EDTECH IN SOUTHEAST ASIA

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

EXECUTIVE SUMMARY

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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.

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.

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.