



Policy brief

Understanding Malaysia's decline in PISA scores: causes and consequences

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June 2024

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Key takeaways

- The 2022 PISA report reveals that Malaysia ranks among the top five countries in the world with the largest declines in test scores across all three core subjects: reading, mathematics and science. We estimate that these declines equate to nearly 1.6 years of lost learning in mathematics, reading (1.4 years) and science (1.1 years).
- Since 2015, Malaysia's PISA scores have been on the decline, with average scores in all three subjects falling below the ASEAN-6 average in 2022. Our analysis suggests that Malaysia's average PISA scores are slightly lower than expected for its income level – signifying potential future challenges with human capital development, productivity and economic growth.
- Four primary factors are likely to have contributed to these declines: (1) learning losses caused by pandemic-induced school closures and digital disparities; (2) a growing educational gap between public and private schools; and (3) deficiencies in education quality, capacity and support.
- To address these hurdles, policymakers must prioritise efforts to increase teaching capacity and quality, outlining a concrete action plan to make up for pandemic-induced learning losses and increasing educational equality.
- Policy efforts should focus on improving teaching capacity by allowing teachers more time to teach by reducing their non-teaching clerical tasks while improving teaching quality through streamlining existing professional development initiatives and improving selection mechanisms.
- To make up for learning losses from Covid-19, school administrators should accelerate the implementation of targeted learning programmes for at-risk and low-performing students beyond school hours. Additionally, these targeted educational interventions need to be paired with robust student psychosocial support systems within schools.
- Policymakers should also work to enhance digital inclusion and expand the digital capacity of public schools, including scaling up existing digital literacy programmes to bridge digital divides between more advantaged students and those from less-advantaged backgrounds. This should be complemented by measures to equalise prior-to-schooling determinants, such as broadening access to quality early childhood care and education.

1. Introduction and overview

The recent publication of the 2022 Programme for International Student Assessment (PISA)¹ scores by the Organisation for Economic Cooperation and Development (OECD) revealed unprecedented declines in scores across the globe – illustrating the massive impacts of the pandemic on teaching and learning in many countries.² Yet, even among the large swathes of affected countries, Malaysia ranked in the top 5 with the largest declines in all three core subjects: reading, mathematics, and science (Figure 1).

To be sure, the use of PISA as a policy tool has faced substantial criticism over the past decade. Education researchers have pointed to PISA's overreliance on standardised testing that only measures a narrow spectrum of educational objectives.³ Moreover, there are also important methodological concerns regarding how PISA tests are designed, administered and evaluated – including issues with sampling and representativeness.⁴

Nonetheless, Malaysia's significant deterioration in the 2022 PISA tests remains instructive, highlighting deeper issues in learning outcomes and human capital development. These concerns are particularly pressing as Malaysia converges towards the high-income economy threshold and as it navigates a critical juncture in its development trajectory. This policy brief aims to put Malaysia's 2022 PISA performance in context, explore potential drivers of this decline and ground a broader discussion on educational outcomes in Malaysia. Given the forthcoming replacement of the existing education blueprint, this policy brief presents an opportunity to spotlight current challenges and outline measures to address them.

2. Malaysia's 2022 PISA scores in summary

Globally, mean performance among OECD nations in mathematics and reading fell by its largest magnitude in a decade.⁵ Even still, Malaysia's deterioration more than doubled that extent – with its mathematics, reading, and science scores falling by 32 points, 27 points, and 21 points respectively (Figure 1). Against a global backdrop of educational setbacks, Malaysia still managed to rank among the top 5 countries for the largest declines in each of the three core subjects⁶ – along with Jordan and Albania (Figure 1).

To put this in perspective, using OECD's estimates⁷ on learning time, we estimate that Malaysia's decline in scores would be roughly equivalent to 1.6 years' loss in mathematics, reading (1.4 years) and science (1.1 years) respectively (see endnote for details on this estimate).⁸ This implies that Malaysian learners have fallen over a year behind where they would have been before the pandemic. Tracking PISA scores from six major ASEAN nations between 2012-2022 reveals that Malaysia's reading, science, and mathematics scores have all dropped below the ASEAN-6 average in 2022 (Figure 2). This means that Malaysia's average scores now trail far behind top regional performers like Singapore and Vietnam, falling closer to scores recorded in Indonesia and Thailand.

As Malaysia approaches the high-income nation threshold, the widening gaps in PISA test scores between Malaysia and the OECD average become more apparent. Specifically, in 2022, Malaysia's PISA scores are 18% lower in reading, science (14%) and mathematics (13%) compared with the OECD average – larger than they were a decade ago. Analysis using cross-country income per capita data suggests that Malaysia's average PISA scores are lower than expected for its income level – indicating that the nation is underperforming relative to its level of development (Figure 3). Indeed, the OECD PISA 2022 summary page notes that in Malaysia, only 41% of 15-year-olds were able to “interpret and recognise how a simple situation can be represented mathematically” – notably lower than the OECD average of

Fig 1. Malaysia ranks in the top 5 for largest score declines in all three subjects
Change in average PISA score (2022 v 2018), top 10 countries by score decline and by subject

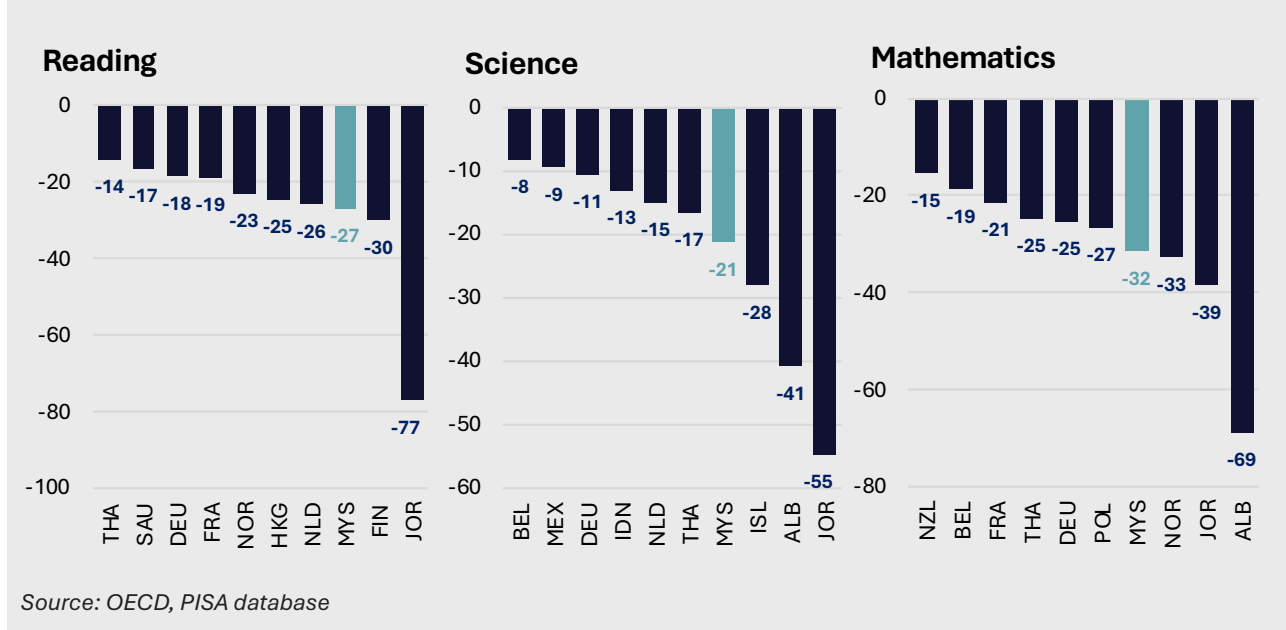
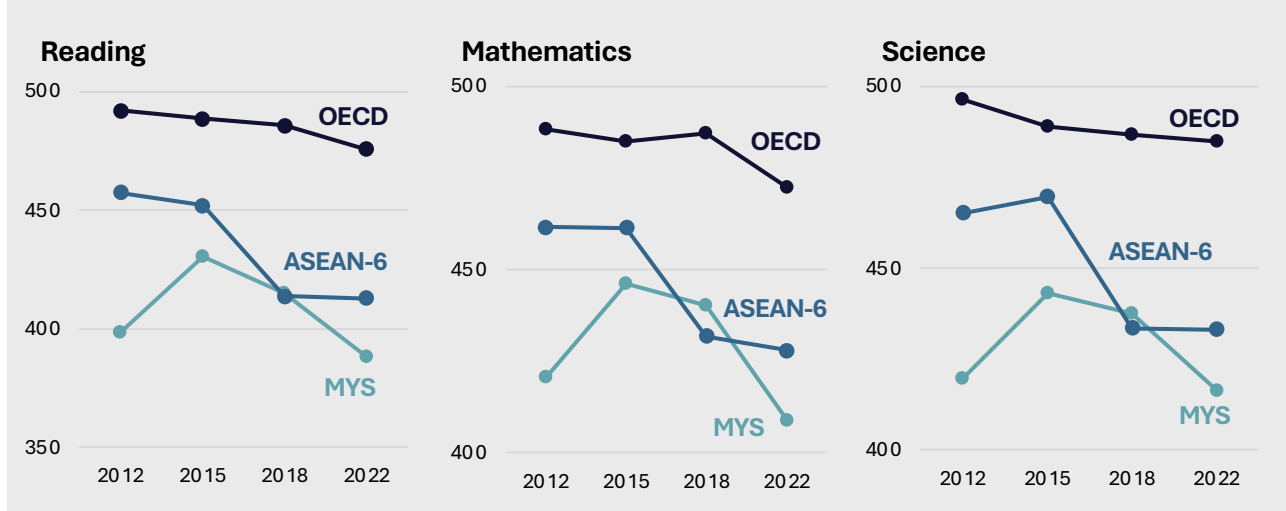


Fig 2. Malaysia’s PISA scores declined below the ASEAN-6 average across all subjects in 2022

Average score by country and ASEAN-6 average



Source: OECD, PISA database

Note: The ASEAN-6 figure includes an average of reported scores from Singapore (SG), Vietnam (VN), Malaysia (MY), Thailand (TH), Indonesia (ID) and the Philippines (PH). Data are not available for Vietnam in 2018 and the Philippines in 2012 and 2015.

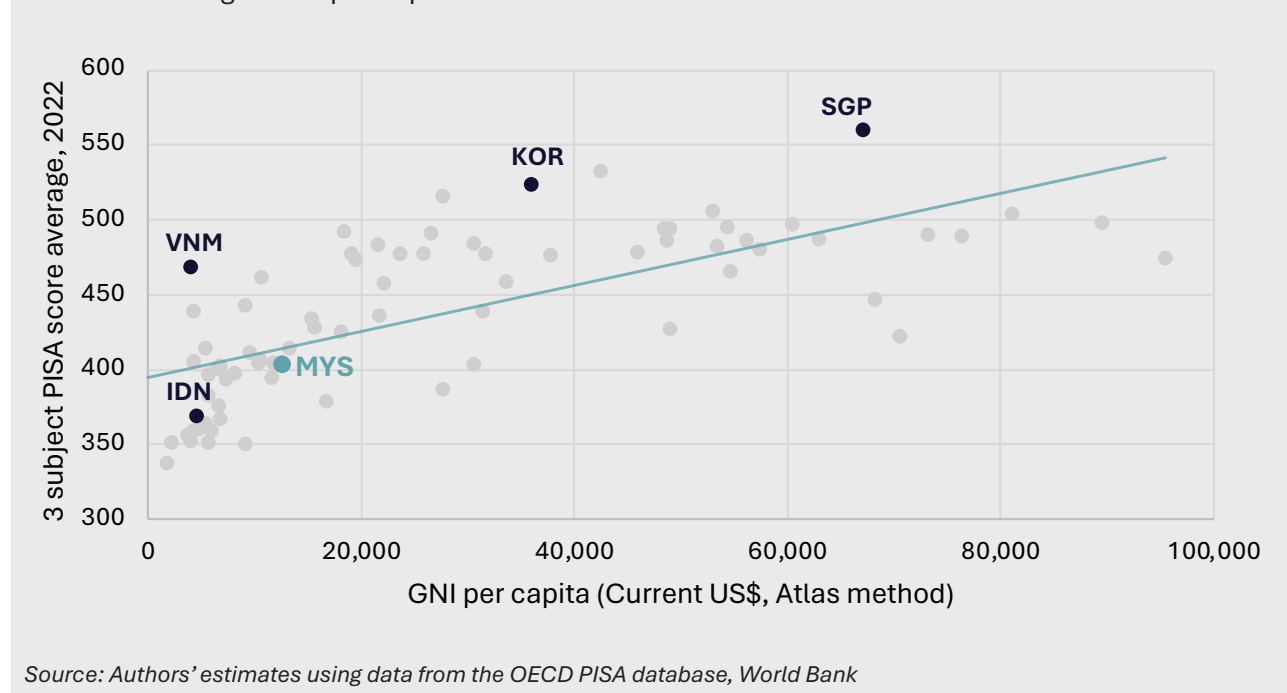
69%.⁹ Likewise, only 1% of 15-year-olds in Malaysia could “model complex situations mathematically” versus the OECD average of about 9%.¹⁰

Again, even while recognising the numerous weaknesses of the PISA assessment process¹¹, these figures still represent a concerning trend. They might indicate a weakness in Malaysia’s human capital

accumulation model and signify a structural barrier to future economic development. This matters because the educational quality and cognitive skills of a population are fundamental drivers of long-term growth and productivity.^{12,13} Cross-country evidence suggests that an improvement of a one-half standard deviation in mathematics and science performance (about a 50-point increase in PISA scores) leads to an increase in GDP per capita growth of 0.9% annually.¹⁴ Applying this to baseline growth projections using Malaysia's 2023 GNI per capita, the country stands to increase its GNI per capita by US\$1,634 by 2033 – highlighting the potential improvements in living standards and wages that could be realised by improving educational outcomes.¹⁵

Fig 3. Malaysia's PISA scores are lower than expected for its income level

PISA score average v GNI per capita



3. Understanding Malaysia's PISA performance

The significant decline in Malaysia's PISA scores, as detailed in Section 2, is reflective of both transitory (pandemic-related school closures) and structural (socio-economic disparities and teaching capacity) challenges. This section explores potential drivers of the deterioration of Malaysia's PISA performance and how they contribute to its educational outcomes.

3.1 Learning losses from pandemic-induced school closures, digital divide

The decline in global PISA scores in 2022, including Malaysia's, could be attributed to the disruptions caused by the Covid-19 pandemic, notably through extended school closures and the transition to remote learning. The closures resulted in cumulative learning deficits, with severe implications for both developed and developing countries. Evaluations of the effects of school closures in Germany and Canada suggest that the longer the duration of closure, the larger the magnitude of learning losses.^{16,17} Estimates from Haeck and Lefebvre (2020) indicate that a three-month learning disruption could lead to about a 7- to 10-point deterioration in PISA scores across all subjects.¹⁸

Malaysia had some of the strictest Covid-19 containment measures in the region and by extension, among the longest school closures in the region. Throughout the 26 collective months of the movement-control order (MCO) imposed between 2020 and 2022, our estimates using Oxford Government Response Tracker (OxCGRT)¹⁹ closure data suggest that Malaysian schools were mandated to close fully 397 days and partially 232 days (Figure 4). This has had a clear negative impact: the Asia Development Bank’s (ADB) 2021 estimates that this led to Malaysian learners facing the most severe learning disruptions within the Southeast Asian region, resulting in a learning loss equivalent to about 5.4-11.4 months.²⁰

Fig 4. Malaysia had some of the longest school closures in the region

Days of mandated school closures, by country

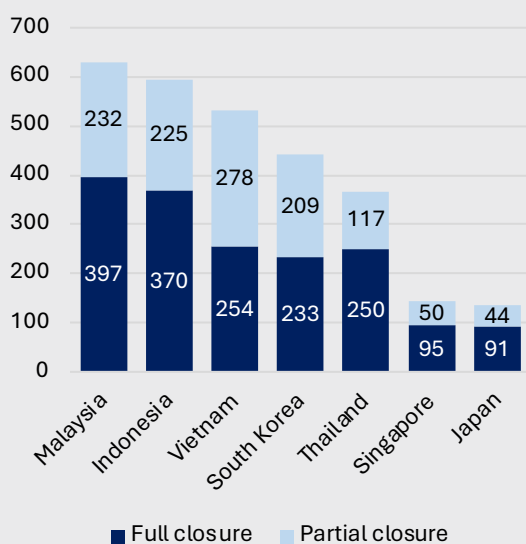
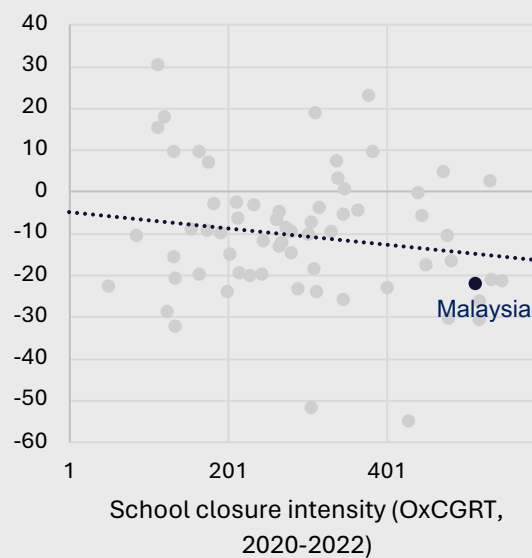


Fig 5. Longer and stricter school closures associated with lower PISA scores

PISA score change 2022/2018 v school closure intensity



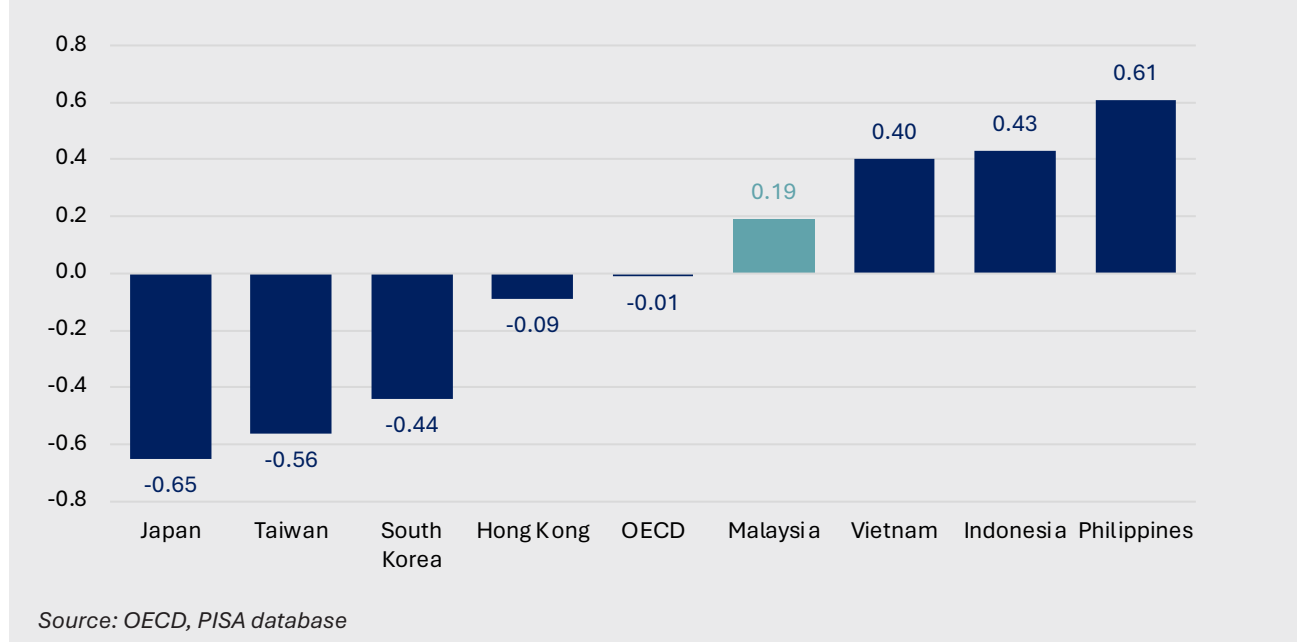
Source: Authors’ estimates using data from Oxford Government Response Tracker (OxCGRT), OECD
 Note: School closures are calculated as the cumulative number of mandated closure days recorded in the OxCGRT school closure tracker from 1 January 2020 to 1 March 2022

Back-of-the-envelope calculations using the same school closure-PISA score elasticities from Haeck and Lefebvre (2020)²¹ suggest that these prolonged school closures would translate to about a 35-point decrease in Malaysia’s PISA scores – closely mirroring the observed decrease in the mathematics scores in 2022 (Figure 1). With these learning disruptions beginning as early as the pre-primary level, there is a growing concern about the long-term effects on learning trajectories, particularly as they progress to more advanced stages of education. Recent research has indeed shown that interruptions in earlier education levels could lead to learning deficits that compound throughout later stages, highlighting the urgency to mitigate learning losses before they produce long-term deficiencies in human capital for Malaysia’s learners later in life.²²

Furthermore, as learning moved online during the pandemic, disparities in access to digital infrastructure exacerbated declines in outcomes and widened educational gaps, which likely contributed to Malaysia’s poor performance in the PISA scores. PISA data show that a large majority of Malaysian learners faced issues with remote learning – more than 80% reported issues with internet access.²³ An aggregated “index of problems in remote learning” places Malaysia’s index score substantially above the OECD

average and several regional peers like Japan, Taiwan, South Korea and Hong Kong (Figure 6).²⁴

Fig 6. Mean index of problems in remote learning Malaysia v OECD and regional peers



3.2 Widening public-private gap in learning outcomes

Another significant factor contributing to the decline in scores is the widening gap in learning outcomes between public and private schools. Since Malaysia's first participation in PISA in 2010, a score gap has existed between the performance of public and private schools (Figure 7). This disparity increased significantly in 2022. PISA data indicate that private schools now outperform public schools by 68 points in mathematics, science (42 points) and reading (29 points) – marking the largest discrepancy in scores between public and private institutions since 2012 (Fig. 7). In fact, when comparing the changes in PISA scores from 2022 with 2018, public schools in Malaysia experienced declines in scores multiple times higher than private schools, particularly in mathematics and science (Figure 8).

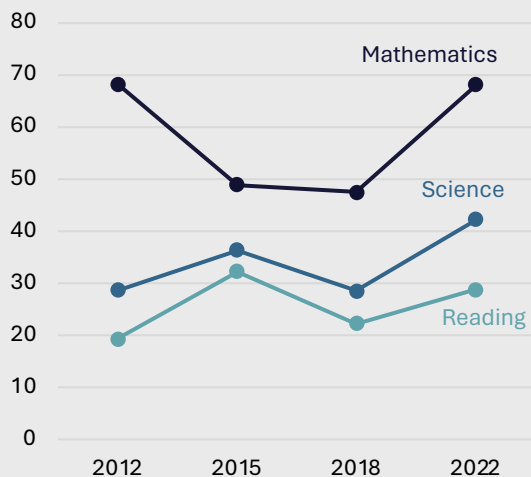
This widening performance gap suggests growing systemic differences in resource availability between private and public schools, reflecting how broader socioeconomic inequalities influence educational opportunities. Since 2005, Malaysia's private school enrolment has tripled, with nearly 1 in 10 students in secondary schools now enrolled in private schools.²⁵ Because wealthier households self-select into private school enrolment, this demand shift directly contributes to growing gaps between private and public schools, which might impact on teaching and peer quality in public schools in the long term.²⁶ This comes as public schools continue to contend with constrained budgets, growing student-teacher ratios and inadequate infrastructure.^{27,28}

3.3 Issues with teaching capacity, quality

Between 2022 and 2018, more than half the countries surveyed, including Malaysia, experienced declines in teaching capacity.²⁹ In Malaysia, from 2018 to 2022 the proportion of Malaysian learners in schools affected by teacher shortages more than tripled, rising from 7% to 24%, while the share of students in schools with inadequately trained staff increased by 1.5 times to 22% over the same period.³⁰

Fig 7. Widening gap between Malaysian public and private schools

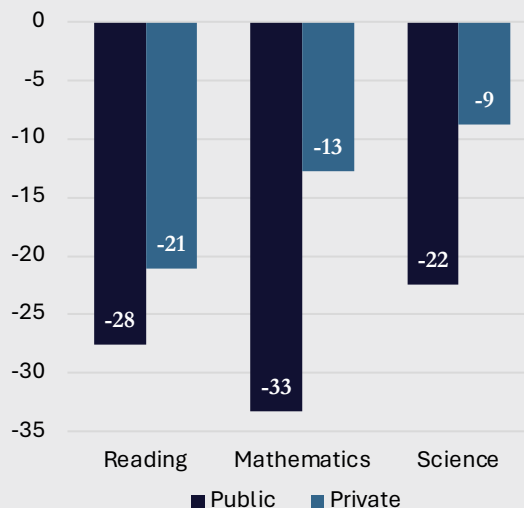
Difference in average score (type of school)



Source: OECD, PISA database, authors' calculations

Fig 8. Public schools recorded far greater declines in 2022

Change in average score (2022/2018)



This is mirrored by a concurrent rise in student-teacher ratios in Malaysia, from 11.8 in 2018 to 12.4 in 2022,³¹ indicating that existing teacher capacity is under strain.

This has been in part exacerbated by the pandemic, which both intensified teaching workloads and necessitated newer teaching methods – especially as schools transitioned online and as remedial learning to address learning losses became more urgent.³² At the same time, as workloads increased, support systems for teachers in the public school system to adapt to these new demands have been inadequate in terms of training, time and capacity.³³ Likewise, programmes like the Professional Learning Community (PLC), intended to support teachers' continuous professional development and equip them to keep up with evolving educational demands, are hampered by governance issues like a lack of oversight and financial support, including reports of “surface-level compliance” where unproductive discussions are undertaken merely to fulfil mandated PLC hours.³⁴ Taken together, an increasing number of Malaysian learners are facing larger class sizes taught by fewer and less qualified teachers. This reduction in capacity, coupled with inadequate support in responding to new educational demands could have long-lasting impacts on the quality of instruction and learning outcomes.

4. Policy recommendations

To improve educational outcomes and stem potential declines in human capital development, Malaysia needs to address both short-term and structural challenges. On this front, it could address legacy challenges related to teaching and support staff, and resource disparity across schools and regions, as well as compensate for pandemic-induced learning losses, especially for disadvantaged learners, and tackle accessibility and quality issues in pre-primary education.

4.1 Address challenges related to quality, and capacity within the education system

Increasing teaching capacity through reducing administrative tasks

A significant proportion of Malaysia's public school teachers' workloads come from non-teaching administrative and clerical tasks.³⁵ Indeed, a comparison of the International Standard Classification of Occupations (ISCO) list of tasks for "secondary education teachers" with the Malaysia Standard Classification of Occupations (MASCO) definitions for both primary and secondary school teachers implies a heavier emphasis on administrative and clerical tasks in the Malaysian context.³⁶ Allowing teachers more time to teach could improve learning outcomes and increase teaching capacity, while also improving the wellbeing of public school teachers.

To this end, policymakers and school administrators could consider undertaking a two-pronged approach. First, conducting a comprehensive review of the public-school teachers' task mix to determine how much time teachers spend on clerical tasks and to identify which of these tasks could be streamlined, reassigned to dedicated non-teaching staff or automated (digital grading and attendance systems) or processes (like centralised administrative services). Second, based on the findings of this review, policymakers should focus on implementing actionable changes gradually: increasing the ratio of administrative and support staff to teachers, reassigning routine tasks away from teachers and integrating technology to reduce time spent on administrative duties.

Teacher selection and training

Malaysia needs to accelerate educational reforms that prioritise the retention of high-quality teaching personnel, placing emphasis not only on "standard meritocracy", which disproportionately values academic performances but also on the attributes conducive to enhancing students' high-order and critical thinking skills. While Malaysia has moved in a positive direction by raising the academic entry requirements for educators through *Program Ijazah Sarjana Muda*³⁷, it is crucial to broaden the criteria beyond academic qualifications to retain and attract high-quality personnel. This may involve establishing selection criteria and strategies to select for attributes like public-sector motivation, leadership traits and a genuine passion for teaching.

Professional development and lifelong learning

Continuous professional development and on-the-job training for teachers are also key to maintaining and enhancing teaching quality over time. Despite this, there have been various issues with professional development initiatives for teachers. Policymakers could work towards mitigating the shortcomings of the long-established PLC programme – particularly the lack of comprehension among teachers regarding its peer-driven, inadequate financial support and oversight and "surface-level compliance" owing to high workloads.³⁸ This might require transitioning the PLC structure away from hierarchical one-way learning to a peer-driven interactive approach, while also tackling resource and time constraints, especially for underfunded schools that impede full teacher participation. Finally, the outcomes of these initiatives need to be integrated into annual performance evaluations of teachers to further incentivise the implementation of effective pedagogies in classrooms.³⁹

4.2 Outline concrete action plan to make up for learning losses for at-risk, vulnerable learners

This “learning loss” action plan should cover two broad aspects: targeted educational intervention and bolstering social support systems in public schools. On the former, policymakers should prioritise targeted learning opportunities beyond regular school hours through tailored coaching and tutoring programmes for at-risk and low-performing learners.⁴⁰ This will need to involve a baseline assessment of competency in core skills emphasising numeracy and literacy during the early stages of primary and secondary schools to identify at-risk learners.⁴¹ On this front, policymakers can look to Germany’s large-scale *Lernstand 5* assessments, which are administered at the start of the academic year for fifth graders. This would enable schools to pinpoint at-risk or vulnerable learners needing targeted support and implement early interventions accordingly.⁴²

Additionally, these remedial interventions must be paired with robust support systems within schools – necessitating increased investment in support and guidance resources in public schools. Currently, such support systems in Malaysia’s public schools are inadequate, with counsellor-to-student ratios as high as one counsellor for every 350 pupils in primary schools and 500 in secondary schools.⁴³ Pairing remedial learning with increased social support will significantly impact the academic and socio-emotional well-being of students, particularly those from disadvantaged backgrounds, who are more likely to lack the social capital and access to resources on matters like the availability of financial aid, scholarships or career planning pathways.⁴⁴

4.3 Improve educational equity by enhancing fair access to opportunity

Malaysia’s declining PISA scores underscore the significant impact of out-of-school socioeconomic factors that affect learning opportunities and human capital development. Addressing these inequities will allow more learners across the country to have a fairer shot at realising their capabilities and reduce the unequal impacts of the pandemic on learning for at-risk students and disadvantaged households.

Improving digital inclusion, digital capacity of public schools

As educational modalities increasingly shift online and as digital literacy becomes essential for social and economic life, universal digital inclusion is imperative. The recently launched Digital Education Policy (DEP) acknowledges that despite ongoing efforts towards digital inclusion, access to digital resources for learning remains a critical challenge, with 36% of learners in rural and urban areas still lacking access to an internet-enabled device.⁴⁵ To this end, policymakers need to accelerate digital inclusion efforts in public schools, including broadening access to functional pedagogical devices.

Additionally, there is also a need to expand public schools’ digital capacity by increasing digital literacy among both students and teaching staff and establishing guidelines for the effective and responsible use of digital devices. Currently, nearly half of Malaysian students reported a lack of confidence in using digital technology independently.⁴⁶ Likewise, the overwhelming majority of public school teachers report having only a “basic” level of digital competency.⁴⁷ This skills gap continues to be a barrier to the effective use of digital education platforms and initiatives like Digital Educational Learning Initiative Malaysia (DELIMa) – and hinders efforts to digitalise the education system more broadly.⁴⁸ While DEP includes measures to boost digital competency among both learners and teachers, the specifics of achieving this have not been announced. To this end, one avenue could be to scale up existing and already successful digital literacy programmes nationwide – drawing from initiatives like the We Think Digital programme spearheaded by Bahagian Sumber and Teknologi Pendidikan (BSTP) and Teach for

Malaysia (TFM).

Equalising prior-to-schooling determinants

Broadening access to pre-primary education might help reduce human capital disparities between learners, particularly when they sort into public and private tracks of formal schooling. Indeed, some evidence suggests that attending pre-primary education can have lasting benefits for outcomes, including basic skill competency, literacy and higher rates of school completion.^{49,50} Yet, preschool enrolment in Malaysia has remained lower than pre-pandemic levels and is stratified geographically – in part because of limited availability in remote areas, a lack of special needs facilities and other economic barriers to access.^{51,52} Challenges with access are compounded by concerns with quality – about half of preschool teachers are unable to meet the minimum requirements of a Diploma in Early Childhood Care and Education (ECCE).⁵³

Going forward, policymakers need to prioritise a range of measures dedicated to enabling wider access to pre-primary education across a more diverse set of households, including establishing a higher number of preschool spots in areas with high demand for public kindergartens and increasing financial support for lower-income parents to reduce financial barriers to access.^{54,55} At the same time, standardising minimum qualification standards and incentivising the upskilling of existing preschool teachers, in line with similar pre-primary educational reforms in Singapore, would ensure a higher standard of teaching and learning across all preschools.⁵⁶

5. Conclusion

The decline in Malaysia's 2022 PISA scores could be attributed to multiple factors, including the effects of pandemic-induced school closures, the digital divide unevenly experienced by underprivileged learners, socioeconomic disparities between public and private schools, and gaps in the professional development of educators.

In response, sustainable and long-term measures are needed to address cumulative learning losses, particularly among disadvantaged learners. At the same time, policymakers should also emphasise preventive measures that could have an impact on future learning outcomes. These should centre on addressing the cumulative learning setbacks exacerbated by pandemic-induced school closures and digital inequalities, empowering teachers and support personnel in the education system, addressing deficiencies in educational resources, and widening access to quality pre-primary education. On this front, decisive policy action is essential not only to reverse the decline in educational performance but also to safeguard Malaysia's future economic development, human capital accumulation and social progress.

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