

Chapter 12

The Impact of COVID-19 on a Fragile Education System: The Case of South Africa



Crain Soudien, Vijay Reddy, and Jaqueline Harvey

Abstract This chapter provides a critical look at what COVID-19 meant for the education sector in South Africa. It documents the path of the pandemic in the education space to understand its effects and the short-term responses of the education system. It begins with the premise that the South African educational system is structurally fragile. Its fragility arises out of the injustices of the apartheid system which disadvantaged schools and learners. It argues that the country has made progress in dealing with this legacy but that the drivers of change, such as improved household incomes, improved access to school materials and better nutrition, have come under strain in recent times. Because of COVID-19, the upward social mobility of low-income communities is growing in precarity while inequalities are exacerbated.

12.1 Introduction

As the world enters its second year of facing the COVID-19 pandemic, it is not only appropriate but necessary that the effects and implications of the pandemic on key social institutions, structures, and individuals are understood well. They need to be understood to assist with the immediate crisis—the urgent containment of the most egregious effects of the disease. More importantly, they need to be understood for the task of looking toward the future.

This future-oriented task will aid in the development of strategies that will position systems and institutions to anticipate and prepare for future similar events and leverage this crisis to make fresh starts where systems, processes, and practices have clearly not worked, not supported everyone equally, and not offered individuals and communities the opportunities to which they have a legitimate claim. This task has immediate relevance for systems of health and social welfare. It applies, however,

C. Soudien (✉)

Nelson Mandela University and Human Sciences Research Council, 20, 4th Avenue, Rondebosch East, Cape Town 7789, South Africa

e-mail: crain.soudien@uct.ac.za

V. Reddy · J. Harvey

Human Sciences Research Council, Durban, South Africa

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poignantly, to the question of education in the circumstances during the COVID-19 pandemic.

Understanding the existing social context is crucial in making sense of the impact of COVID-19 on South Africa, an enormously complex society. While it is a middle-income country, alongside of countries such as Brazil, Mexico, Turkey, and Malaysia, and therefore has access to resources and infrastructure affordances not at the disposal of poorer countries, its social, religious, linguistic, and cultural diversity is overlain with the deep fractures of race, gender and class. While South Africa has made progress in reducing extreme poverty, 'largely due to redistributive transfers in the form of government grants' (Zizzamia et al., 2019: 3), poverty rates remain high. Zizzamia and his colleagues' estimate is that while the country's middle class has grown, and has diversified in racial terms, it only stands at approximately 25% of the national population. In 2015, 55.5% of South Africa's people could not afford to meet their basic needs (Stats SA, 2017). An important distinguishing feature of the country is the social precarity of people who are around the food poverty line of R515 per month (Zizzamia et al., 2019: 9). Using the metaphor 'snakes and ladders,' Zizzamia and his colleagues emphasize how this precarity is determined by an individual's human capital and his/her access to the labour market. They do not specifically focus on access to education, but it could be argued that insufficient access to educational inputs is clearly a critical factor in giving substance to this precarity. As we show below, access remains unequally distributed across the population. How COVID-19 has conditioned this precarity we will only have a good sense of in the future.

We seek to develop a sense of how the effects of the pandemic have played out in South Africa. The approach we take is to examine the multiple levels at which these effects are in operation. These include the legacy level, essentially that of race, the socio-economic level and that of the individual's attributes. Adapting Amnesty International's (2020) categorisation, we work with the approach here that a learner's experience of education in South Africa is for the most part contingent on his/her racial background and socioeconomic status (which overlap significantly), and the less-well understood factor of his/her individual learning attributes. Inequality arises due to one or a combination of these factors.

The chapter begins with a description of the country's socio-economic context, especially as it relates to the provision of education. It then details the onset of the pandemic and the measures that were put in place at the national and provincial levels to mitigate the pedagogical effects of the disruption. These, as will be shown, were focused on keeping the system on track for meeting the formal requirements of the learning year. It was clear that the inherent fragility of the system gave it little room to experiment with new ways of dealing with its inherited and new challenges. The chapter then offers a broad discussion of the effects of the pandemic on two levels. The first, to which most attention is given in this chapter, is the systemic level where the effects of school closures are examined, namely loss of learning days and educational opportunities for different socio-economic groups. The second level is that of the individual. A crucial feature of this experience is that many learners were unable to learn from home; this was primarily reflective of their socio-economic conditions. They did not have the necessary infrastructure, devices, or

funds to participate. But the challenges were also personal. Children, irrespective of their social statuses, learn in different ways. These differences are not recognised in South Africa.

The approach we take in this chapter is largely in the spirit of a critical stock-taking exercise. It is intended to be both comprehensive and analytic. We have attempted to locate whatever has been officially released into the public domain by the educational authorities such as publicly gazetted bulletins and circulars, reports of deliberations, discussions, and consultations which the authorities have made available. Several public surveys relating to the pandemic and schooling have been undertaken in the country. However, most have focused on the public's attitude to the opening of schools and the readiness of schools to re-open safely. Although self-reported material exists in abundance on the effects of the pandemic on learners and their families, this material describes learners' experiences in general terms but does not constitute an empirically grounded resource for describing the effects of the pandemic on learning and learning attainment or the psycho-social well-being and health of learners. Our approach strategically interweaves the official data and the copious secondary data that has become available in our assessment.

12.2 The Beginning of the Pandemic

The first officially recognised COVID-19 case in South Africa was recorded on the 5th of March 2020. More than a year later, on the 28th of April 2021, the number of infections had reached 1,577,200 cases. The number of people who had died had reached 54,237 and 1,502,986 had recovered (see [Worldometers.info/coronavirus/country/south-africa/](https://www.worldometers.info/coronavirus/country/south-africa/) and Turner et al., 2021). As with other countries around the world, South Africa introduced strict measures, including multi-level lockdowns and prohibitions on travel and movement. The government established two key structures to manage the disaster, a National Command Council (NCC) consisting of key cabinet ministers under the chairpersonship of the national president and a Ministerial Advisory Committee (MAC) in the Ministry of Health. The function of the first was to make decisions with respect to the pandemic itself—the measures to be instituted to manage the pandemic and to co-ordinate the country's response to it. The NCC's challenge was not only that of saving lives, as was the case for many high-income countries, but, given the precarity of many households, also of saving livelihoods. That of the second, the MAC, was to advise on the multiple dimensions and issues relating to the pandemic.

Drawing on these structures, on the 15th of March 2020, the President of South Africa, Mr. Cyril Ramaphosa, declared COVID-19 a national disaster. A Level 5 lockdown was declared, first for 21 days and then extended for a further two weeks, and only permitted essential services and business to operate. A R500 billion relief package was announced for the provision of immediate support to unemployed workers and distressed businesses. The country, after the middle of April 2020 gradually eased levels of lockdown to Level 1 by September 2020. In the wake of a

resurgence in infection levels during the country's December national holidays—when daily infection levels (13,674 people) exceeded infection rates during the peak of the pandemic in July 2020—the President announced the return to an adjusted Level 3 Lockdown restrictions. Bans on large gatherings were instituted, movement across borders limited only to essential travel and the sale of and consumption of alcohol prohibited in public spaces. In January 2021, the country was placed under a Level 1 state of lockdown.

12.3 Outlining the Fragility of the South African Educational System

To understand the impact of COVID-19 on the education system, it is first necessary to make some remarks about its nature and structure. It is, in its current form, a young system struggling to divest itself of its apartheid origins. The apartheid order had created 15 separate racially and ethnically defined education authorities. A system that has left individuals classified as white as the most advantaged group. In the closing years of apartheid, the late 1980s, the education levels of the population were low. Almost a quarter of adults in the 25–64-year age-bracket had no schooling and only 8% had post grade 12 qualifications (Stats SA, 2011). As Fiske and Ladd (2004: 44) explain, “as late as 1994, after the National government had significantly increased spending on black learners, the amount spent per pupil in white schools was more than two and a half times that spent on behalf of black learners in the urban townships.”

Apartheid was abolished in 1994 with the ascent to power of an African National Congress-led Government of National Unity. To achieve a more equitable and economically productive society, education, schooling, and the economy were prioritised in line with Nelson Mandela's belief that “*education was the most powerful weapon which you can use to change the world*” (Hattang and Venter, 2011: 90). The new government immediately abolished segregation and inequality in education. It passed the South African Schools Act (SASA) which deracialized the system and brought all learners under a unified national authority (DoE, 1996). The national department had responsibility for policy, but implementation responsibility was granted to provinces on a subsidiarity basis.

In terms of the provisions of SASA (DoE, 1996) the current system consists of public and a relatively small number of private schools. In 2016, based on the latest officially available report from the Department of Basic Education (DBE, 2018), there were 29,749 established public and registered independent schools in South Africa. Of these schools were 14,795 primary schools accommodating 6,929,834 learners and 203,139 teachers, 6,186 secondary schools with 3,989,236 learners and 140,532 teachers, and 4,593 combined and intermediate schools with 2,013,465 learners and 74,942 teachers. Of the 13,307,830 learners in the system, 12,342,283 were in ordinary public schools and 590,282 were in private or independent schools.

Authoritative analyses of the school system describe it as a two-tiered system, characterised by the kinds and levels of inequality that are evident in the wider social system (see Reddy et al., 2012; Hunter, 2019). Seventy-five per cent of all learners in the system are in no-fee schools, many of which carry the legacy disadvantages of being largely black and poor, while the other 25% are in privileged schools, which were largely formerly white and now serve the expanded post-apartheid, and no longer white-only, middle class (Spaull, 2019: 4). The majority system is beset by all the challenges that come with racialized inequality: inefficiencies (van den Berg, 2008), teacher shortages in key subjects (Simkins, 2015) and poor school climate and discipline (Winnar et al., 2018). Although school infrastructure and resources have improved over the last 25 years, some learners still attend schools which have poor infrastructure and dilapidated buildings, dangerous and unsanitary pit latrines, issues with water supply, ill-equipped teachers, shortages of learning materials, large classes, and high dropout rates (see Amnesty International, 2020; Parker et al., 2020 and Stats SA, 2017). The privileged sector is the exact opposite; it is higher-performing and highly functional (Amnesty International, 2020). This structural division makes the management of the system difficult.

This two-tiered character of the system is evident in the country's performance in important benchmarking exercises such as the Trends in International Mathematics and Science Study (TIMSS). TIMSS has been conducted every four years at either the Grade 8 or 9 level since 1995. With the completion of the 2019 TIMSS cycle, a 25-year longitudinal view is now available. TIMSS 1995 ranked South Africa the lowest of the set of participating countries with a very low mathematics achievement score of 276 (SE 6.7). Only one in ten learners demonstrated that they had acquired the minimum mathematics proficiency for their grade-cohort. Improving educational outcomes in this first eight-year period was difficult. Mathematics' achievement scores remained stagnant over the TIMSS 1999 and 2003 cycles. From TIMSS 2003 to TIMSS 2011, the country recorded an increased average mathematics score, and further increases were noted in TIMSS 2015 and 2019. Between 2003 and 2019, the mathematics achievement improved by 102 TIMSS points or one standard deviation (Reddy et al., 2020). The gains were largely due to post-apartheid's most significant drivers of social change, improved home and school conditions effected through a combination of social welfare interventions and socio-economic factors, the provision of social grants, school nutrition schemes and fee-subsidies, improved school resources and instructional materials, increased proficiency in the language of the assessment, improved teacher knowledge, increased levels of parental education, and a greater focus on what happened inside schools and classrooms (Zizzamia et al., 2019).

The TIMSS 2019 mathematics average achievement score of 389 (SE 2.3) and the fact that four in ten learners demonstrated that they had acquired the minimum mathematical proficiencies shifted the categorisation of the country's educational outcomes from *very low* to *low*. An even bigger success story after 2003 was that the highest achievement increases came from the lowest performers who were probably the most disadvantaged learners and who had benefitted most from government's interventions.

Despite these developments, two legacy effects are of relevance for this analysis of the effects of COVID-19 on learner outcomes. First, South African achievement continues to be linked to race, socio-economic background, and geographic location. The mathematics achievement gap between fee and no-fee schools in TIMSS 2019 of 75 points indicates that learners from disadvantaged backgrounds still perform at a lower level compared to their advantaged counterparts (Reddy et al., 2020). Moreover, returning us to Zizzamia et al.'s (2019) characterisation of social mobility as a 'snakes and ladders' phenomenon, we must be concerned about how disadvantaged students are able to sustain the gains they are making given the drivers of change on which they depend are vulnerable. The mathematics improvement rate from TIMSS 2003 to 2011 was 7.4 points per year, but from 2011 to 2019 decreased to 4.6 points. We are unable at this point to definitively explain the dynamics behind these shifts but, following Juan and Visser (2017), suggest that they could be related to significant home and school environment improvements. Among other factors, the cycles of greatest improvement in TIMSS performance happened during a period when 'positive changes over time' were taking place in learners' home environments (Visser and Juan, 2020: 19–20). Upward as the improvement trajectory continued, the impetus faltered after 2011. This was the period, significantly, when socio-economic conditions in the country deteriorated rapidly as unemployment increased. In an analysis of the impact of COVID-19 on education, the significance of the relationship between the increased social and educational provision and improved learner educational attainment cannot be overstated. Our drivers of improvement were compromised.

12.4 Government's Response to COVID-19

When it became clear that South Africa, like the rest of the world (Zhu and Liu, 2020), was staring the prospect of uncontrollable contagion in the eye, its government closed down the schooling system. The Department of Basic Education (DBE) (2020a), responsible for the administration of all public schools, announced at the beginning of the national lockdown that:

In accordance with the pronouncement by the President on 15 March 2020, schools will be closed from 18 March and will reopen on 14 April 2020. This decision has been informed by the warnings provided by the National Institute of Communicable Diseases and World Health Organization who have highlighted the alarming increase of infections within the country over a three day period... Provincial Education Departments, districts and schools are advised to take advantage of this time and are encouraged to utilise the time effectively by ensuring that learners participate in established stimulating programmes such as the Read to Lead programme, maths buddies, constructive holiday assignments, etc. through the supervision and guidance of parents and the broader community whilst learners are at home. This will be supported through the provisioning of workbooks, worksheets, readers, etc.

Closing the schooling system required that the DBE plan and inform the public about the steps it would take to keep the system functional. Within a month, in the middle of April 2020, the DBE had put in place a COVID-19 response programme with the support of the National Education Collaboration Trust (NECT), a multi-party civil society stakeholder. A major initiative was put in place to have water tanks and water supplies provided at every school and community (2020a).

The March 2020 Level 5 lockdown, as indicated above, meant school closures at the beginning of the school year and the expectation that work, teaching, and learning would continue from home. The most important elements of this emergency plan were the following:

1. A multi-media learner support programme in conjunction with the national radio and television broadcaster, the South African Broadcasting Corporation, under the banner: COVID-19 Learner Support. It broadcast lessons through three public television and 12 national and eight regional radio stations.
2. Curriculum support lessons were placed online for Early Childhood Development (ECD) and Grades 10, 11 and 12 learners with emphasis on Mathematics, Physical Sciences, English First Additional language, Life Sciences and Accounting; the provision of access to textbooks and teacher guides; and arrangements with telecommunication platforms to waive subscription fees and data costs to make education material accessible to learners.
3. The DBE upgraded its website. Study material for all grades was uploaded to this website (www.education.gov.za). Included in this material were study guides and revision booklets for the senior phase (Grades 10–12), workbooks for the intermediate phase, and additional material for special needs groups and for those repeating their studies. Tips were provided to parents for helping their children learn. Psychosocial resources were also made available including guidelines for special needs schools.
4. Multimedia materials supported by mobile applications were made available on the DBE website.
5. Email and WhatsApp feeds were sent to teachers who were responsible for teaching reading and for the management of their schools with advice about how to manage their children's learning challenges.
6. A series of consultations was held between the DBE and teacher unions on issues that were arising during the lockdown.
7. The DBE convened two national consultations bringing together approximately 100 educational experts to discuss plans and take advice on the lockdowns.
8. A monitoring and evaluation programme process was put in place to assess system readiness for the provision of personal protective equipment, the availability of water at every school, and the levels of capacity in individual schools to ensure learner safety.
9. Advice for how to resume school feeding in contexts where this was needed.

In addition to the efforts of the DBE, the NECT was also able to report (NECT, 2020b) that the National Association of Social Change Entities in Education (NASCEE), a network coalition of non-governmental organisations, funders and individuals had committed themselves to a national collaboration compact, developed a web-based platform which indicated the activities and services of NGOs and funders in response to pandemic and begun coordinating the curation of online and offline learning content for learners. While this list is not exhaustive, a multifaceted approach was taken in response to COVID-19-related challenges, although it was highly reliant on technological and Internet access.

In June of 2020, the DBE (2020b) published its second medium-term plan entitled *School Recovery Plan in Response to COVID-19 (SRPRC)*. The proposal had initially been to open schools in June 2020, but because of a spike in infections the date was pushed forward, and schools ultimately reopened in August 2020. The plan was based on a phasing-in of grades and a rotational approach. Beginning with learners in examination classes, Grades 7 and 12 were brought back first and then the other grades on a gradual basis. The rotational arrangement also made allowance for only having particular grades in attendance on particular days of the week to minimise the dangers of over-crowding. Schools were given options for rotation. The document paid a great deal of attention to the questions of safety and infection mitigation. With respect to learning, some key purposes of the SRPRC were to:

1. Develop a Robust Curriculum Recovery Plan

This included a plan for the recovery of teaching and learning time. Attention was given to the length of the school day, the length of the school term, and a reduction of time allocated for examinations and assessment. Guidance was also provided to learners for self-directed learning. The SRPRC (DBE, 2020b: 12), with respect to self-directed learning, said that “(i)n the case of self-directed learning, the learning material is prepared in such a manner that learners are able to progress from the known to the unknown on their own ... such content must be well scaffolded and mediated through templates and vivid examples.” The curriculum for Grade 12 was not revised.

2. Manage Examinations and Related Activities

South Africa has a high stakes, externally set matriculation examination. These papers are normally set a year in advance. The DBE took the decision that the standard June Examination written by all learners across the system would be set aside. The exit level examination at the end of the academic year, which under normal circumstances would take place from late October and in November, would be written in November and early December. In terms of content, it would remain the same and all learners, irrespective of their opportunity-to-learn circumstances, would write the same exit level examination.

3. **Develop Standard Operating Procedures to Guide the Basic Education Sector to Manage and Contain the Spread of Infection**

These procedures, aimed specifically at the health and safety of schools during the pandemic, were authored with the assistance of the Education Technical Working Group of the MAC and the NICD.

The re-opening of schools was implemented using a ‘differentiated approach’ (DBE, 2020b: 5). Underpinning the curriculum segment of the SRPRC were concerns about “how much of the curriculum content could not be covered because of ... the lockdown; implications of the lost time for teaching and learning ... assessment ...; how can the time lost be recovered or can the curriculum be reviewed to ensure that the essence of the curriculum is completed in the remaining time available?” (DBE, 2020b: 6). The plan explained that its execution would assist schools to recover “between 29 and 33 teaching days The number of days recovered will be less than the number of days lost and hence there will be a need for a trimming and reorganisation in all grades/years, except Grade 12” (DBE, 2020b: 14). The time lost for Grade 12 learners in particular would be recovered through a shortening of the period scheduled for examination preparation and the extension of the school day.

Operational principles for guiding the SRPRC were explicitly articulated around the need for Inclusion and Equity, ‘ensuring that all learners, and particularly the most vulnerable, access the planned programme’, taking cognizance of the unique needs of schools, phases and grades/years, ensuring that plans were determined in a flexible way ‘guided by the scope and size of the school population’, time management to optimise the use of teaching time, and preserving learning quality and a ‘focus on skills, knowledge and values, rather just content coverage’ (ibid). It is important to emphasize that health and safety were the overriding feature in all these plans.

Interestingly, the provincial education authorities, given the subsidiarity principle around which education is governed in South Africa between the central government and the provinces, largely elected to use the guidelines and resources made available at the national level. Exceptions to this were the Free State Education Department and the Western Cape Education Department (WCED). The former, in addition to repeating the national schedules for radio and television-broadcast lessons and guides, also made available podcasts of lessons for issues and topics and gave their learners access to online and recorded tutorials (see www.education.fs.gov.za). For their part, the WCED (see wcedonline.westerncape.gov.za) not only provided guidelines for schools for managing the pandemic but made substantial education resources available for both learners and teachers and, most significantly, made available weekly lesson plans developed by their internal subject teams for the entire curriculum. For every subject in every grade there was a lesson plan and an actual lesson which could be referred to.

The response of South Africa to the pandemic was thus like that of other countries where an emphasis was placed on the provision of online and hardcopy resources to facilitate educational processes. We turn now to the impact of the pandemic on the learning experience. How much learning took place and what is one able to say, with a reasonable degree of confidence, was the effect of the disruption?

12.5 Education in 2020 and 2021: The Impact of COVID-19

Given the unprecedented nature of the pandemic and the limited empirical data we have at our disposal, the approach we take below is to work largely speculatively with respect to assessing the impact of COVID-19 on learning. As we write this chapter, the results of the National Senior Certificate Examinations, the terminal examination for the schooling system, were announced. Interestingly, while the national pass rate declined by 5.1 percentage points, from 81.3% in 2019 to 76.2% in 2020, the Minister of Education, Mrs. Angie Motshekga (2021), explained that the decline was attributable to a drop in the performance of *progressed learners*, a group of candidates who were repeating their examinations. It is not possible, however, to conclude from this that COVID-19 has had *no* effect on learning.

In South Africa, as elsewhere in the world, the educational impact of the pandemic included the following: (i) learning losses because of school closures, (ii) widening of pre-existing education disparities and (iii) learning gains made over time would be wiped out (Dorne et al., 2020; Hanushek and Woessmann, 2020; United Nations, 2020).

During the March 2020 Level 5 lockdown there were two possible ways to continue with learning activities: online learning or self-learning with parental and sibling support. Even for advantaged schools and learners who could do so, several issues influenced the effectiveness of online learning. For example, the urgency of responding to the pandemic did not allow for the development of an implementation plan or a system of educator and learner support. Educators and learners were thrust, almost overnight, into an education model with which few had experience (Doukakis and Alexopoulos, 2020).

More advantaged schools and households were better able to sustain learning using online learning strategies, although this required effort and presented challenges for both teachers and parents. For this group of learners, schooling continued through online lessons, either through live online teaching or uploaded recorded lessons.

Many disadvantaged schools, however, did not have the means to facilitate satisfactory online learning (Parker et al., 2020; Spaul, 2020). In poorer households, many children did not have a quiet workspace, desk, computer, internet connectivity, or parents who had the time or capacity to take on the role of home schoolers. The 2018 General Household Survey estimated that 22% of households had access to a computer and only 10% had internet access (Stats SA, 2019: 63). Spaul and Van der Berg (2020: 8), based on a survey they conducted, found that while 90% of South African households reported having access to a mobile phone, only 60% reported having access to the internet via their mobile phone.

A survey of their members by the South African Democratic Teacher Union (SADTU, 2021) revealed that two-thirds of learners from poorer households had almost no communication from their teachers during school closures. During the time learners remained at home, Spaul and Van der Berg (2020: 9) estimated that 18% of all children in the school-going age group, were in households without an adult caregiver during the day. What is more, without either teacher contact or adult supervision many African language mother-tongue learners would have had no assistance for managing the English in which most of the lessons would have been delivered.

This differentiation in social capital and resources meant a differentiated set of learning experiences at home. While all learners experienced learning losses during this time, because of the lack of access to educational inputs for three-quarters of learners, almost no learning took place for many children from poor backgrounds. Several media reports confirmed this. The executive director of a large teacher union described the situation of Grade 1 learners in several schools in the country: "... (there is going to) ... be a generation of people who cannot read at all. If you think we have a problem with reading now, watch this space" (Macupe, 2021: 5). Macupe (ibid.) cited a parent who said that her child was going to high school, but he struggled to read and write. As we noted previously, the government supported learning programmes through public radio and television, but these covered limited number of subjects and grades and were not enough to bridge the divide of unequal access to resources. On the basis that television programmes were available for only one and half hours per day, Spaul and Van der Berg (2020) calculated that learners were only receiving the equivalent of 5% of the instruction time they would have received in a normal school day.

School closures also meant the halting of supplementary services provided through the schooling system. For instance, currently, over nine million learners receive two meals per day through the National School Nutrition Programme (NSNP). The suspension of this programme during the lockdown period left these children at risk of being underfed for several months (Le Grange, 2020; Parker et al., 2020).

For many learners, school is a source of education as well as safety and support. One school located in a rural area moved final-year learners in with their teachers to continue their studies and support during lockdown (CBS News 2020). As one learner stated, many were aware of the importance of education for social mobility and the reduction of inequality: "*There are four people in each room, and we get lunch there after school. It's important because getting a good education – especially in South Africa – it sort of determines where you're going to end up in life*" (ibid).

12.6 Time Away from Schools and Classrooms: Deepening and Widening Inequalities

Schools closed on 14 March 2020 and returned in a staggered manner from 8 June 2020. Grade 12 and 7 learners, after *not attending* school for 28 and 33 days respectively, were the first to return. Grades 5 and 8 were the last to return. They had been away from school for 81 days (Gustafsson, 2020a; Mohohlwane et al., 2020). When full classes of the first grades returned (Grades 12, 7, R, 6 and 11) the school managed the *daily distancing* by distributing learners into different classrooms. As the remaining grades returned, to adhere to the social distancing protocols, learners attended on a *rotational basis*, perhaps on alternate days. Using official data, the work of Gustafsson (2020a) shows it is possible to describe the number of school days that were lost because of the closures (Fig. 12.1).

Gustafsson estimated that most learners could have lost almost 60% of the originally anticipated 198 contact school days. When differentiated by socio-economic status, learners from the low SES group’s loss rose to 65% of contact time. Grade 12 learners, writing an external standardised examination, which was not adjusted at all, are estimated to have lost around 35% of contact time. This loss of contact learning time necessitated a trimming (reduction) and re-organisation of the curriculum for learners returning to school in 2020. In January 2021, 58% of school principals

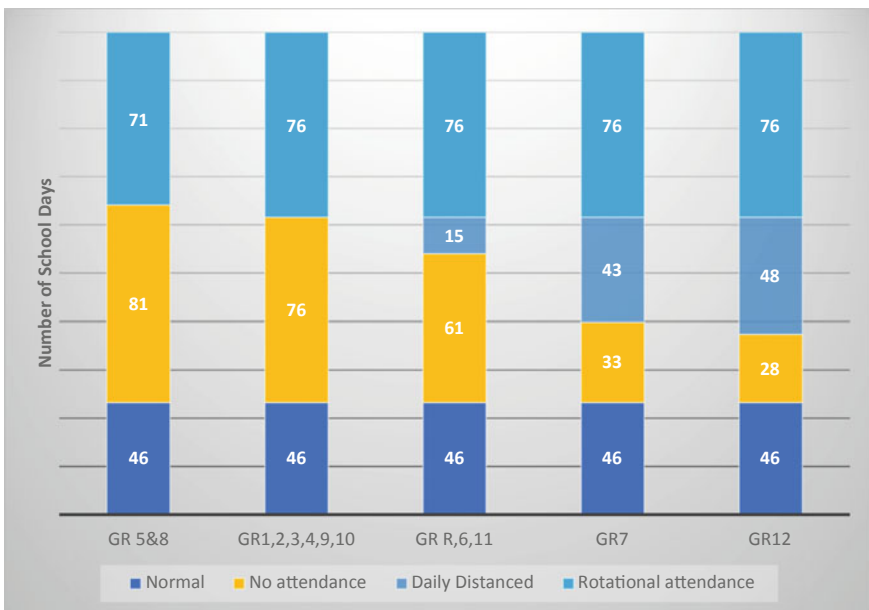


Fig. 12.1 Extent and pattern of school attendance by grade level. Source Gustafsson (2020a: 1)

reported that they had completed most of the trimmed curriculum for most subjects (SADTU, 2021).

While we can estimate and quantify the loss of contact learning time at schools, it is more difficult to quantify actual learning loss. Helpful here is the modelling developed by researchers such as Maldonado and De Witte (2020). They build on studies which look at the effects on test scores following long summer breaks (Cooper et al., 1996), absence from school (Aucejo and Romano, 2016) and the experience of gaps in instructional time (Lavy, 2015). These studies show that a break from school routines will lead to learning losses because of memory decay and limited learning opportunities during school breaks. The implications of their findings are that:

- (i) There *will* be learning losses because of pandemic-related school closures.
- (ii) Learning losses will be higher for mathematics than for reading.
- (iii) Learning losses will not be uniform, with disadvantaged learners experiencing higher learning losses (Kuhfeld et al., 2020; Hanushek and Woessmann, 2020).

To estimate the learning losses in South Africa because of the pandemic we chose to examine the disruptions in 2020 and speculate what possible learning scenarios could look like. We adapted the World Bank¹ methodology which looked at scenarios for how the learning curve would be affected by school closures to South African data. We asked the following question: if the TIMSS 2019 achievement instrument was administered to grade 9 learners in October 2020 (we will call this predicted estimate TIMSS 2020) what would their mathematics achievement score be?

In TIMSS 2019, the national average mathematics score was 389, with a standard deviation SD of 77 points, with fee-paying schools scoring 440 (SD of 79) and no-fee schools 365 (SD of 61). Across South Africa, four in ten learners demonstrated they had acquired the basic mathematical proficiencies, with two in three learners in fee-paying schools and one in four in no-fee schools demonstrating this proficiency.

We plotted the South African mathematics learning curves (Fig. 12.2a). In the first graph (a), the solid line plots the learning curve of South African TIMSS 2019

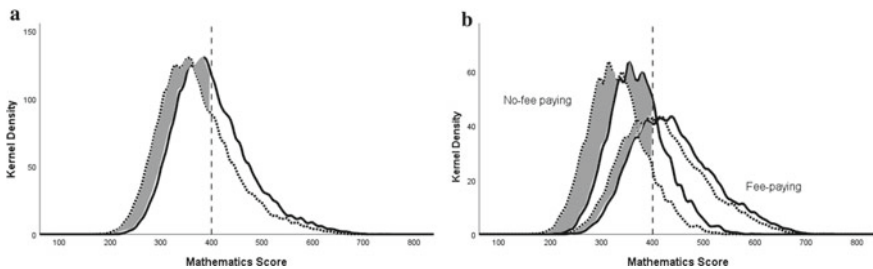


Fig. 12.2 Learning losses curves for ‘TIMSS 2020’ based on TIMSS 2019 based on TIMSS 2019²

¹ Retrieved from <https://blogs.worldbank.org/education/we-should-avoid-flattening-curve-education-possible-scenarios-learning-loss-during-school>.

² For illustration, the learning loss graph is not drawn to scale.

mathematics achievement. The second graph (b) plots the learning curve in no-fee and fee-paying schools. Learners in fee-paying schools (graphs on the right) achieve higher scores than their counterparts in no-fee schools (graphs on the left). The vertical dotted line, at the mathematics score of 400, represents the point of minimum proficiency in mathematics. Learners scoring below 400 points have not demonstrated the minimum mathematical abilities for that grade.

Our challenge was then to predict the mathematics scores for ‘TIMSS 2020’. Given the unprecedented nature of the pandemic, the methodological uncertainties to estimate learning losses, the limited empirical data we have at our disposal and the little we know about how the curriculum recovery process took place. The methodological approach we took was to review other studies that predicted learning losses and speculated what the impact of COVID-19 on learning only in 2020 would be.

Many predictions rely on ‘suggestive extrapolations’ from past studies. These learning losses are predicted in terms of loss of a share of a year of schooling (Azevedo et al., 2020), reduction in learning gains expressed as percentage loss (Kuhfeld et al., 2020), loss of future earnings (Psacharopoulos et al., 2020) or loss of years of learning (Kaffenberger, 2020).

As an illustrative example, Maldonado and De Witte (2020) calculated the effects of school closures on standardized scores for Grade 6 learners in Belgium using six years (2015–2020) of standardized test data and administrative data which measured learners’ socio-economic status. Belgian schools were closed for nine weeks (or one third) of the school year. In the first three weeks of the school closures teachers could only repeat and practice previously taught material. In the next four weeks teachers previewed new materials to be taught when schools would reopen. Most time was spent on the fundamental subjects: language, mathematics, and reading. It is estimated that distance learning took place for up to four hours a day, but one third of learners may have not had access to online learning.

Within this context, the authors found that “students in the 2020 cohort have school averages in mathematics between one fifth and one fourth of a standard deviation lower than students participating in the standardized tests in the five previous years” (page 12). A further finding was that inequality both within and across schools increased because of school closures.

Although South Africa is far from Belgium geographically and in terms of demographic and socio-economic characteristics, we will apply the results from the Belgium panel study to estimate the learning losses in South Africa. Recognising the contextual differences, we speculate that the learning losses in South Africa will be higher than in Belgium. Therefore, the application of the results from the Belgian study presents the minimum learning loss scenario for 2020 in South Africa.

Using the range of learning losses (0.19–0.25), for South Africa we project a scenario where the loss of learning is by 0.25 SD in no-fee schools and 0.19 SD in fee paying schools. The decrease on the national score will be by 0.21 SD. Applying these values to the South African TIMSS 2019 data, Table 12.1 provides the South African estimates for ‘TIMSS 2020’.

As the projection shows, if the grade 9 classes took the TIMSS 2019 achievement test in 2020, in a best-case scenario the TIMSS 2020 mathematics scores will drop

Table 12.1 Speculated mathematics scores in ‘TIMSS 2020’

	TIMSS 2019 math score (SD)	Learning loss: SD and score	TIMSS 2020 math score	TIMSS 2015 math scores
National	389 (SD 77)	0.21 SD (16 TIMSS points)	373	372
Fee-paying	440 (SD 79)	0.19 SD (15 TIMSS points)	425	430
No-fee paying	361 (SD 61)	0.25 SD (15 TIMSS points)	346	342

from 389 to 373 points. The mathematics achievement will decrease to 425 points in fee-paying schools and 346 points in no-fee schools. The dotted line in Fig. 12.2a plots the lower national learning curves and in Fig. 12.2b the lower learning curves for fee and no-fee schools. Applying the Maldonado and De Witte methodology to the South African data shows that the ‘TIMSS 2020’ scores have regressed to the TIMSS 2015 levels where the national score was 372, with fee-paying schools at 430 and no-fee schools at 342 (Reddy et al., 2016).

In TIMSS 2019, 41% of learners demonstrated that they acquired the basic mathematical skills. In 2020, this is speculated to regress back to the 2015 levels of 34%. The shaded part on the graph represents the share of additional learners who cannot demonstrate basic mathematics proficiency because of COVID-19 related school closures.

The sad and uncomfortable truth is that South Africa, which started 2020 with low and unequal achievement scores, is likely to end the year with even lower achievement scores. The achievement gains made since from 1994 would probably revert to the achievement levels recorded in TIMSS 2015—a loss of five years of learning. Additionally, the effect of the pandemic on the education system will widen existing inequalities.

In this uncharted terrain of the pandemic, encompassing learning losses and recovery, we do not yet know the number of days that will be lost to school closures in 2021, the quality of engagements learners will experience when they are in school, and how individual learning recovery will occur. If there is no quick recovery of the learning losses, our projection is that fewer learners will graduate from the school with requisite skills and knowledge to access post-school education, training opportunities, and find an appropriate place in the labour market. Based on what we have presented here, we argue that COVID-19 will have long-lasting effects on our education, economic, and social systems.

12.7 Development of the Individual Learner

In the final part of this chapter, we briefly draw attention to the situation of the individual learner. We argue that we know little about the learning dynamics of individual learners and their experiences of learning in individual subjects. COVID-19 would have brought this phenomenon—how children learn—into the consciousness of many people, especially parents, in a new and hopefully informative way. As one of the most challenging issues raised by the pandemic, we suggest more attention is given to the inequalities that the individual learner experiences.

To understand the circumstances of the individual learner both his/her/their social and biological factors need to be taken into consideration. They interact with one another to contribute to individual development, a complex and multi-layered process (Jotterand, 2018; Stetsenko, 2017). We briefly present the factors of nature and nurture. As an example, and crucial to learning, individual brain development is at the intersection of biological development and environmental factors. This is commonly referred to as brain plasticity which explains how environmental factors substantially shape neural pathways within the brain. Exposure to protective or risk factors within our environment contribute to or hinder brain development (Jotterand, 2018; Shavit et al., 2018; Stetsenko, 2017). This knowledge regarding individual development represents a shift from biological determinism to an understanding that the individual adapts to various forms of experiential adjustments (Stetsenko, 2017). Thus, both the biology of the individual as well as factors within his/her/their environment are crucial influences.

As we move away from biological reductionism, we must understand how actively human bodies react to, organise, and coordinate their own engagements with the wider physical, environmental, and social world (Stetsenko, 2017). Drawing from the work of John Dewey, Jean Piaget, Lev Vygotsky, and others, in the twentieth century, “human beings are understood to be carrying out, right from birth, the ongoing process of relational activities inextricably connecting them with their environment and other people” (Stetsenko, 2017: 127). Development is thus an evolving, lifelong activity from which arises individual attributes. The individual critically contributes to and generates his/her/their own development (Stetsenko, 2017). This development, moreover, does not take place in isolation. It is embedded within collective social practices and dependent on sociocultural supports, tools, and mediations (Stetsenko, 2017). The social conditions which either afford or impede individual development are of critical importance, as is the interaction between the individual and that environment (Stetsenko, 2017). Development is thus “the outgrowth of dynamic relations among the biological and the social, between the individual and others—other people, across multiple settings, across people, and artifacts that may be physical and/or ideational” (Lee, 2017, p. 95). The pandemic has made this question of development and its complexities very clear.

The course development of the learner takes is thus vitally reliant upon sociocultural supports, tools, and mediations. The personal nature of development, furthermore, indicates that the affordances of supports, tools and the mediation provided by teachers and parents must not only be accessible and available to all individuals and communities, but must also be tailored to meet their individual needs (Stetsenko, 2017). As individual learners actively engage with their world and co-construct their unique experiences, they require personalised supports that assist them in their development and academic performance. This is particularly necessary in South Africa where we have an extremely diverse learner population that differs across race, class, ethnic background, language, religion, and many other identities (Soudien, 2020a). Using inequality as an example, we must address the ways in which stereotypes regarding the experience of poverty are enacted in the lives of learners and in the practices and organisation of schooling. It is not enough to use the social description of 'white' or 'black' to understand the learning experience of the child. Each child is different. Tools must be developed to assist administrators and educators in understanding how even curricula and teaching practices perpetuate stereotypical perceptions of ability and of resources for coping. Such framings move us away from deterministic explanations that are deficit-based instead of examining the ways in which the sociocultural environment can support the functional human development needs of all learners (see Lee, 2017). To illustrate the complexity of the learning challenge for individual learners in South Africa, and the influence of COVID-19, we refer to a case study carried out by Shafieka Isaacs (2020) during the lockdown period.

Isaacs (2020) provides a narrative portrait of how Kabelo, a nine-year old boychild in the second grade living in the Soweto township, navigated his learning experience both before and during COVID-19. Through description of several contradictions between Kabelo's performance and behavior in academic and play spaces before COVID-19, the author illustrates the intersection of persistent structural inequality and the life of this individual learner. For example, within formal education Kabelo is required to engage in monolingual teaching and learning as prescribed in the curriculum. Based on his low literacy test scores, he was labelled as an academic underperformer. However, outside of this domain Isaacs shows that he is, in real terms, multilingual and capably navigates his world. He exercises agency and makes responsible decisions. This contradiction, and others, suggest that the two systems—home and school—are in conflict, with only the academic performance system enjoying legitimacy while the knowledges and capabilities shown in the play system are not recognised. Further contradictions and misrecognitions were identified under lockdown when schools were shut down and Kabelo was restricted to his home. For example, while he had the self-motivation to watch educational TV channels, engage in learning through play, and complete the limited homework his mother collected for him from the school, his actual experience, including the agency he demonstrated, was not observed, and acknowledged by his school. Deemed to be underperforming, there is contradiction between how Kabelo attempted to continue his learning and the lack of communication and guidance he received (Isaacs, 2020).

Kabelo's case, we argue, is illustrative of what we need to understand much more fully. It is argued here that how learners are individually positioned, located, and enabled to manage their learning is of the utmost importance. A socially-just education system is one which not only recognises the differing social circumstances of learners but is also attentive to their learning dynamics and responds with inclusive policy, pedagogy, and curricula. Kabelo is the subject of social and systemic inequality—he is black and is a learner in a disadvantaged part of the schooling system—but he is also disadvantaged by the lack of recognition of his individual capacities and capabilities. This latter point is of particular significance.

The literature on learning and cognition is now clear, diminished opportunities for stimulation—through poverty of opportunity, the presence of trauma (and we would argue that switching from mother-tongue to learning in English is an example of trauma), and the lack of nutritional food—precipitate hormonal responses in learners which negatively impacts neurocognitive development, potential educational achievements, and ultimately upward societal mobility (see, *inter alia*, Farah, 2010; World Bank, 2018). The example of Kabelo raises the necessity for further interdisciplinary research to develop evidence-based education that can provide individualised answers for learners without losing human relationships and interaction which are equally necessary for learning (Nóvoa and Alvim, 2020).

12.8 Conclusion

Although we cannot state categorically to what extent learning losses have taken place and their scale, we can speculate broadly that this has happened. It is also likely learning loss has been experienced disproportionately by those who are vulnerable and less able to draw on the resources of the system. Privileged children are more able, except those with challenging learning differences, to substitute for the shortcomings of an education system and will arguably return to their academic trajectory with relative ease. COVID-19 has thus laid bare both the inequalities in provisions needed to continue learning from home—such as funds, digital devices and data, adequate nutrition—as well as the disparity in how well teachers, learners, and parents have been equipped to do so. Even though many countries struggle with this divide, the distinctiveness of the South African experience is the fragility of its educational system and its capacity to deal with shocks such as COVID-19. While we have seen a slow improvement, it is clear that the system may not be able to sustain the gains it has made. Instead, as Gustafsson (2020b: 3) has shown, fragility is evident in the very drivers of the country's improvements—improved access to materials, improved household incomes, improved access to nutrition. All these drivers of development have been challenged by COVID-19. In its response to the pandemic, the government has struggled simply to keep the system operational. It has not, as better resourced and better established school systems have, been able to improvise, innovate and experiment in response to COVID-19. As we suggest in our speculation using the TIMSS data, the country is in danger of being set-back in its improvement

trajectory by five years. As even this first attempt at making sense of the COVID-19 educational experience reveals, the South African educational system and the most prevalent educational approaches being implemented are not sufficiently robust and innovative to deal with the first order of business of stabilising the system, let alone the challenges of innovating towards greater equality.

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Professor Crain Soudien was educated in the fields of education and African Studies at the Universities of Cape Town, South Africa, and the State University of New York at Buffalo. He is a former deputy vice-chancellor of the University of Cape Town, where he remains an emeritus professor in Education and African Studies and the former Chief Executive Officer of the Human Sciences Research Council. He has an honorary appointment at the Nelson Mandela University. His publications in the areas of social difference, culture, education policy, comparative education, educational change, public history, and popular culture include four books, six edited collections and over 220 articles, reviews, reports, and book chapters. He has an A-rating in the South African research system. He is involved in a number of local, national and international social and cultural organisations and is chairperson of the Independent Examinations Board, former chairperson of the District Six Museum Foundation, a former president of the World Council of Comparative Education Societies, and has served as the chair of three Ministerial Committees of Enquiry, including the Ministerial Committee on Transformation in Higher Education and the Ministerial Committee to Evaluate Textbooks for Discrimination. He is a fellow of the International Academy of Education, the African Academy of Science, a member of the South African Academy of Science and a Senior Fellow of NORRAG, the Graduate Institute.

Dr. Vijay Reddy is a Distinguished Research Specialist at the Human Sciences Research Council (HSRC). She assumed this position after serving as the Executive Director for 12 years (2006–2018) of the Education and Skills Development Research Programme. The three major thrusts of her research are: large scale achievement studies, skills planning and publics' relationship with science. She co-ordinated the South African component of the Trends in International Mathematics and Science Study since 2003. Her publication, *Making Global Research Locally Meaningful*, best reflects her stance related to international achievement studies. She led the multi-year Labour Market Intelligence Partnership Project to support the establishment of the Skills Planning Mechanism for Post School Education and Training. The analytical approach framing the studies represents a departure from manpower forecasting and tries to understand the complexities and intricacies around how supply and demand interact in the South African society and economy and then draw implications for reform. Her research on the Publics and Science aims to periodically measure the attitudes and views of the public to science, as well as the shaping influences, to establish the unique fingerprint of the South African public relationship with science.

Ms. Jaqueline Harvey is a Ph.D. intern in the Inclusive Economic Development (IED) research programme at the Human Sciences Research Council and is completing her Ph.D. in Psychology through the University of South Africa. Her research is primarily situated in the educational neuroscience and psycholinguistic domains, and she holds undergraduate degrees in psychology and neurophysiology from the University of Pretoria and an MA in Psychology with specialisation in Research Consultation from the University of South Africa. Ms. Harvey is the co-author of several journal publications, book chapters, and reports relating to the role of language in education and in inequality. She is also a co-author on journal publications and reports because of her work on the Trends in International Mathematics and Science Study (2015 and 2019 cycles) and on the Youth into Science Study projects.

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