	0.760	-0.03	-0.21	0.15
Gender							
Male – female	-0.06	0.07	-0.89	0.373	-0.09	-0.27	0.10
Other – female	0.05	0.22	0.21	0.836	0.06	-0.54	0.67

SE, standard error; std est; standard estimate; CI, confidence interval

[a]Represents reference level

Supplementary table 3: Coefficients for the second model predicting academic performance

Predictor	Estimate	SE	*t*	*p*	Std est	95% CI	
						Lower	Upper
Intercept[a]	10.00	0.22	30.66	<0.001			
Grade		0.21					
Gr. 11 – Gr. 10	-0.02	0.20	-0.07	0.945	-0.01	-0.20	0.19
Gr. 12 – Gr. 10	-0.09		-0.39	0.698	-0.04	-0.24	0.16
Gr. 8 – Gr. 10	0.49	0.31	2.33	0.020	0.22	0.03	0.41
Gr. 9 – Gr. 10	0.20	0.24	0.96	0.337	0.09	-0.09	0.27
School		0.30					
HS2 – HS1	-0.97	0.22	-3.10	0.002	-0.44	-0.71	-0.16
HS3 – HS1	-1.04		-4.41	<0.001	-0.47	-0.68	-0.26
HS4 – HS1	0.35	0.21	1.14	0.256	0.16	-0.11	0.43
HS5 – HS1	-0.06	0.68	-0.25	0.802	-0.03	-0.22	0.17
Gender		0.10					
Male – female	-0.70		-3.27	0.001	-0.32	-0.50	-0.13
Other – female	0.43		0.63	0.529	0.19	-0.41	0.80
ISSV	-0.23		-2.24	0.025	-0.07	-0.14	-0.01

SE, standard error; std est; standard estimate; CI, confidence interval; ISSV, in-school smartphone vigilance

[a]Represents reference level