

EDTECH IN SOUTHEAST ASIA

Opportunities for EdTech development and investment in five Southeast Asian markets: Indonesia, Malaysia, the Philippines, Thailand and Vietnam

HOW TO USE THIS REPORT

This report is designed to be used to support funders, policy makers and innovators considering opportunities for EdTech development in Indonesia, Malaysia, the Philippines, Thailand and Vietnam. The report can be used in its entirety, or key sections can be extracted and used individually. The main report provides an overview of findings from the five focus countries, encompassing an overview of the education system, the potential for EdTech, EdTech supply and enablers. More detailed case studies for each country are provided separately. These can be used by funders and investors considering development in a particular market.

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EXECUTIVE SUMMARY



INTRODUCTION (1 OF 2)

Executive summary

Over the last few decades, Southeast Asia has experienced significant economic growth. This has driven both government and parental spending on education, which has resulted in increased access to education across much of the region, especially at primary school level. However, despite this progress, significant educational challenges remain, especially for disadvantaged and marginalized groups; early evidence shows that these have been exacerbated by the extended school closures as a result of the COVID-19 pandemic. Technology presents an opportunity to complement the work of educators in driving improvements to learning outcomes, however, in the region, EdTech has remained largely the preserve of more affluent consumers, and its potential to improve access to quality education for under-served groups has not yet been realized. This paper presents an overview of the status of education and use of technology to support education (EdTech) in five Southeast Asian markets: Indonesia, Malaysia, Philippines, Thailand and Vietnam. The paper is intended to be used by funders and innovators when considering EdTech development and investment in the region.

The five markets are comparatively and internally diverse so it is difficult to make generalizations about

the region overall. Across all markets, progress has been made towards universal school enrolment at primary level, however access to education at secondary education varies more with many children remaining out of school across the region, especially those from socio-economically disadvantaged or marginalized groups. The quality of learning varies significantly between and within countries. Vietnam, for example, performs very well in international tests measuring outcomes in reading, mathematics and science whereas the Philippines and Indonesia perform particularly poorly. But even within Vietnam, outcomes vary significantly; for example, attainment is lower amongst ethnic minority groups. The full extent of the impact of COVID-19-induced school closures will emerge in time but, across the world, prolonged school closures has significantly impacted on education access, quality and equity. Huge variation in the quality of remote learning has resulted in many children, in particular those from lower income households, receiving a poorer quality of education, or no education at all. Across the five markets, there has been much variation in the extent of school closures – the Philippines, for example, has had one of the longest and strictest lockdowns of any country – but the impact is likely to be felt across the region and will require focused remediation to make up for lost learning.

In the education sector, technology presents an

opportunity to enhance aspects of the education process and complement the work of educators. This potential has been thrust to the fore over the course of the last year, with students around the world reliant on remote learning amidst prolonged school closures. This has also exposed the digital divide that persists and the enormity of the challenge in using technology at scale to support the ‘bottom of the pyramid’ for whom consistent access to reliable technologies that support learning remains a far-off aspiration. It has also accelerated critical evaluations of the role technology can and should play in learning. In their 2020 paper, ‘Realizing the promise: How can education technology improve learning for all?’, The Brookings Institution identifies the comparative advantages that technology presents which can complement the work of educators (Ganimian, A., Vegas, E., & Hess, F. 2020). Solutions should play to these advantages if EdTech is to play a role in accelerating students learning. These comparative advantages are:

- Scaling up quality instruction, such as through prerecorded quality lessons.
- Facilitating differentiated instruction, such as through computer-adaptive learning and live one-on-one tutoring.
- Expanding opportunities to practice.
- Increasing learner engagement, such as through videos and games.

INTRODUCTION (2 OF 2)

In the five focus countries, economic growth has resulted in a burgeoning middle class with disposable income available to spend on education, including private schooling and EdTech. The aspirant middle classes across these countries are willing to pay for EdTech solutions, particularly those which increase children's competitiveness in the international labor market, such as private tutoring or English language learning. As a result of this demand, there have been pockets of EdTech growth in the region, well exemplified by the extraordinary success of Ruangguru in Indonesia, which boasts over 22 million users and high levels of investment.

However, significant challenges remain when it comes to disseminating EdTech at scale across the region and harnessing its potential for under-served groups. Not least amongst the challenges is the huge variation in access to the infrastructure that supports EdTech (including devices, connectivity and electricity) between and within countries. The lack of supportive infrastructure left many parts of the region thoroughly unprepared for technology-supported remote learning when the pandemic hit. Furthermore, there is not always a government commitment to scaling EdTech and providing schools with the tools and resources to do this. Where there is government-level support, execution of EdTech policy can be a challenge, or government policy may focus on the wrong things (for

example, roll-out of devices without a clear strategy for how this will lead to improved education outcomes). The sector is also hampered by low levels of digital skills (amongst teachers, school leaders, students and parents) and a lack of training for educators in how to deploy EdTech effectively.

Research approach

The findings in this report are based on publicly available datasets and reports, as well as insights from interviews with experts in the region (including funders, regional EdTech specialists, local innovators and teachers). Better Purpose also conducted a survey with innovators in the region to understand existing EdTech supply and the challenges and opportunities EdTech organizations face.

How to use this report

This report was prepared for Octava Foundation and MIT Solve by Better Purpose to inform scoping discussions about the Tech4ED Challenge. This report can also be used to support other funders, policy makers and innovators considering opportunities for EdTech development in Indonesia, Malaysia, the Philippines, Thailand and Vietnam. The report can be

used in its entirety, or key sections can be extracted and used individually. The main report provides an overview of findings from the five focus countries, encompassing an overview of the education system, the potential for EdTech, EdTech supply and enablers. More detailed case studies for each country are provided separately. These can be used by funders and investors considering development in a particular market.

Note: *The findings are for general guidance only, apply to a point in time and have not been verified independently. It should be noted that some sources are out-dated and up-to-date information is not available. In addition, in some areas, the information available was contradictory. As such, users bear their own responsibility to check facts before acting upon any of the findings in the report.*

SUMMARY OF KEY FINDINGS

The five markets are comparatively and internally diverse.

There are significant differences in educational performance and development needs across the five countries: Vietnam leads on attainment, while the Philippines and Indonesia still have challenges providing access to education for all children. Parental attitudes to, and spending on, education vary. There are also marked differences in government policy and engagement, infrastructure and market maturity. Within each country there are differences caused by geography and politics.

Socio-economically disadvantaged students do worse, and this is likely to have been exacerbated by the COVID-19 pandemic.

As is consistent with global trends, socio-economically disadvantaged students achieve poorer learning outcomes than their more advantaged peers. Prolonged school closures and economic instability caused by COVID-19 is likely to have exacerbated this inequity.

While educational development needs are different across the region, there are some common themes.

Core numeracy and literacy outcomes across markets are mostly below OECD averages. This is exacerbated

by inequality. Governments emphasize STEM, 21st Century Skills, and digital literacy to support economic growth and most countries are struggling to deliver this adequately across the curriculum.

The 'bottom of the pyramid' is mostly served by public schools, with relatively limited permeation of low-cost private schooling, except for in the Philippines.

Across the region, the private school sector has grown, especially those offering an international, English-language education. Very low-cost private schools that serve the bottom of the pyramid do not appear to be widespread, and the most disadvantaged groups are predominantly served by public education systems.

Some markets have growing EdTech ecosystems, while others are more nascent. International players also complicate the dynamic.

Although there are pockets of EdTech innovation across the region, this varies significantly, and typically serves a more affluent consumer. International big players exist (for example, Google Classroom) but, given the highly contextual needs within each market, local players may be best placed to meet emerging needs.

There is little evidence that the 'bottom of the pyramid' is being well served by EdTech in any of the markets.

Although the bottom of the pyramid is different in each market, there appears to be limited use of EdTech as part of core teaching and learning in government schools (which left systems unprepared for remote learning during COVID-19 school closures). In the most active markets, more products focus on 21st Century Skills and English Language, often through tutoring and enrichment products, rather than core literacy and numeracy which are pervasive challenges in the public education systems.

COVID-19 induced school closures forced remote learning which was delivered through a number of modes in order to reach all socio-economic groups, with varying degrees of effectiveness.

Across the region, TV, radio and paper resources were used to broaden reach, given that not all children could access online learning. As such, there has been significant variation in access to, and quality of, learning experienced by children during the pandemic.

Barriers to more widespread access to EdTech for more disadvantaged groups include access to devices and internet connectivity as well as lack of digital skills

Successful solutions need to incorporate approaches that allow for wide access (such as low-tech, low-cost approaches) and must address constraints relating to digital skills and teacher capacity.

IMPLICATIONS FOR KEY STAKEHOLDERS (1 OF 2)

Implications for funders:

Invest in solutions which address barriers to adoption

If funders wish to serve the ‘bottom-of-the-pyramid’, they must consider solutions which deploy widely available and affordable technologies (including radio, television, mobile phones), and work offline, in order to reach underserved people. Funders may also wish to consider solutions which address some of the broader barriers to widespread adoption, such as those seeking to improve digital literacy and teacher capabilities to use EdTech effectively.

Promote evidence-based solutions, and contribute to growing the evidence base

Successful EdTech solutions build on an existing evidence base about how children learn most effectively (the ‘science of learning’) and how to leverage technology’s comparative advantages. Funders may wish to prioritize solutions which have been proven effective in different contexts to address fundamental learning challenges, such as structured pedagogy, personalized, adaptive learning or other approaches which support teaching at the right level (see the Global Education Evidence Advisory Panel’s [‘Cost Effective Approaches to Improve Global Learning’](#)). Funders should also consider how they can help develop and grow the evidence-base about what works.

Consider appropriate channels to scale

For technology to reach underserved people, solutions will need to reach consumers via public education systems or non-state providers of education which serve more disadvantaged communities (for example, low-cost private schools). Funders should support innovators to identify and work through viable channels for scale. They should also recognize that government procurement cycles can take longer and start-ups may require funding of working capital during this process.

Stimulate the market through innovative financing models

In emerging markets, innovators can struggle to secure loans and equity investments. Investors seeking a social impact could consider debt financing as an alternative mechanism which gives innovators security to develop products without having to give away equity.

Prioritize and support testing

Funding should allow solutions the opportunity to pilot solutions, evaluate their impact and adapt before scaling. This will help build both consumer and government confidence in solutions. A strong piloting program can also address the risks associated with deploying solutions to new contexts that are proven in another.

Implications for innovators:

Know your market

To effectively scale EdTech in any of the five markets, and reach the bottom of the pyramid, innovators will need to deeply understand the contexts they wish to serve and their target beneficiaries. This will involve understanding the infrastructural and financial constraints their beneficiaries face and designing solutions with these in mind. Innovators must be clear on who they are designing for and what challenge their solution addresses, as well as how demand is currently met and the strength of competition.

Align to government priorities

Innovators will need to have a strong understanding of how EdTech is procured within public education systems (which typically serve the most disadvantaged learners) or through non-state actors, such as lower-cost private schools. In order to successfully work effectively through government systems, solutions will need to be closely aligned to government priorities and innovators will need to cultivate strong relationships with government actors.

IMPLICATIONS FOR KEY STAKEHOLDERS (2 OF 2)

Assemble the right team

Innovators will need to assemble a team with the right skills to be successful. In addition to technological expertise, the team will need to have deep contextual understanding of its market, the ability to forge relationships with governments and establish sales channels, business acumen as well as technical knowledge in education.

Design solutions with the 'Science of Learning' in mind

Effective solutions are designed to integrate high-quality content and sound technological design principles with a clear understanding of how children learn. Solutions should draw on the significant evidence-base about how to maximize learning outcomes through the design of effective learning experiences.

Implications for policy makers:

Create an enabling and supportive policy environment for EdTech

Policy makers can encourage innovation and investment by putting in place supportive policies that allow for the roll-out of EdTech at scale and ensure that technology is integrated into wider education policy and strategic initiatives. This could include:

- Clear, government-level support for education and the potential of EdTech;

- Investment in supportive infrastructure at school level;
- Open and transparent policies and processes for the procurement of EdTech in schools;
- Attractive commercial terms for EdTech organizations which balance risk and reward;
- A partnership approach to needs analysis and product development;
- Access to users to develop and refine products;
- Enabling a supportive tech start-up ecosystem.

Re-focus investment on outcomes and not just inputs

Many government-sponsored EdTech initiatives focus on inputs (for example, procurement of devices), without considering how EdTech inputs will result in improved learning. Whilst investment in infrastructure (such as devices, connectivity, electricity) in schools is important, this should form part of a wider strategy for how technology will be used effectively to improve learning outcomes.

Invest in building capacity of systems

For EdTech to be effectively integrated across public education systems, stakeholders from across the system must have the skills and confidence to use it effectively. For example, classroom-level EdTech interventions should be rolled out alongside appropriate

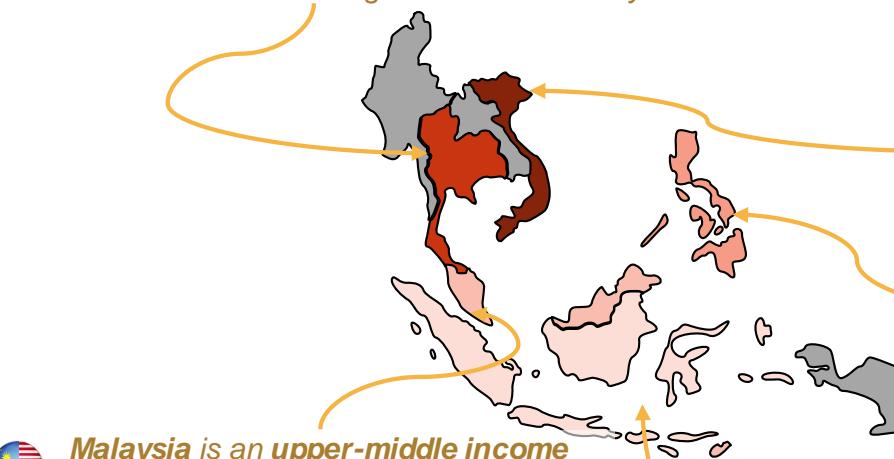
teacher capacity building to ensure that it can be deployed effectively. This should be designed in consideration of principles about how adults learn best, should address underlying barriers to technology usage (including confidence-building) and should focus on pedagogy as well as technology, so the focus of EdTech remains on the learner.

SECTION 1 | EDUCATION OVERVIEW



THE FIVE MARKETS ARE COMPARATIVELY AND INTERNALLY DIVERSE SO GENERALIZATIONS ABOUT THE REGION ARE PROBLEMATIC

 **Thailand** is an **upper-middle income** country, located in the centre of mainland Southeast Asia (SEA). Unlike the other countries, it was **never colonized** by Europeans and its education system has developed indigenously. It has made **notable economic progress** although this has slowed recently. **Military coups** have hindered prospects of Thailand becoming a stable democracy.



 **Malaysia** is an **upper-middle income** country divided into **two geographical sections**: West Malaysia, bordering Thailand on the Malay Peninsula, and East Malaysia on the island of Borneo. Its **economy has grown significantly**, although **income inequality is high**. COVID has had a major impact on Malaysia's economy which is export-led.



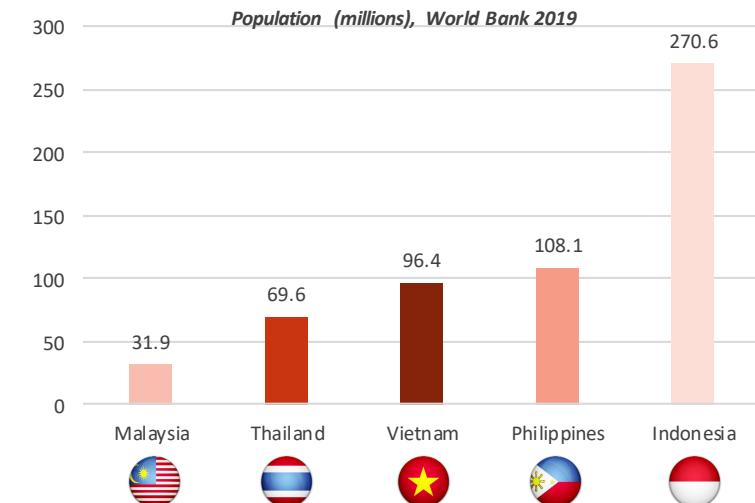
Vietnam is a **lower-middle income** country located on the Indochina peninsula and has a long land border of 4,550km. It has over **53 ethnic minorities** that make up around 14% of the population. Vietnam has experienced **significant population and economic growth** and has been relatively unscathed by the COVID pandemic as a result of proactive government measures to contain the virus.



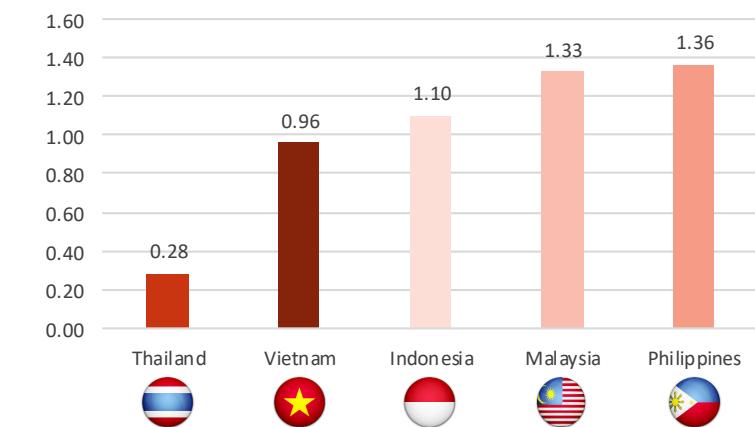
Philippines is a **lower-middle income** island country in the western Pacific Ocean. It consists of around **7,100 islands** and over **170 languages** are used across the country. It is highly vulnerable to **natural disasters** and has had one of the worst **COVID outbreaks** in the region.



Indonesia - an **upper-middle income** country - is the **world's largest island country** and is composed of over **17.5k islands**, 7k of which are uninhabited. It is the **4th most populous country** in the world and is home to **300 ethnic groups** who speak over **300 different languages**. It is the largest **majority Muslim** country in the world.



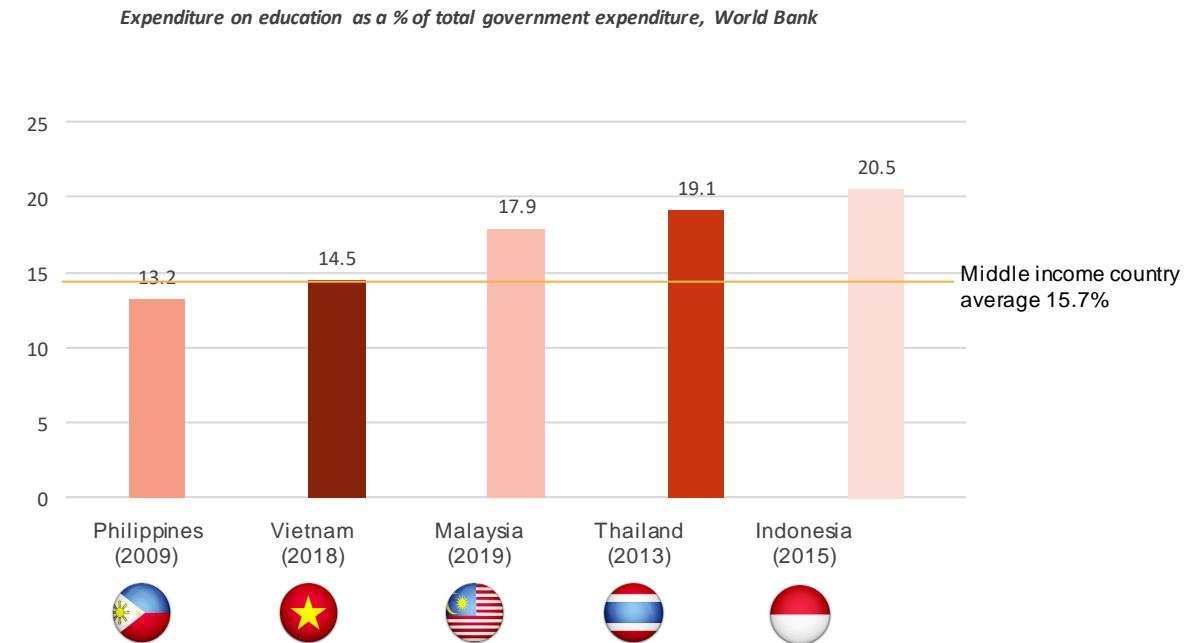
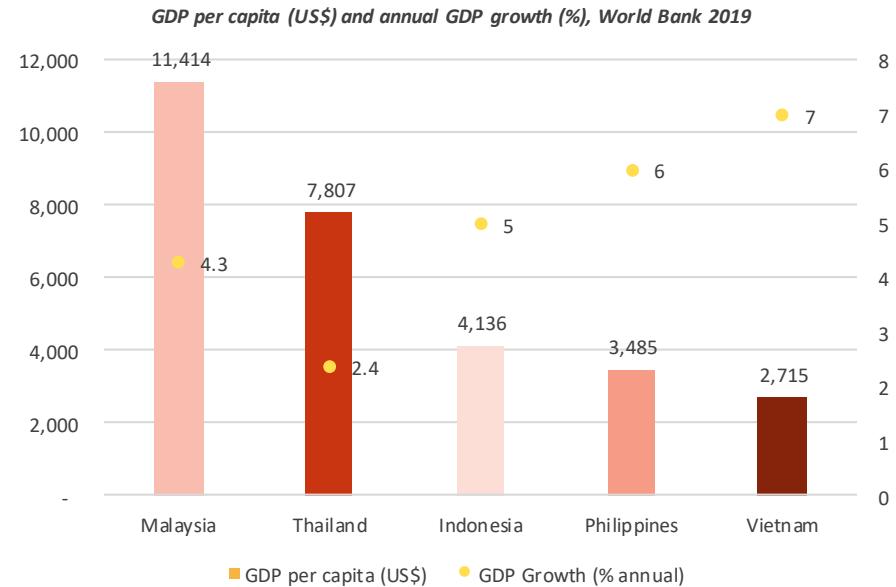
Population Growth (%), World Bank 2019



THE 5 MARKETS VARY CONSIDERABLY IN TERMS OF THEIR ECONOMIC STATUS; GOVERNMENT FUNDING IS IN LINE WITH INTERNATIONAL AVERAGES

There has been much economic growth in the region: Malaysia is expected to transition to a high-income economy by 2024; Thailand was upgraded to an upper-middle income economy in 2011 and Indonesia in 2020; the Philippines is expected to achieve this by 2022. Vietnam has also seen significant growth, transitioning from one of the poorest countries in the world to a lower-middle income country in just 30 years.

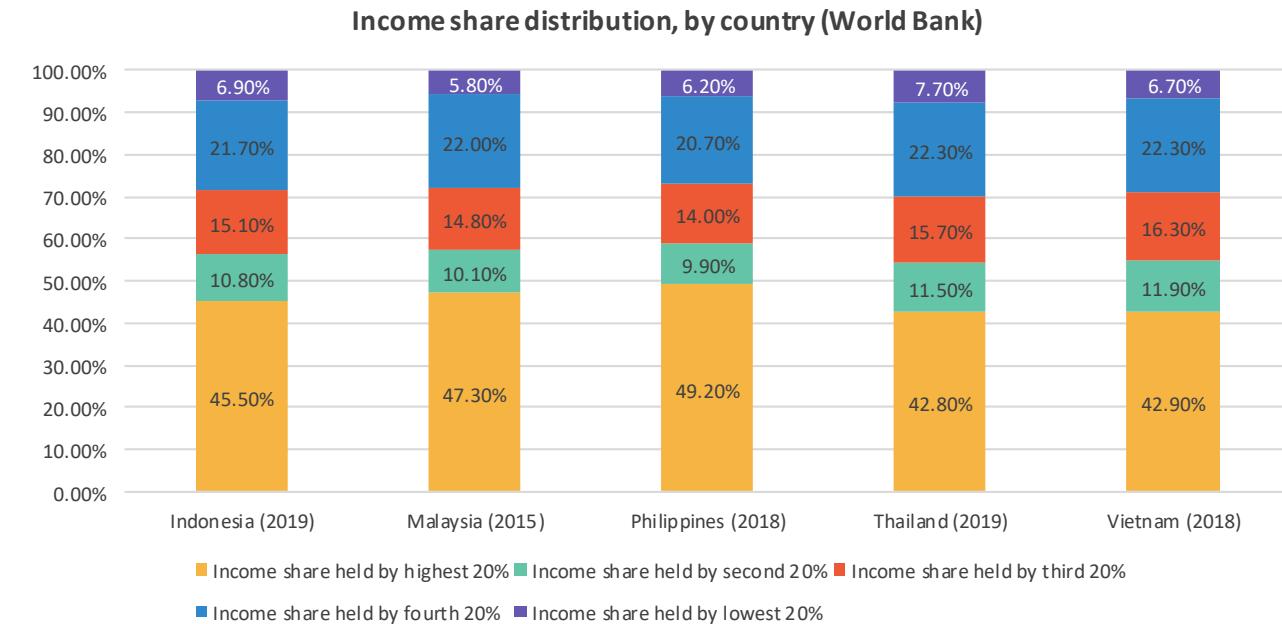
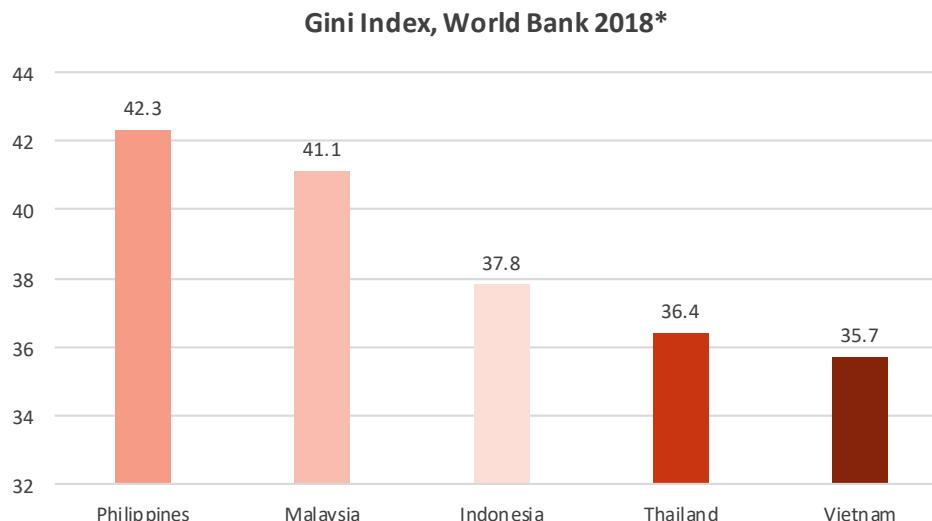
Economic growth in the region is one driver of both government and parental spending on education. This has been impacted by COVID to varying degrees. Some countries, such as the Philippines, have fared worse, compared to Vietnam which has been relatively unscathed.



ACROSS THE FIVE COUNTRIES, LEVELS OF INEQUALITY VARY; THE PHILIPPINES AND MALAYSIA HAVE THE HIGHEST LEVELS OF INEQUALITY

Philippines and Malaysia have the highest Gini index score, indicating higher levels of inequality. Income is much more evenly distributed in Vietnam.

Across all 5 countries, the income share held by the highest 20% greatly exceeds that of other groups. The region is experiencing a significant growth in its middle-class population.



* Data from Malaysia is from 2015

THE PRIVATE EDUCATION SECTOR IS GROWING, WITH MID-RANGE AND INTERNATIONAL OFFERINGS CATERING TO THE GROWING MIDDLE CLASSES

- In emerging markets, demand for education is increasing, often outstripping government supply. This has led to the growing middle classes more often turning to private education.
- Private enrolment in SEA has increased considerably over the last two decades, but is lower than in Sub Saharan Africa, and Latin America and the Caribbean, particularly in the primary sector.
- As economies grow in the region, the private sector market is expected to increase, introducing more high-quality private offerings.
- Factors driving growth include: Shrinking household size and an increase in dual-income families (resulting in greater spending power), and rapid urbanization (resulting in increased pressure on the public school system).
- Mid-range options – which typically have larger class sizes, fewer facilities, a narrower curriculum and, sometimes, less stringent teacher qualifications than higher end private schools – are becoming more popular as the middle class grows and the education market becomes more competitive.
- Furthermore, local demand for international schools has been fuelled by the attractiveness of English language learning as a vehicle for greater career opportunity and international mobility. According to ISC research, around 80% of students attending international schools in Asia are the children of local parents.
- Low-cost private schools are not widespread at this stage (see next page).



| Private spending | | |
|---|---|--|
| Primary | Secondary | Commentary |
| Indonesia  | 23% (WB, 2018)  | 42% (WB, 2018) High participation in private schooling partly driven by enrolments in private religious schools (madrasahs) which offer a cheaper alternative to other fee-paying schools – these are largely run by foundations affiliated with Islamic organisations, may receive some public funding, and are all supported by the Ministry of Religious Affairs. |
| Malaysia  | 12% (WB, 2017)  | 9% (WB, 2019) Private sector spending concentrated within the Chinese segment (c.30% of the population) – relatively mature market. Tamil schools are run by societies. Government focus is mainly on Malay (Bumiputra) system. Increase in demand for international schools. |
| Philippines  | 9% (WB, 2018)  | 25% (WB, 2017) Government-funded vouchers can be used to increase access to private schooling for poorer communities (one of largest PPPs in the world). Private schools can be expensive but there is growth in more affordable private school chains (e.g. APEC schools). |
| Thailand  | 22% (WB, 2019)  | 12% (WB, 2019) Private enrolments are high at primary level and drop off in secondary as people want to go to Thai public universities and therefore need Thai national curriculum. |
| Vietnam  | 1% (WB, 2019)  | N/A Strong appetite by Vietnamese parents to pay for education, but this is mainly in enrichment rather than core, with many schools charging for extra tuition and parents paying for tutoring. Private schools cater to expats and international Vietnamese. |

LOWER SOCIO-ECONOMIC GROUPS ARE PRIMARILY SERVED THROUGH THE PUBLIC EDUCATION SYSTEM, WITH LIMITED LOW-COST PRIVATE SCHOOLING

- Despite the appetite for private schooling in the region, disadvantaged groups continue to be primarily served by the public education system with little widespread adoption of low-cost private schools.
- There is no uniform definition of low-cost private schools for the region. Broadly, they include any market-oriented (nominally for-profit) schools that are dependent on user fees for some or all of their costs.
- Though their scale and coverage is not reliably documented, and many go unrecognised by government, evidence suggests they are expanding across Asia, and growth is attributed to excess and differentiated demand for education.
- The Philippines has more documented cases of low-cost private schools, perhaps driven by the Education Service Contracting Program (ESCP) – a public-private-partnership which uses vouchers to expand access to private education (see right for more information).
- COVID-19 has placed low-cost private schools under considerable financial stress, with many unable to pay teachers, and either shut down or at risk of being shut down. Low-cost private schools are particularly vulnerable to shocks as they are reliant on income generated through school fees and are not included in government crisis response measures.
- In Indonesia, religious schools (madrasahs) are often privately run by foundations affiliated with Islamic organisations, although they may receive some public funding and are all supported by the Ministry of Religious Affairs. Many madrasah are established by the community and tend to serve the more disadvantaged groups so can be considered a form of low-cost private school. However, they can often rely heavily on the government for funding.

Public-Private Partnerships in the Philippines

- The Philippines has one of the largest education public-private partnership programs in the world, and uses vouchers to increase basic secondary school access by extending financial assistance from the public budget to support “poor but deserving” elementary school graduates to attend private high schools that have contracts with the government. In 2009, the Education Service Contracting Program (ESCP) provided vouchers to more than 567,500 students (almost 9% of high school students).
- A World Bank Report (2018) details the ESCP program has come under criticism for mostly supporting grantees from relatively well-off households, as poorer households are unable to pay the difference between the subsidy and the fees that schools charge. The contract also does not specify performance criteria for participating private schools, such as targeting students most in need, or requiring minimum student achievement to ensure continued public funding.
- As private schooling in the Philippines can be expensive (even ESCP program support), in 2014, Ayala Corporation launched the Affordable Private Education Center (APEC), a chain of affordable private high schools, in partnership with the Pearson Affordable Learning Fund.
- APEC schools aim to charge lower than 50% of average private fees. Annual fees range from Php36k-44k (USD745 – 910) for Metro Manila and Php30k – 40k (USD620 – 825) in more rural sites. APEC also recently launched a home-schooling program with lower-than-average annual tuition fees.
- COVID-19 is likely to have a prolonged effect on private school enrolment – in the Philippines, only 2 million out of a former 4.3 million students in private schools had re-enrolled at the beginning of the academic year 2020-2021. Some recent surveys and evidence from past crises suggest that some children who previously attended private schools will switch to public schools, but others may delay entry or drop out.

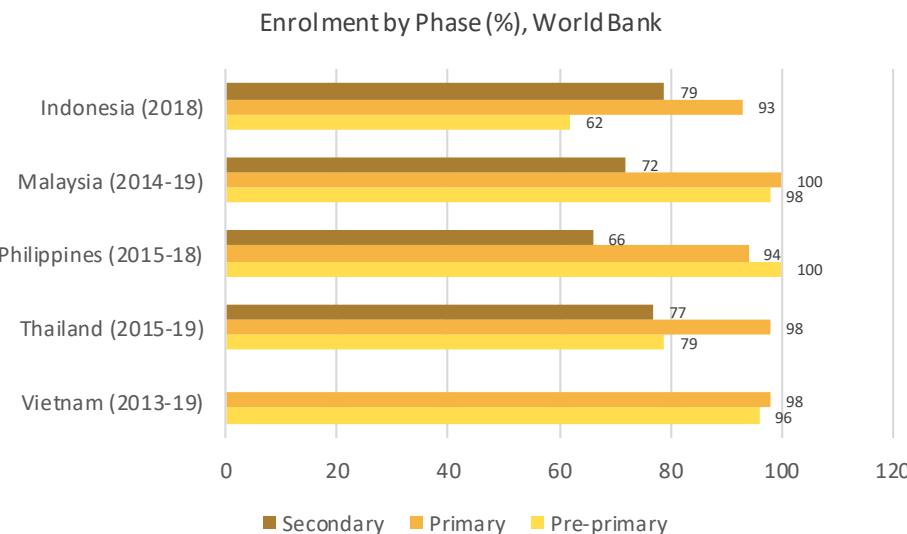
THE EDUCATION SYSTEMS OF THE FIVE COUNTRIES ARE STRUCTURED AND ORGANIZED DIFFERENTLY

Note – this slide captures some high-level trends but should be treated with a degree of caution given the complexity of the topic and conflicting reports from experts.

| | System structure | | | | Strength of reform agenda | Government partnership with private sector |
|---|------------------|-------------|--------------|--|--|---|
| | National power | Local power | School power | Commentary | | |
|  | High | High | Low | Decentralized, with education in the hands of the state, but in practice policy is still driven nationally | Clear and ambitious reform agenda, but challenges with execution | Government open to partnering (especially with local partners) |
|  | High | Low | Low | Federal system but still centralized. Efforts underway to decentralize and give more autonomy to schools. | High level reform agenda, focused on Bumiputra system | Openness to partnering, particularly with Malay businesses |
|  | High | Medium | Low | Very centralized system, although local government gained more influence during COVID school closures | Relatively recent, and limited, reform agenda around ICT | Opaque – some partnering with major international players; large-scale PPP for school vouchers. |
|  | High | Low | Medium | Centralized system, although schools have some autonomy on procurement of teaching aids etc. | Ambitious cross-sector reform is supported by heavy investment | |
|  | High | Low | Medium | Highly centralized (single party state) | Clear, strong, ambitious education policy | |

ACCESS IS A CHALLENGE FOR ALL COUNTRIES AT SECONDARY, AND IN PRIMARY FOR INDONESIA AND PHILIPPINES

In some countries, there remain **major challenges in access to education**, especially at **secondary level** where there are high numbers of children out of school. Progress has been made towards **universal enrolment at primary level**. Access to pre-primary varies considerably with some high performers (e.g. the Philippines) and those with very low participation (e.g. Indonesia). COVID is likely to have negatively impacted on access, with schools across the region reporting drops in enrolment. UNESCO estimates that 2.7 million children across the region will not return to school once they re-open.



Indonesia

- 4.4m learners aged 7-18 are out of school)
- Low access to pre-primary, especially in low-income areas
- High numbers of adolescents not in school or employment

Malaysia

- Enrolment has improved and universal enrolment has been achieved in primary but this drops off in secondary – boys are more at risk at dropping out

Philippines

- High levels of children out of school, in primary and secondary
- Despite this, high levels of enrolment in pre-primary
- Girls at particular risk of drop out

Thailand

- Universal enrolment has not been achieved and many children remain out of school, especially at secondary
- Enrolment in pre-primary is low

Vietnam

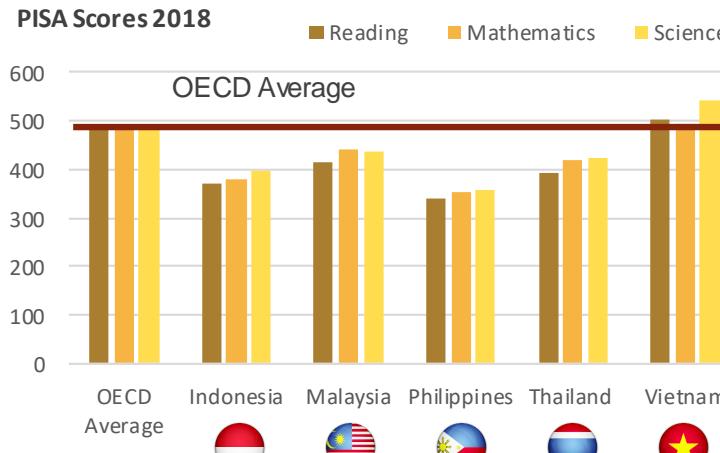
- Strong pre-primary and primary enrolment
- No data available for secondary

"The biggest challenge is the scale of the problem when it comes to access and outcomes"

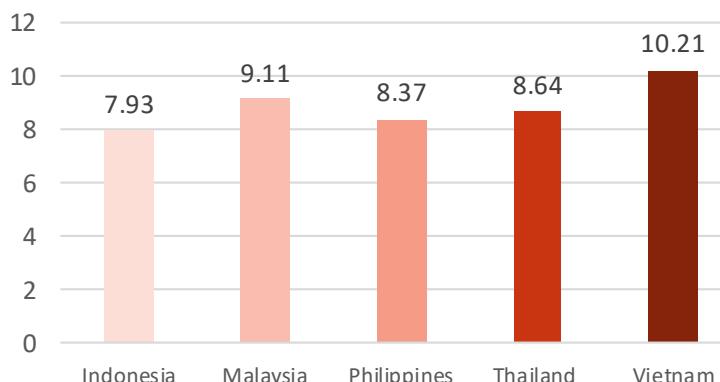
"Access is still the number one barrier in the Philippines"

Note – data for Vietnam not available at secondary-level.

QUALITY OF LEARNING IS PATCHY ACROSS THE REGION WITH BETTER OUTCOMES IN VIETNAM THAN IN OTHER COUNTRIES



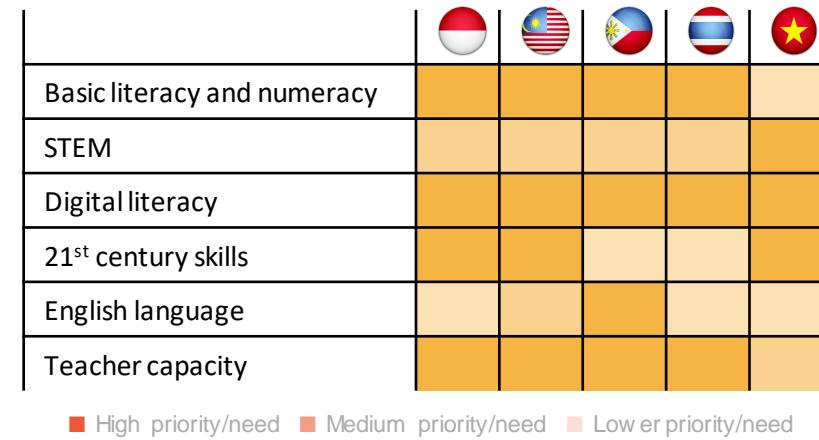
Learning Adjusted Years of Schooling



- Apart from in Vietnam, all countries perform below the OECD average in PISA international tests.
 - Indonesia and the Philippines fare particularly poorly.
 - Vietnam's PISA scores may be inflated by under-representation from disadvantaged groups.

- These trends are replicated when taking into consideration LAYS (Learning Adjusted Year of Schooling) which measures the both time spent in school and quality of learning.
 - Vietnam has a high LAYS score with Indonesia and Philippines faring substantially worse.

Education needs and priorities across the 5 markets – based on outcomes and government priorities



■ High priority/need ■ Medium priority/need ■ Low priority/need

What are the driving factors of poor quality?

- Poor teacher quality and teacher training is a common theme across the poorer performers in the five selected markets (Indonesia, Malaysia, Philippines).
- Lack of common standards for teaching and learning, curriculum, teachers and schools can also be an issue.
- System barriers such as highly centralized systems, rigid curricula and lack of school autonomy.

ACROSS THE FIVE COUNTRIES, DISADVANTAGED OR MARGINALIZED STUDENTS HAVE LOWER ENROLMENT AND OUTCOMES

Drivers of educational inequality across the five markets:

Across the five countries, students who are disadvantaged or marginalized are more likely to be out of school.

| Country | Key themes | Agrarian | Religion | Ethnicity | Language | Poverty | Disability | Gender |
|---|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|  Indonesia | High wealth disparities, lack of infrastructure in rural areas, unequal access to school and ECD for poorer communities. | High priority/need | Medium priority/need | Medium priority/need | Medium priority/need | High priority/need | High priority/need | Medium priority/need |
|  Malaysia | Indigenous populations are not always well catered to, lack of opportunities for disabled students, barriers to education persist for some indigenous groups (e.g. Orang Asli). | Medium priority/need | Medium priority/need | High priority/need | Medium priority/need | High priority/need | High priority/need | High priority/need |
|  Philippines | Wealth is highly concentrated, and poor children are much less likely to attend school. Many children speak a language different to the language of instruction. | Medium priority/need | Medium priority/need | High priority/need | High priority/need | Medium priority/need | Medium priority/need | Medium priority/need |
|  Thailand | Northern Thailand is more prosperous than the South, unequal access to schools for disadvantaged and rural learners and those with disabilities. | High priority/need | Medium priority/need | High priority/need | Medium priority/need | High priority/need | High priority/need | Medium priority/need |
|  Vietnam | Attainment is lower across ethnic minority groups. There is a North vs South divide with the North being less prosperous | Medium priority/need | Medium priority/need | High priority/need | Medium priority/need | High priority/need | Medium priority/need | Medium priority/need |

* Data from Malaysia is from 2015

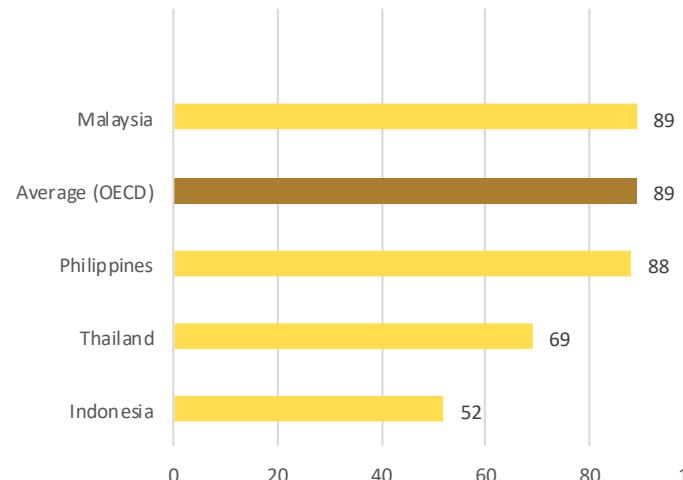
■ High priority/need ■ Medium priority/need ■ Low er priority/need

References: Expert interviews, World Bank, UNICEF, OECD, World Education Services.

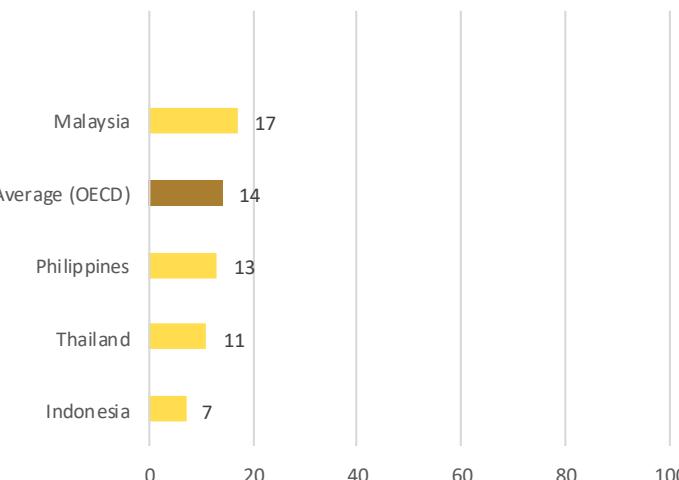
DISPARITIES IN LEARNING OUTCOMES BASED ON SOCIO-ECONOMIC STATUS ARE BROADLY IN LINE WITH GLOBAL AVERAGES

On average, across OECD countries, students from disadvantaged socio-economic groups perform much worse than those from advantaged socio-economic groups. The difference is most acute when it comes to reading scores. Malaysia and the Philippines closely mirror the OECD average in this respect; Thailand and Indonesia do better than average with less difference between the results of both groups.

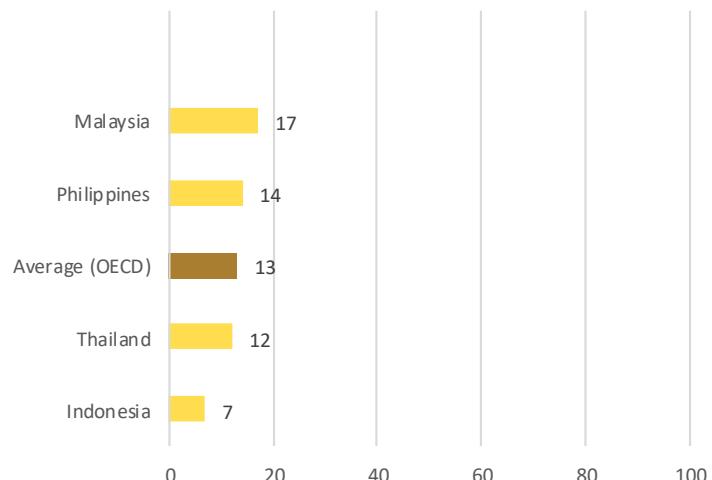
Point difference between advantaged and disadvantaged socio-economic groups – Reading, PISA 2018



Point difference between advantaged and disadvantaged socio-economic groups – Maths, PISA 2018

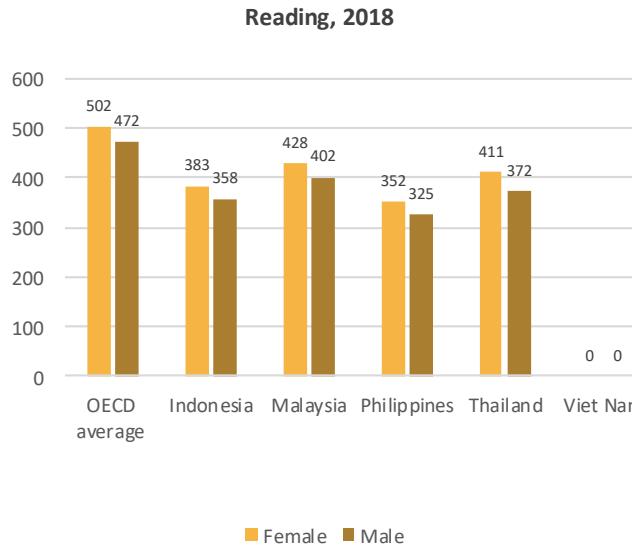


Point difference between advantaged and disadvantaged socio-economic groups – Science, PISA 2018



Note: No data available for Vietnam

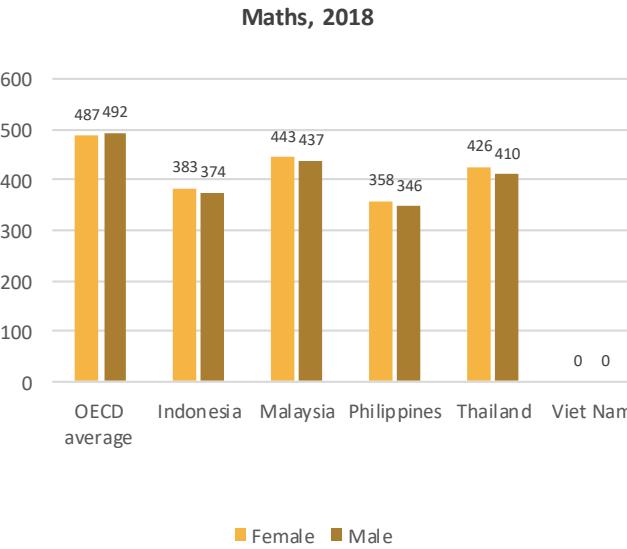
DISPARITIES IN PISA OUTCOMES BASED ON GENDER ARE BROADLY IN LINE WITH GLOBAL AVERAGES WITH GIRLS TYPICALLY OUTPERFORMING BOYS



Girls perform significantly better in reading across all countries

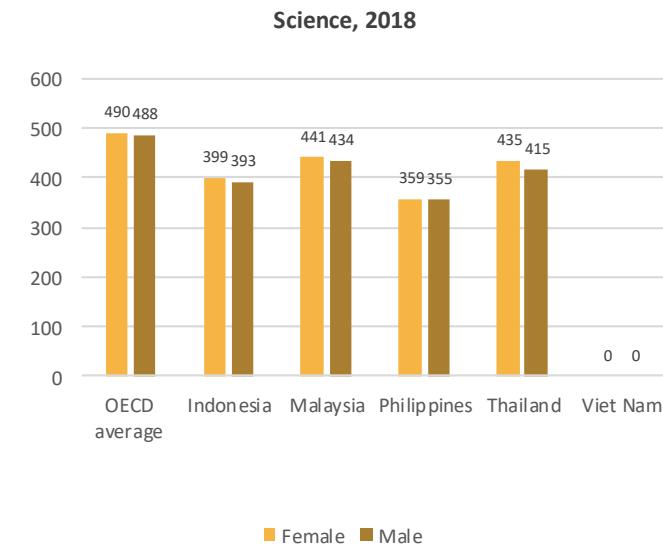
- On average, across OECD countries, girls significantly outperform boys in reading scores (by 30 points).
- This trend is replicated across Indonesia (30 points), Malaysia (26 points), Philippines (27 point) and Thailand (39 points).

Note: No data available for Vietnam



Girls perform better in maths across all countries

- On average, across OECD countries, boys perform marginally better in maths scores than girls (5 points).
- The opposite is true in Indonesia, Malaysia, Philippines and Thailand where girls perform better than boys.



Girls perform marginally better in science in all countries, with more of a marked difference in Thailand.

- Across all countries, there is very little difference in Science performance between boys and girls; this follows the OECD trend.
- There is slightly more of a difference in Thailand where girls outperform boys by 20 points.

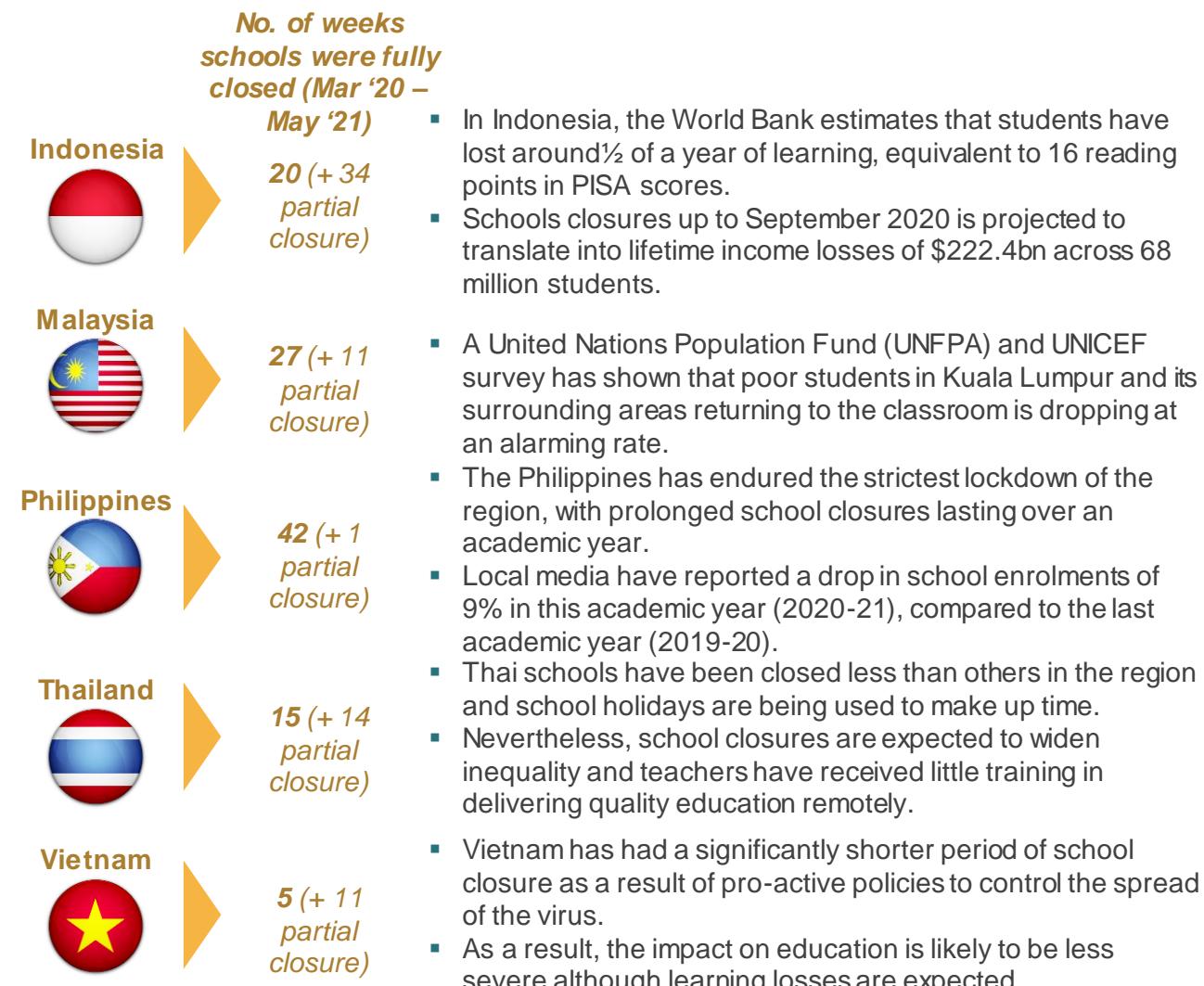
THE IMPACT OF THE COVID-19 PANDEMIC HAS INCREASED LEARNING INEQUALITY ACROSS THE WORLD

"COVID-19 has created the worst crisis to education and learning in a century", World Bank, 2021

The COVID-19 pandemic has had a significant impact on education and exacerbated learning inequality. At the peak of the school closures in April 2020, 94% of students worldwide (1.6 billion children) were out of school. The quality of remote learning has varied significantly between, and within, countries with many children experiencing a much lower quality of learning experience, or no learning at all. The Brookings Institution's analysis shows that at the height of school closures, around 90% of high-income countries were providing some form of online remote learning, compared to only 25% of low-income countries. The economic impact of the crisis has also had a significant impact on learning, with many families' household incomes severely depleted and government hampered by economic recession.

In low- and middle-income countries (LMIC), including those in SEA, the effects are expected to be catastrophic. Before the pandemic, the World Bank estimated that 53 of every 100 children in LMICs were experiencing 'Learning Poverty' (being unable to read and understand a simple text by age 10). After COVID, this number is expected to now have reached 63 of every 100.

The impact of COVID has been far greater for children in poorer families who may have limited access to resources which support remote learning, or face pressures to engage in income-generation activities in times of financial crisis. The pandemic has also increased risks for girls (girls are more likely to drop out of school and are more vulnerable to violence, child marriage and adolescent child-bearing) and other vulnerable groups, such as children with disabilities, ethnic minorities, refugees, and displaced populations are also less likely to access remote learning materials and to return to school post-crisis.



SECTION 2 | THE POTENTIAL OF EDTECH



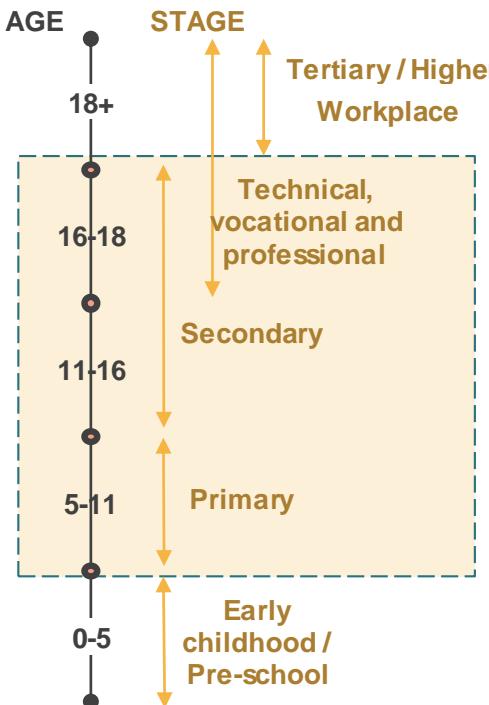
DEFINING EDTECH IS COMPLEX; THERE IS NO ACCEPTED OR CONSISTENT APPROACH, AND THE DEFINITION CAN USE SEVERAL LENSES

Each lens below could be used to confine scope of the challenge



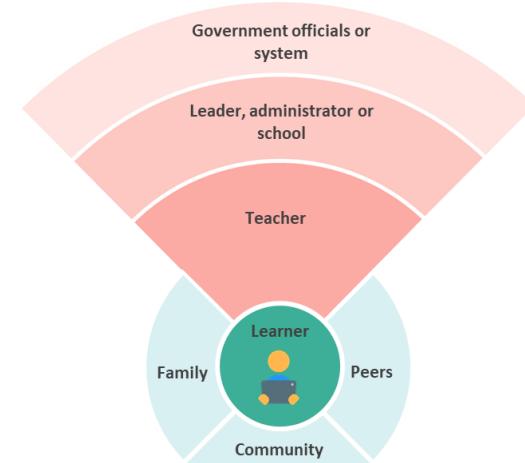
Level: differentiation by age or stage of the target user for the product

EdTech could be very broad ranging in its stage-range. We understand Octava is keen to focus on K-12 range



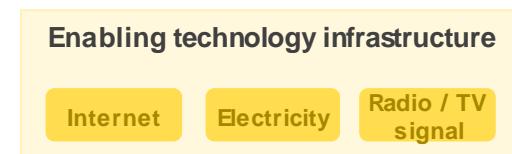
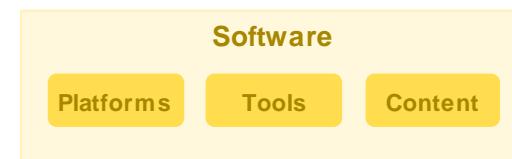
User: differentiation by the role or roles for whom the product is intended

Where learning happens, and how EdTech can support each user – this could be used as a lens to confine scope



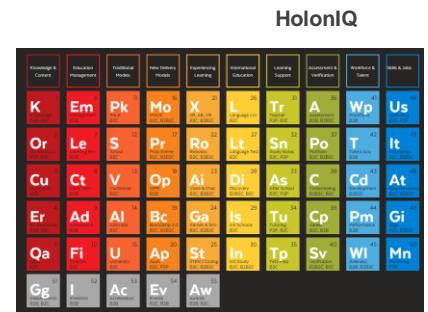
Components: the technology capabilities that the product draws upon

EdTech solutions tend to leverage some or all of the components listed below, which could all be included within the 'EdTech' definition



Purpose: what the product is used for

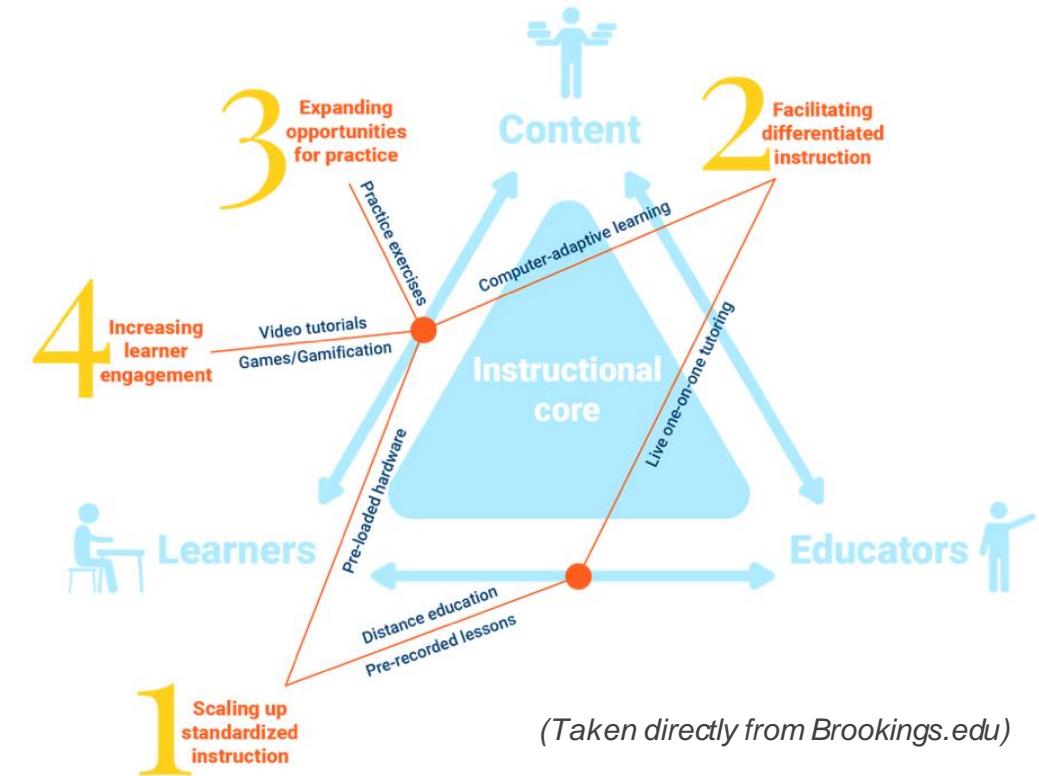
Probably the most complex lens with many different categorisations, all of which have merits and challenges



BROOKINGS INSTITUTION IDENTIFIES FOUR ‘COMPARATIVE ADVANTAGES’ WHICH EDTECH OFFERS TO IMPROVE LEARNER OUTCOMES

The Brookings Institution identifies four ‘comparative advantages’ which EdTech offers which have the potential to complement the work of educators to improve learner outcomes. These comparative advantages include:

- 1 Scaling up quality instruction:** Technology presents the opportunity to deliver standardized quality content at scale which could be useful in SEA where there are prolonged school closures because of COVID (e.g. Philippines) or constraints in the capacity teachers. Pre-recorded quality lessons, distance education, pre-loaded hardware could help to deliver quality at scale.
- 2 Facilitating differentiated instruction:** Technology presents the opportunity to provide a more differentiated learning experience which could be useful in SEA where many learners are not meeting grade-level expectations. Computer-adaptive learning and live one-on-one tutoring offer the possibility to provide differentiated support to students.
- 3 Expanding opportunities for practice:** Technology can provide additional opportunities for students to review and practice which is a key learning process and often isn’t given enough attention in class. Technology could allow students to review topics at their own pace through providing practice exercises.
- 4 Increasing learner engagement:** Technology could increase learner engagement with material by using video tutorials for self-paced learning and presenting exercises as games and/or gamifying practice.



THERE ARE EXAMPLES FROM ACROSS THE GLOBAL EDTECH ECOSYSTEM OF EDTECH ADDRESSING MANY OF THE CHALLENGES FACED IN SEA

| Description | Potential of EdTech to support | International examples |
|---|--|------------------------|
| Literacy and numeracy | <p>Poor levels of student literacy and numeracy</p> <ul style="list-style-type: none"> Virtual tutoring, online content, app-based games, edutainment and remedial online activities for core skills and holistic whole child development Open source early reading materials Holistic development and progress tracking apps for parents | |
| Teacher quality | <p>Limited teacher knowledge and skills, poor access to professional development</p> <ul style="list-style-type: none"> Intelligent, mobile learning management systems educators use to analyze student progress, personalize learning, and identify professional development needs Mobile or low-tech self-study courses and virtual live training Virtual communities of practice and platforms for resource sharing | |
| Content and curriculum | <p>Poor quality content that is not aligned to curriculum outcomes, or informed by the science of how children learn</p> <ul style="list-style-type: none"> Online, curriculum aligned learning videos, text-based courses, activities and tests designed by experts, and guided and marked by artificial intelligence Virtual, live and blended one-on-one and group classes and tutoring Topic and grade specific question and answer forums and text services | |
| Equity of access to quality learning | <p>Poorer enrollment levels, especially for disadvantaged and marginalized groups</p> <ul style="list-style-type: none"> Open source, low-bandwidth, virtual platforms for students to access learning videos and content, and store content in offline mode Content and tools targeted to out-of-school youth, or users with SEND or language needs Apps that support organizations to communicate and partner with donors | |
| 21st Century skills | <p>Widespread traditional teaching methods, limited opportunities for student critical thinking and real-world problem solving</p> <ul style="list-style-type: none"> Solutions with content designed to build 21st century, holistic skills, soft skills, peer collaboration and key stakeholder/parent support High-tech products that enhance learning across the curriculum, such as VR Solutions that encourage independent leaner work and critical thinking | |
| STEM & Digital Skills | <p>Widespread digital divide lack of opportunity for students to access and engage in STEM and digital disciplines</p> <ul style="list-style-type: none"> Online targeted STEM and high-tech industry skills (e.g. coding) learning content, products, tuition and teacher capacity building Integrated STEM learning in tuition with a different focus (e.g. FLN, English) Providing students with connectivity, high-tech equipment and environments | |

SEVERAL FACTORS CONSTRAIN WIDE-SPREAD ADOPTION OF EDTECH AMONGST MORE DISADVANTAGED ECONOMIC GROUPS

Insufficient access to electricity and connectivity

- Many parts of SEA continue to have unreliable electricity and internet connectivity, especially in remote or rural locations.
- COVID-19 exacerbated the digital divide and exposed how many children were not able to access remote learning through online channels – as a result there was a reliance in many places on radio, TV and physical resources.
- In South Asia, East Asia, and the Pacific, UNICEF estimated that 227 million children cannot be reached by either digital or broadcast learning, which is more than 28% of school-aged children in the region.

“Some students don’t have connectivity in the home and had to climb a hill to get a connection and set up a temporary tent to study.” – Teacher, Vietnam

Prohibitive cost of devices and software

- The cost of devices to access many EdTech solutions (e.g. mobile phones, tablets or laptops) remains high and out of reach for many disadvantaged children.
- Where devices are available, in low-income families, they are typically shared between family members, restricting the time children are able to access them for learning.
- Schools and teachers may also have limited technology available for learning.
- For EdTech companies to be sustainable, they often rely on B>C sales (e.g. in-app purchases) which preclude more disadvantaged learners from accessing them at scale.

“Private schools have parents to help students access devices; public schools struggle. We want kids to move online but they don’t have access to good devices or might share one with all their siblings.” – Teacher, Philippines

Poor digital literacy, low levels of ICT integration and teacher / parent readiness

- Many students, teachers and parents lack the digital skills and confidence to engage meaningfully with EdTech solutions.
- Parents may lack time and ability to support use of EdTech in the home.
- Teachers may not be prepared, or have the training and support to enable EdTech use in school.
- Whilst the system may be supportive of EdTech use, this does not always result in schools having the resources and skills to action this.

“All public schools teachers have access to a Learning Platform but teachers lack the skills to use this effectively. There are no active measures to help teachers learn.” – Teacher, Malaysia

For EdTech to reach the ‘bottom of the pyramid’ at scale, it must address these constraints.

MID- AND LOW-TECH SOLUTIONS ARE BEING USED TO REACH THE MOST UNDER-SERVED GROUPS IN SEA AND AROUND THE WORLD

| | Benefits: | Challenges: | Examples: |
|--|---|---|--|
|  Mobile | <ul style="list-style-type: none"> Widely used to promote access on individual apps or third party platforms (e.g. social media) and likely more widely available than tablets or computers Highly flexible and easy to monitor usage | <ul style="list-style-type: none"> Less evidence about mobile use to promote new learning Unlikely to be available to young children or independently useable by young children Content must be specifically adapted for mobile | Ruangguru (Indonesia) provides a cloud-based mobile app and LMS with curriculum activities, tutoring, and exam practice, with over 6m users |
|  Radio | <ul style="list-style-type: none"> Long been used in LMICs to educate out-of-school and marginalized children with positive outcomes Cost effective, simple, sustainable and immediate access to education programs, with a broad reach | <ul style="list-style-type: none"> Difficult to monitor usage Not able to differentiate instruction or monitor progress Limited to radio penetration and network coverage | DepEd Radio (Philippines) The DepEd started to broadcast k-12 programs and CPD across 162 radio stations in lockdown |
|  TV | <ul style="list-style-type: none"> Used in resource-constrained environments for many years with strong impact on outcomes Live broadcasts, pre-recorded broadcasts or edutainment can be engaging and highly accessible | <ul style="list-style-type: none"> Not all children have access to television Expensive and time-consuming to generate quality content Difficult to monitor usage Not able to differentiate instruction or monitor progress | TV Okey (Malaysia) Launched by public broadcaster RTM to deliver education programs and edutainment to K-12 students |
|  Offline and blended digital | <ul style="list-style-type: none"> Distributing digital content enables offline access to online resources and simulate online environments Mid-tech and low-bandwidth comms solutions, (e.g. web text-based formats) enable remote instruction | <ul style="list-style-type: none"> Limited by device availability and electricity availability Difficult to monitor usage Unlikely to be available to young children or independently useable by young children | AHA! Learning Center (Philippines) provide free, low-bandwidth text-based FLN classes via Facebook Messenger, to remote areas |
|  Tested audio instruction | <ul style="list-style-type: none"> Low-cost audio instruction via radio, or pre-recorded content on MP3/CD Has been shown to dramatically improve the quality of teaching and learning in a range of contexts | <ul style="list-style-type: none"> Limited by device availability to play audio and electricity availability (for charging etc.) Difficult to monitor usage Not able to differentiate instruction or monitor progress | NomadLab (Vietnam) provides computers loaded with learning content and CPD, in MP3 and multimedia form, to teachers |
|  Teacher support | <ul style="list-style-type: none"> Provides teachers with devices or low-tech CPD to build capacity to lead remote learning A range of low-tech methods to continue teachers' pedagogical CPD and general teaching practice | <ul style="list-style-type: none"> Expensive and time-consuming to generate specialized and personalized quality content Difficult to monitor usage Users may have insufficient digital literacy skills | Trainkru (Thailand) offers an offline, LMS that analyzes teacher performance data to improve CPD for teachers in rural areas |

SECTION 3 | EDTECH SUPPLY



EDTECH IS USED DIFFERENTLY IN SCHOOLS IN EACH OF THE 5 MARKETS, WITH MOSTLY LOW TO MODERATE ACTIVITY IN PUBLIC SYSTEMS



Indonesia

Government open to partnership, but still limited activity in public schools

- Have an online teacher PD and EdTech procurement platform.
- EdTech mainly used in high school, higher ed, and corporate settings.
- *Ruangguru* dominates the market as the largest SEA EdTech player.
- EdTech companies rely on free-trials to maximize outreach.
- Rural and low income students lack connection and devices.
- Many private schools use LMS and live-classrooms.

EdTech response to COVID

- Distance learning (online, TV and printed), and free internet quotas for learning.



Malaysia

Government emphasis on devices rather than quality pedagogy

- EdTech mainly used in tertiary, professional, and private K-12 institutions in urban areas.
- Increasing demand for holistic (e.g. soft skills) or high-tech (e.g. VR) products.
- National e-learning platform recently launched.
- High levels of student digital literacy and device ownership.
- Mostly locally devised EdTech.

EdTech response to COVID

- Revised an existing online, national learning platform, which is regarded by WEF as effective in making up for learning loss.



Philippines

Schools dominated by international software (e.g. MS & google) and free content

- Very little EdTech innovation in public schools, although much more mature in private schools, post high school, and professional education.
- Teachers lack experience and expertise in using EdTech.
- Public school students unlikely to have widespread access to devices.
- Many private schools use LMS.

EdTech response to COVID

- A remote learning platform was launched in October 2020, and was perceived to be challenging for many learners to access.
- Remote radio programs to supplement learning are perceived as having low-quality content.



Thailand

Traditional education system with very limited EdTech in schools

- Despite being a relatively wealthy country, use of EdTech is low.
- Many learners in rural areas unable to access tech.
- Teachers and students generally have low digital literacy.
- No national education ICT strategy.
- Mobile solutions are preferred.
- Growing demand for solutions to improve teacher workload and remote K-12 education access.

EdTech response to COVID

- Online K-12 learning platform, and TV K-12 courses on 17 channels (available only via cable subscription).
- Socio-economic inequalities prohibited widespread access (e.g. lack of WiFi).



Vietnam

Online platform for schools, good innovation and government partnership

- MoE provides robust online learning platform and EdTech advice for schools.
- EdTech widely used; especially English language, LMS, and MOOC products.
- Market saturated with low quality content and international players.
- Growing demand for quality ECD, STEM and K-12 content.

EdTech response to COVID

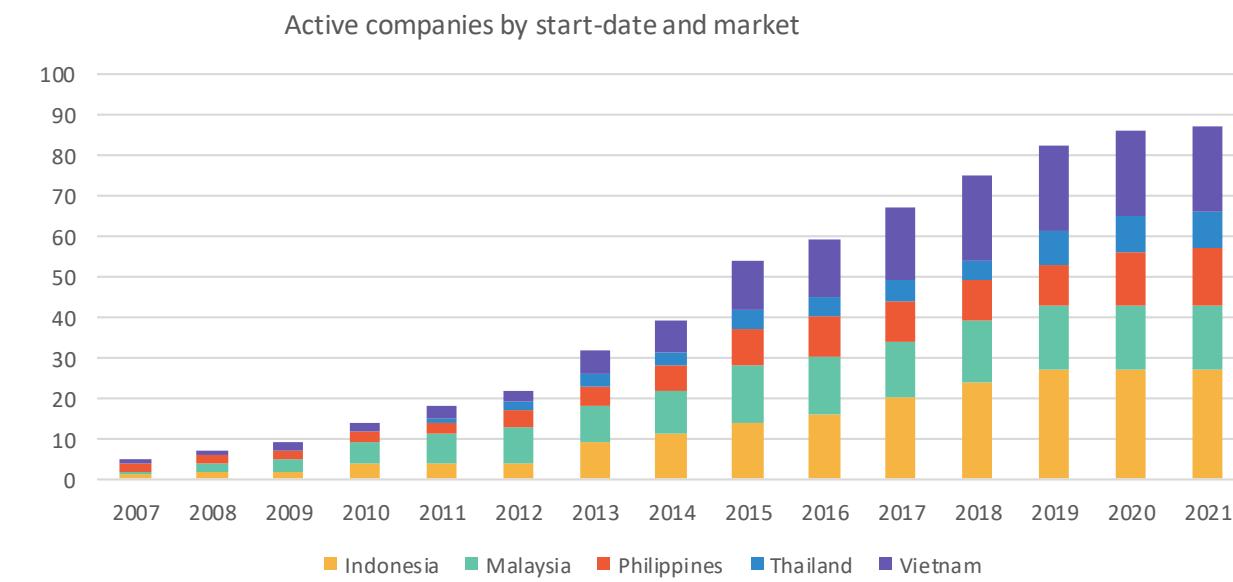
- Online student learning and teacher PD through video-conference platforms; provided tablets and WiFi to minority children and remote areas; added digital literacy to the national K-12 curriculum.

OVERVIEW | A MAPPING OF SUPPLY IDENTIFIED 108 ‘IN SCOPE’ EDTECH SUPPLIERS HEADQUARTERED WITHIN THE FIVE MARKETS

108 existing EdTech providers have been identified which are based in the 5 markets, and who offer EdTech products targeted at the K-12 age range. While this is a good indication of the breadth of products, the list is not exhaustive. It draws from many international databases (such as Crunchbase, Tracxn, EdTech Hub) and interviews with experts.

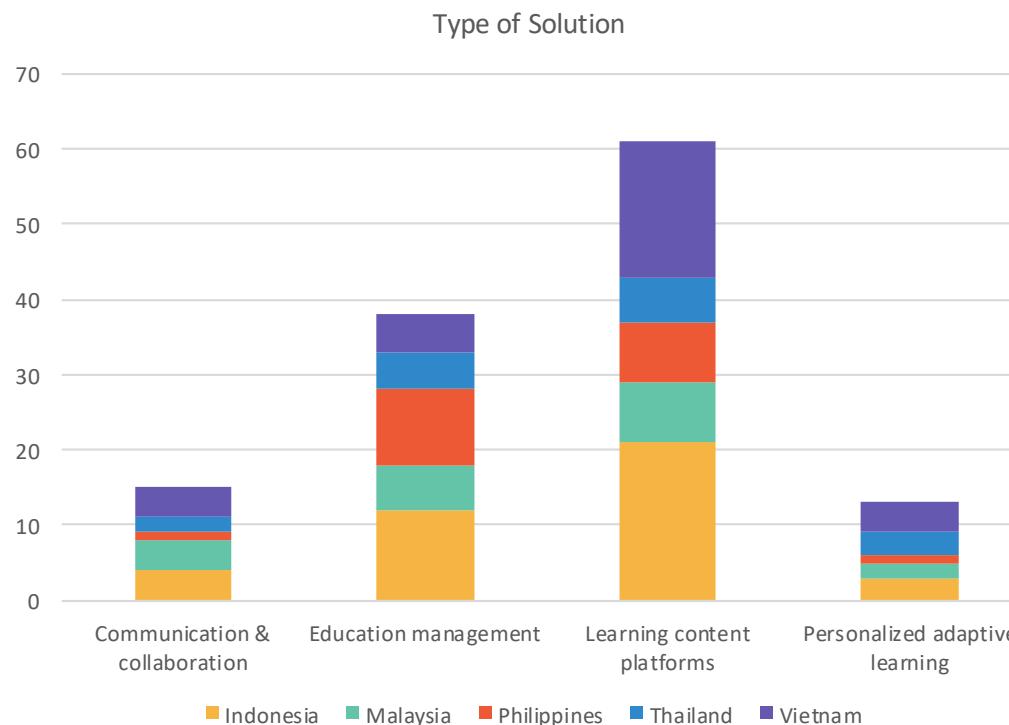
108 suppliers with a K-12 focus were identified. A small number operate in more than one of the 5 markets.
Indonesia has the largest number, followed by Vietnam

Based on companies for which start dates were readily available, the period from 2013 to 2016 showed the sharpest growth, with a slowing over the past three years. Malaysia’s growth was earliest, with more recent surges from Vietnam

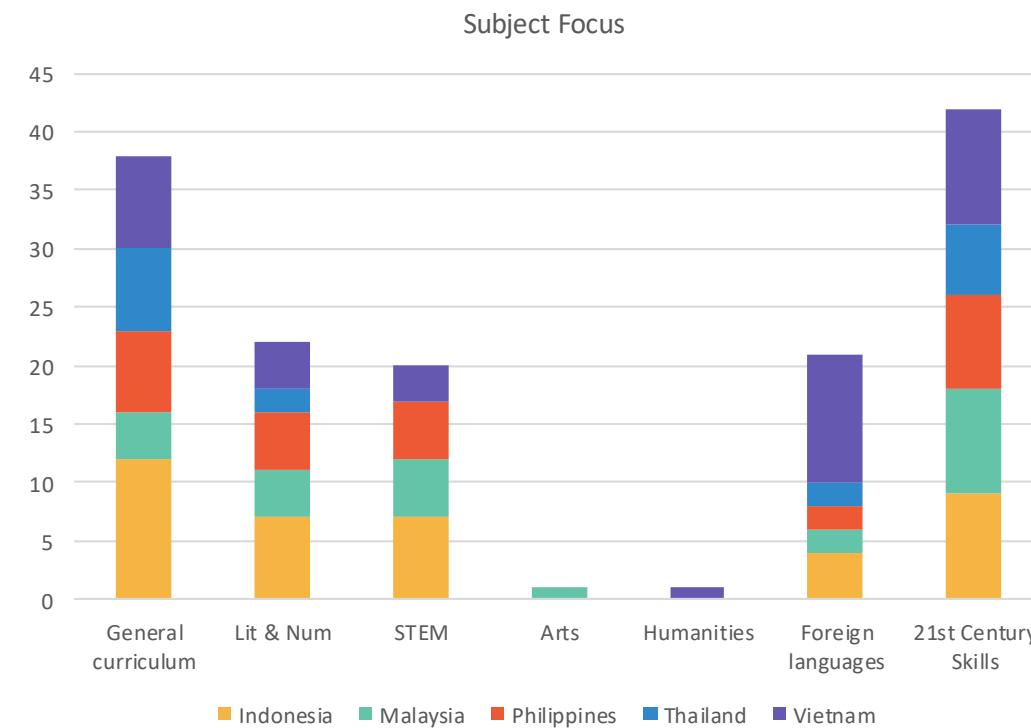


BREAKDOWN | SUPPLY IS DOMINATED BY LEARNING PLATFORMS WITH A BIG FOCUS ON 21ST CENTURY SKILLS, LANGUAGES AND TUTORING / TEST PREP

Supplier base is dominated by learning platforms, especially in Indonesia and Vietnam

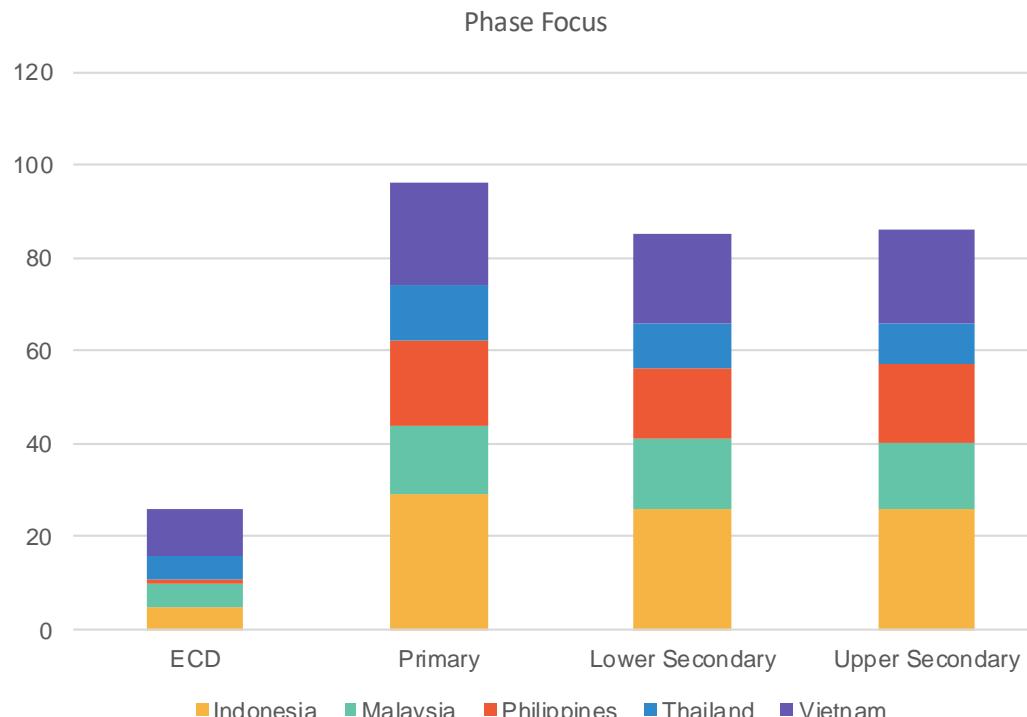


There is significant focus on 21st Century skills, Languages, and tutoring / test prep (within general curriculum) rather than literacy and numeracy products

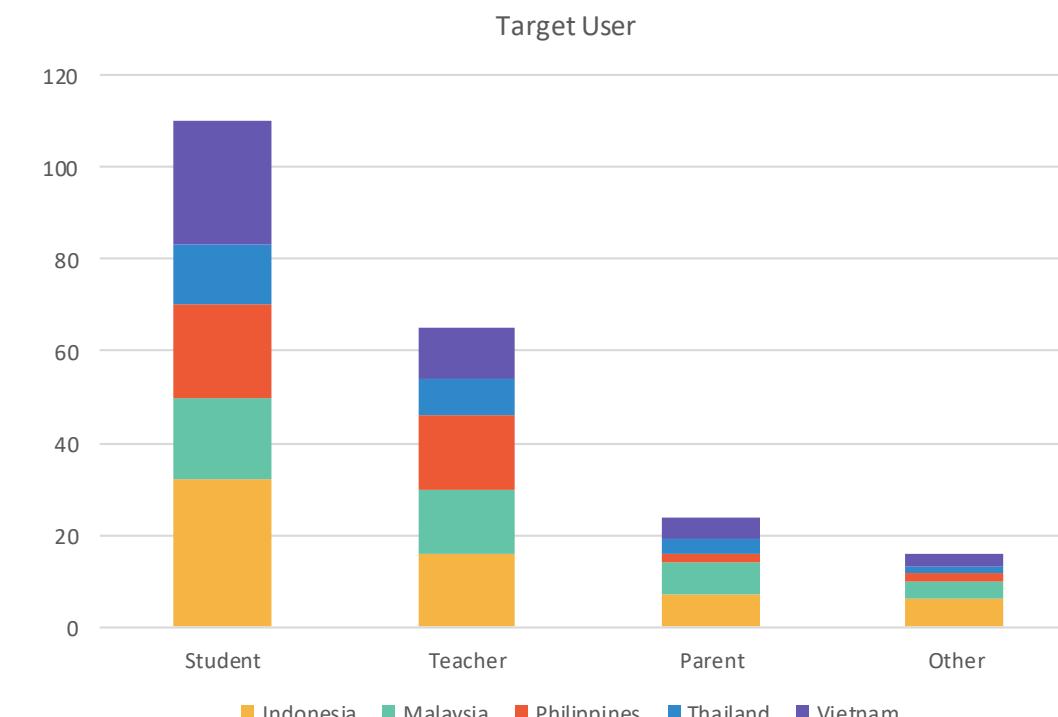


BREAKDOWN | PRODUCTS MOST OFTEN SERVE PRIMARY AND SECONDARY LEVEL STUDENTS

Other than early years, other phase segments are equally well served



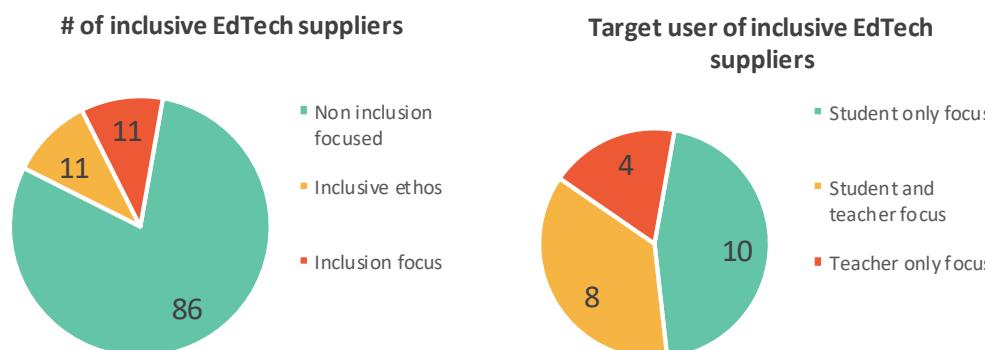
More products serve the needs of students than other users, possibly reflecting the private market. The products in the teacher segment are mainly learning management systems



THOUGH MOST EDTECH SUPPLIERS MAPPED TARGET MORE AFFLUENT USERS, SOME SOLUTIONS HAVE AN INCLUSIVE DIMENSION

Inclusive EdTech solutions:

- Out of 108 suppliers identified across the 5 markets, 22 indicated that they provide inclusive solutions, that can improve accessibility for disadvantaged users.
- Out of 22 suppliers, most aim to develop numeracy, literacy and digital skills of students in primary and lower secondary. Over 40% of the 22 also aim to be used by teachers to support learning, and only 4 exclusively target teacher CPD.
- Half (11) of the 22 aim to provide general inclusive solutions, and distribute free, open-source content through web platforms, apps, or storables, digitized content to users from all backgrounds.
- 11 others were specifically designed to serve disadvantaged or marginalized users, and mostly offered content or activities specifically designed to suit user needs, or solutions designed for use in remote and limited connectivity areas.



Examples:

Inclusive ethos:

- **BuriBooks** (Philippines) – a large, open-source eBook library of K-12 books in Filipino and English, and supplementary activities for learners, teachers and parents.
- **Gnowledge** (Malaysia) - a free education platform to create, publish, share and take tests, exercises and assignments, for educators, students and parents.

Inclusion focus:

- **Solve Education!** (Indonesia) - an app designed to teach out-of-school youth, students in non-traditional settings, and marginalized learners 21st-century knowledge and skills.
- **Kidspire** (Vietnam) - a STEAM and digital literacy program for orphan children that includes hands-on, curriculum aligned activities, youth mentoring, and provides learners with modern classroom equipment.

Teacher focus:

- **NomadLab** (Vietnam) - provides shock resistant computers with offline-enabled servers, learning content, solar panels and professional development for teachers in underserved areas.

Student focus:

- **Virtualahan** (Philippines) - a virtual school for out-of-school youth and learners with disabilities, to develop their digital skills and help them move out of poverty.

THERE ARE LIMITED INSTANCES WHERE MEDIUM AND LOW-TECHNOLOGY SOLUTIONS HAVE BEEN USED TO REACH DISADVANTAGED LEARNERS

Medium and low-tech EdTech solutions:

- Prior to school closures caused by the COVID-19 pandemic, there are limited examples of mid- and low-tech solutions that have been used to reach marginalized or disadvantaged learners across each of the five markets.
- Supplier mapping has identified only seven organizations who offer mid- and low-tech solutions for remote K-12 learning.
- Of that group, most offer offline or low-bandwidth enabled digital content, and two solutions emerged in response to COVID-19 related school closures.
- Additional research has identified that the majority of low and medium tech solutions in the five markets are led by government, and were created during COVID-19 related school closures, to deliver education television programs to all students nationwide, especially those without internet access.
- Prior to COVID-19, low and mid-tech solutions initiated by the government only appear to have existed in Indonesia (TV and radio) and Malaysia (TV).

Examples before COVID-19:

Private organizations:

- **Markoding** (Indonesia) an offline enabled community platform that teaches underprivileged youth to code for free, using any available tech device.
- **ELLN Digital** (Philippines) A K-3 teacher professional development course run by FIT-ED that uses offline, interactive courseware and a blended learning approach to enhance teacher FLN knowledge.

Government:

- **Indonesia MoEC:** Set up *Radio Edukasi* in 1980 to provide learning content and edutainment to K-12 learners, and *TV Edukasi* in 2004, that airs two channels with live education programs; one for students and one for teachers.
- **Malaysia MoE:** Set up EduWebTV in 2008 to air curriculum-aligned K-12 programs.

Examples after COVID-19:

Private organizations:

- **AHA! Learning Center** (Philippines) started to provide free, low-bandwidth text-based FLN classes via Facebook Messenger to remote learners during closures.

Government:

- **Malaysia MoE:** Launched TV Okey in April 2020 to deliver K-12 programs to all students; especially those without internet access.
- **Thailand MoE:** Started to broadcast K-12 education content on 17 TV channels across the country.
- **Philippines DepEd:** Has broadcast K-12 lessons on 162 radio stations and 207 TV channels, to continue learning nationwide, since mass school closure.
- **Vietnam MoET:** Started to broadcast curriculum-aligned K-12 school lessons on one national and 27 provincial TV channels across the country.

SECTION 4 | EDTECH ENABLERS



EACH MARKET HAS BEEN ASSESSED AGAINST A RANGE OF MATURITY INDICATORS TO ASSESS RELATIVE ATTRACTIVENESS

EdTech maturity in the five countries has been assessed by looking at five different areas: Infrastructure, education policy and strategy, resources and capacity, market and buyers and existing supply. This draws from multiple frameworks that are used in the sector.

| Infrastructure | | |
|---|-------------|----------|
| Presence of physical infrastructure needed for EdTech including electrification, internet connectivity, telecoms and prevalence of devices at school and home | Indonesia | Med-Low |
| | Malaysia | High-Med |
| | Philippines | Med |
| | Thailand | High-Med |
| | Vietnam | Med-Low |

| Supply (see Section 4 – supply analysis) | | |
|--|-------------|--|
| Whether there are already players in the market providing services to customers, indicating the maturity of the market | Indonesia | |
| | Malaysia | |
| | Philippines | |
| | Thailand | |
| | Vietnam | |



| Market & buyers | | |
|--|-------------|---------|
| Whether government is active as a buyer and open to partnering with the private sector, the propensity of consumers to invest in EdTech, and general market conditions | Indonesia | Med |
| | Malaysia | Med-Low |
| | Philippines | Med-Low |
| | Thailand | Med |
| | Vietnam | Med |

| Education policy & strategy | | |
|---|-------------|----------|
| The extent to which government is supportive of EdTech investments and initiatives in terms of policy on education, technology and EdTech | Indonesia | Med-High |
| | Malaysia | Med |
| | Philippines | Med-Low |
| | Thailand | Med-Low |
| | Vietnam | Med |

| Resources & capacity | | |
|---|-------------|---------|
| Availability of human capital (skills and experience), networks and community (e.g. incubators and accelerators) and investment capital needed to support a thriving EdTech ecosystem | Indonesia | Med |
| | Malaysia | Med-Low |
| | Philippines | Med-Low |
| | Thailand | Med |
| | Vietnam | Med |

INDONESIA

- Government is committed to reform and open to partnership** – key driving role in education, with a new digitization agenda which includes building digital skills, improving internet access, improving teacher quality.
- Ministerial support** – the Minister of Education (Nadiem Makarim) is a tech entrepreneur and is very pro innovation.
- Government's ability to deliver** – despite commitment, execution is difficult, and scaling of equitable EdTech will require strong engagement with government.
- Investment in human capital for tech** – new technology parks supported by universities will also drive innovation and local talent.
- Infrastructure remains a challenge** – with low electrification and internet penetration rates.
- Low digital skills** – in the general population, although youth population shows interest in digital skills.
- Historical reluctance for consumer spending on education** – a cultural shift is required for mass market adoption of paid-for EdTech products.
- Career prospects still very focused on natural resources** rather than digital and 21st Century Skills.

| | | | |
|---|---------|---|----------|
| Infrastructure | Med-Low | Education Policy & Strategy | Med-High |
| <ul style="list-style-type: none"> Although infrastructure is improving, Indonesia is not ready to fully scale EdTech, and has low electrification and internet penetration rates for a low-income nation, particularly in remote areas. Indonesia's internet is more affordable, but of poorer quality, than regional averages. There is high use of computers among the student population. Low-tech options and mobile phones are also widely accessible and used to improve EdTech reach. | Med | <ul style="list-style-type: none"> The government is focused on creating a digital workforce, universal internet access, and improving the digital skills and resources of low-income families and female entrepreneurs. Current MOEC digital initiatives include a teaching at the right level platform, improving teacher quality and creating a marketplace for school operation needs. The MOEC is working to integrate ICT into all learning, and reach more learners through low-tech methods. Decentralized government funding and structures have limited EdTech sector growth. | Med |
| <ul style="list-style-type: none"> Many EdTech start-up founders are generalist entrepreneurs who may lack education sector expertise. There is an emerging for-and non-profit EdTech start-up sector, which is run by, and in partnership with, influential local and global corporate, government and financial bodies. VC investment is driving improvements in local talent. One major supplier – Ruangguru dominates the sector and investor funding. New technology parks are being developed through universities to incubate Indonesian tech start-ups. | Med | <ul style="list-style-type: none"> Local government partnership is key to scaling EdTech in schools. Although central government cannot endorse vendors, it manages a national online procurement platform. Most suppliers prioritize business-to-customer EdTech and market products using social media. There is a cultural reluctance to spend on education. The market is forecast to grow but is inequitable and concentrated in the most populous region. Many customers lack digital skills to trial products. | Med |

MALAYSIA

- Good infrastructure – including electricity, connectivity and devices, as well as high digital literacy.**
- Limited government policy support – EdTech is strongly focused on devices and infrastructure rather than directly considering quality of pedagogy and learning outcomes.**
- EdTech products are focused on post K-12 sector – especially higher education and professional education.**
- Human capital is weak – compared to other markets in terms of innovation, entrepreneurship and overall activity.**

| | | | |
|--|----------|---|---------|
| Infrastructure | High-Med | Education Policy & Strategy | Med |
| <ul style="list-style-type: none"> Malaysia enjoys near 100% electrification and innovative methods are being trialled to bring electricity to the nations most remote areas. Although fixed broadband is faster, particularly when internet traffic increases, more people connect using a mobile device and mobile learning is forecast to increase significantly. Most of Malaysia is digitally literate and a majority of students own electronic devices. | | <ul style="list-style-type: none"> The MoE is working to provide all schools with internet access and digital devices, to improve ICT use in schools, and to enhance the national e-learning infrastructure. Government strengthening of the private sector, and investment in national connectivity and digital innovation, is forecast to continue to influence market growth. There is appetite for revised government policies that encourage innovation and investment. | |
| Resources & capacity | Med-Low | Market & buyers | Med-Low |
| <ul style="list-style-type: none"> To address need for outsourcing technical tech workers overseas, the Government is seeking to move away from a labor-based workforce, and has pledged to invest in creative and innovative industries to create 1.5m innovation-based, highly skilled jobs by 2020. The EdTech sector is dominated by domestic companies with low global influence, with low entrepreneurship drive. The EdTech start-up ecosystem is growing. Malaysia hosts over 140 local start-ups, and 28 incubator and accelerator programs. | | <ul style="list-style-type: none"> Tertiary providers and students are the biggest consumers in the sector, and corporate employee training is forecast to be the leading form of EdTech in the future. Private K-12 schools in urban areas have become key buyers of EdTech to encourage student enrolment. The end users of EdTech products have a preference towards products that develop 21st century skills and whole child development, but are price sensitive and prefer to choose custom features that deliver more value over time. The digital learning market is expected to flourish. | |

PHILIPPINES

- Country-wide infrastructure is improving –** there have been big improvements with access to electricity and internet although the geographically dispersed nature of the Philippines and prevalence of natural disasters can impede upon connectivity.
- Infrastructure in schools lags behind –** there are some efforts to improve tech infrastructure in schools and digitization although this is a relatively nascent priority area, and the system lacks a central ICT policy. More innovation happens at local government level.
- The digital sector is relatively under-developed –** digital skills are lacking in the population, especially amongst teachers who can be resistant to the use of EdTech. Both government and consumers more typically use free, open source EdTech products and capacity to pay for EdTech products varies significantly.
- Low appetite for EdTech from DepEd –** K-12 system is traditional and has not embraced EdTech in the way that TESDA (technical and vocational) and CHED (higher education) have.
- Growing EdTech entrepreneurship capacity –** international businesses are taking advantage of investment opportunities.

| | | | |
|--|---------|---|---------|
| Infrastructure | Med | Education Policy & Strategy | Med-Low |
| <ul style="list-style-type: none"> The Philippines is on track to achieving universal electrification by 2022. Infrastructure remains expensive, but government aims to address this. The geographically scattered country makes it hard to get good telecoms infrastructure in place, and natural disasters are an issue. Rates of personal and household internet access are growing, and Wi-Fi is often available for free in major urban areas, but internet speeds can be slow. Almost all adults use smart phones, and the tech device market share is relatively high. | | <ul style="list-style-type: none"> The government is leading system reform to modernize the workforce and education system. The DepEd invests in school infrastructure, digital literacy learning, and needed initiatives to improve school access to the internet, digital resources, new tech equipment. This shift is relatively new; more innovation happens locally. The system does not have a central ICT policy, or capacity to support online courses and use tech for teacher training. There is also resistance to tech use within the teaching community. | |
| Resources & capacity | Med-Low | Market & buyers | Med-Low |
| <ul style="list-style-type: none"> The government has released plans to improve the Philippine digital ecosystem, and entice global businesses to establish local bases and invest in local products and services. Despite consolidated efforts to develop workforce digital capacity through online courses during COVID-19, there are low national employment rates, and the digital sector is less developed than other countries in the Asia/Pacific region. Teachers in public schools lack experience and expertise to support widespread EdTech use. | | <ul style="list-style-type: none"> The DepEd partnered with for- and non-profit partners to improve school ICT infrastructure. Government and schools prefer free, open source products. Capacity to pay for EdTech varies significantly although Filipinos live in a fast growing economy, spend a lot on education, and are willing to pay for things they find useful. As youth represent a quarter of the market, digital marketing firms and start-ups are investing in youth-centric campaigns, non-traditional learning, and closely tune into Gen Z preferences. | |

THAILAND

- Good countrywide supporting infrastructure** – full electrification and high internet penetration.
- Nascent EdTech policy** – the potential of technology to support education development needs has not been realized. There have been some efforts to promote ICT at government level and a growing recognition of the positive role technology can play but there is still no formal ICT policy.
- Limited digital literacy** – social media is popular and prevalent, but digital literacy levels are low, and Thailand faces a major skilled labor shortage.
- High consumer appetite for investing in children's education** - there are high levels of private schooling), there is a market for B>C EdTech products that could be tapped.
- Growing EdTech community** – but this is still small.

| | | | |
|---|----------|---|---------|
| Infrastructure | High-Med | Education Policy & Strategy | Med-Low |
| <ul style="list-style-type: none"> All of Thailand's citizens are able to access electricity, and the government is working towards using sustainable energy sources. The majority of Thai citizens access the internet every day, and internet quality is consistently improving. Social media is popular, and the majority of Thai people own one or more mobile devices. | | <ul style="list-style-type: none"> Thailand has taken many actions to promote ICT use, over the last decade, and to transition into an innovation-driven economy, but established no formal national ICT strategy. MoE reform aims to improve internet access, digital efficiency and IT resources across all schools, and has integrated coding into the curriculum. | |
| Resources & capacity | Med | Market & buyers | Med |
| <ul style="list-style-type: none"> Thailand has an ageing population and faces the highest skilled labor shortage in the region. The government has invested heavily in venture funding for Thai start-ups, several tech incubators, from the international or ASEAN sector, are exploring the Thai market. There is a growing local EdTech community of start-ups focused on all ages of learner, school management, training and development, and English learning. Teacher and student digital literacy is low and digital resources across all grades are needed. | | <ul style="list-style-type: none"> The government is investing in hardware, software and 'people-ware' across all sectors and aims to upskill all teachers' ICT skills and English teachers' sector specific skills. There is demand for EdTech to improve teacher workload, and digital learning for people unable to access in-person courses in urban regions, particularly among young people. Thailand's mobile shopping market is the strongest in the region; IT and networking markets are growing. Low birth rate and high income levels mean consumers are open to spending on their children's education. | |

VIETNAM

- Strong consumer market for education –** culturally high aspirations lead to an appetite to spend on education, particularly English language and career focused skills. This leads to higher price-points. However, there is still demand for traditional education from some parents.
- Infrastructure is patchy despite investment –** but smartphone penetration is high.
- Good tech talent is available –** leading to investment by international tech companies. Government continues to invest in developing tech talent to meet the demand for high-skilled talent.
- North / South divide –** conservative, communist, bureaucratic North vs dynamic, innovative, business friendly and consumerist South.

| | | | |
|---|---------|--|-----|
| Infrastructure | Med-Low | Education Policy & Strategy | Med |
| <ul style="list-style-type: none"> ▪ Infrastructure is a challenge outside major cities. ▪ The Government significantly invested to enable all citizens to access electricity. ▪ Rapid urbanization and industrialization has led to issues with unsustainable electricity supply. ▪ Fixed broadband penetration is low. There are high rates of internet mobile penetration and smartphone ownership, but connectivity is censored, fairly costly, and can be unreliable. ▪ Social media use is high, particularly among those under 18. | | <ul style="list-style-type: none"> ▪ New reform prioritized digital literacy learning, and school connectivity and resource access. ▪ The Government is investing in innovative solutions to improve nationwide connectivity, knowledge sharing, and financial flexibility. ▪ There is an appetite for improved Government policy to protect young learners online, and trade regulations that encourage foreign investment and local business prospects. ▪ A new curriculum will be developed for 2025 presenting opportunities for digitization of new content. | |
| Resources & capacity | Med | Market & buyers | Med |
| <ul style="list-style-type: none"> ▪ Advanced tech is outsourced abroad, and the government invests to support new companies, attract and retain tech sector human resource, and meet the demand for high-skilled talent. ▪ The market attracts major foreign investment and some funding from local corporations. ▪ Major international technology companies are setting up in Vietnam because of availability of local talent - this may also pose a competitive threat to local businesses. | | <ul style="list-style-type: none"> ▪ The MoE provides guidance on EdTech and is developing policy for online education. ▪ Most start-ups use business to customer sales models, and target stakeholders at all levels, who are likely to be digitally literate and interested in EdTech. ▪ There is lack of evidence for market willingness to pay for online courses, and offline-online hybrid learning solutions may be more likely to secure loyal customers. | |

CASE STUDY | INDONESIA



INDONESIA – OVERVIEW OF ENABLING ENVIRONMENT FOR EDTECH

- Government is committed to reform and open to partnership** – key driving role in education, with a new digitization agenda which includes building digital skills, improving internet access, improving teacher quality.
- Ministerial support** – the Minister of Education (Nadiem Makarim) is a tech entrepreneur and is very pro innovation.
- Government's ability to deliver** – despite commitment, execution is difficult, and scaling of equitable EdTech will require strong engagement with government.
- Investment in human capital for tech** – new technology parks supported by universities will also drive innovation and local talent.
- Infrastructure remains a challenge** – with low electrification and internet penetration rates.
- Low digital skills** – in the general population, although youth population shows interest in digital skills.
- Historical reluctance for consumer spending on education** – a cultural shift is required for mass market adoption of paid-for EdTech products.
- Career prospects still very focused on natural resources** rather than digital and 21st Century Skills.

| | | | | |
|--|---------|--|----------|--|
| Infrastructure | Med-Low | Education Policy & Strategy | Med-High | |
| <ul style="list-style-type: none"> Although infrastructure is improving, Indonesia is not ready to fully scale EdTech, and has low electrification and internet penetration rates for a low-income nation, particularly in remote areas. Indonesia's internet is more affordable, but of poorer quality, than regional averages. There is high use of computers among the student population. Low-tech options and mobile phones are also widely accessible and used to improve EdTech reach. | | | | |
| Resources & capacity | Med | <ul style="list-style-type: none"> Many EdTech start-up founders are generalist entrepreneurs who may lack education sector expertise. There is an emerging for-and non-profit EdTech start-up sector, which is run by, and in partnership with, influential local and global corporate, government and financial bodies. VC investment is driving improvements in local talent. One major supplier – Ruangguru dominates the sector and investor funding. New technology parks are being developed through universities to incubate Indonesian tech start-ups. | | |
| <ul style="list-style-type: none"> Local government partnership is key to scaling EdTech in schools. Although central government cannot endorse vendors, it manages a national online procurement platform. Most suppliers prioritize business-to-customer EdTech and market products using social media. There is a cultural reluctance to spend on education. The market is forecast to grow but is inequitable and concentrated in the most populous region. Many customers lack digital skills to trial products. | | | Med | |

INDONESIA HAS ONE OF THE MOST RAPIDLY GROWING ECONOMIES AND POPULATIONS IN THE WORLD

| Country Profile | | |
|-----------------------------|-------------------|-------------------------------------|
| Population (WB, 2019) | Total | Annual growth |
| | 270.6 million | 1.1% |
| Youth population (WB, 2019) | Aged 14 and under | Aged 15 - 24 |
| | 26% | 16.9% |
| Settlement (WB, 2019) | Urban | Rural |
| | 56% | 44% |
| Health (WB, 2019) | Life expectancy | Infant mortality (per 1,000 births) |
| | 72 | 20 |
| GDP (WB, 2019) | Total (\$) | Per Capita (\$) |
| | 1.1 trillion | 4,135.6 |
| | | Growth (% annual) |
| | | 5% |



Indonesia is situated in the Indian and Pacific oceans. As the world's largest island country, it is composed of over 17.5k islands; 7k of which are uninhabited.

Context

- **Indonesia is the largest economy in Southeast Asia**, and has recently reached upper middle-income status and cut its poverty rate by more than half since 1999.
- **It is focusing on renewing its competitiveness in the global market** and transitioning from an agricultural economy to an economy based on industrial manufacturing and services.
- **A growing future workforce is forecast to drive economic progress**. 70% of the population are estimated to reach working age by 2030 and establish the nation as the fourth-largest economy by 2050.
- **Indonesia is the fourth most populous country in the world**, and home to over 300 ethnic groups who speak over 300 different languages.
- **Indonesia is the largest majority Muslim country** - 87% of the population identify as Sunni Muslim, while 10% identify as Christians, and 1.7% as Hindu.

Impact of COVID-19

- **The COVID-19 crisis has hindered Indonesia's progress towards development goals** - over 8 million citizens have been pushed into poverty.
- **Over 60 million students, their teachers and families were impacted when schools closed** and many were unable to participate in new initiatives for online learning due to unequal access to technology and internet connectivity.
- **School closures are projected to lead to significant learning loss** - students are estimated to have lost half of a year of learning (equivalent to 16 points on PISA).
- **Loss of learning is predicted to translate to significant lifetime income losses** of US\$222.4 billion across 68 million students, equivalent to 19.9% of GDP in 2019.

INDONESIA UNDERINVESTS IN EDUCATION AND HAS YET TO FULFIL GOALS OF UNIVERSAL ENROLMENT AND QUALITY EDUCATION ACROSS ALL GRADES

| Education data | | | | |
|-------------------------------|---|--|---|----------------------------------|
| Education Spending (WB, 2015) | 20.5% of total government expenditure | | | |
| Primary | No. students (WB, 2018) | % of students in private school (WB, 2018) | No. teachers (WB, 2019) | Student to trained teacher ratio |
| | 29.4m | 22.8% | 1.8m | N/A |
| Secondary | No. students (WB, 2018) | % of students in private school (WB, 2018) | No. teachers (WB, 2018) | Student to trained teacher ratio |
| | 24.9m | 42.1% | 1.6M | N/A |
| Total enrolment (% of total) | Pre-primary - gross (Female) (WB, 2018) | Primary - net (Female) (WB, 2014) | Lower-secondary - net (Female) (WB, 2018) | |
| | 62.3% (59.1%) | 94.4% (92.0%) | 83.7% (86.5%) | |
| PISA score (OECD, 2018) | Reading (average) | Mathematics (average) | Science (average) | |
| | 371 (487) | 379 (489) | 396 (489) | |

| Major education challenges | |
|---|--|
| <ul style="list-style-type: none"> Universal enrolment has not been achieved; 4.4m learners aged 7–18 are out of school (OOS). Poor, disabled, or rural children are at risk of exclusion - secondary children from the poorest households are five times more likely to be OOS; 57% of children with disabilities are OOS. Children who attend school struggle to acquire basic academic skills - half of 15-year-old students achieve a minimum proficiency level in reading and less than one third of them did so in maths. Access to ECD is lower in low-income areas (e.g. 20% less in Papua State) Adolescents are missing out on education and employment opportunities - a quarter of Indonesia's 46m 15-19 year olds are not in education or employment; youth unemployment is 15%. Indonesia has much lower literacy levels than other S-E Asian nations - 55% of school leavers are illiterate, compared with 14% in Vietnam and 20% across OECD member countries. Education expenditure has increased significantly in 15 years but remains one of the lowest in SEA. Teachers face challenges teaching the new curriculum as there is a disconnect between the nationally-designed materials and what is used by local teacher training colleges. | |
| Government response to COVID-19 | |
|  School closure: All education institutions closed on March 16 th after the first COVID case was confirmed.  School reopening: Staggered opening in low-risk areas from July in 2020. Nationwide opening from Jan 2021 with pupils on rota to maintain 50% capacity.  Areas of support: Guidance materials (home learning, school opening, and safeguarding), abridged curriculum, distance learning (online, TV and printed), and free internet quotas for learning.  Funding: A fiscal package of 4.3% of GDP, to increase social and health sector preparedness. | |

PRIVATE SCHOOL ENROLMENT HAS INCREASED OVER TIME AND MAY PROVIDE MORE ACCESSIBLE OPTIONS TO LOCAL FAMILIES

Overview

- World Bank data shows that **private enrolment is rising** (and reached 23% in primary and 42% in secondary in 2018).
- MoEC data from 2014 tells a slightly different story and shows that there were **more public elementary and junior secondary schools, and more private senior secondary and vocational schools**.

Low-cost schools

- Although **MoEC data does not differentiate between higher and lower-cost private schools**, according to the Indonesian Private Education Forum Body, **80% of private schools target disadvantaged groups** to offer options to students unable to gain places in highly regarded state schools.
- A study of 64 lower-cost schools, across six provinces, by the Center for Indonesian Policy Studies (CIPS) found:
 - Most private schools charge inexpensive monthly fees** ranging from IDR5,200 - 468,000 (USD0.37 – 33) per student.
 - Most private schools in the capital, Jakarta, are lower-cost:** In 2015, private schools in Jakarta made up 57% of all 5.6k schools. Many served disadvantaged families, and fees ranged from IDR30k - 130k (USD2 – 9) per student.
 - Most low-cost private schools are set up by individuals in the community** to provide accessible education for children of impoverished households in their neighbourhood, and most are registered and some are accredited.
 - Low-cost schools may provide higher student outcomes in some subjects**, and low-cost schools in Jakarta had significantly better exam scores in maths and slightly lower reading scores, than public schools.
 - Some families consider low-cost schools to be more accessible** as they are often located closer to homes and safer and cheaper to travel to, and have less strict enrolment requirements.
 - The **monthly operational cost per student in low-cost schools is lower** (by 34%) than in public schools in the same area.

Types of private school

- In Indonesia, **students can attend either attend “regular” or madrasah primary and secondary schools**. Madrasahs are Islamic institutions led by the Ministry of Religious Affairs (MoRA). Both regular and madrasah schools have public and private options.
- Most madrasah are private**, funded by Islamic foundations, run by the community, but still **rely heavily on government funding**.
- Madrasahs are seen to serve disadvantaged or rural groups, and are often cheaper** than “regular” fee-charging schools. However, as a result, many are severely underfunded with a high proportion of uncertified, underpaid teachers.
- The **number of madrasahs more than doubled** between 2002 and 2012 (from 63,000 to 145,000) due to growth in the number of informal madrasahs, which were not formally registered, and therefore do not offer education on any ‘secular’ subjects.

COVID is likely to decrease private school enrolment:

- The COVID-19 economic shock is expected to cause strong declines in private enrolment**, as the current recession is more severe than the 1998 Asian financial crisis, which decreased private enrolment by 8%.
- Decline may be worse in urban areas**; in 1998, private enrolment fell by 16% in Jakarta, and continued to fall in the next year.
- During school closures, **private schools (especially those serving marginalized communities) in need were given grants**, and grant use rules were relaxed. Many **schools reported difficulty accessing funds**.

EDUCATION ACCESS AND OUTCOMES ARE LOW, ESPECIALLY FOR DISABLED STUDENTS OR STUDENTS FROM LOW-INCOME AREAS

| Causes of inequality |
|---|
| <ul style="list-style-type: none"> Income inequality: The four richest men are wealthier than the poorest 100m people combined, and the poorest citizens, particularly women, receive low wages and face work insecurity. Unequal infrastructure access: Citizens without electricity access are concentrated in a number of rural provinces Restricted land ownership: The majority of the land is owned by big corporations and wealthy individuals who are able to continue to benefit financially from ownership. Limited access to high-skilled and high-paid jobs: due to education system under funding and barriers to equal education access Limited education funding: Spending stagnated over the past decade and remained well below recommended levels for emerging economies in 2015, at 3.6% of GDP. Youth opportunities: Out of the 46m adolescents, nearly a quarter of 15 to19-year-olds are not in education, employment or training, and youth unemployment is around 15%. Unequal school access: 57% of school-aged children with disabilities are not in school, and junior secondary school children from poor households are 5 times more likely to be out-of-school. (e.g. Junior Secondary out-of-school rates range from 1.3% in Yogyakarta, an affluent city, to 22% in Papua, the country's poorest province.) Unequal ECD access: ECD enrolment ratio is smaller in lower income areas. E.g. ECD gross enrolment ratio is over 20% less in Papua Province. Insufficient digital skills and use: 80% of companies state that although basic digital skills are needed to use their products, many education providers lacked the skills needed to understand products. In addition, internet penetration (50%) is below the SEA average, and 66% percent of Indonesians are unbanked. High risk of tectonic activity: In 2006, over 600 people were killed by a tsunami in Java. |

Drivers of educational inequality across Indonesia:

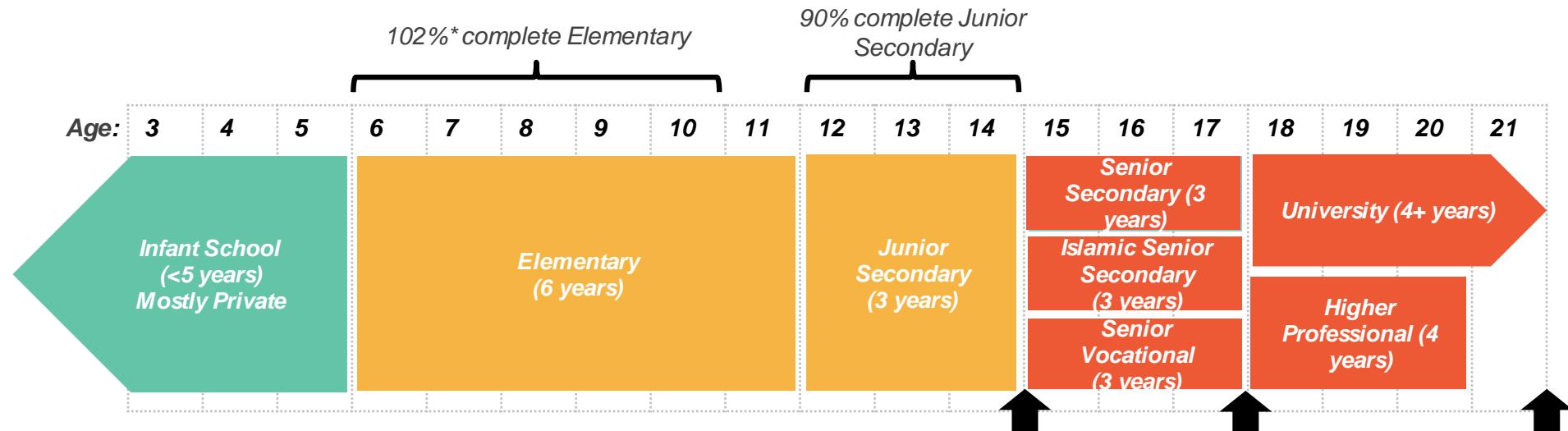
| | Agrarian | Religion | Ethnicity | Language | Poverty | Disability | Gender |
|---------------------------------------|----------|----------|-----------|----------|---------|------------|--------|
| Indonesia has high wealth disparities | | | | | | | |

Needs and issues

- Universal enrolment:** Indonesia aims to achieve universal enrolment by 2030 (including ECD), but around 4.4 million children and adolescents aged 7–18 years' old are still out of school.
- Workforce reform:** The government prioritizes developing a digitally competent workforce, has policies in place to support technology in schools, and runs initiatives that aim to improve the digital skills of low-income families and female entrepreneurs.
- Declining reading and maths proficiency:** In PISA 2015, less than half of 15-year-old students achieved a minimum proficiency level in reading and less than one third of them did so in maths. In PISA 2018, 70% of children could not demonstrate basic literacy.
- Low national and regional outcomes:** Student learning remains below the levels of other countries. The World Bank showed 55% of learners who complete school are functionally illiterate, compared with 14% in Vietnam and 20% across member countries of the OECD. Most students also do not meet Indonesia's national learning targets, or meet the passing score for Grade 12 national exams.
- Teacher capacity:** Teachers are trained in local colleges, which may not be up to date with new content, standards and curriculum, that have been developed at national level.
- Policies can be challenging to establish** across over 300 ethnic groups who speak over 300 different languages.

EDUCATION IN INDONESIA IS COMPULSORY FOR 6 YEARS OF PRIMARY SCHOOL AND 3 YEARS OF JUNIOR SECONDARY SCHOOL

The formal structure of the education system follows a 6-3-3-4 progression:



Certificate of Completion of Junior Secondary

- Certificate of Completion of Senior Secondary
- Certificate of Competency

- Undergraduate Degree
- Diploma of Higher Professional education

Key information:

Language of instruction: Indonesian (and local languages in elementary education)

Compulsory education: Elementary and Junior Secondary

Academic year: July to June

Key:

- = Compulsory education
- = Non-compulsory education
- = Mostly informal/private education

STRUCTURE OF THE EDUCATION SYSTEM | KEY INSTITUTIONS

Key bodies involved in education:

- The **Ministry of Education, Culture, Research and Technology** of the Republic of Indonesia (abbreviated: Kemendikbud-ristek or Kemdikbud-ristek) is responsible for early childhood education, primary education , secondary education, vocational education, and higher education, and cultural management, research, research and technology development.
- The Ministry is currently led by the **Minister of Education, Culture, Research, and Technology** (Mendikbudristek), Nadiem Makarim.
- The **structure of the Ministry has been revised numerous times in recent years**. In 2019, the Ministry consisted of the following units:
 - General Secretariat
 - Directorate General of Teachers and Education Personnel
 - Directorate General of Early Childhood Education, Basic Education, and Secondary Education
 - Directorate General of Vocational Education
 - Directorate General of Higher Education
 - Directorate General of Culture
 - Inspectorate General
 - Language Development and Development Agency
 - Research and Development Agency and Books
 - Expert Staff for Education and Culture Regulation

How the system works:

- Since 2003, with the **introduction of decentralization in the Indonesian education system**, teachers and principals have been given more influence and authority to manage educational practices.
- Despite efforts to de-centralize, **the school system is still centrally steered by the Ministry**, who are responsible for curriculum development, national school exams, and hiring teachers.
- The government began to decentralize the system alongside introducing a new, competency-based curriculum, and a School-Based Management policy which **allowed schools to conduct their own teaching practices, and curriculum delivery**, according to student and local needs.
- As part of this process, **schools were also encouraged to involve local communities** in activities to improve education quality.
- Research suggests Indonesia's **shift towards a decentralized system has been hindered by uneven teacher' quality, low commitment of teachers and principals, and poor parent and local society participation** in school committee programs.
- The local and central governments of Indonesia have committed to allocating **20 percent of their budgets to education** since 2009.
- Most of the **central government spending on education has been transferred to the local governments at the district level** to support the compulsory nine-year basic education (primary and junior secondary levels).
- The government **funds schools directly through a 'School Operational Assistance Program'**. This program was launched in 2005 to **encourage school autonomy managing their funds and expenses**. The amount of financial aid differs according to the number of students enrolled in a school.

MAJOR EDUCATION POLICIES AND KEY REFORMS

The Education Act (2003)

Following a decades-long dictatorship and highly centralized education system, a new Government started the democratization of Indonesia, and released a new Education Act to decentralize various functions of government and transfer them to locally elected district governments. The Act also introduced free and mandatory basic education, the commitment to spend 20% of the national budget on education, and gave schools much greater administrative autonomy. In present day, the school system is still centrally steered by the MoEC, who are responsible for curriculum development, national school exams, and hiring teachers. Local government are responsible for decisions regarding the financing and managing of primary and secondary education.

The Teacher Law (2005)

In an effort to improve education quality in Indonesia, in 2005 the government passed the Teacher Law, a comprehensive bill designed to raise the quality of teachers. The Law required all teachers to acquire a four-year degree and be certified by 2015, and offered teachers who obtained certification a professional allowance that would effectively double their salary.

National Education Standards (2005)

The MoEC defined the nation's first educational standards in the following eight areas: content, process, graduate competency, teacher standards, school facilities, education management, funding and assessment. It also mandated the establishment of a National Education Standards Board, who were tasked with preparing the detailed education standards and overseeing their implementation.

The Ministry of Education and Culture's Strategic Plan (2010 - 2014)

Set within a framework of major overall national plans in 2010, education was the second priority after public sector reform. The Ministry announced five missions that would serve as the basis of all educational programs: 1) improve availability of education, 2) improve affordability of education, 3) improve the quality and relevance of education, 4) improve equality in obtaining education, 5) improve the assurance/guarantee of obtaining education services.

Presidential Decree on Holistic Integrated Early Childhood Development (2013)

To strengthen children's readiness for school, the Government issued a policy framework to establish an early education centre in every village across the country, to continue to increase central and local government investment in ECD, and to integrate early learning with basic health services. So far, most centres are run by civil society actors.

State Budget Proposal (2019)

To move away from a predominately low-skilled labour force and prepare the nation for international economic competition, the MoEC pledged to spend around US\$36 billion for education in 2020. This amount is a 30% increase from 2015, but stays within 20% of total public spending mandated by the constitution. Around 60% of the budget was allocated to teachers' salaries and allowances.

THE EDTECH ECOSYSTEM IN INDONESIA

| Focus area | Country data |
|--|--------------|
| Access to electricity (% of population) (WB, 2019) | 98.9% |
| Internet users (% of population) (WB, 2019) | 47.7% |
| Secure Internet servers (per 1 million people) (WB, 2020) | |
| Fixed telephone subscriptions (per 100 people) (WB, 2019) | 1,877 |
| Smartphone users (% of population) (Newzoo, 2019) | 31.1% |
| Number EdTech start-ups (Tracxn, 2019) | 195 |
| Number of incubator and accelerator programs (Tracxn, 2019) | 42 |
| Proportion of primary schools with access to computers for pedagogical purposes (%) (WB, 2018) | 40.1% |
| Proportion of secondary schools with access to computers for pedagogical purposes (%) (WB, 2017) | 51.7% |
| Proportion of primary schools with access to Internet for pedagogical purposes (%) (WB, 2019) | N/A |
| Proportion of secondary schools with access to Internet for pedagogical purposes (%) (WB, 2018) | 61.4% |

Maturity of the EdTech ecosystem in Indonesia:

- **Government is committed to reform and open to partnership** – key driving role in education, with a new digitization agenda which includes building digital skills, improving internet access, improving teacher quality.
- **Ministerial support** – the Minister of Education (Nadiem Makarim) is a tech entrepreneur and is very pro innovation.
- **Government's ability to deliver** – despite commitment, execution is difficult, and scaling of equitable EdTech will require strong engagement with government.
- **Investment in human capital for tech** – new technology parks supported by universities will also drive innovation and local talent.
- **Infrastructure remains a challenge** – with low electrification and internet penetration rates.
- **Low digital skills** – in the general population, although youth population shows interest in digital skills.
- **Historical reluctance for consumer spending on education** – a cultural shift is required for mass market adoption of paid-for EdTech products.
- **Career prospects still very focused on natural resources** rather than digital and 21st Century Skills.

EDTECH MATURITY | THE MARKET IS GROWING FASTER THAN ITS INFRASTRUCTURE

| Infrastructure | Med-Low | Education Policy & Strategy | Med-High | Resources & capacity | Med | Market & buyers | Med | Supply | Med-Low |
|---|---------|--|----------|--|-----|--|-----|---|---------|
| <ul style="list-style-type: none"> Although infrastructure is improving, Indonesia is not ready to fully scale EdTech, and has low electrification and internet penetration rates for a low-income nation, particularly in remote areas. Indonesia's internet is more affordable, but of poorer quality, than regional averages. There is high use of computers among the student population. Low-tech options and mobile phones are also widely accessible and used to improve EdTech reach. | | <ul style="list-style-type: none"> The government is focused on creating a digital workforce, universal internet access, and improving the digital skills and resources of low-income families and female entrepreneurs. Current MOEC digital initiatives include a teaching at the right level platform, improving teacher quality and creating a marketplace for school operation needs. The MOEC is working to integrate ICT into all learning, and reach more learners through low-tech methods. Decentralized government funding and structures have limited EdTech sector growth. | | <ul style="list-style-type: none"> Many EdTech start-up founders are generalist entrepreneurs who may lack education sector expertise. There is an emerging for- and non-profit EdTech start-up sector, which is run by, and in partnership with, influential local and global corporate, government and financial bodies. VC investment is driving improvements in local talent. One major supplier – Ruangguru dominates the sector and investor funding. New technology parks are being developed through universities to incubate Indonesian tech start-ups. | | <ul style="list-style-type: none"> Local government partnership is key to scaling EdTech in schools. Although central government cannot endorse vendors, it manages a national online procurement platform. Most suppliers prioritize business-to-customer EdTech and market products using social media. There is a cultural reluctance to spend on education. The market is forecast to grow but is inequitable and concentrated in the most populous region. Many customers lack digital skills to trial products. | | <ul style="list-style-type: none"> There is an online teacher PD and EdTech procurement platform. EdTech mainly used in high school, higher ed, and corporate. Ruangguru dominates the market as the largest SEA EdTech organization. Firms rely on free-trials to maximize outreach. Many schools use LMS and live-classrooms. During COVID-19 school closures, specific technology providers were appointed by the MoEC to provide free access to online learning, including Ruangguru. | |

INFRASTRUCTURE

Electricity

- The overall rate of electrification** in Indonesia is improving.
- Recent ambitious government plans have extended electricity access** – the number of people without access declined from around 100 million in 2000 to around 23 million in 2016, even with a population increase of almost one-quarter.
- Citizens remaining without access in Indonesia are concentrated in a number of provinces** including East and Central Java, East Nusa Tenggara and Papua.

Internet

- Internet penetration (50%) is below the Southeast Asia average (63%)** but more affordable and roughly 50% of those in neighbouring countries.
- Several remote areas in Indonesia are not yet connected to the internet** - while internet penetration rate has risen, which can make it challenging to distribute content.
- The quality of internet connection (measured by download speed) is generally poor** and fixed broadband penetration is low, which may constrain EdTech use.
- EdTech is not accessible to all learners** – the system is not equipped to offer tech at scale. Many rural or lower income students lack connectivity or tech device access.

Telecoms and tech

- Low-tech options are more widely available** – 95% of students are able to access TV.
- There are fairly high rates of TV access in rural areas** – 96.6% of learners are able to access TV in urban areas, compared to 92.3% in rural areas.
- Mobile phones are being used to improve product reach** – 67% of students use smartphones in class, and 81% use them for homework.
- Indonesia has the highest number of school IT labs globally**, used by 40% of students.
- Indonesian students are likely to use computers** and rank second in the world, behind the USA, for desktop computer use (54%) and laptop use for homework (84%).

| Focus area | Country data |
|---|--------------|
| Access to electricity (% of population, WB 2018) | 98.5 |
| Access to electricity, rural (% of rural population, WB 2018) | 96.8 |
| Access to electricity, urban (% of urban population, WB 2018) | 99.9 |
| Time required to get electricity (days) (WB 2019) | 32.2 |
| Renewable electricity output (% of total electricity output, WB 2015) | 10.7 |
| Fixed broadband subscriptions (WB 2019) | 2.96m |
| Fixed broadband subscriptions (per 100 people, WB 2019) | 9.3 |
| Individuals using the internet (% of population, WB 2019) | 47.7 |
| Secure internet servers (per 1 million people, WB 2019) | 1,683.8 |
| Fixed telephone subscriptions (WB 2019) | 9.67m |
| Fixed telephone subscriptions (per 100 people, WB 2019) | 3.6 |
| Smartphone users (% of population) (Newzoo, 2019) | 31.1% |

EDUCATION POLICY AND STRATEGY

| <i>Key policies and initiatives</i> | <i>Opportunities</i> | <i>Constraints</i> |
|---|--|--|
| <ul style="list-style-type: none"> ▪ The Minister of Education (Nadiem Makarim) is a tech entrepreneur and is very pro innovation. ▪ A National Council was formed in 2006 to incorporate ICT into Indonesia's education system and made responsible for providing ICT infrastructure and content for e-learning at all levels. ▪ Policies are in place that support the use of technology in schools such as computer based national standardized tests and equivalency programs (EPs) for out-of-school children, and adult citizens seeking remedial education. ▪ The MoEC developed a platform for online, professional development to support teachers remote learning methods and co-create and share planning and resources online. ▪ The Government is prioritizing upskilling a future digital workforce – in 2019, \$421.9m was allocated to upskill the future workforce with digital skills. ▪ Government cash assistance programs support families to purchase EdTech products and give low-income families "Smart Cards" loaded with under IDR 1m (~\$75) to spend on education resources and subscriptions. This has been key to the scaling of some EdTech, such as Zenius Education (video based learning). | <ul style="list-style-type: none"> ▪ The MoEC receives an annual budget from central government to improve the EdTech infrastructure and meet the Universal Service Obligation for Schools (2015), which mandates connecting all schools to the internet. ▪ The Government is attempting to improve equal access to infrastructure – and completed the Palapa Ring in 2019; a \$1.5 billion network of undersea fiber-optic cables, to provide fiber-optic broadband internet to all regions of Indonesia. ▪ The MoEC is starting to use low-tech methods to reach more learners and launched educational TV programs in lockdown from early childhood to senior high school learning in lockdown. ▪ The Government is looking to support female entrepreneurship and digital confidence - UK-ID Tech Hub, an initiative by the UK Government to support the growth of the Indonesian Tech Ecosystem, recently partnered with the Women's Empowerment and Child Protection Ministry to launch HERfuture, an online program to support women entrepreneurs to use technology to support their businesses. | <ul style="list-style-type: none"> ▪ The Government's commitment to tech has not translated into funding - spending on ICT in education is significantly lower than in other sectors, and countries. ▪ Government policy does not yet cover basic consumer protection – data protection legislation has been under consideration for many years. ▪ Private sector partnerships often fail to materialize. Given the decentralized nature of Indonesia's education system, to scale EdTech, communicating and negotiating with many different government local and central stakeholders is required, which can be very challenging for new companies to do if they do not already have experience the sector. ▪ The impact of local EdTech implementation varies. Although central government creates EdTech standards that are implemented through the decentralized government, no proven methods for successfully scaling EdTech across regions have been found. ▪ The MoEC is not incentivized to invest in private products as it is mandated to deliver EdTech resources, making it a potential competitor. ▪ School connectivity initiatives are not always successful – The Universal Service Obligation project in 2015 aimed to install internet in schools in remote areas, but reached approximately 1,500 schools. |

RESOURCES AND CAPACITY

| | |
|-------------------------------|--|
| Human capital | <ul style="list-style-type: none"> ▪ The majority of founders are male, highly-educated, serial entrepreneurs and completed graduate studies overseas, and either founded a start-up, worked in one or invested in one. Only 35% percent of companies had at least one female founder. ▪ Most founders are new to the sector or lack sector knowledge - almost two-thirds do not have experience in education or EdTech, and many claim to lack knowledge of sustainable business models. ▪ There is a shortage of qualified, experienced talent in IT, maths and science, and a shortage of 9m workers is forecast by 2030. There are not enough computer science graduates, and only 16% are hired. ▪ Talent shortages and strict restrictions on foreign human capital has led to offshore recruitment, particularly in India. |
| Networks and community | <ul style="list-style-type: none"> ▪ The nation hosts over 195 for-and non-profit EdTech startups and 42 incubator and accelerator programs run by diverse bodies such as Google, major telecom companies, the Indonesian Stock Exchange, and the national government's Creative Economy Body (not all of these will be within the scope of this review). ▪ Indonesian and UK Government have partnered to develop the tech ecosystem in Indonesia and established the UK-ID Tech Hub, a technology and innovation hub established to support the growth of the Indonesian Tech Ecosystem. |
| Investment capital | <ul style="list-style-type: none"> ▪ EdTech companies find it challenging to secure investment as companies focus on social impact, which can deter investors, and less than 5% of users pay after the free trial period. ▪ Investment in the sector is low - start-ups received \$200m in 2019; significantly less than India (\$2.5bn). ▪ One start-up receives the majority of funding – <i>Ruangguru</i> (learning management systems and marketplace for private tutors) received \$150m in 2019, and there were seven additional cases of funding for other companies over \$23m. ▪ Over 50% of companies acquire funding from more than one source as funding doesn't fulfil their capital needs. The most common source is from angel investors, followed by VC companies. ▪ Most companies are not yet at the profit-generating stage – 89% generate revenue, of which only 27% are profitable. ▪ Private investment has risen in the last five years, and is more focused on K-12 which secured more funding than any other type in 2020. Key investors include: Venturra Capital, United Overseas Bank, Venture Management, CyberAgent Ventures, East Ventures, and PT Insight Investments. |

| Focus area | Country data |
|--|--------------|
| Adult literacy rate (% of people ages 15 and above, WB 2018) | 95.7 |
| Female share of employment in senior-middle management (%) (WB 2010) | 19.4 |
| Companies with female top manager (% of companies) (WB 2015) | 22.1 |
| Companies with female participation in ownership (% of companies, WB 2015) | 22.1 |
| Number of new business registered (WB 2016) | 58,426 |
| Number Edtech StartUps (Tracxn 2019) | 195 |
| Number of Incubator and accelerator programs (Tracxn 2019) | 42 |
| Cost of business start-up procedures (% of GNI per capita, WB 2019) | 5.7 |

MARKET AND BUYERS

| | |
|------------------------------------|--|
| Role of government as buyer | <ul style="list-style-type: none"> ▪ Procurement occurs on an online platform for local government, managed by central government where schools choose from approved suppliers. If local governments purchase from the e-catalogue, they avoid a full tender process. Companies reportedly find listing on the platform challenging as compatibility requirements are clearly defined or consistent with a diverse marketplace. ▪ Regional governments are seen as powerful partners to gain access to schools – E.g. Since 2014, Ruangguru has negotiated B2G direct sales through relationships with government relation officers in 32 out of 34 provinces. ▪ Central Government cannot endorse vendors to work with local governments but influences the sector by arranging events where providers can meet local government, teachers and parents. |
| Role of consumer as buyer | <ul style="list-style-type: none"> ▪ Products typically target high school and higher education – fewer products exist in the primary sectors, due to the barriers targeting younger students. ▪ Consumer-focused EdTech is expected to be larger than business-to-business EdTech after 90% of companies changed from only B2C (online tutoring platforms) to include B2B (e.g. Learning Management Systems) to increase revenue and customer acquisition. ▪ 66% percent of Indonesians are unbanked so providers need to integrate new payment technologies quickly. ▪ Teachers and parents are less sceptical about EdTech as a result of the COVID crisis increasing reliance on online and distance education. |
| Market conditions | <ul style="list-style-type: none"> ▪ The market size of the EdTech industry is forecast to continue to grow - it was estimated to be at \$112m in 2019 and is expected to grow at 24.9% annually. ▪ Market coverage is inequitable and concentrated in the Jakarta region on Java, Indonesia's most populous island. Companies are deterred from smaller, lower income markets, or areas with poor infrastructure. ▪ EdTech is largely scaled through social media by using existing social media platforms to promote products or facilitate learning. ▪ The majority of products use a 'freemium' pricing strategy – 62% of companies use freemium pricing or offer free-trials to maximize their outreach and attract new users. ▪ Digital illiteracy poses a marketing challenge - over 80% of companies state that although basic digital skills are needed to use their products, many education providers lacked the skills needed to understand products, and therefore their willingness to invest. |

SUPPLY

Trends

- **There are currently two popular types of EdTech products** which include platforms that offer learning management systems (LMS) for teacher-student collaboration, and platforms with interactive live teaching tools, such as G-Suite for Education, Microsoft for Education, Zoom, etc.
- **EdTech products and services typically target high schools and higher education institutions, and professionals** - few or no products exist in the primary or pre-primary sectors, or in technical/vocational education, due to the barriers in targeting younger students.
- **Companies are finding alternative solutions to connectivity challenges** by offering pre-loaded features that do not require internet access.
- **Companies tend to target a breadth of product and service offerings** rather than fewer products and services with greater depth.
- During COVID-19 school closures, **ten providers were appointed by the MoEC to provide free online learning**, including Ruangguru and Zenius. **Other platforms commonly used to support learning through lockdown** include: Google Suite Education, Smart Class, Microsoft Teams, Quipper School, and Kelas Pintar.

Opportunities

- **EdTech companies do not appear to target critical learning gaps** - less than 15% of companies offer content focused on mathematics, science and reading (areas where Indonesia performed poorly in PISA international tests).
- **There is rising demand for more objectivity and connectors in the sector** - The Indonesian EdTech Association (INET) is a new non-profit consortium to bridge the gap between companies, government, students, and schools. Their impact is yet to be measured, and they have also been criticized for high membership fees and failing to include many key sector players.

| Focus area | Country data |
|--|--------------|
| High-technology exports (current US\$, WB 2019) | 6.3b |
| High-technology exports (% of manufactured exports, WB 2019) | 8.1 |
| ICT goods exports (% of total good exports, WB 2019) | 2.8 |
| ICT good imports (% of total good imports, WB 2019) | 8.0 |
| ICT service exports (% of service exports, BOP, WB 2017) | 4.0 |
| ICT service exports (BoP, current US\$, WB 2017) | 1.1b |
| Medium and high-tech exports (% manufactured exports, WB 2018) | 28.7 |

CASE STUDY | MALAYSIA



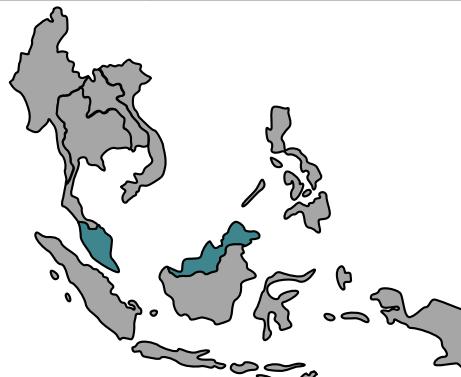
MALAYSIA - OVERVIEW OF ENABLING ENVIRONMENT FOR EDTECH

- Good infrastructure** – including electricity, connectivity and devices, as well as high digital literacy.
- Limited government policy support** – EdTech is strongly focused on devices and infrastructure rather than directly considering quality of pedagogy and learning outcomes.
- EdTech products are focused on post K-12 sector** – especially higher education and professional education.
- Human capital is weak** – compared to other markets in terms of innovation, entrepreneurship and overall activity.

| Infrastructure | High-Med | Education Policy & Strategy | Med |
|--|----------|---|---------|
| <ul style="list-style-type: none"> Malaysia enjoys near 100% electrification and innovative methods are being trialled to bring electricity to the nations most remote areas. Although fixed broadband is faster, particularly when internet traffic increases, more people connect using a mobile device and mobile learning is forecast to increase significantly. Most of Malaysia is digitally literate and a majority of students own electronic devices. | | <ul style="list-style-type: none"> The MoE is working to provide all schools with internet access and digital devices, to improve ICT use in schools, and to enhance the national e-learning infrastructure. Government strengthening of the private sector, and investment in national connectivity and digital innovation, is forecast to continue to influence market growth. There is appetite for revised government policies that encourage innovation and investment. | |
| Resources & capacity | Med-Low | Market & buyers | Med-Low |
| <ul style="list-style-type: none"> To address need for outsourcing technical tech workers overseas, the Government is seeking to move away from a labor-based workforce, and has pledged to invest in creative and innovative industries to create 1.5m innovation-based, highly skilled jobs by 2020. The EdTech sector is dominated by domestic companies with low global influence, with low entrepreneurship drive. The EdTech start-up ecosystem is growing. Malaysia hosts over 140 local start-ups, and 28 incubator and accelerator programs. | | <ul style="list-style-type: none"> Tertiary providers and students are the biggest consumers in the sector, and corporate employee training is forecast to be the leading form of EdTech in the future. Private K-12 schools in urban areas have become key buyers of EdTech to encourage student enrolment. The end users of EdTech products have a preference towards products that develop 21st century skills and whole child development, but are price sensitive and prefer to choose custom features that deliver more value over time. The digital learning market is expected to flourish. | |

MALAYSIA IS WORKING TO TACKLE INCOME INEQUALITY AND IS FORECAST TO BECOME A HIGH-INCOME ECONOMY

| Country Profile | | |
|-----------------------------|-------------------|-------------------------------------|
| Population (WB, 2019) | Total | Annual growth |
| | 31.9 million | 1.3% |
| Youth population (WB, 2019) | Aged 14 and under | Aged 15 - 24 |
| | 24% | 17.5% |
| Settlement (WB, 2019) | Urban | Rural |
| | 76.6% | 23.4% |
| Health (WB, 2019) | Life expectancy | Infant mortality (per 1,000 births) |
| | 76 | 7.3 |
| GDP (WB, 2019) | Total (\$) | Per Capita (\$) |
| | 364.7 billion | 11,414.2 |
| | | Growth (% annual) |
| | | 4.3% |



Malaysia lies just north of the Equator across the South China Sea and is divided into two geographical sections: West Malaysia, bordering Thailand on the Malay Peninsula, and East Malaysia on the island of Borneo.

Context

- Malaysia is **expected to transition economy to a high-income economy** from an upper middle-income by 2024.
- The **economy is on an upward trajectory** and has grown by 5.4% since 2010.
- Malaysia is a **leading exporter of electrical appliances, and electronic parts**. It diversified from an agriculture and commodity-based economy to one that hosts robust manufacturing and service sectors, since gaining independence in 1957.
- Malaysia's **income inequality is high compared to other ASEAN countries** - although incomes have increased, the gap across groups have also increased, and the government is working to support low-income households, mainly in the form of cash transfers.
- **SMEs make up 99% of the nation's businesses** and employ 66.2% of the workforce.

Impact of COVID-19

- The pandemic has had a major economic impact on Malaysia particularly on its vulnerable households, due to reduced export-led growth.
- Global lockdown measures also caused significant financial constraints due to plunging oil prices, reduced tourism, and further strains on the country's existing heavy debt problem.
- Within a week after non-essential business closed, 70% of SMEs reported a **50% drop in business**. Between January and November 2020, **100,000 workers lost their jobs**.
- The nation's **near-term economic outlook will be more dependent than usual** on government measures to **sustain private sector activity**.

MALAYSIA AIMS TO IMPROVE LEARNING EQUITY AND ENROLMENT AND IS COMPETING WITH A THRIVING INTERNATIONAL PRIVATE SCHOOL SECTOR

| Education data | | | | |
|------------------------------|--|--|-------------------------------------|---|
| Education Spending | 17.9% of total government expenditure (WB, 2019) | | | |
| Primary | No. students (WB, 2017) | % of students in private school (WB, 2017) | No. teachers (% trained) (WB, 2019) | Student to trained teacher ratio (WB, 2017) |
| | 3.1m | 11.8% | 235.3k (96.7%) | 11.8 |
| Secondary | No. students (WB, 2019) | % of students in private school (WB, 2019) | No. teachers (% trained) (WB, 2019) | Student to trained teacher ratio (WB, 2018) |
| | 2.6m | 9.3% | 228.6k (93.4%) | 12.2 |
| Total enrolment (% of total) | Pre-primary (Female) (WB, 2019) | Primary (Female) (WB, 2014) | Secondary (Female) (WB, 2018) | |
| | 98% (100%) | 100% (100%) | 72% (75%) | |
| PISA score (OECD, 2018) | Reading (average) | Mathematics (average) | Science (average) | |
| | 415 (487) | 440 (489) | 438 (489) | |

| Major education challenges |
|---|
| <ul style="list-style-type: none"> Although pre-school enrolment improved from 72.4% in 2010 to 84.3% in 2017, UNICEF estimate 13,500 additional childcare centres are needed to provide universal childcare. Although the enrolment rate has increased in all grades since 2013, enrolment drops by 10% between lower and upper secondary. Boys are at higher risk of dropping out of primary (2.4% vs 1.9% of girls), and secondary level (7.5% vs 3.7% of girls), and girls are likely to complete one more school year (13 years), and perform better. Many indigenous children and learners with SEND do not go to school as many schools are not inclusive. Many parents send their children to private, international schools. Approximately 50% of international school students are now local, and enrolment has increased by 87% since 2012. Poor teacher quality and training, highly centralized systems, rigid curricula and lack of school autonomy are regarded as key barriers to improving the quality of learning outcomes. Malaysia ranks poorly in international tests; some countries with lower education budgets rank higher. |

| Government response to COVID-19 |
|---|
|  School closure: First closed on March 18, 2020, and closed again on November 9 as cases spiked.  School reopening: Primary and secondary schools returned in phases from July 15 and are currently being phased back in after the second wave.  Areas of support: A revised digital learning platform, with 1.7m monthly student and educator users, which is regarded by WEF to have been effective in making up for a loss of learning.  Funding: A fiscal package equal to \$4.86 billion. |

MORE LOCAL CHILDREN ARE ATTENDING MALAYSIA'S GROWING NUMBER OF ENGLISH-SPEAKING, PRIVATE INTERNATIONAL SCHOOLS

Private school popularity:

- **Rules around local children attending international schools have changed significantly in the last decade.** Prior to 2007, Malaysians weren't allowed to attend international schools. Between 2007 and 2012, there was an enrolment cap for locals at 40%.
- **Demand for English speaking international school providers is growing.** According to Relocate Magazine (2019), since Malaysia's government removed a 40% limit on international schools in 2012, the total number of English-medium international schools in the country has increased by 75%, and student enrolment has increased by 87%.
- **Increasing numbers of local Malaysian children are now attending the country's international schools** and approximately 50% of all international-school students in Malaysia are now locals. For this reason, several schools are expanding their campuses to respond to the demand, and more schools are opening.
- **After Singapore, Malaysia has the most developed private education market in Southeast Asia.** It has a long history of establishing private higher education institutions and generating significant investments from corporations and private equity. Both Malaysia and Singapore are also benefiting from the increased popularity of international schools, which make up a significant portion of the private market.
- **Attending schools abroad is popular in Malaysia.** After Greater China, South East Asia is the second largest market of students leaving for Western countries and the majority of students come from Malaysia.
- **Kuala Lumpur, which currently has 22% of Malaysia's international schools,** is home to the vast majority of its premium, private international schools.

Examples of low-cost private school fees:

- A report by International Schools Database (2020) found **Kuala Lumpur is the second most affordable city in Asia for international education**, after Phnom Penh, Cambodia, and school fees range from \$2,492 to \$23,542 a year.
- Low-cost private school index Celcom has also released **a list of some of the cheapest, reputable private schools in Malaysia in 2021**. Examples of private school fees from two schools on this list are provided below as an indication of fee levels:

| International School Fees | | | | |
|--------------------------------------|-----|-----------------|-----------------|-----------------|
| <i>Heritage International School</i> | | Pre-Primary | Primary | Secondary |
| | RM | N/A | 17,965 - 18,500 | 21,475 - 24,235 |
| | USD | N/A | 4,363 – 4,493 | 5,216 – 5,886 |
| <i>MAS International School</i> | | Pre-Primary | Primary | Secondary |
| | RM | 10,000 - 12,000 | 14,250 –18,750 | 21,000 – 30,000 |
| | USD | 2,428– 2,914 | 3,461 – 4,554 | 5,100 – 7,286 |

DESPITE IMPROVING ENROLMENT THE SYSTEM IS NOT EQUIPPED TO SERVE INDIGENOUS AND DISABLED CHILDREN

| Causes of inequality |
|--|
| <ul style="list-style-type: none"> Income inequality has increased and is high relative to other East Asian countries. ECD supply: Limited supply of day-care placements are a concern. UNICEF (2020) estimate 13,500 centres are needed to provide universal childcare by 2020. Low secondary enrolment: Although the enrolment rate has increased at every grade since 2013, the enrolment rate drops by 10% between lower and upper secondary education. Barriers to inclusion: Although the Ministry reported that enrolment of children with disabilities increased to 74,694 in 2017, from 56,406 in 2013, UNICEF (2020) reported concerns that inclusive education is not provided in practice, and many children with disabilities miss out on schooling as many schools are inadequately equipped. Exclusion of indigenous children: A UN report (2019) revealed that children of Orang Asli communities lag far behind in access to education and in learning outcomes, and have significant rates of drop out after primary school. Performance of boys: In 2017, the expected years of schooling among girls was one year higher compared to males (13 years). It was also found that boys showed a higher risk of dropping out of primary (2.4% compared to 1.9% of girls), and secondary schooling (7.5% compared to 3.7% of girls). In 2018 PISA assessments, girls also perform better than boys with a statistically significant difference of 26 points. Increased international school presence: More affluent parents often send children to private schools. The number of English-medium international schools in Malaysia has increased by 75% since 2012, and enrolment has increased by 87%. Around 50% of international school students are from local families. |

Drivers of educational inequality across Malaysia:

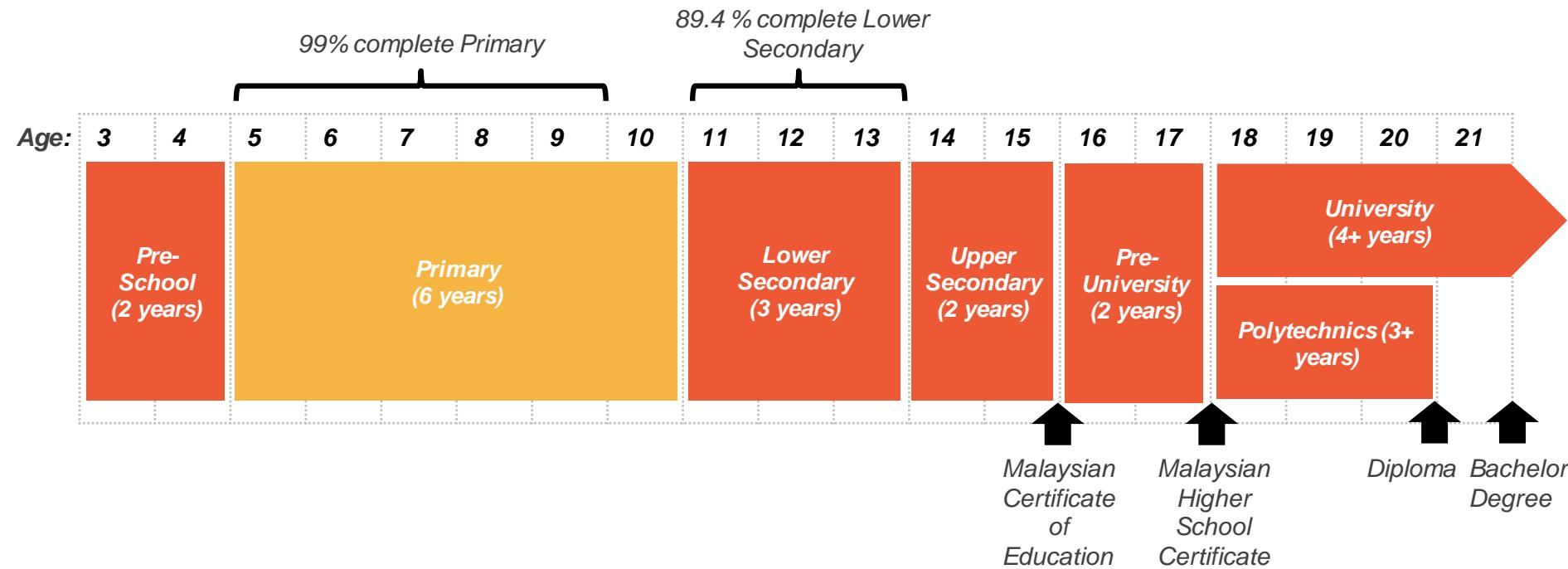
| | Agrarian | Religion | Ethnicity | Language | Poverty | Disability | Gender |
|--|----------|----------|-----------|----------|---------|------------|--------|
| Indigenous populations are not well catered to | | | | | | | |

Needs and issues

- Focus on digital education:** The Government is focused on providing affordable and convenient digital education to overcome a shortage of quality education.
- High investment and poor outcomes:** Although Malaysia progressed from the bottom 30% to the middle 30% of PISA participating countries between 2012 and 2018, students performed below average in all subjects, with some countries that spend less on education ranking considerably higher.
- Teacher capacity:** World Bank (2013, 2011) found that poor teacher quality and training was a key barrier to improving the quality of learning outcomes, and found students were falling behind because they lacked the opportunity to develop higher order thinking skills.
- System structure:** The World Bank also found that the highly centralized system, rigid curricula and lack of school autonomy, were also attributed to slow improvement outcomes.
- New family and community priorities:** The rising population and increasing rates of affluence are creating demand for a broad range of education solutions, but price and affordability remain a major factor in their decision to choose solutions.

ONLY PRIMARY SCHOOL EDUCATION IS COMPULSORY IN MALAYSIA

The formal structure of the education system follows a 2-6-3-2-2-3/4 progression:



Key information:

- Language of instruction:** Bahasa Melayu
- Compulsory education:** Primary
- Academic year:** January to November

- Key:**
- Yellow square = Compulsory education
 - Orange square = Non-compulsory education
 - Green square = Mostly informal/private education

MAJOR EDUCATION POLICIES AND KEY REFORMS

| | |
|--|--|
| Malaysia Education Blueprint (2006 – 2010) | Launched by the Government, the first national education Blueprint aimed to address a number of obstacles identified as high priority, and detailed a roadmap to: establish a national Pre-School Curriculum, increase school autonomy and shift away from a centralized education structure, set up 100 new classes for students with special needs, increase the percentage of single-session schools to 90% for primary and 70% for secondary, and decrease class sizes from 31 to 30 students in primary, and 32 to 30 in secondary by 2010. |
| Cluster Schools of Excellence initiative (2007) | The first of many government activities laid out by the 2006 – 2010 Blueprint aimed at encouraging more school autonomy at the grassroots level, and slowly moving away from a centralized education structure. Cluster leader schools were made responsible for delivering school development and support activities in their districts, and were selected based on excellence and expertise in a specialist academic and extra-curricular area. Cluster members were selected based on geographic location. |
| National Pre-school Curriculum (2010) | An initiative by the Ministry to standardize and streamline the quality of public and private pre-schools across the country. Learning goals outlined by the curriculum are focused on nurturing students to reach their full potential in all aspects of holistic development with a focus on science and technology, communication, spirituality, attitude and values, humanities, grooming and physical development and aesthetics. |
| Malaysia Education Blueprint (2013 – 2025) | Launched in 2013, and covering pre-school to post-secondary education, the Education Blueprint is country's main contemporary education policy reform document. It sets out an ambitious target to transform the education system so that Malaysia ranks among the top third of countries in international indices, such as the Program for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) by 2025, from its 2012 positions in the bottom quartile. The blueprint highlights aspirations to ensure universal access and full enrolment of all children from pre-school through to upper secondary school level by 2020; to be in the top third of countries in international assessments, and to ensure that minority groups and students with physical or learning disabilities are provided with necessary provisions for conducive and supportive learning. Though the plan details highly centralized plans for reform, there is a perception a 'one-size-fits-all' policy may be ill-suited to such a diverse country, and a more customized approach may be necessary to achieve reform objectives. |
| Establishment of the Education Performance and Delivery Unit (2013) | The primary role of the Unit is to facilitate, support, and deliver the Ministry's vision in transforming Malaysia's education system through the Education Blueprint for 2013-2025. The unit sets to effectively deliver strategies, oversee implementations, manage interdependencies, and introduce new approaches to propel Malaysia's education system to become globally competitive. |

EDTECH MATURITY | AN EMERGING SECTOR AND DIGITALLY LITERATE WORKFORCE HAS LOW INFLUENCE IN THE GLOBAL MARKET

| Focus area | Country data |
|--|--------------|
| Access to electricity (% of population) (WB, 2019) | 100% |
| Internet users (% of population) (WB, 2019) | 84.2% |
| Secure Internet servers (per 1 million people) (WB, 2020) | 7,494 |
| Fixed telephone subscriptions (per 100 people) (WB, 2019) | 23.3 |
| Smartphone users (% of population) (Newzoo, 2018) | 57.5% |
| Number EdTech start-ups (Tracxn, 2019) | 130 |
| Number of incubator and accelerator programs (Tracxn, 2019) | 28 |
| Proportion of primary schools with access to computers for pedagogical purposes (%) (WB, 2017) | 100% |
| Proportion of secondary schools with access to computers for pedagogical purposes (%) (WB, 2018) | 92.3% |
| Proportion of primary schools with access to Internet for pedagogical purposes (%) (WB, 2019) | 92.2% |
| Proportion of secondary schools with access to Internet for pedagogical purposes (%) (WB, 2018) | 96.3% |

Maturity of the EdTech ecosystem in Malaysia

- **Good infrastructure** – including electricity, connectivity and devices, as well as high digital literacy.
- **Limited government policy support** – EdTech is strongly focused on devices and infrastructure rather than directly considering quality of pedagogy and learning outcomes.
- **EdTech products are focused on post K-12 sector** – especially higher education and professional education.
- **Human capital is weak** – compared to other markets in terms of innovation, entrepreneurship and overall activity.

EDTECH MATURITY | AN EMERGING SECTOR AND DIGITALLY LITERATE WORKFORCE HAS LOW INFLUENCE IN THE GLOBAL MARKET

| Infrastructure | High -Med | Education Policy & Strategy | Med | Resources & capacity | Med -Low | Market & buyers | Med - Low | Supply | Med |
|---|--------------|---|-----|--|-------------|---|--------------|--|-----|
| <ul style="list-style-type: none"> Malaysia enjoys near 100% electrification and innovative methods are being trialled to bring electricity to the nations most remote areas. Although fixed broadband is faster, particularly when internet traffic increases, more people connect using a mobile device and mobile learning is forecast to increase significantly. Most of Malaysia is digitally literate and a majority of students own electronic devices. | | <ul style="list-style-type: none"> The MoE is working to provide all schools with internet access and digital devices, to improve ICT use in schools, and to enhance the national e-learning infrastructure. Government strengthening of the private sector, and investment in national connectivity and digital innovation, is forecast to continue to influence market growth. There is appetite for revised government policies that encourage innovation and investment. | | <ul style="list-style-type: none"> To address need for outsourcing technical tech workers overseas, the Government is seeking to move away from a labor-based workforce, and has pledged to invest in creative and innovative industries to create 1.5m innovation-based, highly skilled jobs by 2020. The EdTech sector is dominated by domestic companies with low global influence, with low entrepreneurship drive. The EdTech start-up ecosystem is growing. Malaysia hosts over 140 local start-ups, and 28 incubator and accelerator programs. | | <ul style="list-style-type: none"> Tertiary providers and students are the biggest consumers in the sector, and corporate employee training is forecast to be the leading form of EdTech in the future. Private K-12 schools in urban areas have become key buyers of EdTech to encourage student enrolment. The end users of EdTech products have a preference towards products that develop 21st century skills and whole child development, but are price sensitive and prefer to choose custom features that deliver more value over time. The digital learning market is expected to flourish. | | <ul style="list-style-type: none"> EdTech mainly used in tertiary, professional, and private k-12 institutions in urban areas There has been a shift towards delivering products that offer sophisticated technologies (e.g. AR), online classrooms, data analytics and reporting, and collaborative student activities. There is rising demand for quality school-age digital learning resources, and holistic K-12 student learning and workforce training products. Most EdTech is locally devised and the market is expected to show intense competition once global companies start to enter the market. | |
| | | | | | | | | | |

INFRASTRUCTURE

Electricity

- Peninsular Malaysia enjoys near 100% electrification.
- A limited number of regions are without access to electricity and located in highly inaccessible rural locations.
- The Government is trialling a range of solutions to achieve 100% electrification by 2025, from grid connections to innovative, new solar-hybrid power generation programs.
- Singapore is scheduled to import 100 megawatts (MW) of electricity from Malaysia for two years as part of an experimental, renewable energy sharing program. This will make up about 1.5% of Singapore's peak electricity demand.

Internet

- Household internet penetration rates improved from 87% to 90.1% between 2018-19.
- Recent increases in internet traffic have slowed internet speeds - following Movement Control Orders imposed by the pandemic, there has been a 15% increase in internet traffic, and download speeds are reportedly much lower than those reported by service providers.
- More people in Malaysia connect to the internet using a mobile device and a mobile data plan than by a computer with a fixed broadband connection.
- Fixed broadband is faster and more reliable than 4G connection which is slow compared to neighbouring countries. Broadband is also harder to achieve in remote areas.

Telecoms and tech

- A large proportion (90.1%) of the population is technologically literate due factors such as long-term, pervasive internet penetration, and an established e-commerce industry.
- Mobile phone learning is forecast to become the next major trend due to continued increase in internet penetrations and increased smartphone use.
- Around 63.1% of students in Malaysia own electronic devices – of that figure, 6% have personal computers, 9.3% have laptops, 5.8% have tablets and 46.5% have smartphones.
- This is considerably lower in some rural areas such as Klang Valley, where eight out of ten students are without access to computer or laptop.

| Focus area | Country data |
|---|--------------|
| Access to electricity (% of population, WB 2018) | 100 |
| Access to electricity, rural (% of rural population, WB 2018) | 100 |
| Access to electricity, urban (% of urban population, WB 2018) | 100 |
| Time required to get electricity (days, WB 2019) | 24 |
| Renewable electricity output (% of total electricity output, WB 2015) | 10 |
| Fixed broadband subscriptions (WB 2019) | 5.92m |
| Fixed broadband subscriptions (per 100 people, WB 2019) | 9.3 |
| Individuals using the internet (% of population, WB 2019) | 84.2 |
| Secure internet servers (per 1 million people, WB 2019) | 6,723.9 |
| Fixed telephone subscriptions (WB 2019) | 7.4m |
| Fixed telephone subscriptions (per 100 people, WB 2019) | 23.3 |
| Smartphone users (% of population, Newzoo 2018) | 57.5% |

EDUCATION POLICY AND STRATEGY

| <i>Key policies and initiatives</i> | <i>Opportunities</i> | <i>Constraints</i> |
|--|---|---|
| <ul style="list-style-type: none"> ▪ The Government is focused on providing affordable and convenient digital education to overcome a shortage of quality education. ▪ The MoE has pledged to improve ICT in Malaysia and digitalize education, through new initiatives to digitalize textbooks, and through a new online education platform. ▪ In 2016, the Prime Minister pledged to provide all schools with internet access and digital devices. All would receive 24-hour internet access, and one IT device for every 10 students by 2020, and high-speed internet, one IT device per student, and video conferencing facilities in every school by 2025. ▪ The Ministry recently launched one of the world's largest national e-learning platforms – in June 2020, the MoE launched the Digital Education Learning Initiative platform to provide e-learning resources for home learning. It has since revamped to include materials from technology titans such as Google Classroom and Microsoft 365 and averages 1.7m users monthly. | <ul style="list-style-type: none"> ▪ EdTech market growth is linked to new Government initiatives in ICT and e-learning in addition to an increasing number of corporate companies and a rising number of schools and universities. ▪ The government aims to roll out better internet connectivity and coverage to all Malaysians by 2025 under a \$6.9 billion National Digital Network plan. ▪ Malaysia's international education market has grown considerably in the last decade and attracts university students from other Islamic nations, due to competitively priced quality education and innovation. Student enrolment rose from 70,000 in 2009 to 200,000 in 2020. ▪ Public sector education spending is expected to grow modestly as the government focuses on strengthening the private education sector. For example, the government target of US\$20 billion in contribution from education services, is expected to be approximately 47% funded by the private sector. | <ul style="list-style-type: none"> ▪ The market has no EdTech specific regulations provided by the Government which gives potential for start-ups to establish themselves as appealing market players by introducing high-quality, global standard compliant solutions to the market. ▪ The Government has relatively limited experience collaborating with local EdTech companies which could hinder the process of establishing an inclusive start-up ecosystem, as they may not be fully aware of start-up needs. ▪ There is on-going rivalry between Malaysia and Singapore since Singapore declared independence in 1965. Though both countries have encouraged innovation and entrepreneurship, Singapore has attracted more funding as it is perceived to have a stronger start-up ecosystem, a stronger education system, and better taxation rates. ▪ The Ministry does not rely on a single division to implement ICT in education – the national 'Smart School Initiative' focuses on strategic public-private partnerships between the ministry, industry, and community, and is one of the seven key actions to shift towards a knowledge-based economy. |

RESOURCES AND CAPACITY

| <i>Human capital</i> | <ul style="list-style-type: none"> The Government's economic agenda set out to create 1.5 million jobs by 2020 with targeted improvements in labor productivity and reduced dependency on low-skilled foreign workers, in a shift from labor focused to knowledge and innovation-based economic activities. Skilled workers were projected to represent 35% of the workforce in 2020. Industries will be encouraged to invest in high value-add activities that require skilled workers. Malaysia outsources technical EdTech development overseas but is rich in human capital resources to develop EdTech content. | <table border="1"> <thead> <tr> <th>Focus area</th><th>Country data</th></tr> </thead> <tbody> <tr> <td>Adult literacy rate (% of people ages 15 and above, WB 2018)</td><td>95.7</td></tr> <tr> <td>Female share of employment in senior-middle management (%, WB 2019)</td><td>19.4</td></tr> <tr> <td>Companies with female top manager (% of companies, WB 2015)</td><td>22.1</td></tr> <tr> <td>Companies with female participation in ownership (% of companies, WB 2015)</td><td>22.1</td></tr> <tr> <td>Number of new business registered (WB 2018)</td><td>58,426</td></tr> <tr> <td>Number EdTech start-ups (Tracxn 2019)</td><td>149</td></tr> <tr> <td>Number of incubator and accelerator programs (Tracxn 2019)</td><td>28</td></tr> <tr> <td>Cost of business start-up procedures (% of GNI per capita, WB 2019)</td><td>11.1</td></tr> </tbody> </table> | Focus area | Country data | Adult literacy rate (% of people ages 15 and above, WB 2018) | 95.7 | Female share of employment in senior-middle management (%, WB 2019) | 19.4 | Companies with female top manager (% of companies, WB 2015) | 22.1 | Companies with female participation in ownership (% of companies, WB 2015) | 22.1 | Number of new business registered (WB 2018) | 58,426 | Number EdTech start-ups (Tracxn 2019) | 149 | Number of incubator and accelerator programs (Tracxn 2019) | 28 | Cost of business start-up procedures (% of GNI per capita, WB 2019) | 11.1 |
|--|--|--|------------|--------------|--|------|---|------|---|------|--|------|---|--------|---------------------------------------|-----|--|----|---|------|
| Focus area | Country data | | | | | | | | | | | | | | | | | | | |
| Adult literacy rate (% of people ages 15 and above, WB 2018) | 95.7 | | | | | | | | | | | | | | | | | | | |
| Female share of employment in senior-middle management (%, WB 2019) | 19.4 | | | | | | | | | | | | | | | | | | | |
| Companies with female top manager (% of companies, WB 2015) | 22.1 | | | | | | | | | | | | | | | | | | | |
| Companies with female participation in ownership (% of companies, WB 2015) | 22.1 | | | | | | | | | | | | | | | | | | | |
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| Number of incubator and accelerator programs (Tracxn 2019) | 28 | | | | | | | | | | | | | | | | | | | |
| Cost of business start-up procedures (% of GNI per capita, WB 2019) | 11.1 | | | | | | | | | | | | | | | | | | | |
| <i>Networks and community</i> | <ul style="list-style-type: none"> The local EdTech landscape is budding - Tracxn, which tracks start-ups and private companies in more than 30 countries, notes that Malaysia had over 149 EdTech-related start-ups, compared to 359 in Singapore (the highest in ASEAN) or 71 in Thailand (among the lowest in the region). The broader technology ecosystem is also growing and there were around 28 local accelerators and incubators in 2019, compared to 86 in Singapore. | | | | | | | | | | | | | | | | | | | |
| <i>Investment capital</i> | <ul style="list-style-type: none"> The industry is highly competitive and fragmented in terms of languages, subject focus areas, and local cultures. A report on the e-learning market in Malaysia by Ken Research (2019) states that the market is dominated by domestic companies with very low presence from global players. Players in the market are highly competitive and compete on price, fee structures, customized vs. standardized content, and user access rates. | | | | | | | | | | | | | | | | | | | |

MARKET AND BUYERS

| | |
|------------------------------------|--|
| Role of government as buyer | <ul style="list-style-type: none"> The Ministry provides a range of e-learning applications and resources to teachers and students, as a national requirement of the schooling system, through its virtual learning platform, DELIMa (“Digital Education Learning Initiative Malaysia”). During the pandemic, DELIMa was updated with programs from some of the biggest technology firms, including Google Classroom, Microsoft 365 and Apple Teacher Learning Centre. |
| Role of consumer as buyer | <ul style="list-style-type: none"> The highest demand in the EdTech sector is from higher education institutes and students. The urban, private K-12 education providers are becoming lead market consumers in response to competition for student applications – in the last decade, the MoE has encouraged the growth of private schools, and there is market saturation in major cities. In response, schools are collaborating and developing appealing digital resources through partnership with corporates and incubators. The end users of EdTech products are price sensitive and prefer to choose custom features, and customized content, which deliver more value over time. Corporate companies will also represent a significant source for demand for EdTech – Companies in the region use e-learning solutions to lower training costs, and the number of corporate companies increased from 6.3m to 8.1m between 2013 and 2019, and is expected to reach 12m by 2023. |
| Market conditions | <ul style="list-style-type: none"> The Malaysian digital learning market is expected to flourish – before the pandemic, analysts expected the market to exceed US\$2bn by 2023, driven by increasing demand for EdTech and high student enrolment levels. A rising population and increasing rates of affluence are shifting parent preferences towards holistic education, as they are able to access more education options aligned with their beliefs and values. However, price and affordability remain a major factor in determining the right solutions. English language skills and foreign higher education are a priority for many and may influence decision making. Malaysia is a significant source of international students to the UK; over 17,000 Malaysian students study in the UK each year. |

| Focus area | Country data |
|---|--------------|
| Government expenditure on education (% of total, WB 2019) | 17.9 |
| Net ODA received (% of central gov expense, WB 2019) | 0.01 |
| Net ODA received per capita (current US\$, WB 2019) | 0.2 |
| GDP per capita (current US\$, WB 2019) | 11,414.2 |
| GDP per capita growth (annual %, WB 2019) | 2.9 |
| Urban population (% of total population, WB 2019) | 76.6 |

SUPPLY

Trends

- There have been key shifts towards the following EdTech areas:
 - Interactive education models through platforms, emerging technologies, data analytics, augmented reality, etc. (E.g. Edutool Apps: Who provide augmented reality enabled products and activity kits, for home and classroom use at every age, in FLN, curriculum subjects, coding and robotics).
 - Innovating pedagogy by creating classroom environments that foster collaboration, application and student-led learning. (E.g. Gnowledge: A free collaborative platform where educators, students and parents can create, publish, share and take tests, exercises and assignments).
 - Holistic learning combining leadership training, teaching of life skills, and workforce training. (E.g. MindValley: Who offer a range of online courses, mobile apps, and digital and live events for students and teachers on holistic education, wellbeing and soft skills).

Opportunities

- The demand for school-age digital resources is high, second only to the demand at higher education level.
- Competition is expected to increase once global companies start entering into the market.
- There is emerging demand for more holistic and innovative solutions to prepare the next generation with skills for a changing economy.

| Focus area | Country data |
|--|--------------|
| High-technology exports (current US\$, WB 2019) | 86.5bn |
| High-technology exports (% of manufactured exports, WB 2019) | 51.8 |
| ICT goods exports (% of total good exports, WB 2019) | 32.5 |
| ICT good imports (% of total good imports, WB 2019) | 24.1 |
| ICT service exports (% of service exports, BOP, WB 2017) | 7.2 |
| ICT service exports (BoP, current US\$, WB 2017) | 2.7bn |
| Medium and high-tech exports (% manufactured exports, WB 2018) | 66.1 |

CASE STUDY | THE PHILIPPINES



PHILIPPINES - OVERVIEW OF ENABLING ENVIRONMENT FOR EDTECH

- Country-wide infrastructure is improving –** there have been big improvements with access to electricity and internet although the geographically dispersed nature of the Philippines and prevalence of natural disasters can impede upon connectivity.
- Infrastructure in schools lags behind –** there are some efforts to improve tech infrastructure in schools and digitization although this is a relatively nascent priority area, and the system lacks a central ICT policy. More innovation happens at local government level.
- The digital sector is relatively under-developed –** digital skills are lacking in the population, especially amongst teachers who can be resistant to the use of EdTech. Both government and consumers more typically use free, open source EdTech products and capacity to pay for EdTech products varies significantly.
- Low appetite for EdTech from DepEd –** K-12 system is traditional and has not embraced EdTech in the way that TESDA (technical and vocational) and CHED (higher education) have.
- Growing EdTech entrepreneurship capacity –** international businesses are taking advantage of investment opportunities.

| | |
|--|---|
| <p>Infrastructure</p> <p>Med</p> <ul style="list-style-type: none"> The Philippines is on track to achieving universal electrification by 2022. Infrastructure remains expensive, but government aims to address this. The geographically scattered country makes it hard to get good telecoms infrastructure in place, and natural disasters are an issue. Rates of personal and household internet access are growing, and Wi-Fi is often available for free in major urban areas, but internet speeds can be slow. Almost all adults use smart phones, and the tech device market share is relatively high. | <p>Education Policy & Strategy</p> <p>Med-Low</p> <ul style="list-style-type: none"> The government is leading system reform to modernize the workforce and education system. The DepEd invests in school infrastructure, digital literacy learning, and needed initiatives to improve school access to the internet, digital resources, new tech equipment. This shift is relatively new; more innovation happens locally. The system does not have a central ICT policy, or capacity to support online courses and use tech for teacher training. There is also resistance to tech use within the teaching community. |
| <p>Resources & capacity</p> <p>Med-Low</p> <ul style="list-style-type: none"> The government has released plans to improve the Philippine digital ecosystem, and entice global businesses to establish local bases and invest in local products and services. Despite consolidated efforts to develop workforce digital capacity through online courses during COVID-19, there are low national employment rates, and the digital sector is less developed than other countries in the Asia/Pacific region. Teachers in public schools lack experience and expertise to support widespread EdTech use. | <p>Market & buyers</p> <p>Med-Low</p> <ul style="list-style-type: none"> The DepEd partnered with for- and non-profit partners to improve school ICT infrastructure. Government and schools prefer free, open source products. Capacity to pay for EdTech varies significantly although Filipinos live in a fast growing economy, spend a lot on education, and are willing to pay for things they find useful. As youth represent a quarter of the market, digital marketing firms and start-ups are investing in youth-centric campaigns, non-traditional learning, and closely tune into Gen Z preferences. |

PHILIPPINES' ECONOMIC GROWTH HAS BEEN HINDERED BY POLITICAL TURMOIL, THE PANDEMIC, AND RISING CHILD-POVERTY LEVELS

| Country Profile | | |
|------------------|-------------------|-------------------------------------|
| Population | Total | Annual growth |
| | 108.1 million | 1.4 |
| Youth population | Aged 14 and under | Aged 15 – 24 |
| | 30% | 18.9% |
| Settlement | Urban | Rural |
| | 47.1% | 53% |
| Health | Life expectancy | Infant mortality (per 1,000 births) |
| | 71 | 22 |
| GDP | Total (\$) | Per Capita (\$) |
| | 376.8 billion | 3,485.1 |
| | | Growth (% annual) |
| | | 6% |



Philippines is an island country in the western Pacific Ocean. It consists of around 7,100 islands which are located around 800 km off the coast of Vietnam.

| Context |
|---|
| <ul style="list-style-type: none"> Philippines is expected to reach upper-middle income country status by 2022, and reduced poverty from 23.3% in 2015 to 16.6% in 2018. With the 7th highest birth rate in Asia, the population is expected to reach 142m by 2045. It is the only pre-dominantly Christian country in Asia; 80% of the population is Catholic. Over 170 languages are used across country. Next to Filipino, English is the national language, and spoken by two-thirds of the population. Child poverty levels vary significantly across the country and have increased in the Autonomous Region in Muslim Mindanao (ARMM) from 52.6% in 2006, to 63.1% in 2015. The nation is vulnerable to natural disasters and ranked third in the world for disaster risk. President Duterte has received international criticism for his approach to illegal drug prohibition and has been accused of violations to Human Rights, since his election in 2016. |
| Impact of COVID-19 |
| <ul style="list-style-type: none"> The Philippines had the worst COVID outbreak and longest, strictest lockdown in SEA. The outbreak caused a sharp decline in exports and tourism, a significant decline in consumption and investment growth, and slowed rising wage trends. Lockdown caused the country's worst economic performance on record – GDP is likely to shrink by 10%, and the nation may suffer the worst growth in the world in the next 5 years. ADB analysis (2020) revealed the overall health and economic costs of national school closure are 70 times higher than alternative options, as long-term health behaviours due to interrupted education are higher than the projected number of lives saved from closures. The country is unlikely to have enough vaccines to inoculate the country by 2022. |

ALTHOUGH PHILIPPINES' INVESTMENT IN EDUCATION HAS INCREASED MORE FUNDING IS NEEDED TO IMPROVE SCHOOL QUALITY AND ACCESS

| Education data | | | | |
|------------------------------|---------------------------------------|--|--|---|
| Spending | N/A | | | |
| Primary | No. students (WB, 2018) | % of students in private school (WB, 2018) | No. teachers (% trained) (WB, 2018) | Student to trained teacher ratio (WB, 2018) |
| | 13.4m | 8.9% | 495.6k (100%) | 27.1 |
| Secondary | No. students (WB, 2018) | % of students in private school (WB, 2017) | No. teachers (% trained) (WB, 2018) | Student to trained teacher ratio (WB, 2018) |
| | 10.6m | 24.7% | 421.8k (100%) | 25.0 |
| Total enrolment (% of total) | Pre-primary-gross (Female) (WB, 2018) | Primary - net (Female) (WB, 2014) | Lower-secondary- net (Female) (WB, 2018) | |
| | 99.8% (98.1%) | 96.2% (95.9%) | 89.3% (92.4%) | |
| PISA score (OECD, 2018) | Reading (average) | Mathematics (average) | Science (average) | |
| | 340 (487) | 353 (489) | 357 (489) | |

| Major education challenges |
|--|
| <ul style="list-style-type: none"> The Government increased spending on basic education by 60% between 2010 and 2015, and constructed 86,478 classrooms and hired over 128,000 new teachers in that time. More funding is needed. Expenditure per student is 90% lower than the OECD average, and 43,000 teachers and 30,000 classrooms are still estimated to be needed. The country participated in PISA for the first time in 2018, and received very low scores in all subjects. Despite recent progress, 14% of secondary age (2.8m) children are not in school, only half of 3–4-year-olds are enrolled in day care, and only 87% of students complete basic education. 94% of students speak a language other than the test language at home; this is the second highest percentage amongst all PISA-participating economies. Over 3,000 schools have no regular source of safe and clean water, or adequate toilet facilities. Only 53% of children from poor households attend high school, compared to 81% from the richest. Teacher quality needs improvement. 48% of tested students reported receiving instruction with clarity. |

| Government response to COVID-19 |
|---|
|  School closure: All schools were closed on March 16, 2020. |
|  School reopening: Schools remain shut. There are no plans to reopen until vaccines are available. |
|  Areas of support: Remote learning platform was slow to launch, and challenging for many learners to access. 70% of teacher respondents felt students were unable to grasp learning in this format. |
|  Funding: The government launched two fiscal stimulus packages in 2020 of around 6.4% of GDP. |

THE MINISTRY USES PUBLIC FUNDS TO SUPPORT DISADVANTAGED HIGH POTENTIAL STUDENTS TO ATTEND PRIVATE HIGH SCHOOLS

- The Philippines has one of the largest education public-private partnership programs in the world, and uses vouchers to increase basic secondary school access by extending financial assistance from the public budget to support “poor but deserving” elementary school graduates to attend private high schools that have contracts with the government. In 2009, the *Education Service Contracting Program (ESCP)* provided vouchers to more than 567,500 students (almost 9% of high school students).
- The ESCP program has come under criticism for mostly supporting grantees from relatively well-off households**, as poorer households are unable to pay the difference between the subsidy and the fees that schools charge. The **contract also does not specify performance criteria for participating private schools**, such as targeting students most in need, or requiring minimum student achievement to ensure continued public funding.
- Smart Parenting (2020) recently published the **average private school tuition fees** for schools across the Philippines:

| Phase | Average private tuition fees | Average # school years | Total cost |
|-------------|------------------------------|------------------------|-----------------------------|
| Preschool | PHP40k (c. USD836) | 1 | PHP40k (c. USD836) |
| Elementary | PHP80k (c. USD1,672) | 6 | PHP480k (c. USD10k) |
| High school | PHP150k (c. USD3,135) | 6 | PHP900k (c. USD18.8k) |
| College | PHP110k (c. USD2,299) | 4 | PHP440k (c. USD9.2k) |
| | | | PHP1.86m (c. USD39k) |

- As private schooling in the Philippines can be expensive (even with ESCP program support), in 2014, Ayala Corporation launched the **Affordable Private Education Center (APEC)**, a chain of affordable private high schools, in partnership with the Pearson Affordable Learning Fund.
- APEC schools aim to charge lower than 50% of average private fees**. Fee range from PHP36k-44k (c. USD752 – 919) for Metro Manila and PHP30k – 40k (c. USD626 – 835) in more rural sites. APEC also recently launched a home-schooling program with lower than average tuition fees.

COVID-19 is likely to have a prolonged effect on private school enrolment

- UNICEF (2021) report that **only 2 million out of a former 4.3 million students in private schools had re-enrolled** at the beginning of the academic year 2020-2021 in the Philippines, as a result of school closures caused by the COVID-19 pandemic.
- Some recent surveys and evidence from past crises in the country suggest that, over the coming year, some **children who previously attended private schools will switch to public schools**, but others may delay entry **or drop out**.

ACCESS AND OUTCOMES ARE LOWEST IN INDIGENOUS COMMUNITIES AND REMOTE AREAS DUE TO LOW SPENDING AND INCOMPLETE REFORM

| Causes of inequality |
|--|
| <ul style="list-style-type: none"> Rapid population growth: The government expects the population to reach 142m by 2045. Income inequality: Poverty rates vary from 3.9% in the National Capital Region (NCR), to 53.7% in the Autonomous Region in Muslim Mindanao (ARMM), where children's poverty has increased from 52.6% in 2006, to 63.1% in 2015. Low employment rates: In 2018, 60% of the working-age population was employed - this is lower than the average for the region (65%) but higher than the average for the country's income group (54%). Low education expenditure: Expenditure per student was the lowest of all 2018 PISA participants (90% below average). Though education spending rose considerably by 60% from 2010-15, 86,478 classrooms were built, and 128,000 teachers were hired, the World Bank (2015) estimates that 43,000 more teachers and 30,000 more classrooms are still needed. Low and unequal enrolment and completion rates: Around 2.8m learners, 14% of secondary-school age children, are not in school. 81% of children from the wealthiest 20% of households, and only 53% of children from the poorest households, attended high school in 2013. Only 78% complete basic education. Deteriorating human rights: Poorer citizens in urban areas are more likely to be victims of human rights abuse. Inadequate school sanitation: A DepEd study (2016) revealed over 3,000 schools have no regular source of safe, clean water, or adequate toilet facilities. Linguistic challenges: Around 94% of 15-year-old students in the Philippines speak a language other than the test language (i.e. English) at home. Natural disaster risk: A 2020 cyclone impacted 31m lives across the country. |

Drivers of educational inequality across the Philippines:

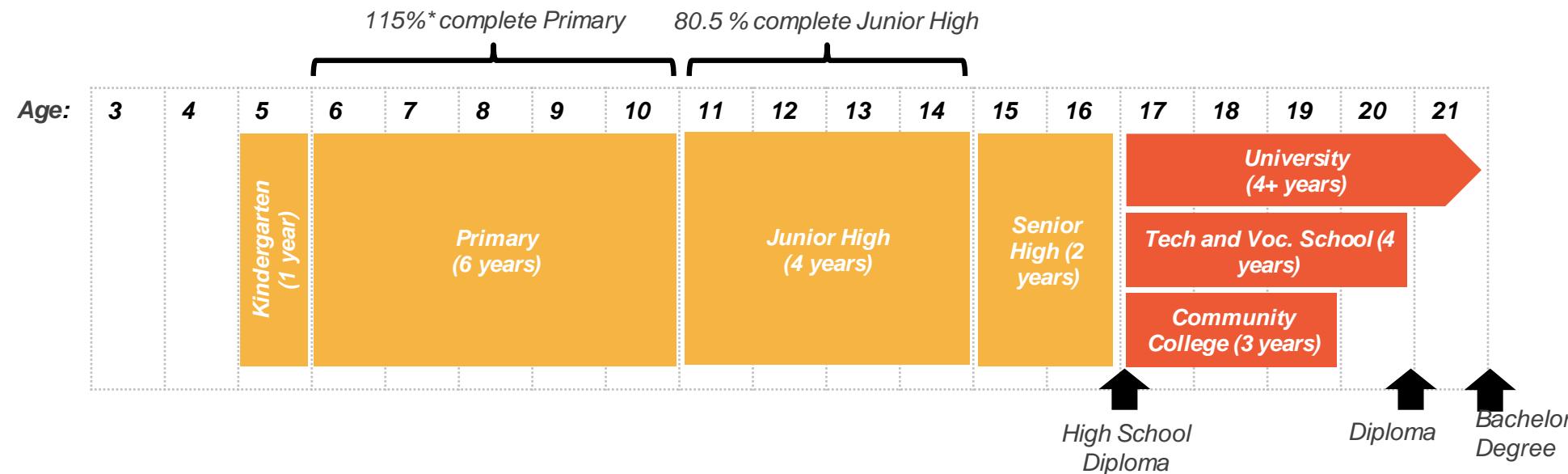
| | Agrarian | Religion | Ethnicity | Language | Poverty | Disability | Gender |
|--|----------|----------|-----------|----------|---------|------------|--------|
| Wealth is highly concentrated, and poor children are much less likely to attend school | | | | | | | |

Needs and issues

- Whole system reform:** The government has released new plans for economic growth to move towards becoming a more globally competitive knowledge economy.
- Recent school reform:** The Ministry moved to a K-12 system and launched a universal curriculum in 2016.
- ICT reform priorities:** Despite several attempts, there is yet to be a definitive central policy and strategy for ICT in education, or ICT in the curriculum. More recently, the DepEd has started to promote digital literacy and has provided ICT equipment to schools through the 2018 Digital Rise Program.
- Poor outcomes:** In its first participating year in PISA, in 2018, the Philippines scored "significantly lower" than any other participating country in mathematics and science. It came in last place in reading, and second to last place in science and mathematics.
- Teacher capacity:** More needs to be done to improve teacher adequacy and skills. Many teachers currently rely on printed textbooks, and TIMSS student survey data revealed that only 48% of tested students reported receiving instruction in mathematics with high clarity, and only 48% reported receiving science instruction with high clarity

EDUCATION IS COMPULSORY FOR 1 YEAR OF KINDERGARTEN, 6 YEARS OF PRIMARY SCHOOL AND 6 YEARS OF HIGH SCHOOL

The formal structure of the education system follows a 1-6-4-2-3/4 progression:



Key information:

Language of instruction: English, Filipino (and some minority languages at elementary level)

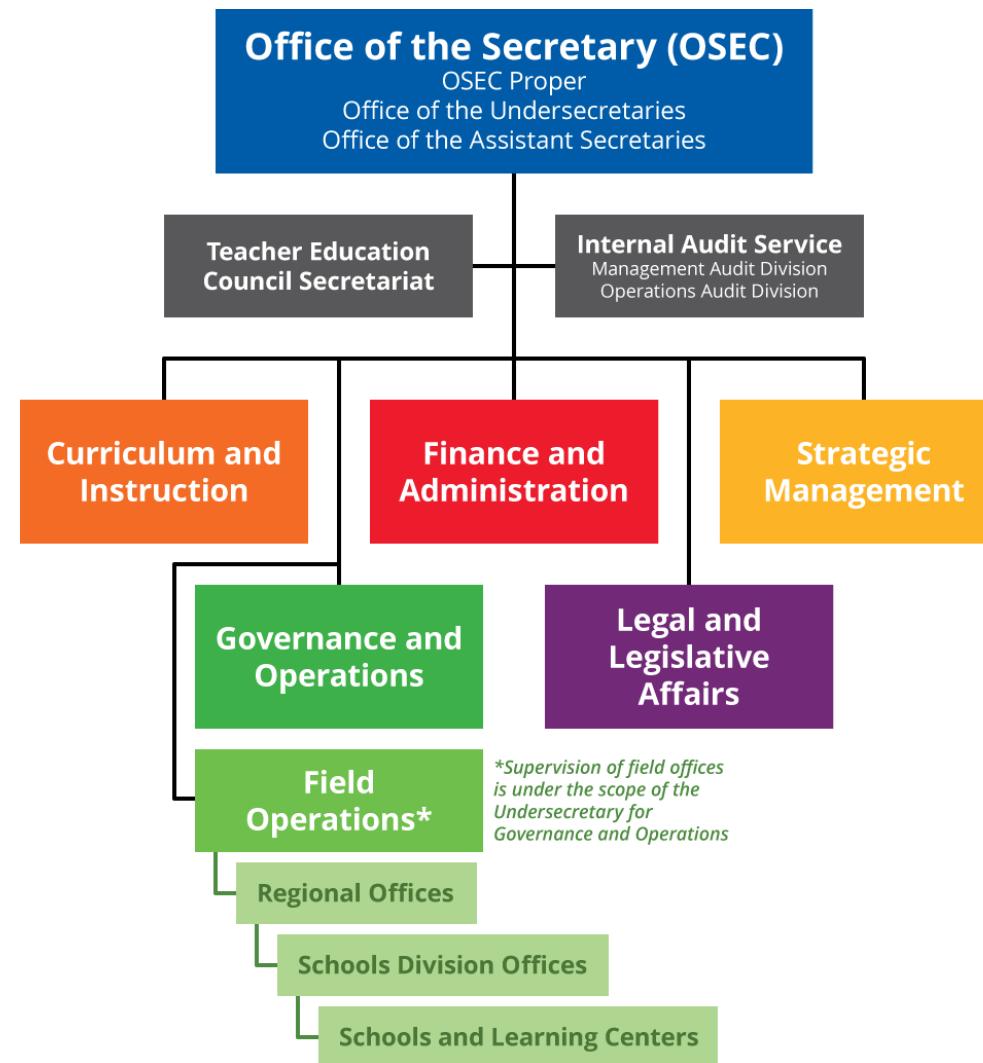
Compulsory education: Kindergarten, Primary, Junior High and Senior High

Academic year: June to March

Key:

- Yellow = Compulsory education
- Red = Non-compulsory education
- Green = Mostly informal/private education

STRUCTURE OF THE EDUCATION SYSTEM | KEY INSTITUTIONS



The DoE also has the following attached agencies:

- Early Childhood Care and Development Council
- National Book Development Board
- National Council for Children's Television
- National Museum
- Philippine High School for the Arts

Note – diagram is taken directly from Philippines Department of Education website

MAJOR EDUCATION POLICIES AND KEY REFORMS

| | |
|--|--|
| Governance of Basic Education Act (2001) | An act that defined the current Department for Education, and provided an overall framework for school empowerment by strengthening the leadership roles of headmasters and fostering transparency and local accountability for school administrations. |
| Mother Tongue-Based Multilingual Education Law (2009) | Following a period of over 40 years where a political compromise mandated the use of both English and Filipino as formal languages of instruction, to improve school outcomes, the DepEd issued a law that required the use of the learners' first language as the primary medium of instruction from pre-school until Grade 3, in addition to the teaching of Filipino and English as separate subjects. |
| Kindergarten Education Act (2011) | As part of the former Senator's desire to implement a K-12 basic education cycle to "give everyone an equal chance to succeed" and "have quality education and profitable jobs", Kindergarten was formally made compulsory and provided for free. |
| The Enhanced Basic Education Act (2013) | <p>Also known as the 'K to 12 Reform', the Act is regarded as the most comprehensive basic education reform initiative ever done in the country (ADB, 2020), and was envisioned by the government as a key solution to the long-standing crisis faced by basic education in the country, as part of wider reform to establish the Philippines as an upper-middle income country by 2022. It:</p> <ul style="list-style-type: none"> • Lengthened the number of years of formal basic education, from one of the shortest in the world, to 13 years. • Mandated a more decentralized approach to school improvement, where schools would have more autonomy over curriculum delivery, and would be accountable to a regional office for administrative, fiscal, legal and ancillary support services. (Despite a number of policies in this area since 2013 reform, the system is still widely believed to be highly centralized). • Established an enhanced curriculum to enable learners to master basic competencies. • Sought to boost enrolment levels, graduation rates and mean years of schooling in elementary and secondary education to improve the quality of higher education. |
| Philippine Development Plan (2017–2022) | The nation's first medium-term plan for a whole-of-society approach for economic growth. It seeks to lay a stronger foundation for more inclusive growth, a high-trust and resilient society, and a globally competitive knowledge economy. |

EDTECH MATURITY | EMERGING EDTECH INFRASTRUCTURE AND POLICY, AND DIGITAL ECOSYSTEM WITH YOUTH-CENTRIC MARKETING

| Focus area | Country data |
|--|--------------|
| Access to electricity (% of population) (WB, 2019) | 95.6% |
| Internet users (% of population) (WB, 2019) | 43.0% |
| Secure Internet servers (per 1 million people) (WB, 2020) | 113.6 |
| Fixed telephone subscriptions (per 100 people) (WB, 2019) | 3.9 |
| Smartphone users (% of population) (Newzoo, 2019) | 33.6% |
| Number EdTech start-ups (Tracxn, 2019) | 195 |
| Number of incubator and accelerator programs (Tracxn, 2019) | 42 |
| Proportion of primary schools with access to computers for pedagogical purposes (%) (WB, 2018) | 78,2% |
| Proportion of secondary schools with access to computers for pedagogical purposes (%) (WB, 2018) | 77.1% |
| Proportion of primary schools with access to Internet for pedagogical purposes (%) (WB, 2018) | 31.4% |
| Proportion of secondary schools with access to Internet for pedagogical purposes (%) (WB, 2018) | 66.3% |

Maturity of the EdTech ecosystem in Philippines

- **Country-wide infrastructure is improving** – there have been big improvements with access to electricity and internet although the geographically dispersed nature of the Philippines and prevalence of natural disasters can impede upon connectivity.
- **Infrastructure in schools lags behind** – there are some efforts to improve tech infrastructure in schools and digitization although this is a relatively nascent priority area, and the system lacks a central ICT policy. More innovation happens at local government level.
- **The digital sector is relatively under-developed** – digital skills are lacking in the population, especially amongst teachers who can be resistant to the use of EdTech. Both government and consumers more typically use free, open source EdTech products and capacity to pay for EdTech products varies significantly.
- **Low appetite for EdTech from DepEd** – K-12 system is traditional and has not embraced EdTech in the way that TESDA (technical and vocational) and CHED (higher education) have.
- **Growing EdTech entrepreneurship capacity** – international businesses are taking advantage of investment opportunities.

EDTECH MATURITY | EMERGING EDTECH INFRASTRUCTURE AND POLICY, AND DIGITAL ECOSYSTEM WITH YOUTH-CENTRIC MARKETING

| Infrastructure | Med | Education Policy & Strategy | Med-Low | Resources & capacity | Med-Low | Market & buyers | Med-Low | Supply | Med-Low |
|--|-----|---|---------|--|---------|---|---------|---|---------|
| <ul style="list-style-type: none"> The Philippines is on track to achieving universal electrification by 2022. Infrastructure remains expensive, but government aims to address this. The geographically scattered country makes it hard to get good telecoms infrastructure in place, and natural disasters are an issue. Rates of personal and household internet access are growing, and Wi-Fi is often available for free in major urban areas, but internet speeds can be slow. Almost all adults use smart phones, and the tech device market share is relatively high. | | <ul style="list-style-type: none"> The government is leading system reform to modernize the workforce and education system. The DepEd invests in school infrastructure, digital literacy learning, and needed initiatives to improve school access to the internet, digital resources, new tech equipment. This shift is relatively new; more innovation happens locally. The system does not have a central ICT policy, or capacity to support online courses and use tech for teacher training. There is also resistance to tech use within the teaching community. | | <ul style="list-style-type: none"> The government has released plans to improve the Philippine digital ecosystem, and entice global businesses to establish local bases and invest in local products and services. Despite consolidated efforts to develop workforce digital capacity through online courses during COVID-19, there are low national employment rates, and the digital sector is less developed than other countries in the Asia/Pacific region. Teachers in public schools lack experience and expertise to support widespread EdTech use. | | <ul style="list-style-type: none"> The DepEd partnered with for- and non-profit partners to improve school ICT infrastructure. Government and schools prefer free, open source products. Capacity to pay for EdTech varies significantly although Filipinos live in a fast growing economy, spend a lot on education, and are willing to pay for things they find useful. As youth represent a quarter of the market, digital marketing firms and start-ups are investing in youth-centric campaigns, non-traditional learning, and closely tune into Gen Z preferences. | | <ul style="list-style-type: none"> Schools are dominated by international software (e.g. MS & Google) and free content, and many private schools use LMS. There is limited tech innovation in public schools; it is more mature in private, higher, and professional education Higher internet penetration and quality, and lower costs, are expected to improve, and improve digital participation. English language EdTech is popular, and there is need for EdTech to support transitioning to mother tongue as the language of instruction. The Philippines is looking to use ICT to collaborate with neighbouring countries to support education after COVID. | |

INFRASTRUCTURE

Electricity

- The Philippines has improved electricity access** and boosted household electrification rates past 90% in 2016. By contrast, 5% of households did not have electricity in 2019.
- The country is on track to meet the target of achieving universal electrification by 2022** as set out in the Philippine Development Plan 2017-2022.
- Natural and man-made disasters sometimes cause outages in some parts of the country** - e.g. an earthquake in 2017 led to the total loss of power in several provinces.
- The Philippine Power System is generally stable** despite natural and man-made calamities e.g. maintenance shutdowns.

Internet

- There were 73.91 million internet users (67% of the population)** in January 2021.
- The number of internet users in the Philippines increased** by 4.2 million (+6.1%) between 2020 and 2021, with ~17.7% of households with internet access at home in 2019.
- Philippines ranked the “second slowest” in internet speed** among the 10-member Association of Southeast Asian Nations (ASEAN), and 110th among 139 countries in 2020.
- Broadband is available in most cities** - free WiFi is also available in metro stations and shopping malls in major cities, but cellular coverage is spotty due to a longstanding duopoly that didn't encourage investment, which has now been resolved.
- The Philippines has consistently topped rankings for the heaviest internet users worldwide** with an average screen time of 10 hours daily.

Telecoms and tech

- 98.6% of the Philippines' adult population use mobile phones as a digital device** and approximately 98.5% of the adult population use smartphones.
- The tech device market share is relatively high** - desktops, mobile phones and tablets stood at 54.25%, 43.04%, and 2.72% in 2021.
- In 2019, 24% of households had communal mobile phones** but only two out of ten had communal computers.

| Focus area | Country data |
|---|--------------|
| Access to electricity (% of population, WB 2018) | 94.9 |
| Access to electricity, rural (% of rural population, WB 2018) | 92.5 |
| Access to electricity, urban (% of urban population, WB 2018) | 97.5 |
| Time required to get electricity (days, WB 2019) | 37 |
| Renewable electricity output (% of total electricity output, WB 2019) | 10 |
| Fixed broadband subscriptions (WB 2019) | 5.92m |
| Fixed broadband subscriptions (per 100 people, WB 2019) | 5.5 |
| Individuals using the internet (% of population, WB 2019) | 43 |
| Secure internet servers (per 1 million people, WB 2019) | 111.3 |
| Fixed telephone subscriptions (WB 2019) | 4.2m |
| Fixed telephone subscriptions (per 100 people, WB 2019) | 3.9 |
| Smartphone users (% of population, Newzoo 2019) | 33.6% |

EDUCATION POLICY AND STRATEGY

| <i>Key policies and initiatives</i> | <i>Opportunities</i> | <i>Constraints</i> |
|---|--|--|
| <ul style="list-style-type: none"> ▪ A central ICT policy is yet to be developed - despite attempts in 2001, 2004, and 2009. ▪ The country moved to a K-12 system in 2016 - and reforms have been backed up by new investment in school infrastructure. ▪ The DepEd promoted digital literacy and provided equipment to schools – through the 2018 Digital Rise Program. ▪ The DepEd and the Department of Information and Communications Technology (DICT) partnered to establish the Public Education Network (2021) to fast-track the digital connectivity of all public schools, and DepEd offices, and allow learners to access government and commercial learning platforms. The Network also connects DepEd Offices to other governance and partnership platforms. ▪ The DepEd recently released the minimum specifications for personal computers, laptops and mobile devices for distance learning. | <ul style="list-style-type: none"> ▪ There is currently a reliance on printed textbooks - but the move to distance learning during COVID-19 has opened an opportunity to provide more curriculum-appropriate digital resources. ▪ A new Alternative Learning System allows Filipinos to develop new ICT skills as part of Government efforts to develop effective citizens in an increasingly digital world. The initiative aims to provide learners with new critical knowledge, skills, and values in Digital Concepts, Operations and Management, System Network Digital Devices, Applications and Ethics. ▪ The long-term partnership between DepEd and DICT presents many opportunities - including advocacy for additional ICT service providers in public schools and online resources, and improved partnership with key telecommunications organizations. The DICT will also enhance DepEd satellite and fibre-optic network capacity, connect schools in remote regions to the internet, as part of the Last Mile Schools initiative. | <ul style="list-style-type: none"> ▪ There is insufficient equipment and connectivity in schools and homes – there are not yet on-campus Wi-Fi networks or broadband connections across the entire country, and many schools only have access to ageing or outdated computers. ▪ There is inadequate technology for teacher training across the system and general resistance to use of technology within the teaching profession. ▪ The system is heavily focused on other education reforms - including the shift to K-12, transition to mother tongue as language of instruction, and programs to tackle high drop-out rates and poor performance. ▪ Recent studies revealed that although participant motivation was high, 70% of Filipinos who started online courses faced problems with completion due to slow internet speeds, limited ICT access, and high participation costs. |

RESOURCES AND CAPACITY

| | Focus area | Country data |
|-------------------------------|---|---------------------|
| Human capital | <ul style="list-style-type: none"> Over 150,000 people in the country acquired digital skills during COVID-19 through courses (such as those offered by GitHub, LinkedIn and Microsoft) to help prepare for high demand roles in customer service, project management and data analysis. In 2018, 60% of the working-age population was employed - this is lower than the average for the region (65%) but higher than the average for the country's income group (54%). A USAID report (2019) found that local, visionary leaders from nongovernment coalitions, advocacy groups, and schools are a leading driving factor in the scaling up of EdTech. | |
| Networks and community | <ul style="list-style-type: none"> The Philippine Roadmap for Digital Startups (2015) aims to improve the ecosystem for innovators - education is an area with significant growth opportunities for entrepreneurs, and the sector is less active than other countries in the Asia/Pacific region. Tracxn have identified 71 EdTech-related start-ups in the country – a significant number emerged in the past 5 years, and provide platforms for courses, cloud-based training and assessment, school management systems, and virtual learning solutions. Established players (e.g. Microsoft) have partnered with local teams from Intel and Felta Multi-Media to create rugged devices that are designed for and targeted at school children. | |
| Investment capital | <ul style="list-style-type: none"> In the last five years there has been \$480M in venture capital funding to 200 individual investments for EdTech in Southeast Asia, which is likely to influence the Philippines market. Expert analysis says the trend is likely to continue, as the region continues to boost the digitization of its infrastructure and consumer behaviour. New legislation (2020) aims to make investment in local ICT more attractive –The "Make It Happen in the Philippines" campaign (developed in partnership with the UK) aims to boost local capacity in electronics, manufacturing, automotive, aerospace, IT, and health to entice global businesses to establish local bases. In 2019, the ICT sector was the top investment contributor, partly due to the entry of a 3rd telecoms player. The market also continues to grow, despite the socio-economic impact of COVID-19. | |
| | | |

MARKET AND BUYERS

| <i>Role of government as buyer</i> |
|------------------------------------|
|------------------------------------|

- **DepEd has deployed multiple technology initiatives to address the lack of ICT infrastructure in schools** – including implementing an Enhanced Basic Education Information System (EBEIS) and learning resource and development management platform.
- **Groups like Globe Telecommunications and Ayala Foundation partner with DepEd central and regional offices** to provide advice on general program implementation, and provide schools with digital devices, content, and internet access. (E.g. Globe Telecommunications helped establish 218 “Global Filipino Schools” and supplied one secondary school in each region with internet, tablets, virtual reality goggles, modems, mobile phones, and teacher training on ICT integration and digital citizenship).

| <i>Role of consumer as buyer</i> |
|----------------------------------|
|----------------------------------|

- **There has been an increasing monetization of Gen Z's online activity** – as Filipino youth represent a quarter of the local e-commerce market, digital marketing is monitoring and tapping into their mindsets and preferences.
- **Start-ups are investing in digital channels** to integrate education into youth-centric campaigns.
- **Global consumer behaviour has shifted** and younger generations are often the first to go online to find information about new opportunities, education, and opinions.
- **Better mobile internet penetration and the rise of e-commerce will accelerate the adoption of e-learning** as students in remote areas with limited school access will be able to connect more reliably to quality virtual classes.

| <i>Market conditions</i> |
|--------------------------|
|--------------------------|

- **The Philippines is one of the fastest growing economies in the world** with a large population and fast-growing GDP.
- **According to the UN, the Philippines has the 3rd youngest population in the APAC region** and a large, growing Gen Z (12-23) population who are digital natives, and have been exposed to social media and mobile applications since birth.
- **There is increased evidence that Filipinos are willing to pay for things they find useful** such as online English courses.
- **In 2018, the country's 13 million students spent \$13 billion on education** - and \$20 million consumers spent approximately \$37 billion on products.

| Focus area | Country data |
|---|--------------|
| Government expenditure on education (% of total, WB 2009) | 13.2 |
| Net ODA received (% of central gov expense, WB 2019) | 1.6 |
| Net ODA received per capita (current US\$, WB 2019) | 8.4 |
| GDP per capita (current US\$, WB 2019) | 3,485.1 |
| GDP per capita growth (annual %, WB 2019) | 4.6 |
| Urban population (% of total population, WB 2019) | 47.1 |

SUPPLY

Trends

- The country has seen higher internet penetration rates alongside rapidly reduced costs, and improved quality** - between 2013 and 2019, local broadband internet speeds jumped from 2.0 Mbps to 19.3 Mbps, costs fell from \$5.27/Mbps to \$0.48/Mbps, and penetration rose from 40% to 60%.
- In years to come, the country expects to lower more barriers to internet access** and increase internet users from amongst younger generations.
- Applications that teach English continue to be popular** as the economy of the Philippines relies heavily on remittances from overseas workers.

Opportunities

- Users are predicted to begin to value non-traditional education “badges” and “certificates”** and will be willing to invest in these alternatives rather than typical universities.
- The country has switched to using learners’ mother tongue as a language of instruction** and there is opportunity for future EdTech products and services to support with this transition.
- In response to the challenges of the COVID-19 pandemic, the Philippines’ hosted a meeting for Education Ministers across the region**, and proposed a comprehensive, cooperative Recovery Framework, which encouraged ICT-enabled collaboration across the region.

| Focus area | Country data |
|--|--------------|
| High-technology exports (current US\$, WB 2019) | 35.8bn |
| High-technology exports (% of manufactured exports, WB 2019) | 62.2 |
| ICT goods exports (% of total good exports, WB 2019) | 49 |
| ICT good imports (% of total good imports, WB 2019) | 20.9 |
| ICT service exports (% of service exports, BOP, WB 2017) | 16.5 |
| ICT service exports (BoP, current US\$, WB 2017) | 5.7bn |
| Medium and high-tech exports (% manufactured exports, WB 2018) | 80.8 |

CASE STUDY | THAILAND



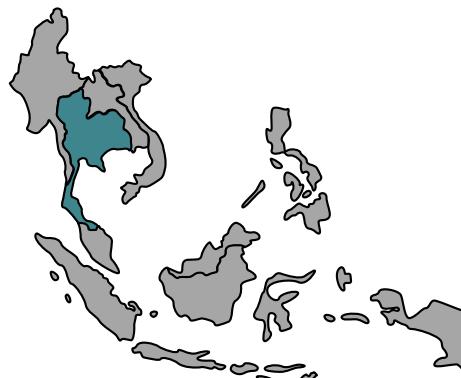
THAILAND - OVERVIEW OF ENABLING ENVIRONMENT FOR EDTECH

- Good countrywide supporting infrastructure** – full electrification and high internet penetration.
- Nascent EdTech policy** – the potential of technology to support education development needs has not been realized. There have been some efforts to promote ICT at government level and a growing recognition of the positive role technology can play but there is still no formal ICT policy.
- Limited digital literacy** – social media is popular and prevalent, but digital literacy levels are low, and Thailand faces a major skilled labor shortage.
- High consumer appetite for investing in children's education** - there are high levels of private schooling, there is a market for B>C EdTech products that could be tapped.
- Growing EdTech community** – but this is still small.

| | | | |
|---|-----------------|--|----------------|
| Infrastructure | High-Med | Education Policy & Strategy | Med-Low |
| <ul style="list-style-type: none"> All of Thailand's citizens are able to access electricity, and the government is working towards using sustainable energy sources. The majority of Thai citizens access the internet every day, and internet quality is consistently improving. Social media is popular, and the majority of Thai people own one or more mobile devices. | | <ul style="list-style-type: none"> Thailand has taken many actions to promote ICT use, over the last decade, and to transition into an innovation-driven economy, but established no formal national ICT strategy. MoE reform aims to improve internet access, digital efficiency and IT resources across all schools, and has integrated coding into the curriculum. | |
| Resources & capacity | Med | Market & buyers | Med |
| <ul style="list-style-type: none"> Thailand has an ageing population and faces the highest skilled labor shortage in the region. The government has invested heavily in venture funding for Thai start-ups, several tech incubators, from the international or ASEAN sector, are exploring the Thai market. There is a growing local EdTech community of start-ups focused on all ages of learner, school management, training and development, and English learning. Teacher and student digital literacy is low and digital resources across all grades are needed. | | <ul style="list-style-type: none"> The government is investing in hardware, software and 'people-ware' across all sectors and aims to upskill all teachers' ICT skills and English teachers' sector specific skills. There is demand for EdTech to improve teacher workload, and digital learning for people unable to access in-person courses in urban regions, particularly among young people. Thailand's mobile shopping market is the strongest in the region; IT and networking markets are growing. Low birth rate and high income levels mean consumers are open to spending on their children's education. | |

THAILAND'S RECENT AND RAPID SOCIO-ECONOMIC GROWTH IS THREATENED BY A SLOWING ECONOMY, AGEING SOCIETY, AND POLITICAL INSTABILITY

| Country Profile | | |
|------------------|-------------------|-------------------------------------|
| Population | Total | Annual growth |
| | 69.6 million | 0.30 |
| Youth population | Aged 14 and under | Aged 15 – 24 |
| | 17% | 13.4% |
| Settlement | Urban | Rural |
| | 50.6% | 49% |
| Health | Life expectancy | Infant mortality (per 1,000 births) |
| | 77 | 8 |
| GDP | Total (\$) | Per Capita (\$) |
| | 543.5 billion | 7,806.7 |
| | | Growth (% annual) |
| | | 2.4% |



Thailand is located in the centre of mainland Southeast Asia. It is bordered by Myanmar, Lao, Cambodia, Malaysia, the Andaman Sea, and an inlet of the South China Sea.

References: UNESCO data (2019); World Bank country overview (2020); World Education Services (2018); World Bank data (2019, 2018); Thailand Business News (2021); PwC (2021); Phnom Penh Post (2021); Bloomberg (2021); World Bank (2020); ABC News (2021).

Context

- Notable socio-economic progress in four decades, moving from a low- to upper-middle income country, and reducing poverty from 65.2% to 9.85% between 1988 and 2018.
- Economic growth recently slowed as a result of US-China trade tensions, slowing public investment, and a drought which impacted agricultural production.
- To support the economy, the state provides low-income earners with welfare cards, crop price guarantees to farmers, and schemes to stimulate SME liquidity and tourist spending.
- A rapidly ageing society is expected to lower the working age population by 11% by 2040.
- Thailand's recent history of military coups has hindered prospects of becoming a stable democracy. Since 1932, there have been 19 military coup attempts; 12 of them successful.
- Thailand is among the few countries never to have been colonized by European powers and its education system has developed mostly indigenously.

Impact of COVID-19

- Though late to employ quarantine measures, Thailand successfully stemmed the first wave of virus infection, through surveillance and contact tracing, but cases surged in early 2021.
- The economic impact has been severe and led to widespread job losses, because of a decline in tourism, supply chain disruption and lower domestic consumption, and the Finance Ministry recently cut the 2021 economic growth forecast from 4.5% to 2.8%.
- PwC reported improving economic resiliency is key to Thailand's successful crisis recovery.
- 84% of Thai businesses were hit adversely by the pandemic, due to transport restrictions, disruption of operation and supply chains, and limited workforce and financial liquidity.
- The Government prioritized building public-private partnerships to sustain learning in lockdown, from private organizations such as the Asia Foundation.

ALTHOUGH WELL FUNDED, THE QUALITY, INFRASTRUCTURE AND ACCESSIBILITY OF THAILAND'S SCHOOLS ARE BELOW REGIONAL AVERAGES

| Education data | | | | |
|-------------------------------|---|---------------------------------|---|----------------------------------|
| Education Spending (WB, 2013) | 19.1% of total government expenditure | | | |
| Primary (WB, 2019) | No. students | % of students in private school | No. teachers (% trained) | Student to trained teacher ratio |
| | 4.9m | 22.0% | 378.1k (100%) | 13.0 |
| Secondary (WB, 2019) | No. students | % of students in private school | No. teachers (% trained) | Student to trained teacher ratio |
| | 6.0m | 11.5% | 229.3k (100%) | 26.2 |
| Total enrolment (% of total) | Pre-primary - gross (Female) (WB, 2019) | Primary - net | Upper-secondary - net (Female) (WB, 2015) | |
| | 78.6% (78.6%) | N/A | 79.1% (79.0%) | |
| PISA score (OECD, 2018) | Reading (average) | Mathematics (average) | Science (average) | |
| | 393 (487) | 419 (489) | 426 (489) | |

| Major education challenges |
|---|
| <ul style="list-style-type: none"> ▪ Around 14% of secondary aged children are OOS, and most are disadvantaged, migrants or have SEND. ▪ Despite high spending on education, military intervention has resulted in high turnover of education ministers and investments are not resulting in the expected outcomes. ▪ Students perform below international standards in PISA. Immediate efforts to improve scores could lead to a 60% increase in GDP per capita before 2045. ▪ Half of Grade 9 students have minimal proficiency levels in maths and reading, and 1/3 of 15-year-olds are functionally illiterate. Rates are more acute in rural areas and reach 47%. ▪ Once adjusted for learning quality, most Thai children receive 8.7 years of school, and students in Vietnam are around 1.5 years ahead academically. ▪ There are no common student learning standards and the state may lack capacity to lead assessment. ▪ Only 45% of schools have basic sanitation facilities, and only 60% have access to basic drinking water. |

| Government response to COVID-19 |
|---|
|  School closure: All schools closed on March 18, 2020 for 4 months, on January 4 for one month, and April 19 indefinitely, with regional closures in between caused by spikes in local infection rates. |
|  School reopening: All schools re-opened in July 2020 after the first wave, Feb 1 following the second, and remain closed indefinitely. |
|  Areas of support: Online K-12 learning platform, and TV K-12 courses on 17 channels (available only via cable subscription). Socio-economic inequalities prohibited widespread access (e.g. lack of WiFi). |
|  Funding: The government have issued a \$61 billion relief package, in three phases, that is primarily aimed at providing financial assistance to individuals and SMEs. |

LOW SECONDARY ENROLMENT, POOR OUTCOMES AND HIGH NATIONAL ILLITERACY RATES ARE MORE ACUTE FOR STUDENTS IN RURAL AREAS

| Causes of inequality |
|--|
| <ul style="list-style-type: none"> Slowing economy: Economic growth has slowed as a result of US-China trade tensions, slowing public investment, a drought impacting agricultural production, and a rapidly ageing society which is expected to lower the working age population by 11% by 2040. History of political instability: 19 military coups since 1932 have led to decades of interrupted economic and educational reform. Low secondary enrolment: Although around 95% per cent of primary-school age children in the country attend school, around 14% of secondary-school age children are not in school. Unequal access for disadvantaged and rural learners: The largest proportion of out-of-school children are from disadvantaged communities, migrants or living with a disability. Limited ECD access: Around 15% of 3-5 year old learners do not attend an early education program and 59% of children under 5 years do not have at least three books at home. Limited infrastructure: The World Bank (2015) state that only 45% of schools have basic sanitation facilities, and only 60% have access to basic drinking water. Lack of performance standards: Although national 'O-NET' tests aim to certify education level completion, a review of system capacity by UNESCO (2017) revealed scores fluctuate between years and cannot be used to assess whether the system meets curricular expectations. Concerns were also raised about central and local administrators' capacity to interpret results. Limited digital literacy across the system: Teachers and students generally have low levels of digital literacy. |

Drivers of educational inequality across Thailand:

| | Agrarian | Religion | Ethnicity | Language | Poverty | Disability | Gender |
|---|----------|----------|-----------|----------|---------|------------|--------|
| Northern Thailand is more prosperous than the South | | | | | | | |

Needs and issues

- Costly but ineffective reform:** Despite high spending on education since military takeover in 2014, the OECD and UNESCO declared education investments "are not resulting in the expected outcomes".
- Poor learning outcomes:** The 2018 Global Education Monitoring Report states half of Grade 9 students have minimal proficiency in maths and reading. Results from Grade 12 national tests in 2016 revealed students failed eight out of nine subjects on average.
- Inefficient use of learning time:** A Thai child is expected to obtain 12.7 years of schooling. Once adjusted for quality of learning, that amounts to 8.7 years, and on average, a student in Vietnam is 1.5 years ahead of Thai students academically.
- Declining international performance:** In 2018 PISA, Thailand ranked 56th for maths, 66th for reading, and 52nd for sciences; all below international averages. This is their lowest score on record, and 16 points below 2015 scores.
- High, unequal rates of functional illiteracy:** The World Bank (2015) graded one-third of 15-year-old students as either "functionally illiterate", or unable to understand the meaning of what they have read. Rates are more acute (47%) for students in rural areas.

THAILAND'S PRIVATE SCHOOLS HAVE THE LOWEST FEES IN THE REGION BUT LOCAL UNDERPRIVILEGED CHILDREN ARE UNABLE TO ACCESS THEM

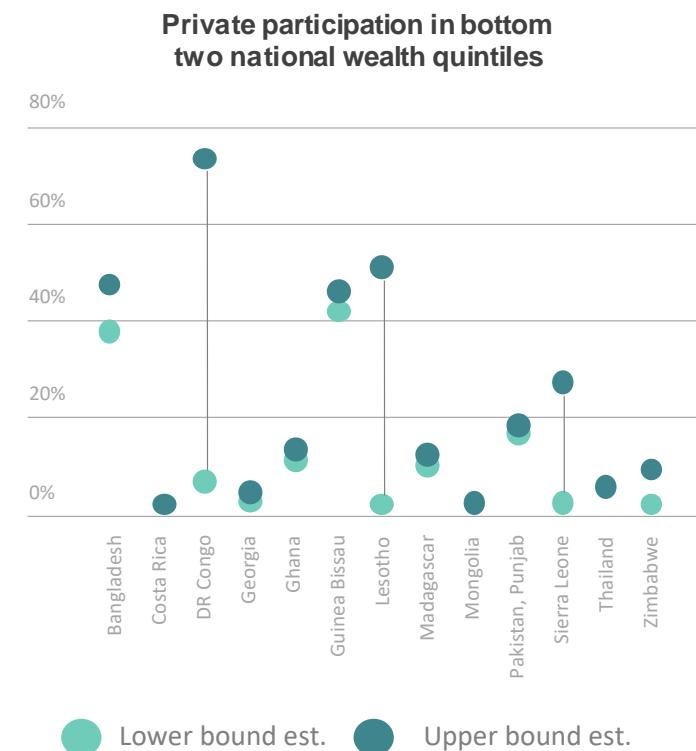
Overview of private schools in Thailand:

- **Thai international school fees are among the lowest in the region, and 21.7% cheaper than Singapore.** The Centre for Economic & Business Research (CEBR) has reported that **the average cost of an education in Thailand is THB550k (USD17.6k)**, which is lower than school fees in neighbouring Asian countries.
- **Fees at Thailand's international schools vary greatly**, with annual tuition fees ranging from THB150k (USD4,815) to THB900k (USD28,911) at Bangkok's top tier schools.
- In Thailand, **short public supply has influenced growth in the low-cost private sector**, especially at the **secondary school level**.

Note – this chart is reproduced from UNICEF (2021). 'Implications of COVID-19 for low-cost private schools'. Available at url: https://www.unicef.org/globalinsight/media/1581/file/UNICEF_Global_Insight_Implications_covid-19_Low-cost_Private_Schools_2021.pdf

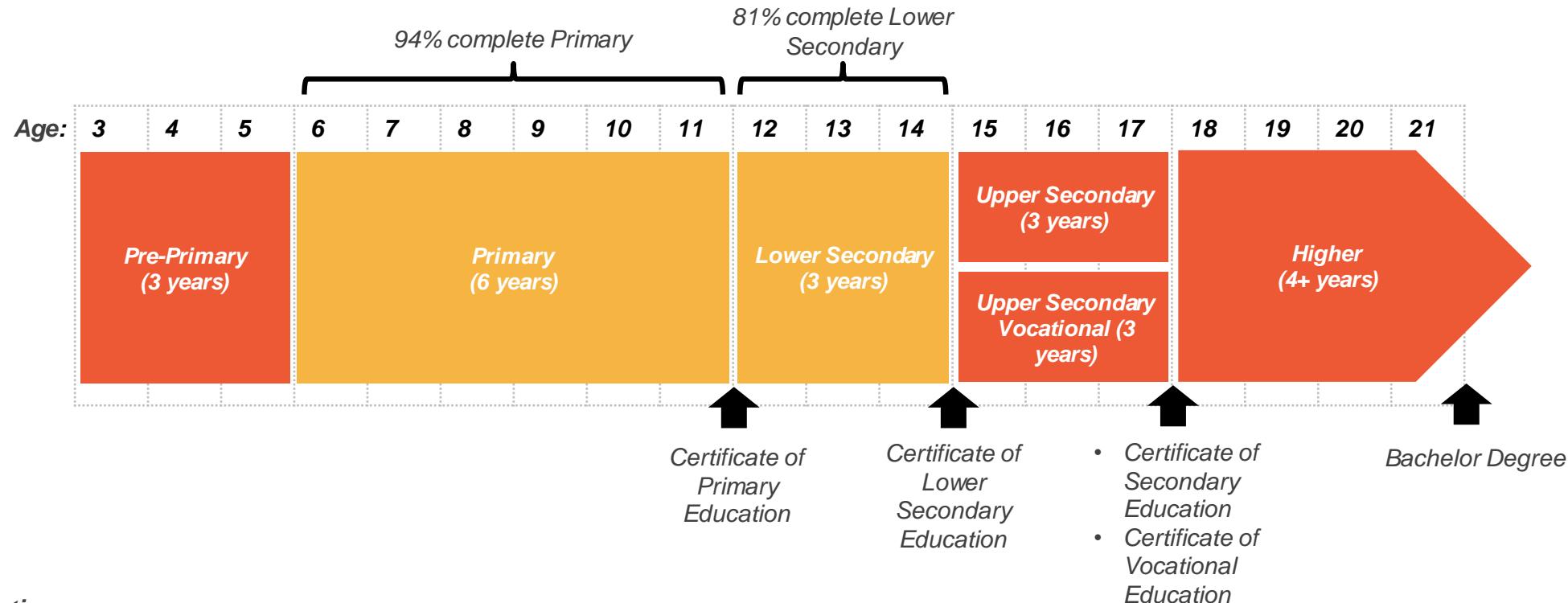
Disadvantaged student participation:

- Thailand low rates of private school participation from poor households, shown below:



EDUCATION IN THAILAND IS COMPULSORY FOR 6 YEARS OF PRIMARY SCHOOL AND 3 YEARS OF LOWER SECONDARY SCHOOL

The formal structure of the education system follows a 3-6-3-3-4 progression:



Key information:

Language of instruction: Thai

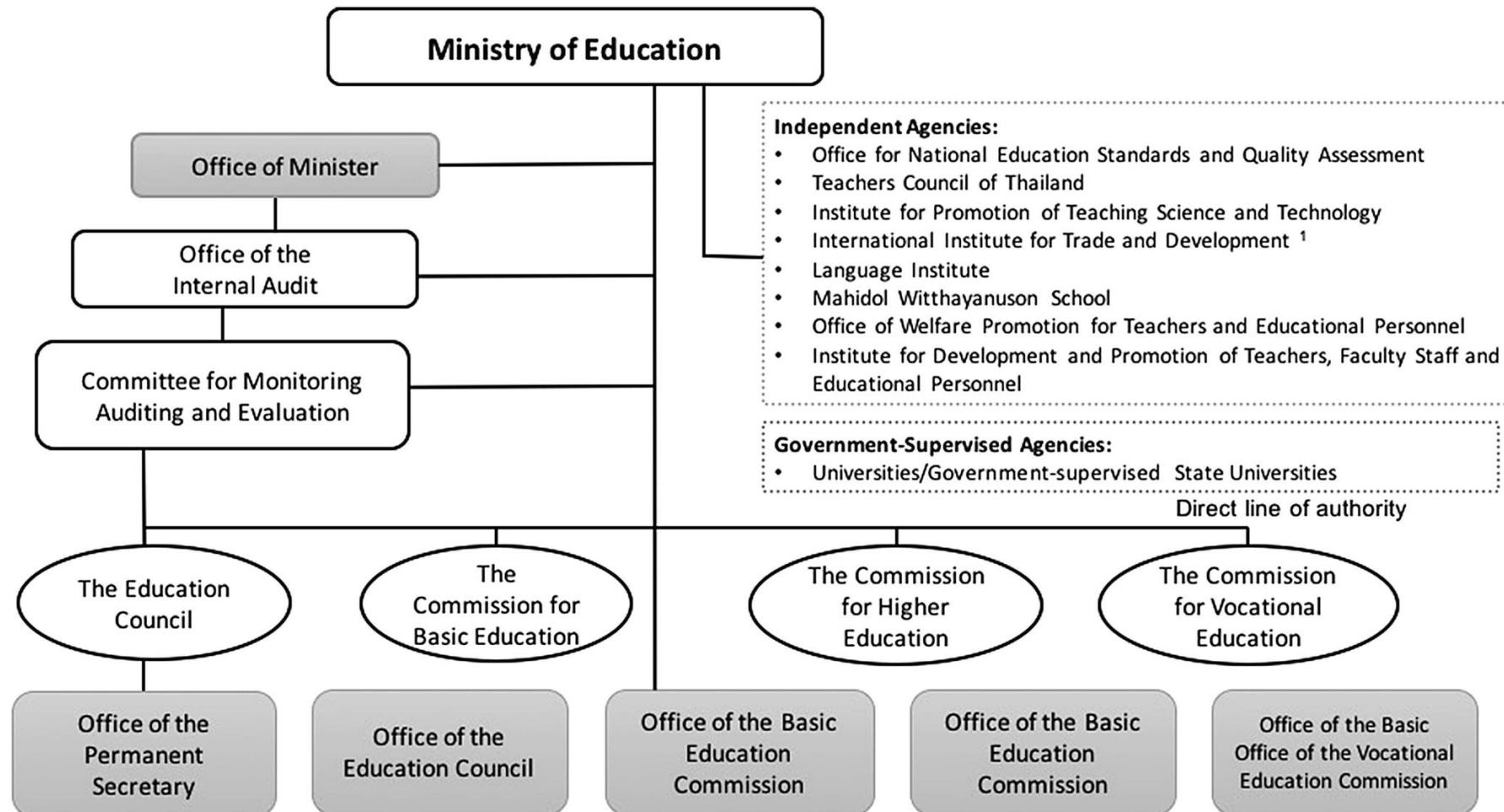
Compulsory education: Primary and Lower Secondary

Academic year: September to June

Key:

- = Compulsory education
- = Non-compulsory education
- = Mostly informal/private education

STRUCTURE OF THE EDUCATION SYSTEM | KEY INSTITUTIONS



1. Operating as a regional training center, the International Institute for Trade and Development was established by the Royal Thai Government and UNCTAD as a non-profit and independent organization

MAJOR EDUCATION POLICIES AND KEY REFORMS

| | |
|--|---|
| The New Constitution (1997) | In response to challenging economic and political transparency events, the government launched major public administration reforms which stipulated that the state give autonomy to localities. As part of this, the government set a plan to decentralize the education system, and shift decision making from authority to schools. It was hoped the change would increase education system innovation, and improve challenges with lack of accountability, structural inefficiency and poor management quality at all levels. |
| Basic Education Core Curriculum (2008) | To improve and standardize educational standards nationwide, the Government published elementary and secondary school curricula, and mandated all students attend 1,000 to 1,200 learning hours per year, and receive nine years of basic education in: Thai language, mathematics, science, social studies, religion and culture, physical education, art, occupations and technology, and foreign languages. |
| National Education Plan (2002 – 2016) | A plan for education reform created by Ministry of Education, which focused on building a knowledge-based economy and society, promote continuous learning, and involve all segments of society in designing and decision-making concerning public activities. The Ministry of Education is currently trying to implement these changes by reforming the curriculum, basic education learning process, and admission processes. |
| Ordinary National Educational Test (2005) | In 2005, the National Institute of Educational Testing Service introduced the Ordinary National Educational Test (O-NET) in primary Grade 6, and secondary Grades 9 and 12. The data is used by local education authorities to compare individual schools against district or national averages, and for school inspection. The number of subjects was reduced from eight to five in 2016 (UNESCO, 2017). |
| Internationalisation Pledge (2013) | In 2013, the Government announced plans to internationalize the education system by relaxing visa rules to attract more foreign teachers, to harmonize qualifications and credit systems with ASEAN partner countries, and to increase English-language programs in Thailand. Plans were interrupted by a military coup the following year. |
| 12 Core Values of Thai People (2014) | Following the military takeover of May 2014, Thailand's new ruling junta launched a country-wide education campaign that aimed to promote political stability by reinvigorating traditional values, and changed the school curriculum to promote Thai values and morals. |
| 20 Year Strategic Plan (2017-2037) | In line with the Government's wider 20 year 'Thailand 4.0' strategy, in 2017, the MoE announced plans to revamp the education system and bring standards on a par with those of developed countries by: 1) Raising the average national assessment scores of students in every subject to above 50%; 2) increasing the education of working-age adults; 3) providing high-speed internet access to 90% of schools nationwide; 4) fixing inequality in the education system; 5) improving the levels of student achievement in rural areas; 6) guaranteeing equity in educational resource allocation; 7) raising research and development spending in universities. |

EDTECH MATURITY | THAILAND'S GROWING EDTECH SECTOR IS HEAVILY SUPPORTED BY GOVERNMENT FUNDING

| Focus area | Country data |
|--|--------------|
| Access to electricity (% of population) (WB, 2019) | 99.9% |
| Internet users (% of population) (WB, 2019) | 66.7% |
| Secure Internet servers (per 1 million people) (WB, 2020) | 1908 |
| Fixed telephone subscriptions (per 100 people) (WB, 2019) | 7.8 |
| Smartphone users (% of population) (Newzoo, 2018) | 43.7% |
| Number EdTech start-ups (Tracxn, 2020) | 66 |
| Number of incubator and accelerator programs | N/A |
| Proportion of primary schools with access to computers for pedagogical purposes (%) (WB, 2019) | 99.8% |
| Proportion of secondary schools with access to computers for pedagogical purposes (%) (WB, 2019) | 99.7% |
| Proportion of primary schools with access to Internet for pedagogical purposes (%) (WB, 2019) | 99.8% |
| Proportion of secondary schools with access to Internet for pedagogical purposes (%) (WB, 2019) | 99.7% |

Maturity of the EdTech ecosystem in Thailand

- **Good countrywide supporting infrastructure** – full electrification and high internet penetration.
- **Nascent EdTech policy** – the potential of technology to support education development needs has not been realized. There have been some efforts to promote ICT at government level and a growing recognition of the positive role technology can play but there is still no formal ICT policy.
- **Limited digital literacy** – social media is popular and prevalent, but digital literacy levels are low, and Thailand faces a major skilled labor shortage.
- **High consumer appetite for investing in children's education** - there are high levels of private schooling, there is a market for B>C EdTech products that could be tapped.
- **Growing EdTech community** – but this is still small.

EDTECH MATURITY | THAILAND'S GROWING EDTECH SECTOR IS HEAVILY SUPPORTED BY GOVERNMENT FUNDING

| Infrastructure | High - Med | Education Policy & Strategy | Med - Low | Resources & capacity | Med | Market & buyers | Med | Supply | Med - Low |
|--|------------|--|-----------|---|-----|---|-----|--|-----------|
| <ul style="list-style-type: none"> All of Thailand's citizens are able to access electricity, and the government is working towards using sustainable energy sources. The majority of Thai citizens access the internet every day, and internet quality is consistently improving. Social media is popular, and the majority of Thai people own one or more mobile devices. | | <ul style="list-style-type: none"> Thailand has taken many actions to promote ICT use, over the last decade, and to transition into an innovation-driven economy, but established no formal national ICT strategy. MoE reform aims to improve internet access, digital efficiency and IT resources across all schools, and has integrated coding into the curriculum. | | <ul style="list-style-type: none"> Thailand has an ageing population and faces the highest skilled labor shortage in the region. The government has invested heavily in venture funding for Thai start-ups, several tech incubators, from the international or ASEAN sector, are exploring the Thai market. There is a growing local EdTech community of start-ups focused on all ages of learner, school management, training and development, and English learning. Teacher and student digital literacy is low and digital resources across all grades are needed. | | <ul style="list-style-type: none"> The government is investing in hardware, software and 'people-ware' across all sectors and aims to upskill all teachers' ICT skills and English teachers' sector specific skills. There is demand for EdTech to improve teacher workload, and digital learning for people unable to access in-person courses in urban regions, particularly among young people. Thailand's mobile shopping market is the strongest in the region; IT and networking markets are growing. Low birth rate and high income levels mean consumers are open to spending on their children's education. | | <ul style="list-style-type: none"> As the 2nd largest economy of the ASEAN region Thailand is transitioning into a digital economy by pushing towards key new tech such as big data and robotics etc. As COVID-19 has cut off in-person learning for many students in the country EdTech start-ups are seeking new approaches to increase their reach. There is an opportunity to make use of innovations appearing across the rest of the ASEAN region, e.g. individualized learning AI in Singapore. | |
| | | | | | | | | | |

INFRASTRUCTURE

Electricity

- Thailand's electricity access for 2018 was 100.00%
- In its vision to develop the country under the Thailand 4.0 framework, the Government aims to transition towards renewable energy and has issued a power development plan for 2018 to 2037 which supports technological tools and grassroots solutions, including blockchain energy, trading schemes, and residential and community-based renewable energy (e.g. allowing electricity generated by rooftop solar panels to be sold back to the grid).

Internet

- There were 52 million internet users in Thailand in January 2020.** The number of internet users in Thailand increased by 1 million (+2.0%) between 2019 and 2020. Internet penetration in Thailand stood at 75% in January 2020.
- 90% of people use the internet every day** - 8% use it once a week, and 2% once a month.
- The average internet speed for mobile phone connections is improving, and 5G technology is appearing** – mobile internet is 17.58Mbps, with an annual change of +29%.
- WiFi speeds are some of the region's strongest, and getting progressively faster** - the average speed for fixed connections is 57.63Mbps, with a year-on-year change of +48%.

Telecoms and tech

- The majority of people own a digital device** - 98% of people own a mobile device, 71% of people own a smartphone, 25% of people own a laptop or computer, and 12% own a tablet.
- There are 92.33 million active phone numbers in Thailand.** This suggests that many people in the country use more than one number.
- Social media is popular, and commonly accessed by mobile** - the average Thai user spends about 3 hours and 11 minutes daily on social media. In 2020, 97.6% of internet users used social networking applications on their mobile phones, and the number of social network users was forecasted to be around 55 million users.

| Focus area | Country data |
|---|--------------|
| Access to electricity (% of population, WB 2018) | 100 |
| Access to electricity, rural (% of rural population, WB 2018) | 100 |
| Access to electricity, urban (% of urban population, WB 2018) | 100 |
| Time required to get electricity (days, WB 2019) | 31 |
| Renewable electricity output (% of total electricity output, WB 2015) | 36.7 |
| Fixed broadband subscriptions (WB 2019) | 14.8m |
| Fixed broadband subscriptions (per 100 people, WB 2019) | 15.3 |
| Individuals using the internet (% of population, WB 2019) | 66.7 |
| Secure internet servers (per 1 million people, WB 2019) | 2597 |
| Fixed telephone subscriptions (WB 2019) | 3.7m |
| Fixed telephone subscriptions (per 100 people, WB 2019) | 3.9 |
| Smartphone users (% of population, Newzoo 2018) | 43.7% |

EDUCATION POLICY AND STRATEGY

Key policies and initiatives

- Over the past ten years, Thailand has enacted a number of measures to promote ICT use to support the country's economic expansion - it has made substantial investments in hardware, software, "people-ware", and infrastructure, and efforts to improve the ICT skills of teachers and students through government programs, public-private partnerships, and ICT initiatives aimed at rural schools and disadvantaged students.
- Coding has become a mandatory subject in the Thai curriculum alongside other Governmental activities as part of 'Thailand 4.0' reform to transition into an innovation-driven economy, and use tech, engineering and computer science in education.
- Key policy foci of MoE reform in 2017 include: Creating opportunities to increase efficiency and reduce inequality with digital transformation and high-speed internet in all schools, and strengthening teachers' and students' English skills and digital skills.

Opportunities

- Thailand has moved from a largely agrarian low-income society to an upper middle-income country and a key contributor to the economic growth of the Southeast Asian region.
- The Ministry has initiated projects to enhance Thailand's competitiveness, including English camps for teachers, the promotion of STEM education in basic education institutions, and the promotion of work-integrated learning.
- The Government is prioritizing developing its human resources and nurturing learners to become well rounded citizens, through numerous projects to boost learners' thinking skills, ethics, life skills, hygiene, and learning skills (e.g. literacy, numeracy and reasoning), and encourage English teachers to develop skills in line with the Common European Framework of Reference for Languages (CEFR).
- Digital learning materials are needed for all subjects and grades.

Constraints

- Thailand has implemented hardware-focused initiatives in schools with mixed success. E.g. the 'One Child One Tablet' policy (2012) where suppliers struggled to deliver tablets to schools on time and teachers lacked skills to use them. The agenda was scrapped by a new MoE in 2014.
- Digital literacy of teachers and students is currently low. Recent international surveys found Thai students' ICT proficiency levels were low and teachers lacked confidence in their own ability to use ICT, in comparison with peers in other countries.
- There is currently no education ICT strategy in existence, despite the recommendations of a UNESCO and OECD joint report in 2017.
- Internet access is not the same in all parts of the country and in rural areas it is more unstable and unresponsive.
- English language proficiency is low.
- University degrees from 'big name' institutions are still a requirement for people seeking high-paid jobs.

RESOURCES AND CAPACITY

Human capital

- Thailand has an ageing population.** The productive work force (ages 20-59) makes up 58.9% of the population but will drop below 50% in the next two decades. Human capital development is essential for increasing the work force's productivity to support the ageing society that Thailand is quickly becoming.
- 74 % (2018) of the working-age population is employed.** This is higher than both the average for its region (65%) and the average for its income group (57%).
- Thailand faces the greatest shortage of skilled labour in the ASEAN region** and has been urged to open up to foreign skilled labour by the US, Australia, Britain, Germany and Japan.

Networks and community

- There are 71 EdTech-related start-ups in Thailand** who provide cloud-based learning solutions, mobile learning apps (for pre-school upwards), courses for professionals, LMS for companies, English learning apps, gamified content, and resource sharing platforms for teachers.
- In 2021, the Ministry of Labour announced a partnership with Microsoft** to upskill 4 million Thais to become digital citizens.

Investment capital

- In 2015, the Thai government announced the launch of 570 million dollars in venture funding** for Thai start-ups.
- There are several tech incubators and accelerators focusing on start-ups in Thailand,** including True Incube, TechGrind, StormBreaker Venture Accelerator, and some US and Europe based funds that have an interest in the ASEAN region.
- There are incubators/accelerators in neighbouring countries who are enhancing the impact of the Thai market,** e.g. Enterprise Singapore, who are sending their teams to explore the Thai market and to bring Thai EdTech companies under their roof.

| Focus area | Country data |
|--|--------------|
| Adult literacy rate (% of people ages 15 and above, WB 2018) | 93.8 |
| Female share of employment in senior-middle management (%, WB 2019) | 31 |
| Companies with female top manager (% of companies, WB 2016) | 64.8 |
| Companies with female participation in ownership (% of companies, WB 2016) | 64.4 |
| Number of new business registered (WB 2018) | 55,589 |
| Number EdTech start-ups (Tracxn 2020) | 71 |
| Number of incubator and accelerator programs | N/A |
| Cost of business start-up procedures (% of GNI per capita, WB 2019) | 3 |

MARKET AND BUYERS

| <i>Role of government as buyer</i> |
|------------------------------------|
|------------------------------------|

- **The government is investing in hardware, software and ‘people-ware’, and has an ambition to roll out internet access to all schools in the country.**
- **The OECD and UNESCO recommends the MoE invests in a national digital learning repository** to help students master subject matter and to develop 21st century competencies.
- **The government is investing in upskilling teachers in ICT skills**, and upskilling English teachers.
- **The government will need to invest in systems to monitor and assess ICT** and its use in schools.

| <i>Role of consumer as buyer</i> |
|----------------------------------|
|----------------------------------|

- **Well-known private schools and respected universities are concentrated in the capital**, creating a demand for digital content and online learning courses for Thai people who are not able to access in-person courses due to financial or logistical constraints.
- **Demand for digital skills is growing among young people in Thailand** who want to become more employable, in a country with a 147% mobile penetration rate.
- **Teachers are looking for ways to free themselves from mundane tasks**, to spend more time on the meaningful parts of their jobs, such as personalization and mentoring, and are looking for ways to do this.
- **74% of the population uses mobile devices to access banking services**. Thailand also has the strongest preference towards making mobile app purchases compared to other ASEAN countries.

| <i>Market conditions</i> |
|--------------------------|
|--------------------------|

- **Thailand’s IT market grew more than 13% during 2019** with hardware as the biggest contributor and digital services with the highest growth at 34%. Smart devices including CCTV and smart Bluetooth were valued at around 23% of the overall IT market. Software services accounted for 20%, with digital services valued at 12% of the overall IT market.
- **Thailand’s networking market is projected to hit THB 18.3 billion by 2025** from THB 10.7 billion in 2018 at a CAGR of 8% during the forecast period.
- **Thailand has been witnessing huge growth in data traffic**. High mobile penetration encourages people to use more online services and activities such as mobile banking, PromptPay, and e-commerce. With 5G, Thailand is expected to see the exponential growth of data traffic, especially from IoT devices.

| Focus area | Country data |
|---|---------------------|
| Government expenditure on education (% of total, WB 2009) | 19.1 |
| Net ODA received (% of central gov expense, WB 2019) | -0.3 |
| Net ODA received per capita (current US\$, WB 2019) | -4.9 |
| GDP per capita (current US\$, WB 2019) | 7,806.7 |
| GDP per capita growth (annual %, WB 2019) | 2.1 |
| Urban population (% of total population, WB 2019) | 50.7 |

SUPPLY

Trends

- Thailand is the 2nd largest economy of the ASEAN region and is transitioning from being an industrial economy to a digital economy, following widespread proliferation of the internet and the Thai government's active push towards digital transformation through its Thailand 4.0 initiative. Some of the key technology initiatives in focus are related to big data, robotic process automation, cloud, software as a service, Internet of Things, CCTV and Bluetooth.
- The ICT Ministry rolled out the 'Smart Thailand' strategy as part of the national ICT framework known as 'ICT 2020', plus a pilot project called 'Smart City', which empowers local industries to compete globally. The objective is to widen the penetration of the Internet to every house, and the availability of affordable devices for practical applications.

Opportunities

- There is an opportunity to make use of innovations appearing across the rest of the ASEAN region, e.g. individualizing education through AI in Singapore, giving schools direct access to cutting-edge resources in Indonesia, connecting students with online study partners in Singapore, combining online and offline classes in Vietnam, and working towards career goals with online advisors in Malaysia.
- COVID-19 has cut off in-person learning for many students in the country which has forced many learners to turn to online channels to continue their education, and EdTech start-ups to strive to increase their reach.

| Focus area | Country data |
|--|--------------|
| High-technology exports (current US\$, WB 2019) | 40.3bn |
| High-technology exports (% of manufactured exports, WB 2019) | 23.6 |
| ICT goods exports (% of total good exports, WB 2019) | 14.4 |
| ICT good imports (% of total good imports, WB 2019) | 13.1 |
| ICT service exports (% of service exports, BOP, WB 2017) | 0.6 |
| ICT service exports (BoP, current US\$, WB 2017) | 450m |
| Medium and high-tech exports (% manufactured exports, WB 2018) | 62.2 |

CASE STUDY | VIETNAM



VIETNAM - OVERVIEW OF ENABLING ENVIRONMENT FOR EDTECH

- Strong consumer market for education –** culturally high aspirations lead to an appetite to spend on education, particularly English language and career focused skills. This leads to higher price-points. However, there is still demand for traditional education from some parents.
- Infrastructure is patchy despite investment –** but smartphone penetration is high.
- Good tech talent is available –** leading to investment by international tech companies. Government continues to invest in developing tech talent to meet the demand for high-skilled talent.
- North / South divide –** conservative, communist, bureaucratic North vs dynamic, innovative, business friendly and consumerist South.

| | | | |
|---|---------|--|-----|
| Infrastructure | Med-Low | Education Policy & Strategy | Med |
| <ul style="list-style-type: none"> ▪ Infrastructure is a challenge outside major cities. ▪ The Government significantly invested to enable all citizens to access electricity. ▪ Rapid urbanization and industrialization has led to issues with unsustainable electricity supply. ▪ Fixed broadband penetration is low. There are high rates of internet mobile penetration and smartphone ownership, but connectivity is censored, fairly costly, and can be unreliable. ▪ Social media use is high, particularly among those under 18. | | <ul style="list-style-type: none"> ▪ New reform prioritized digital literacy learning, and school connectivity and resource access. ▪ The Government is investing in innovative solutions to improve nationwide connectivity, knowledge sharing, and financial flexibility. ▪ There is an appetite for improved Government policy to protect young learners online, and trade regulations that encourage foreign investment and local business prospects. ▪ A new curriculum will be developed for 2025 presenting opportunities for digitization of new content. | |
| Resources & capacity | Med | Market & buyers | Med |
| <ul style="list-style-type: none"> ▪ Advanced tech is outsourced abroad, and the government invests to support new companies, attract and retain tech sector human resource, and meet the demand for high-skilled talent. ▪ The market attracts major foreign investment and some funding from local corporations. ▪ Major international technology companies are setting up in Vietnam because of availability of local talent - this may also pose a competitive threat to local businesses. | | <ul style="list-style-type: none"> ▪ The MoE provides guidance on EdTech and is developing policy for online education. ▪ Most start-ups use business to customer sales models, and target stakeholders at all levels, who are likely to be digitally literate and interested in EdTech. ▪ There is lack of evidence for market willingness to pay for online courses, and offline-online hybrid learning solutions may be more likely to secure loyal customers. | |

VIETNAM HAS A RAPIDLY GROWING AND AGEING POPULATION AND HAS EXPERIENCED RAPID, STRONG ECONOMIC GROWTH

| Country Profile | | |
|------------------|-------------------|-------------------------------------|
| Population | Total | Annual growth |
| | 96.4 million | 1% |
| Youth population | Aged 14 and under | Aged 15 - 24 |
| | 23% | 14% |
| Settlement | Urban | Rural |
| | 36.6% | 63% |
| Health | Life expectancy | Infant mortality (per 1,000 births) |
| | 75 | 16 |
| GDP | Total (\$) | Per Capita (\$) |
| | 261.9 billion | 2,715.3 |
| | Growth (% annual) | |
| | 7% | |



Vietnam is located on the Indochina peninsula. It has a long land border of 4,550 km, and borders China to the North, Laos and Cambodia to the West, and the Eastern Sea of the Pacific Ocean to the East.

| Context |
|--|
| <ul style="list-style-type: none"> Vietnam's population expected to grow by almost 24 million by 2050, and the 65+ age group is also expected to increase 2.5 times by 2050. Vietnam has transformed from one of the world's poorest nations into a lower middle-income country in just 30 years. Its emerging middle class currently accounts for 13% of the population, and is expected to reach 26% by 2026. Vietnam has over 53 ethnic minorities that make up around 14% of the population. Living standards and basic services have improved in the last two decades. Almost all citizens use electricity, compared to 14% in 1993. Health outcomes have also improved, and the infant mortality rate has decreased, from 32.6 (per 1,000 live births) in 1993, to 16. Rapid urbanization and industrialization have damaged Vietnam's environment and natural assets, and led to urgent issues with pollution, waste, and power and water supply. |

| Impact of COVID-19 |
|---|
| <ul style="list-style-type: none"> The COVID-19 outbreak has not been as severe in Vietnam compared to other countries, due to proactive government measures, and the nation has been celebrated for its resilience against the pandemic. Vietnam is one few countries in the world not to expect an economic recession following the pandemic. The education of more than 21 million children across Vietnam was disrupted because of COVID-19 as schools were closed for over three months to curb the spread of the virus. |

VIETNAM SCORES HIGHLY IN INTERNATIONAL EDUCATION RANKINGS BUT HAS HIGH RATES OF OOSY AND A GROWING PRIVATE SECTOR

| Education data | | | | |
|-------------------------------|---|-----------------------------------|--------------------------|----------------------------------|
| Education Spending (WB, 2018) | 14.5% of total government expenditure | | | |
| Primary (WB, 2019) | No. students | % of students in private school | No. teachers (% trained) | Student to trained teacher ratio |
| | 8.5m | 1.2% | 390.8k (99.5%) | 21.9 |
| Secondary | No. students | % of students in private school | No. teachers (trained) | Student to trained teacher ratio |
| | N/A | N/A | N/A | N/A |
| Total enrolment (% of total) | Pre-primary - gross (Female) (WB, 2019) | Primary - net (Female) (WB, 2019) | Secondary (Female) | |
| | 95.9% (97.1%) | 98.6% (100%) | N/A | |
| PISA score (OECD, 2018) | Reading (average) | Mathematics (average) | Science (average) | |
| | 505 (487) | 496 (489) | 543 (489) | |

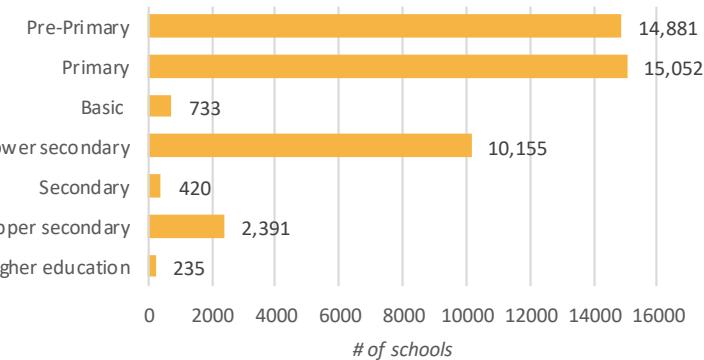
| Major education challenges |
|---|
| <ul style="list-style-type: none"> ▪ Since 2008, the government has spent a significant portion of its budget on education which has led to widespread social support for education and progress in this sector. ▪ Vietnam outperforms neighboring and lower middle-income countries in education rankings – it ranked 48th in the World Bank human capital index and has scored highly in all PISA subject since 2015. ▪ International scores may be inflated by low secondary enrolment and underrepresentation of disadvantaged youth - nearly 37% of upper-secondary school-aged students are out-of-school. ▪ Attainment is lower among ethnic minority groups who are also the most economically disadvantaged. ▪ Vietnam's local rising middle class prefer the private education sector over public schooling due to quality of services, which has increased market focus on private and vocational schools and services. ▪ Schooling has become costly as many schools charge extra tuition and parents often pay for tutoring. ▪ Intense competition for University places is likely to grow as supply does not meet demand and more jobs are set to become automated. |

| Government response to COVID-19 |
|--|
|  School closure: All schools first closed from February until mid-April 2020. On February 21 2021, school holidays were extended indefinitely.  School reopening: Opened secondary schools on May 4 and Primary and ECD schools on May 11, 2021.  Areas of support: Online learning and teacher CPD through Microsoft Teams and Viettel, provided tablets and WiFi to minority children and remote areas, and added digital literacy to the curriculum.  Funding: A national credit support and fiscal package equal to \$12 billion. |

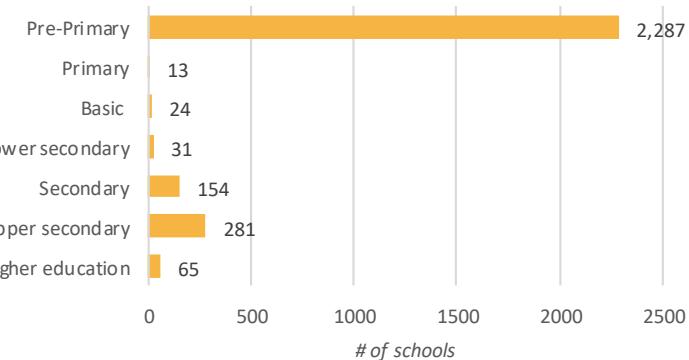
A GROWING NUMBER OF PRIVATE, URBAN PRE-PRIMARY AND PRIMARY SCHOOLS MOSTLY SERVE HIGH INCOME FAMILIES AND EXPATS

- There are **many types of school in Vietnam**. Schools are divided into two types: public (*cong lap*) and non-public (*ngoai cong lap*). All schools use the same curriculum and must operate according to Vietnamese laws. Non-public schools are classified into: **semi-public** (*ban cong*), set up by the State and mobilizes society to jointly invest in infrastructure; **people-founded** (*dan lap*), social/economic organizations that set up an institution with non-State capital with State permission; and **private** (*tu thuc*), set up by individuals with State permission and financially supported by themselves.
- There has been a **growth in the number of private schools in pre-primary and general education**, especially in major cities. These **institutions aim to offer quality education alternatives to high-income Vietnamese families and expats**.
- Local private enrolment rates may change**. Vietnam is relaxing regulations for local enrolment in international schools, and the cap for local students is set to rise to 50% from 20%.
- A 2018 report by the EU-Vietnam Business Network stated that Vietnamese **people prefer private education over the public school system** because of perceived stronger student outcomes. This has led to a **strong market for 'non-public' and 'overseas' services**. In addition, **paid-for supplementary services** to enhance employability, such as in language and soft skill tutoring, are increasingly valued, and there is growing demand for world-class education through study abroad.
- UNESCO (2021) state that **COVID-19 adversely affected the incomes and well-being of private school teachers**, especially in low-cost private schools. In addition, private school teachers in Vietnam reported not being paid during school closures.
- Equest**, based in Hi Chi Minh City, is a **popular low-cost provider of education to 110,000 local students each year**, and is **funded by KKR Global Impact**, the impact arm of equity giant KKR.
- Forbes (2014) state that most **private schools across Vietnam are for-profit schools**, and public schools throughout Vietnam are not entirely free, and typically have fees that students must pay to attend. In rural areas, this might amount to c. USD100 per student per year, which is a **significant cost to farming families**, who typically earn c. USD600-1,000 a year.
- Low-cost private schools are competitive**. Last year, over 1,500 students competed for 500 places at Doan Thi Diem, a for-profit primary and secondary school that has operated for over 20 years, and is one of the first private schools in the country. The school cost roughly USD250 a month to attend, including tuition (approx. USD150 a month), meals, and transportation. This cost is comparable with most private schools in Hanoi, and also increasing rapidly.
- Though **government schools still make up the majority of schools** across Vietnam, **the majority of private schools are early childhood and pre-primary providers**.

Number of schools in Vietnam in school year 2016/17, by type



Number of schools in the private sector in Vietnam in school year 2016/17, by type



Source: Ministry of Education and Training, Statista

UPPER SECONDARY ENROLMENT AND ATTAINMENT IS LOWER AMONG ETHNIC MINORITY GROUPS DESPITE STRONG NATIONAL OUTCOMES

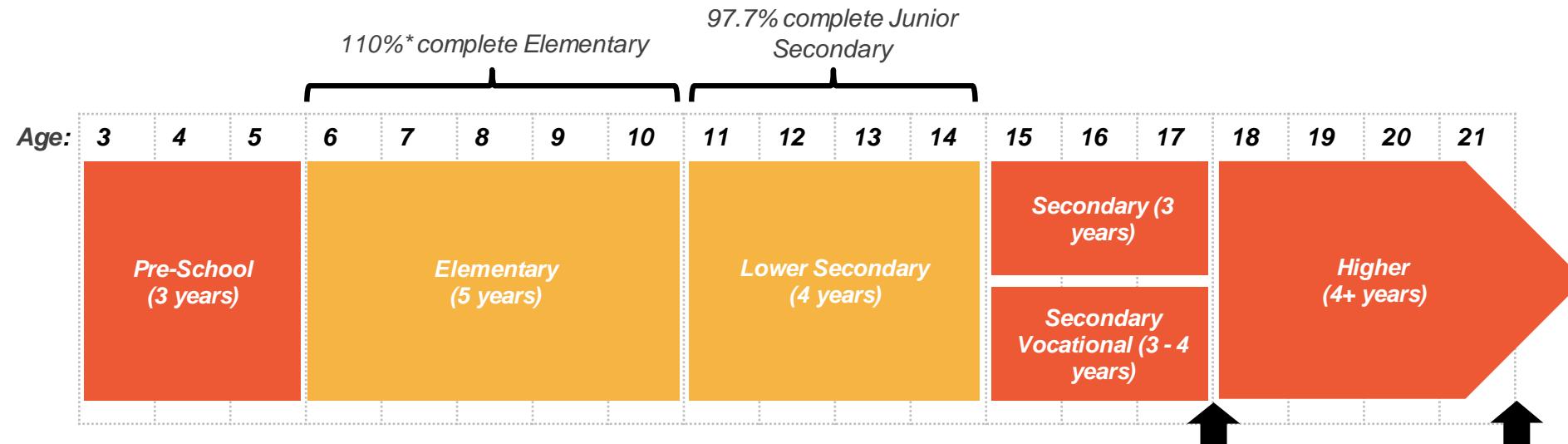
| Causes of inequality |
|--|
| <ul style="list-style-type: none"> Rapidly ageing population: As one of the most rapidly ageing countries, Vietnam's 65+ age group is also expected to increase 2.5 times by 2050. Unusually large cohort of unver-20s competing against rapid industrialisation: Intense competition for University places is forecast to continue to grow, as supply does not meet demand. The economy is going through major transformation and those only primary educated are 3 times more likely to have their job automated. Rising supplementary school fees: Though elementary education is free, schools charge supplementary fees, ranging from maintenance levies to fees for books and uniforms. Secondary schools are allowed to charge small tuition fees. It is also common for parents to pay teachers for extra private lessons for their children. Low and unequal upper secondary enrolment: Nearly 37% of Vietnamese children are not enrolled in upper secondary school, and school leavers tend to be poorer and lower-achieving than average. Unequal attainment: Attainment is much lower among ethnic minority groups. Vietnam has over 53 ethnic minorities that make up around 14% of the population, and are among the most economically disadvantaged groups. Rising shifts towards private education in affluent areas: Increasingly, local middle class families are choosing private schooling over public schooling, due to a perception of higher quality services, which has led to a market focus on private and vocational schools. Restricted connectivity options: There are only three internet service providers and there is censorship of websites that feature politically sensitive or critical content, and websites of select human rights groups. |

| Drivers of educational inequality across Vietnam: | Agrarian | Religion | Ethnicity | Language | Poverty | Disability | Gender |
|---|----------|----------|-----------|----------|---------|------------|--------|
| Attainment is lower across ethnic minority groups. There is a North vs South divide with the North as less prosperous | | | | | | | |

| Needs and issues |
|--|
| <ul style="list-style-type: none"> Education as a priority: Since 2008, the government has spent a significant portion of its budget on education. Ongoing government commitment and long standing cultural and social support for education is perceived to have resulted in progress in this sector. Education as part of whole system reform: The Education Development Strategic plan (2011-2020) aims to develop a highly skilled future workforce by: achieving universal ECD, improving secondary quality and access in disadvantaged areas, restructuring vocation education, and strengthening education management, investment and teacher professional development. Digital reform: New MoE reform and investment prioritized digital literacy learning, and school connectivity and ICT resource access. The Ministry also recently embedded digital literacy into the national curriculum. Strong but contested international outcomes: Students ranked 13th out of 79 countries in PISA's 2018 rankings for reading, an improvement of 19 places from 2015. Since PISA assesses learning of 15-year-olds in school, scores may be inflated by the underrepresentation of students from disadvantaged groups. Growing popularity for STEM: There is an emerging desire among parents for children to develop STEM skills. |

EDUCATION IN VIETNAM IS COMPULSORY FOR 5 YEARS OF ELEMENTARY SCHOOL AND 4 YEARS OF LOWER SECONDARY SCHOOL

The formal structure of the education system follows a 3-5-4-3-4 progression:



Key information:

Language of instruction: Vietnamese

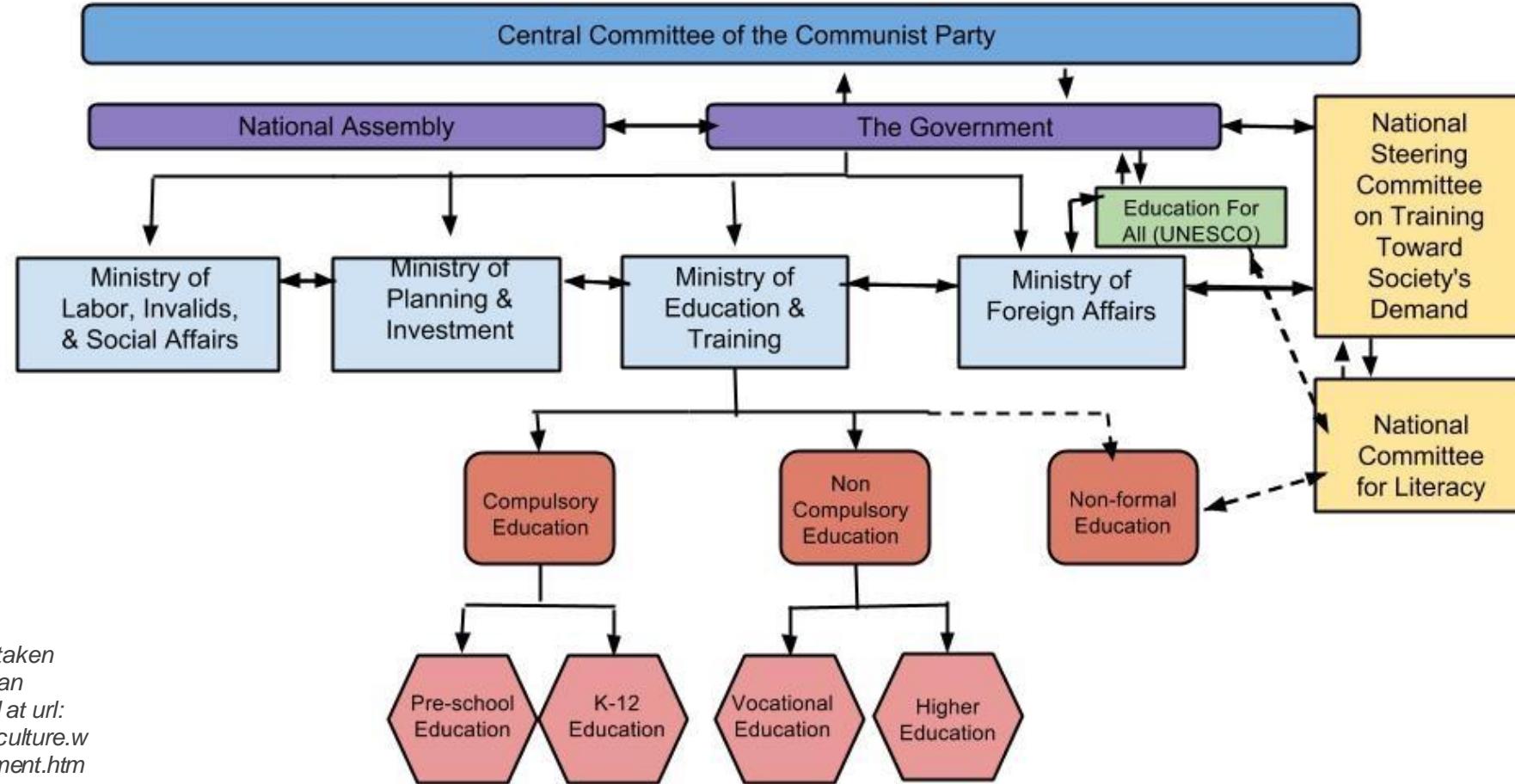
Compulsory education: Elementary and Basic Secondary

Academic year: September to June

Key:

- = Compulsory education
- = Non-compulsory education
- = Mostly informal/private education

STRUCTURE OF THE EDUCATION SYSTEM | KEY INSTITUTIONS



MAJOR EDUCATION POLICIES AND KEY REFORMS

| | |
|---|---|
| Education Law (2005) | <p>The Government released the Education Law in 2005 to describe the basic structure of the education system, the qualifications students must possess to enter each level, and to establish the centrality of the Ministry of Education and Training's (MOET) overall role in the system. The law also mandates and describes a quality assurance scheme, and expressly forbids religious instruction in schools.</p> |
| The amended Education Law (2009) | <p>Amendments to the Education Law were made to meet the changing requirements of industry and contemporary education. Four additions were made: 1) Higher salaries for teachers to motivate them to deliver higher quality education; 2) streamlining general education into two areas of basic education and job-oriented education; 3) standardizing teacher qualifications; 4) providing lower-secondary school students with free tuition.</p> |
| Fundamental School Quality Level Standards (2003) | <p>A national policy to provide universal access to education and ensure that minimal conditions were met in every primary school. Standards comprise a set of 34 requirements schools are expected to meet in 3 areas: 1) Input standards (e.g. teacher qualifications, infrastructure, teaching resources); 2) process standards (e.g. annual school plans, parent participation CPD); 3) output standards (e.g. net enrolment, progression and completion rates).</p> |
| Education For All Action Plan (2003-2015) | <p>Recognizing the need to improve educational access and quality, the Government adopted the Dakar Education for All (EFA) Framework for Action to devise a plan to strengthen the capacity, provision and monitoring in each of the following areas: Early childhood care and pre-school, primary, lower-secondary and non-formal education.</p> |
| Education Development Strategic Plan (2011 – 2020) | <p>Intent to renovate the education system towards modernization, democracy and global integration, in 2011, the Government released a plan to improve education, ensure it is in line with international quality standards, and ensure social equity, by:</p> <ul style="list-style-type: none"> 1. Achieving universal early childhood and care education. 2. Improving the quality of lower secondary education and pursuing universal upper secondary education in disadvantaged areas. 3. Strengthening ethnic minority boarding schools and providing inclusive education at all levels. 4. Restructuring the vocational education system. 5. Expanding non-public higher education and provide more university preparatory institutions for ethnic minorities. 6. Diversify various forms of continuing education and create life-long learning opportunities. 7. Renovate education management, expand the education network, develop human resources, and strengthen investment and training. |

EDTECH MATURITY | A GROWING WORKFORCE AND MARKET LED BY MAJOR GOVERNMENT FUNDING AND GROWING FOREIGN INVESTMENT

| Focus area | Country data |
|---|--------------|
| Access to electricity (% of population) (WB, 2019) | 99.4% |
| Internet users (% of population) (WB, 2019) | 68.7% |
| Secure Internet servers (per 1 million people) (WB, 2020) | 3105.8 |
| Fixed telephone subscriptions (per 100 people) (WB, 2019) | 3.8 |
| Smartphone users (% of population) (Newzoo, 2019) | 44.9% |
| Number EdTech start-ups (Tracxn, 2020) | 146 |
| Number of incubator and accelerator programs (Tech in Asia, 2021) | 40 |
| Proportion of primary schools with access to computers for pedagogical purposes (%) | N/A |
| Proportion of secondary schools with access to computers for pedagogical purposes (%) | N/A |
| Proportion of primary schools with access to Internet for pedagogical purposes (%) | N/A |
| Proportion of secondary schools with access to Internet for pedagogical purposes (%) | N/A |

Maturity of the EdTech ecosystem in Vietnam

- **Strong consumer market for education** – culturally high aspirations lead to an appetite to spend on education, particularly English language and career focused skills. This leads to higher price-points. However, there is still demand for traditional education from some parents.
- **Infrastructure is patchy despite investment** – but smartphone penetration is high.
- **Good tech talent is available** – leading to investment by international tech companies. Government continues to invest in developing tech talent to meet the demand for high-skilled talent.
- **North / South divide** – conservative, communist, bureaucratic North vs dynamic, innovative, business friendly and consumerist South.

EDTECH MATURITY | A GROWING WORKFORCE AND MARKET LED BY MAJOR GOVERNMENT FUNDING AND GROWING FOREIGN INVESTMENT

| Infrastructure | Med-Low | Education Policy & Strategy | Med | Resources & capacity | Med | Market & buyers | Med | Supply | Med |
|---|---------|--|-----|---|-----|---|-----|--|-----|
| <ul style="list-style-type: none"> ▪ Infrastructure is a challenge outside major cities. ▪ The Government significantly invested to enable all citizens to access electricity. ▪ Rapid urbanization and industrialization has led to issues with unsustainable electricity supply. ▪ Fixed broadband penetration is low. There are high rates of internet mobile penetration and smartphone ownership, but connectivity is censored, fairly costly, and can be unreliable. ▪ Social media use is high, particularly among those under 18. | | <ul style="list-style-type: none"> ▪ New reform prioritized digital literacy learning, and school connectivity and resource access. ▪ The Government is investing in innovative solutions to improve nationwide connectivity, knowledge sharing, and financial flexibility. ▪ There is an appetite for improved Government policy to protect young learners online, and trade regulations that encourage foreign investment and local business prospects. ▪ A new curriculum will be developed for 2025 presenting opportunities for digitization of new content. | | <ul style="list-style-type: none"> ▪ Advanced tech is outsourced abroad, and the government invests to support new companies, attract and retain tech sector human resource, and meet the demand for high-skilled talent. ▪ The market attracts major foreign investment and some funding from local corporations. ▪ Major international technology companies are setting up in Vietnam because of availability of local talent - this may also pose a competitive threat to local businesses. | | <ul style="list-style-type: none"> ▪ The MoE provides guidance on EdTech and is developing policy for online education. ▪ Most start-ups use business to customer sales models, and target stakeholders at all levels, who are likely to be digitally literate and interested in EdTech. ▪ There is lack of evidence for market willingness to pay for online courses, and offline-online hybrid learning solutions may be more likely to secure loyal customers. | | <ul style="list-style-type: none"> ▪ EdTech is widely used across the country, especially for English language, LMS, and MOOC providers are a key new market segment. ▪ There is increasing strong consumer interest in advanced learning technologies (e.g. VR). ▪ Other companies mostly provide digital content for all ages, and tools to integrate advanced technology into learning. ▪ The market is seen as saturated with low-quality content, and there are opportunities for more products in Early Childhood learning, STEAM, and competency-based K-12 learning. | |

INFRASTRUCTURE

Electricity

- **Since 2017, Vietnam's entire population has been able to get access to electricity** due to the government's Rural Electrification Program, which utilized international donor and commercial bank loans to connect 82m homes in poor and rural areas to the national grid in under 20 years.
- **Rapid urbanization and industrialization have caused urgent challenges** with unsustainable electricity and water supply, waste management and pollution.

Internet

- **There is a high internet penetration rate** despite only gaining internet access in 1997.
- **The mobile internet market has recently slowed in growth** because of high penetration and low internet speeds caused by frequent service disruptions, which has developed a reputation for unreliable connectivity.
- **Fixed broadband penetration is still relatively low** due to a reduced number of fixed lines and the prevalence of mobile platforms.
- **Vietnam has the third-highest high-speed internet cost in the region** at \$2.41 per megabit per month, which can hamper market innovation and growth.

Telecoms and tech

- **Vietnam is putting considerable effort into modernization** and the expansion of its telecommunication system, and seeking to make 5G mobile network services and smartphones universally accessible, and provide fiber-optic networks to all regions and 80% of households by 2025.
- **There are significant numbers of digital consumers**; over 70% of the population own a smart phone and spend an average of almost seven hours online every day.
- **There are 64m active social media users in Vietnam** 6m are under the age of 18.
- **There are three, government owned, internet service providers** who censor websites that feature politically sensitive or critical content, and websites of select human rights groups.

| Focus area | Country data |
|---|--------------|
| Access to electricity (% of population, WB 2018) | 100 |
| Access to electricity, rural (% of rural population, WB 2018) | 100 |
| Access to electricity, urban (% of urban population, WB 2018) | 100 |
| Time required to get electricity (days) (WB 2019) | 31 |
| Renewable electricity output (% of total electricity output, WB 2015) | 36.7 |
| Fixed broadband subscriptions (WB 2019) | 14.8m |
| Fixed broadband subscriptions (per 100 people, WB 2019) | 15.3 |
| Individuals using the internet (% of population, WB 2019) | 68.7 |
| Secure internet servers (per 1 million people, WB 2019) | 2597 |
| Fixed telephone subscriptions (WB 2019) | 3.7m |
| Fixed telephone subscriptions (per 100 people, WB 2019) | 3.9 |
| Smartphone users (% of population) (Newzoo, 2019) | 44.9% |

EDUCATION POLICY AND STRATEGY

| <i>Key policies and initiatives</i> | <i>Opportunities</i> | <i>Constraints</i> |
|--|---|--|
| <ul style="list-style-type: none"> ▪ The government launched a new growth model, <i>Industry 4.0</i>, to reach upper middle-income status by 2030 - It includes developing: <ul style="list-style-type: none"> ○ A highly skilled workforce of graduates and employees. ○ An education system that prioritizes life-long, inclusive academic and technical learning. ○ An adaptive, flexible labour market that grants universal social protection. ▪ The Ministry embedded digital literacy into the national curriculum, at all school levels following COVID-19 school closures. ▪ The Ministry developed a national digital literacy framework as part of its next 10-year national education sector plan and budget. ▪ The Ministry collaborated with non-profit and private sector partners to increase learner connectivity in rural and remote areas, by providing: Internet access and virtual training to over 25m million educators, tablets with WiFi for ethnic minority children, and online learning aids that illustrate inclusive best teaching practices. ▪ A national “Digital Knowledge” platform was launched in 2018 to facilitate knowledge-sharing and information access on an open platform. | <ul style="list-style-type: none"> ▪ Vietnamese authorities have reaffirmed their commitment to economic modernization and a more open economy and the education sector plays an important part of the national <i>Industry 4.0</i> economic and digital transformation agenda. ▪ Government investment in the digital economy hastened Covid-19 recovery is forecast to contribute significantly to Vietnam's increasing revenue, and has prompted investment companies to view the nation as a growth hub for tech start-ups. ▪ Ho Chi Minh is set to become the first “smart city” in Vietnam and will focus on building a cloud-based infrastructure, big data, and data warehouses and centres; this may include EdTech innovation initiatives. ▪ The Government has announced plans to commercialize a 5G network. As a result, more citizens will be able to access 5G easily, using only domestically-produced equipment, which may improve EdTech scaling opportunities through social media and web and app based platforms. ▪ Vietnam is looking to harness non-cash payment technologies via mobile phones and the web, as part of a new national financial inclusion strategy until 2025, which may further improve EdTech reach. | <ul style="list-style-type: none"> ▪ Vietnam has been transitioning from a rigid, centrally-planned economy since 1986. ▪ Technology regulations are continuously being updated, revised, and restructured in Vietnam - Private investors pursuing EdTech are preparing to compete in a fluid and ever-changing market place. ▪ Compared to regional and global averages, children in Vietnam are at higher risk of exposure to cyberbullying and inappropriate online content and behaviour, due to less defined government policies for child online protection. 21% of young people are reported to have been a victim of cyber bullying in 2019. ▪ 98% of total export revenue currently comes from Foreign Direct Investment, although the government hopes revenue growth of the IT sector would be double the country's GDP growth. ▪ There is a perception that foreign investment in the digital economy is hindered which can limit local business prospects, and more should be done to: <ul style="list-style-type: none"> ○ Bridge the digital divide. ○ Establish a stable and regulatory policy landscape in line with international best practice. ○ Review tariff and non-tariff barriers. |

RESOURCES AND CAPACITY

| | |
|-------------------------------|---|
| Human capital | <ul style="list-style-type: none"> ▪ The growing demand for highly-skilled talent far outstrips supply – the emerging workforce often seek higher-ed and employment opportunities abroad (and contributed \$1bn to the US economy in 2020). ▪ Software parks in Hanoi and Mekong are being built to attract human resource for the IT sector and a number of initiatives domestic IT companies produce software and equipment to retain national talent. ▪ Start-up founders are mostly “third generation” entrepreneurs who have studied abroad and may be likely to prioritize innovative, user-friendly products that are aligned with international standards. ▪ Advanced technologies (e.g. Augmented Reality) integrated into products and services are often outsourced from foreign providers notably from Singapore, Malaysia and Korea. |
| Networks and community | <ul style="list-style-type: none"> ▪ The Government of Vietnam has been actively supporting start-ups and established around 30 business incubators and 10 business accelerators across the country. ▪ EdTech service providers from the US, Singapore and Israel have established a presence in Vietnam without local partnerships, and could pose a competitive threat to homegrown business. ▪ Vietnam’s e-commerce and IT export markets are also booming – e-commerce was valued at \$5bn in 2019, and forecast to reach \$23bn by 2025, and mobile phones and computers were the first and third key exports in 2019, with a trade surplus of \$28bn. |
| Investment capital | <ul style="list-style-type: none"> ▪ The market is entering its first stage of growth, and mostly funded by foreign investors – funding was predicted to rise from \$55m to \$150m between 2018-19, with an annual market growth of 50%. ▪ One start-up receives most funding - <i>Topica EdTech Group</i>, a tertiary MOOC, received \$50m in 2018. ▪ Smaller, local EdTech players are struggling with lack of funding and finding a product-market fit. ▪ The UK, Republic of Korea, and Finland are actively interested in Vietnam’s EdTech sector and seeking partnership for business development in offshore markets. ▪ Vietnamese corporations also play an active role in supporting the start-up ecosystem and invest significantly in venture capital funds that support research in science, technology and innovation. ▪ The market has attracted foreign EdTech groups like Duolingo, who want to trial content in local schools and competitively access the market via local sales agents with strong government relationships. |

| Focus area | Country data |
|---|--------------|
| Adult literacy rate (% of people ages 15 and above, WB 2009) | 93.5 |
| Female share of employment in senior-middle management (%, WB 2007) | 16.3 |
| Companies with female top manager (% of companies, WB 2015) | 22.4 |
| Companies with female participation in ownership (%) of companies, WB 2015) | 51.1 |
| Number of new business registered(WB 2016) | 73,422 |
| Number EdTech start-ups (Tracxn 2019) | 146 |
| Number of incubator and accelerator programs (Tracxn 2021) | 40 |
| Cost of business start-up procedures (% of GNI per capita, WB 2019) | 5.6 |

MARKET AND BUYERS

| | |
|------------------------------------|--|
| Role of government as buyer | <ul style="list-style-type: none"> The Ministry actively provides guidance on EdTech implementation at the education provider and local authority levels, through different forms of publications and notifications. The Government is currently developing legislation for online education and accreditation but the new agenda for digital transformation has heavily influenced the rapid growth of the EdTech market. |
| Role of consumer as buyer | <ul style="list-style-type: none"> Most EdTech start-ups use business-to-customer sales models. The broader population are digitally literate internet users who value the importance of education and life-long learning, and may be enthusiastic consumers of emerging EdTech. Education reform from early childhood to tertiary levels have cultivated EdTech interest and participation across all key stakeholder groups including policy makers, school leaders and administrators, teachers, students and families. |
| Market conditions | <ul style="list-style-type: none"> Widespread, rapid digital uptake and internet penetration has paved the way for a fast-developing prospective market for technology investors and EdTech businesses alike. The market is driven by some key factors including rising demand for multimedia content, low-cost-and time-efficient learning options, and strong government initiatives to promote start-ups and ICT use. There is a lack of evidence for market willingness to pay for online courses and a perception of need for greater quality assurance in online and digital education solutions. There is an emerging desire among parents for children to develop STEM skills – in response, providers are diversifying product content from an English language focus, to other areas such as maths. Offline-online hybrid learning solutions may be more likely to secure loyal customers as parents and educators are generally in favour of study centre-based learning over strictly digital solutions and hybrid models may make it easier for students and parents to adopt online tools. |

| Focus area | Country data |
|---|--------------|
| Government expenditure on education (% of total, WB 2018) | 14.5 |
| Net ODA received (% of central gov expense) | N/A |
| Net ODA received per capita (current US\$, WB 2019) | 11.3 |
| GDP per capita (current US\$, WB 2019) | 2,715.3 |
| GDP per capita growth (annual %, WB 2019) | 6.0 |
| Urban population (% of total population, WB 2019) | 36.6 |

SUPPLY

Trends

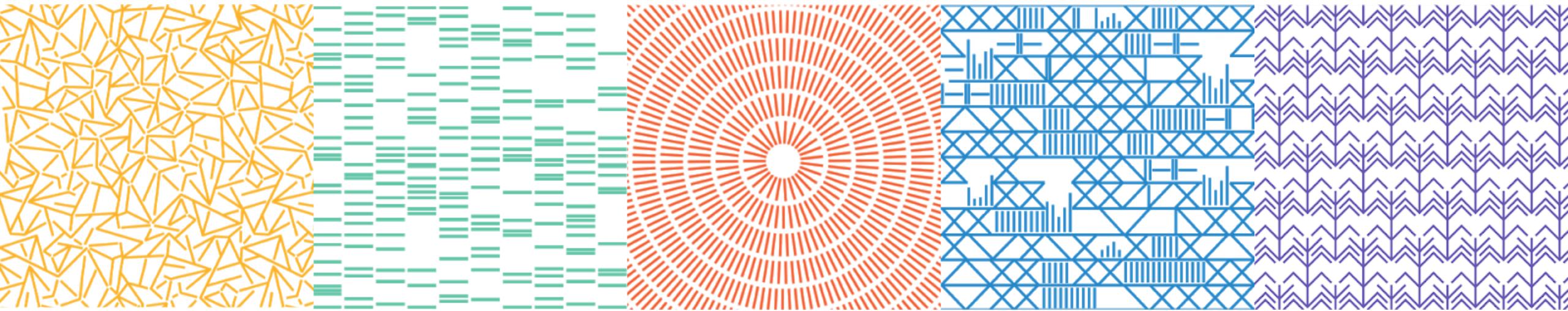
- **Massive Open Online Courses (MOOC) providers have developed rapidly** and started growing as a key new market segment over the period of 2015-2019.
- **The market is expected to align with strong consumer interest in advanced technologies** such as Augmented Reality (AR), Virtual Reality (VR), Artificial Intelligence (AI) and gamification.
- **EdTech companies currently focus on three key products and services** including digital learning content for all ages, learning management systems, and tools to integrate advanced technology, such as AI, in learning.
- **The market is perceived to be crowded with low-quality content** for learning in: early childhood (focused on English Language and game-based learning), K-12 (focused on test prep, self-study, eBooks and tutoring services), and English Language (for adults and children).

Opportunities

- **The Early Childhood Education sector is a niche market** and offers potential business opportunities with kindergartens looking to respond to new government sector development plans, particularly in English language content, teacher training quality assurance and communities of practice.
- **The K-12 education system is massive and has undergone significant reform** to shift towards competency-based curricula, which prioritize STEAM learning, reaching over 15.8m students. This presents opportunities for new EdTech products and services, particularly in the areas of: digital content, e-textbooks, teacher training, and assessment products.

| Focus area | Country data |
|--|--------------|
| High-technology exports (current US\$, WB 2019) | 90.4b |
| High-technology exports (% of manufactured exports, WB 2019) | 40.4 |
| ICT goods exports (% of total goods exports, WB 2019) | 35.0 |
| ICT good imports (% of total goods imports, WB 2019) | 25.7 |
| ICT service exports (% of service exports, BoP) | N/A |
| ICT service exports (BoP, current US\$) | N/A |
| Medium and high-tech exports (% manufactured exports, WB 2018) | 54.6 |

APPENDICES



APPENDIX 1 | COMMONLY-USED ACRONYMS

ADB – Asian Development Bank

AI – Artificial Intelligence

App – An application, especially as downloaded by a user to a mobile device

AR – Augmented Reality

ASEAN – The Association of South East Asian Nations

CHED – Commission on Higher Education

COVID – Coronavirus disease

CPD – Continuing Professional Development

DepEd – Department of Education

ECD – Early child development

EdTech – Education Technology

FIT-Ed - Foundation for Information Technology Education and Development

FLN – Foundational Literacy and Numeracy

GDP – Gross Domestic Product

Gen Z – A demographic cohort born between 1997 and 2015

GINI – An index used for analyzing income or wealth distribution

HE – Higher Education

ICT – Information and communications technology

IT – Information technology

K-12 – A phase of schooling between Kindergarten and 12th grade

LAYS - Learning Adjusted Year of Schooling

LMIC – Low and middle-income countries

LMS – Learning Management System

MIT – Massachusetts Institute of Technology

MOOC – Massive Open Online Course

MoE – Ministry of Education

MOEC – Ministry of Education and Culture

MS – Microsoft

OECD – Organisation for Economic Co-operation and Development

OOSY – Out of school youth

PAL – Personalized and adaptive learning

PD – Professional development

PISA – Program for International Student Assessment

Q&A – Question and answer

RCG – Renewables Consulting Group

SEA – Southeast Asia

SEND – Special educational needs and disabilities

STEM – Science, technology, engineering and mathematics

STEAM – Science, technology, engineering, the arts and mathematics

TESDA – Technical Education and Skills Development Authority

TV - Television

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNICEF - United Nations Children's Emergency Fund

VR – Virtual Reality

WB – World Bank

WEF – The World Economic Forum

WiFi – Wireless high-speed internet access

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