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EdTech for Marginalised Learners in Southeast Asia

Perspectives from funders and providers on priorities, design, investment, and scaling considerations

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About this document

About EdTech Hub

EdTech Hub is a global research partnership. Our goal is to empower people by giving them the evidence they need to make decisions about technology in education. Our evidence library is a repository of our latest research, findings, and wider literature on EdTech. As a global partnership, we seek to make our evidence available and accessible to those who are looking for EdTech solutions worldwide.

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Abbreviations and acronyms

AI   Artificial Intelligence

ADB   Asian Development Bank

ASEAN Association of Southeast Asian Nations

B2B   Business-to-business

B2C   Business-to-consumer

B2S   Business-to-school

CAC   Customer Acquisition Cost

CLTV   Customer Lifetime Value

CSR   Corporate Social Responsibility

GEM   Global Education Monitoring (report)

HCD   Human-centred design

INEE   Inter-agency Network for Education in Emergencies

KII   Key informant interview

K–12   Kindergarten to Grade 12

MVP   Minimum Viable Product

NGO   Non-governmental organisation

OOSCY Out-of-school children and youth

SAGE   Supporting Advancement of Girls' Education (programme)

SEAMEO Southeast Asian Ministers of Education Organization
STEM-ED Regional Centre for STEM Education

SEND   Special educational needs and disabilities

STEM   Science, technology, engineering and maths

UDL   Universal design for learning

UI   User interface

UNHCR United Nations High Commissioner for Refugees

Executive summary

EdTech in Southeast Asia's vast and rapidly evolving educational landscape presents significant opportunities to reshape educational access, quality, and equity. This report presents a landscape analysis of EdTech interventions in the region, with a particular focus on marginalised learners. It explores the extent to which EdTech providers and funders in Southeast Asia consider and respond to the needs of marginalised learners through their design, investment, and scaling decisions.

Using a mixed-methods approach comprising a document review and semi-structured key informant interviews (KII) with 20 EdTech providers and six EdTech funders working across eight countries,[1] this report seeks to answer four research questions, as listed and outlined below.

1. To what extent are existing EdTech solutions within the Southeast Asia region catering to the needs of marginalised learners?

The literature review reveals that efforts have been made to use technology to enable more equitable quality education access for marginalised learners. However, substantial gaps and challenges persist, particularly for learners with special educational needs, displaced populations, and learners of linguistic minorities. Moreover, evidence of EdTech's effectiveness in improving learning outcomes for marginalised learners in Southeast Asia remains limited and uneven. Our review of private provider interventions reveals only a few documented impact evaluations, with no unified framework or standard for assessing effectiveness.

2. To what extent do EdTech providers consider the needs of marginalised learners in their decision-making and design processes?

The KIIs showcased how EdTech providers described using a variety of strategies to meet the diverse needs of learners across the region. EdTech providers expanded upon their key design considerations within teaching and learning design, curriculum alignment and localisation, feedback and testing mechanisms, and accessibility in efforts to meet the needs of marginalised learners. In particular, offline-first solutions emerge as a key

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[1] The EdTech providers interviewed were primarily based in Indonesia, Philippines, Vietnam, Timor-Leste, Cambodia, but also work across Laos, Malaysia, and Myanmar.

approach to overcome connectivity issues, while inclusive design features — such as localised interfaces, simplified navigation, and accommodations for students with special educational needs and disabilities (SEND) — enhance usability for diverse needs, ensuring more equitable access.

3. What are the challenges and opportunities towards reaching and scaling interventions for marginalised learners in Southeast Asia?

EdTech providers in this study leverage partnerships with a range of actors, including the government, private sector, non-governmental organisations, and communities, in order to achieve scale. However, they described significant barriers to doing this. These included constraints in funding, capacity, and infrastructure. EdTech funders also face barriers when identifying and investing in scalable innovations. Such barriers include limited funding, government regulation, and risk-averse funding environments.

4. What key considerations and metrics do funders use to evaluate the potential and success of their investments in supporting EdTech interventions?

Discussions with funders showcased how educational impact is viewed as central to long-term success. While scaling emerged as a primary consideration for funders, funders were mindful of financial returns and social impact. However, the definitions of impact and approaches to measuring it vary across funders interviewed, suggesting that it is difficult for them to make comparisons across interventions or make informed decisions.

The analysis also presents several cross-cutting insights from the interviews conducted, highlighting possible areas to strengthen the EdTech ecosystem in Southeast Asia in ways that are inclusive, scalable, and sustainable, in particular, those of capacity building, evidence generation and partnerships.

- **Capacity building.** Both EdTech providers and funders identified a need to build capacity, approaching it from different perspectives. EdTech providers pointed to gaps in their ability to conduct monitoring, evaluation, and research in order to assess and demonstrate the impact of their interventions effectively. On the other hand, funders emphasised the importance of building EdTech providers' technical and operational skills, particularly for

implementation, integration within the education system, and long-term sustainability. Bridging these capacity gaps is critical to ensure EdTech interventions are impactful and effective.

- **Evidence generation.** While calls for evidence on the impact of EdTech on learning outcomes are not new, evidence and data remain scarce. Funders interviewed for this study acknowledged this gap and have begun requiring EdTech providers to demonstrate impact through both qualitative and quantitative methods. However, limited provider capacity means rigorous measurement is still uncommon. A stronger evidence base is essential for informing design and scaling decisions to serve marginalised learners better.

- **Partnerships.** Partners emerged as a key enabler to scaling efforts, including local partnerships and community involvement, and were identified as crucial for fostering success in marginalised regions. EdTech providers also expressed strong interest in greater sector-wide collaboration to exchange insights, share challenges, and strengthen overall capacity. In addition, addressing systemic barriers like the lack of digital infrastructure requires coordinated, multi-stakeholder approaches. Fostering collaborative partnerships can produce shared solutions and drive long-term, sustainable progress in the EdTech ecosystem.

1. Introduction

Southeast Asia's vast and rapidly evolving EdTech landscape presents significant opportunities to reshape educational access, quality, and equity across the region. Highlighted by the 2023 UNESCO Global Education Monitoring (GEM) Report on Technology in Education and the Association of Southeast Asian Nations' (ASEAN) growing focus on digitisation—governments and private-sector players are investing more in digital education platforms and learning tools to address long-standing educational challenges, particularly after the Covid-19 pandemic (↑UNESCO, 2023b).

Despite rising global and regional interest in digital education, EdTech solutions and interventions for marginalised learners remain limited (↑UNESCO, 2023b). Inclusive and equitable approaches to address gaps in access, digital literacy, and culturally relevant content need to be prioritised to ensure that the diverse needs of marginalised or underserved learners in Southeast Asia are met, and these learners are not left behind in the region's EdTech transformation. These priorities align with the 2025 ASEAN Digital Masterplan, emphasising the importance of increased private sector engagement and encouraging robust public-private partnerships to expand the reach and quality of digital services across the region (↑ASEAN, 2021).

This report presents the findings of a landscape analysis of EdTech interventions designed for the Southeast Asian context. The analysis aims to understand the extent to which EdTech providers and funders in Southeast Asia address the needs of marginalised learners through their priorities in design, investment, and scaling decisions. It focuses on initiatives targeting marginalised groups and those with potential to scale. The research for the study included interviews with funders engaged in the Southeast Asian EdTech space to examine their perspective on EdTech's impact on marginalised learners, the approaches they adopt to support inclusive solutions, and the drivers behind their investment decisions.

The analysis intentionally includes a broad range of EdTech interventions that go beyond learner-facing solutions, encompassing initiatives aimed at teachers and system-level actors as well. While learner-based EdTech is a vital focus area, restricting the scope exclusively to this segment at this stage would limit our ability to capture the full diversity of innovation and investment shaping the education ecosystem in the region. Our approach is designed to provide a comprehensive overview that lays the foundation for more focused analyses in future work.

This builds on EdTech Hub's research for the ASEAN-UK SAGE programme, particularly on how EdTech could be used to support improvements in foundational literacy and numeracy; out-of-school children and youth; and learners with disabilities, as well as overcoming gender barriers to employment through the use of EdTech solutions. It aims to contribute evidence-based insights for policymakers, donors, funders, and EdTech providers, by highlighting proven localised strategies, design and implementation experience, feedback showcasing best practices and lessons learnt to inform future innovations, building on the existing knowledge that has been generated from ⇡UNESCO's (2023a) GEM report, GSMA's report on *The Future of Learning* (⇡Deshpande & White, 2024) from the Philippines, and the World Bank's report on EdTech in Indonesia (⇡Bhardwaj et al., 2020), among others.

1.1. Key research questions

Noting that various studies have focused on EdTech in the region, this analysis aims to have a more narrow focus on marginalised learners, answering the following four questions around the EdTech Landscape:

1. To what extent are existing EdTech solutions within the Southeast Asia region catering to the needs of marginalised learners?

2. To what extent do EdTech providers consider the needs of marginalised learners in their decision-making and design processes?

3. What are the challenges and opportunities towards reaching and scaling interventions for marginalised learners in Southeast Asia?

4. What key considerations and metrics do funders use to evaluate the potential and success of their investments in supporting EdTech interventions?

Additional, specific questions were outlined for both EdTech providers and EdTech funders. These questions aim to better understand key features around EdTech interventions through asking EdTech providers about their principles and approach to making decisions around design, user-testing, and feedback iteration; barriers and limitations in implementing and scaling; as well as reflections and lessons learnt.

Questions around investment priorities, insights on market trends and scale, as well as challenges and opportunities, were also presented to EdTech funders to understand whether and how much these factors influence decisions to accommodate marginalised learners as well.

1.2. Definitions

For the purpose of this research, we adopted the following definitions:

- **Association of South-East Asian Nations (ASEAN):** An organisation of ten countries in Southeast Asia, started in 1967 with the purpose of encouraging economic growth and good relationships between countries in the area (⬆ASEAN, no date). These countries include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Given its current progress towards accession into ASEAN, Timor-Leste has also been included in this study.

- **EdTech interventions**: Technology-based tools to deliver teaching and learning, with the aim of improving educational outcomes. These can include both 'online' or 'offline-first' tools and interventions, such as digital platforms, apps, and specific software, as well as the delivery of hardware with integrated education software (⬆Results for Development, 2025).

- **EdTech providers**: Organisations or companies that develop the EdTech/tech-based tools for teaching and learning, including those that support students, teachers, schools, and governments. EdTech providers may target their tools to teachers and students both within and outside educational institutions for the purpose of improving teaching and learning (⬆Global EdTech, no date)

- **Marginalised learners**: Learners who are facing specific barriers and may require specific kinds of support in their learning, due to cultural, linguistic, socio-economic conditions, etc. (⬆Cheah et al., 2023). These include groups of out-of-school children and youth, marginalised girls, children in rural and remote areas, children with disabilities and special learning needs, refugee and migrant learners, as well as learners from ethnic and indigenous communities

- **EdTech funders** are organisations, institutions, or individuals that provide financial support and resources to educational technology initiatives, startups, or projects. This report conceptualises funders broadly, including bilateral donors, private investors, philanthropic organisations, foundations, and venture capital firms. The term 'investor' is used in this report to specifically refer to a subset of funders who provide funding with the expectation of financial returns.

- **Scaling**: An expansion of the reach, product offering and/or impact of a tool or service provided (↑Cooley & Linn, 2024). This could be achieved by serving a larger audience within the country or by expanding its presence to more countries, typically described as vertical scale. It may also include increasing offerings within their own product, catering to more inclusive needs, or material provided in their product or intervention, commonly referred to as horizontal scale (↑Castillo et al., 2023).

- **Tech winter:** A significant and prolonged downturn in the technology sector, typically following a period of rapid growth and high valuations, characterised by decreased investment, widespread layoffs, and a slowdown in innovation, specifically in the tech start-up ecosystem (↑Akbar, 2023). In terms of the recent tech winter (2022–2025), this has been driven by post-Covid-19 pandemic-related economic adjustments, rising interest rates, and geopolitical tensions.

2. Methodology

For the landscape analysis, we adopted a mixed-methods approach comprising a document review and online, in-person, and semi-structured interviews (KII). This section outlines each of these methods, as well as details of the approach to sampling and analysis, ethical considerations, and limitations in the report.

2.1. Literature review

The purpose of the literature review is to:

- Map out existing EdTech interventions in Southeast Asia that have the potential to be scaled for marginalised learners.

- Assess the extent to which existing EdTech solutions cater to the needs of marginalised learners.

- Explore the challenges and gaps in current literature about EdTech interventions across Southeast Asia, particularly as it relates to accommodating marginalised learners in developing and designing EdTech interventions.

- Identify regional policies that pertain to the rapidly growing EdTech sector in the region.

- Better understand the EdTech funder landscape, funder priorities in the region, and whether or how the needs of marginalised learners are considered when making decisions around funding.

In the first instance, literature to be included in the review was identified through systematic searches of the internet and relevant databases. Given that one of the central aims of this study is to provide up-to-date information on EdTech solutions for marginalised learners, documents included in the review had to meet the following inclusion criteria:

- Published by international organisations, academic articles or recognised non-governmental organisations (NGOs).

- Published within the past 10 years (2014 onwards) or earlier, but remain relevant to current EdTech initiatives.

- Contain information relating to EdTech interventions, their target beneficiaries, design principles, scalability, and challenges or opportunities in the region.

2.2. Sampling strategy

To identify EdTech providers, the study began with a comprehensive scan of active EdTech providers in Southeast Asia, encompassing both for-profit and non-profit organisations. This initial scan identified a pool of 135 providers, which was later filtered down using targeted criteria to select those with the greatest potential to address the needs of marginalised learners.

These criteria encompassed an evaluation of providers based on:

- **Size:** Determined by download numbers (at least 100,000), user reviews (at least 1,000), funding (at least USD 10 million), and number of users (at least 1.5 million), reflecting reach and resources.

- **Growth:** Measured by increases in downloads and reviews, indicating momentum and user adoption. Due to limited data, growth was inferred from available metrics such as user base expansion and market trends.

- **Relevance:** Prioritised providers focused on EdTech solutions for learners from primary to upper secondary, vocational studies, lifelong learning, or skills development for marginalised communities, aligning with the inclusivity objectives of this landscape analysis.

Impact evaluation, particularly in relation to scaling potential, was excluded from the criteria because data on how EdTech solutions affect learners in Southeast Asia is inherently scarce, especially for marginalised groups. Additionally, while not all data points were available for every provider (some were skipped due to inconsistency or unavailability) the study maintained a robust evaluation by leveraging available metrics, qualitative assessments, and market trends as a proxy for missing information. This approach ensured that providers with significant potential were not excluded solely due to incomplete data, allowing for a comprehensive and inclusive analysis.

This focus enabled the study to explore how EdTech solutions can effectively serve marginalised learners, supporting the core objectives of assessing the extent to which existing solutions cater for these learners.

From the shortlist of providers, all organisations were contacted, and snowball sampling was used for referrals to additional companies considered relevant and aligned with our criteria. While the limitations of snowball sampling, such as the potential for bias, are acknowledged, this approach was necessary due to the low response rate from cold outreach. Additionally, direct referrals from the initially selected list of providers

helped expand the sample to include more organisations addressing similar challenges in the region.

2.3. Key informant interviews (KIIs)

Semi-structured key informant interviews (KIIs) were conducted with selected EdTech providers and funders to gain deeper insights into the landscape. Interviews explored the following themes:

- Target beneficiaries and the specific marginalised groups they serve.

- Decision-making processes related to data use, user-testing, and iterative design.

- Barriers and enablers influencing implementation and scale.

- Reflections on lessons learnt from the development and deployment of EdTech solutions.

Interviews with EdTech funders focused on:

- Investment priorities and expected returns in the EdTech sector.

- Market trends and business models that are likely to emerge.

- Approaches to scaling, particularly in reaching marginalised communities.

- Challenges and opportunities for investment in EdTech initiatives.

A total of 20 EdTech providers were interviewed, comprising 10 providers from Indonesia, 3 from the Philippines, 2 from Cambodia, 3 from Vietnam, and 2 from Timor-Leste. No providers from Thailand, Malaysia, Brunei, Laos, or Singapore were interviewed; however, the interviews included providers based in other countries who operate across the region (see Table 4.1 for a list of EdTech providers in Southeast Asia). Table 4.1 highlights the services provided by each respective EdTech provider, as well as the interventions' primary user base, noting the provider's intentions of focusing on a specific marginalised group. Some of the providers worked across multiple countries, sharing insights from their experience across the region. A total of 9 for-profit providers and 11 not-for-profit or social enterprises were interviewed.

To identify relevant EdTech funders, a preliminary scan of prominent venture capitalists in the region with EdTech portfolios was undertaken, as well as of impact investors active in the sector. Initial contact was conducted through publicly available contacts, and further relevant contacts funding EdTech interventions in the region were sought through

snowball sampling. Leads were also sought from interviews with EdTech providers, which included philanthropic organisations, impact investors, both sovereign and private, who are engaged in EdTech financing. A total of six EdTech funders were then interviewed; however, two out of the six funders were unable to participate in a live discussion and provided written responses to the interview questions. These responses were treated as transcripts and analysed using the same coding framework to ensure consistency across the dataset.

2.4. Thematic analysis of interview data

All interviews were transcribed and analysed using thematic analysis. An initial coding framework was developed deductively, informed by the core research questions and the predefined thematic areas outlined above in Section 2.3. This framework was subsequently refined through inductive coding, allowing for the inclusion of additional themes that emerged from the data. Transcripts were coded manually by members of the research team, with individual codes consolidated into broader thematic categories to enable cross-case comparison and synthesis.

Although transcripts were not subject to double coding, the research team held regular discussions to review coding decisions and validate the emerging thematic structure. Final themes and sub-themes were agreed upon collectively, based on their relevance to the study aims, recurrence across interviews, and their explanatory value in capturing key dynamics across stakeholder groups. In selecting which themes and illustrative quotes to highlight in the findings, the team considered not only their frequency but also their depth and analytical significance, giving weight to particularly insightful or nuanced reflections.

2.5. Expansion of research scope to incorporate emerging findings

Midway through the study, it became clear that including the perspectives of funders would add valuable depth and broader context to the overall analysis. As a result, the research scope was expanded to include interviews with funders operating in the region, enhancing the relevance and reach of the final report.

2.6. Ethical considerations

All participants in the study were informed about the purpose of the research, their right to confidentiality, and the voluntary nature of their participation. Informed consent was obtained prior to conducting

interviews, and all data was stored securely to protect participant privacy. Participants were given the right to withdraw at any time. All organisations mentioned in the study that requested to review and approve their contributions were provided with a courtesy copy.

While the primary focus of this report was not the ethical dimensions of EdTech design and implementation, it is important to note that ethical considerations, such as safeguarding learner privacy, ensuring responsible onboarding to technology, and promoting digital inclusion, are particularly relevant to this space. These issues did not emerge strongly in the interviews conducted, but they represent an important area for further inquiry. Future research could explore how EdTech interventions can be designed and delivered in ways that are ethically sound, context-sensitive, and aligned with the readiness and capacities of marginalised learners and the education workforce.

2.7. Limitations

There are seven main limitations to this regional EdTech landscape analysis. These are outlined below.

1. Limited responses from EdTech providers and funders.

There was limited participation from EdTech providers and funders, despite sustained efforts to engage them, particularly through cold outreach and leveraging professional networks in the sector. This resulted in a relatively small sample size for the survey, potentially limiting the comprehensiveness of the landscape analysis. Additionally, a disproportionate number of interviews were secured with providers based in Indonesia compared to other countries in the region. This geographic imbalance was taken into account during the interpretation of findings to avoid overgeneralising insights from one specific context.

2. Language barriers: Interviews conducted in English

The data collection was limited to stakeholders with a working knowledge of English, as all interviews were conducted in English. This may have excluded voices from local actors who could not comfortably participate in English-language discussions, potentially limiting the diversity and representativeness of perspectives captured.

3. Limitations in collecting data from marginalised learners

One of the key limitations of this study was that the scope did not encompass data collection from marginalised learners, resulting in an

absence of their perspective, limiting the comprehensiveness of the findings. Future research could address this gap.

4. Absence of real-time interaction among funders

Two funders provided written responses in lieu of participating in live interviews. While their inputs were coded using the same analytical framework to ensure consistency, the lack of real-time interaction restricted opportunities for probing or clarification. This may have limited the depth and richness of insights gained from these participants.

5. Short time frame

The study had to be conducted within a very tight time frame, with only two months (February to May 2025),[2] to collect data from interviews and analyse reports. This impacted the sample size of the study. The time frame made it impossible to access interviewees who have less social media visibility or those who required continued follow-up due to delayed responses.

6. Absence of an ecosystem framework or structured gap analysis

An ecosystem framing of the EdTech landscape in Southeast Asia, as well as structured tools such as comparative matrices, SWOT analyses, or gap-opportunity maps, were considered during the design of the study. However, these approaches were not pursued due to time constraints, data availability, and the exploratory nature of this initial scoping effort. The decision was made to focus instead on generating a broad overview of key actors, themes, and gaps. A more structured ecosystem analysis and comparative mapping could be valuable next steps, particularly if accompanied by deeper, more representative data collection or if developed collaboratively with stakeholders at regional workshops or policy convenings.

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[2] However, additional information was provided by EdTech funders who gave written responses to the questions.

3. Literature review

This literature review first examines the challenges and gaps in current literature focusing on EdTech interventions in the region, particularly with regard to accommodating marginalised learners. Next, it considers regional and national policies to contextualise the digital education landscape in which the providers and funders of the region operate. Finally, the review focuses on EdTech funders' priorities and decision-making processes.

3.1. EdTech services for marginalised groups

This section examines existing solutions and identifies gaps within regional EdTech interventions that aim to cater to the different kinds of marginalised learners, who are the focus of this report. Where relevant, examples of specific interventions from the literature are included to illustrate these approaches.

3.1.1. Gender and marginalisation

Globally, significant progress in girls' education has been achieved since the implementation of the 2030 Sustainable Development Goals. Gender parity in school enrolment has been reached at primary and secondary levels, and on average, girls' learning outcomes are the same as, if not better than, boys' (⇡UNESCO, 2024). However, available data now shows a significant number of boys are out of school in Southeast Asia (⇡Afzal et al., 2024), suggesting that increased focus on and understanding of boys' barriers to completing school is needed. Despite this shift, the literature review found that girls remain the focus of EdTech programmes and solutions that aim to address gender inequality.

Programmes targeting marginalised girls in Southeast Asia aim to address gender stereotypes and utilise strategies to empower the women participants while delivering a range of information and educational content. For instance, the Factory Literacy Programme, and Women's Radio FM 102 in Cambodia, and the Connect to Learn programme in Myanmar aim to encourage self-confidence and knowledge about women's rights while delivering content on functional literacy, health issues, and English language skills, respectively (⇡Mitchell et al., 2025; ⇡Thinley et al., 2024). These examples employ programmatic designs that address girls' and women's unique challenges by providing digital devices, offering flexible learning modalities, and creating female-only spaces.

Although there is evidence that technology can be empowering for girls (↑Webb et al., 2020), the experience in Southeast Asia is consistent with global trends in that girls are less likely to have access to technology and face cultural biases and gendered assumptions that can lead to limiting self-regulating behaviours in their use of technology (↑Mitchell et al., 2025). Furthermore, sociocultural perceptions of science, technology, engineering, and mathematics (STEM) as 'masculine' subjects influence girls' perceptions and confidence in their abilities in these domains (↑UNICEF, 2023).

Despite the range of EdTech initiatives targeting girls, research about key considerations adopted by the programmes and interventions when implementing gender equitable EdTech remains limited. This includes research on online safety, a concern that disproportionately affects girls and young women globally and in the region (↑UNESCO, 2024).

3.1.2. Children with disabilities

EdTech interventions supporting students with special educational needs and disabilities (SEND) range from providing accommodation to learners with sensory impairments to various kinds of cognitive and learning difficulties (↑Mitchell et al., 2024; ↑Zhao et al., 2024a). In Southeast Asia, over 3 million children are identified as having learning disabilities (↑SEAMEO SEN, 2024). Despite efforts to ensure these learners have equal opportunities to access quality education at the policy level (↑ASEAN, 2019), challenges remain in the provision of quality learning programmes and broader inclusion efforts to support these learners, particularly in the EdTech space (↑Singh, 2022). This includes designing EdTech interventions in a way that can effectively cater to the needs of children with disabilities.

Evidence from existing EdTech interventions across the region underscores this variability. Closed captioning and accessibility features to access resources such as documents and videos have been found to be broadly available across the region. However, measures to systematically include students in learning through more inclusive curricula, pedagogy, and assessments still seem to be lacking (↑Singh, 2022). Specific interventions range from the availability of assistive technologies, such as 'BacaBicara', an Indonesian lipreading system for those with hearing impairments (↑Muljono et al., 2019), to a variety of screen-reader software for visually impaired learners, while others provide subtitles in videos and digital resources as a means of inclusive accommodation (↑UNESCO, 2023a). Initiatives such as 'ToyEight', a Malaysia-based EdTech intervention that assesses students' learning needs at early developmental stages, are also available. However, applications incorporating emotional recognition

features to support children with intellectual disabilities remain rare (↑Destyanto, 2023).

3.1.3. Out-of-school children and youth (OOSCY)

A recent scoping study on out-of-school children and youth (OOCSY) in Southeast Asia estimates that 11.8 million learners are out of school in the region, although there is variation across countries (↑Afzal et al., 2024). Initiatives targeting OOSCY vary in focus, with some providing foundational skills like literacy, numeracy, and digital literacy, while others offer pathways for continuing education for early school-leavers. Examples include Thailand's Mobile Literacy for Out-of-School Children initiative, the Tech4Ed programme and Alternative Learning System in the Philippines, and Cambodia's Basic Education Equivalency Programme (↑Afzal et al., 2024). These programmes include features such as providing multiple ways to access content and flexible learning opportunities, as will be discussed further in Section 3.1.6.

Beyond these examples, however, few EdTech programmes target OOSCY specifically; instead, this group is often included as a target demographic for programmes that reach marginalised populations more generally (↑Afzal et al., 2024). However, broader, cross-cutting approaches that are assumed to be applicable may not address the unique needs of OOSCY, and more research is needed on solutions tailored to this specific group.

3.1.4. Displaced populations

EdTech interventions supporting displaced populations can enable learning continuity by providing access to education and supporting educators working in these areas (↑Ashlee et al., 2020; ↑Barnes & Katrin, 2025; ↑Dahya, 2016) In Southeast Asia, there are an estimated 287,685 refugees and asylum seekers, and over 2 million internally displaced persons (IDPs) were noted 2023, with the crisis in Myanmar and Rohingya people contributing the most to these figures (↑UNHCR, 2024). As one of the regions most vulnerable to the effects of climate change (↑Ysmael Arriola, 2024), and hence prone to increasing numbers of internally displaced populations, Southeast Asia is likely to face increasing humanitarian crises in the future that will require effective educational responses during emergencies.

While global evidence indicates that technology has the potential to provide educational and social and emotional learning opportunities during crisis settings (↑Ashlee et al., 2020; ↑Barnes & Katrin, 2025; ↑Tauson & Stannard, 2018), there is limited systematic use of EdTech to support teaching and learning practices. Most research has documented the use of

EdTech in conflict situations outside of Southeast Asia (↑INEE, 2016). Although much of this data is now dated, it highlights a persistent gap in both research and services available for this marginalised group.

3.1.5. Learners from linguistic minorities

The literature has limited examples of innovations that serve learners from linguistic minorities in Southeast Asia, despite the region's linguistic and cultural diversity. Southeast Asian countries have diverse populations, both regionally and within individual countries. Indonesia alone has been estimated to have 700 indigenous groups (↑Asia Indigenous Peoples' Pact et al., 2010), whose languages, cultures, and religions differ from those of the majority population. One salient area where EdTech has the potential to support minorities in education is by providing materials in their 'home languages'. However, there is limited research on how this can be effectively implemented in contexts where capacity and resources are constrained.

Studies have found that using mother-tongue-based multilingual education (MTB MLE) has a positive impact on learning outcomes in many low- and middle-income contexts (↑Zhao et al., 2024b).[3] There is little evidence on EdTech interventions in Southeast Asia that have been specifically designed to support learners with minority languages, despite proven evidence of how helpful initiatives are, particularly those taking place within the formal education systems, or supporting other foundational skills.

3.1.6. Nature of EdTech interventions for marginalised learners

The EdTech sector in Southeast Asia is in its nascent stages (↑Skills Nation, 2022), with efforts underway to leverage its potential to address the needs of marginalised learners, including learners with disabilities, OOSCY, and rural populations (↑UNESCO GEM Report Team & SEAMEO SEN, 2023; ↑Barnes et al., 2024).

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[3] The paper by ↑Zhao et al. (2024b) does not discuss evidence or examples from Southeast Asia, however the impact of MTB MLE in the region appears to be mixed. A pilot in Vietnam of MTB MLE by UNICEF and the Ministry of Education and Training found students who participated in the programme had improved Vietnamese and maths scores, and the ministry intended to expand the programme (↑UNICEF & Ministry of Education and Training, Vietnam, 2015). Meanwhile, ↑Igarashi et al. (2024) find a negative impact on literacy in Filipino and English following implementation of the national MTB MLE policy in the Philippines, which the authors say could be explained by challenges in implementation and the ethnolinguistic diversity of the country.

EdTech providers have begun to design interventions to address the diverse needs of marginalised learners. Disability-inclusive education, powered by assistive technologies, is gaining momentum, especially in countries like Malaysia, the Philippines, and Thailand, offering tailored tools to enhance accessibility, yet its integration into mainstream systems remains patchy, limiting its reach (↑Singh, 2022; ↑UNESCO GEM Report Team & SEAMEO SEN, 2023).

Open and distance learning (ODL) has also surged forward in Cambodia, Indonesia, the Philippines, and Vietnam following the Covid-19 pandemic (↑Crompton et al., 2021; UNESCO GEM Report Team & SEAMEO SEAMOLEC, 2023), promising flexible education for remote learners. However, its efficacy is curtailed by unreliable infrastructure and inconsistent access to devices or the internet, particularly in underserved areas (↑Dao et al., 2022; ↑Hoang et al., 2020). Mid- and low-tech solutions, such as radio and mobile-based platforms, stand out as pragmatic responses to the region's digital divide, delivering content where high-tech options (often catering to more urban, affluent communities) to deliver tutoring and test-preparation services, falter (↑Crompton et al., 2021; ↑Hoang et al., 2020; ↑Tauson & Stannard, 2018). While efforts have been made to use technology to enable more equitable quality education access for marginalised learners, substantial gaps and challenges persist.

These gaps, including a lack of high-quality, region-specific research, hinder the development of evidence-based EdTech interventions, particularly those aimed at supporting OOSCY or learners with disabilities. Insufficient contextualisation, such as the failure to adapt content to local languages and cultures, renders many solutions irrelevant to linguistically diverse learners, exacerbated by limited access to the internet, electricity, or devices in rural areas, locking entire communities out of tech-driven education (↑Barnes et al., 2024; ↑ADB, 2023). In addition, low digital literacy among teachers and students, paired with inadequate training, outdated curricula, underqualified educators, and unequal access, magnify these barriers, disproportionately affecting marginalised learners (↑Better Purpose et al., 2021)

Opportunities to bridge these gaps remain promising, but must be pursued with deliberate attention to equity and inclusive design. Low-tech solutions like radio and SMS platforms offer a lifeline to learners in infrastructure-poor regions, although their one-way delivery limits interactivity and engagement compared to digital alternatives (↑UNESCO GEM Report Team & SEAMEO STEM-ED, 2023). Collaboration between governments and with the private sector could be leveraged to further resources and push for innovation in the sector. However, this risks

prioritising profit-driven models over the needs of underserved groups, without strong public oversight (↑Better Purpose et al., 2021; ↑UNESCO, 2023a). Personalised learning driven by Artificial Intelligence (AI) holds transformative potential, tailoring education to individual needs and upending rigid traditional systems, but its high costs and reliance on robust tech ecosystems make it a challenge for many in Southeast Asia (↑ADB, 2023; ↑Skills Nation, 2022; ↑Tauson & Stannard, 2018; ↑UNESCO, 2023a).

As highlighted above, some EdTech providers have made efforts to address these challenges by embedding equity within their interventions' design and delivery, opting for low-tech solutions, leveraging strategic partnerships between government or other private sector stakeholders, and integrating AI to overcome barriers to reach marginalised learners. However, challenges still remain, particularly in understanding which principles and practices are most effective across the different stages of product development to address the diverse needs of different marginalised learners.

3.1.7. Rural and urban divides

Rural and remote learners in Southeast Asia are often classified as marginalised due to a convergence of structural barriers that limit their access to quality education. These include geographic isolation, limited infrastructure (such as electricity supply and internet connectivity and access), teacher shortages, and reduced access to learning materials and support services (↑Barnes et al., 2024). These structural disadvantages restrict students' ability to benefit from educational opportunities, particularly when technology is involved. For instance, fewer than 30% of rural households in Cambodia and Myanmar have access to the internet, compared to over 80% in urban areas, exacerbating inequalities in digital learning access (↑ADB, 2023). ASEAN governments have acknowledged these divides, with the ASEAN Master Plan on Rural Development 2022–2026 highlighting digital inclusion and rural education access as key strategic priorities (↑ASEAN, 2022a). The plan calls for expanded connectivity, digital literacy, and targeted interventions in remote areas to enable more equitable access to development opportunities.

The literature suggests that much of the EdTech landscape in Southeast Asia remains concentrated in urban hubs. However, this does not mean that providers are not making efforts to ensure inclusivity for learners in rural regions, even if such efforts are not always explicitly targeted. Notably, some providers have adapted their services to better meet the needs of rural populations. For example, Solve Education!, operating in Indonesia,

developed a gamified mobile learning app ('Dawn of Civilization') designed specifically for low-end devices and offline functionality, enabling flexible, self-paced learning for out-of-school rural youth (↑Solve! Education, 2023). Similarly, Passerelles numériques Cambodia[4] delivers multi-year vocational and IT training programmes targeting underserved youth from remote provinces, combining digital and in-person training models that include accommodation and social support. In Indonesia, Ruangguru has introduced an offline mode feature for Ruangbelajar, allowing learners to access educational content like videos and modules without an internet connection. This feature is deployed in partnership with local governments to reach students in low-connectivity areas (↑Ruangguru, 2025).

Despite these efforts, a scan of the literature suggests that most EdTech initiatives remain at pilot scale, with limited geographical reach and few independent evaluations of their effectiveness. Challenges persist in aligning EdTech solutions with the linguistic, cultural, and infrastructural realities of rural communities. Without sustained public-sector support, stronger monitoring, and better evidence, the potential for EdTech to close urban–rural learning gaps remains constrained.

3.1.8. Effectiveness of EdTech interventions for marginalised learners in Southeast Asia

While enthusiasm around EdTech's potential to bridge educational gaps is widespread, evidence of its effectiveness in improving learning outcomes for marginalised learners in Southeast Asia remains limited and uneven. Our review of private provider interventions revealed only a few documented impact evaluations, with no unified framework or standard for assessing effectiveness. This gap is particularly acute for learners with disabilities, linguistic minorities, and displaced populations, whose specific needs are often overlooked, especially when interventions are not explicitly designed for these groups. As a result, it remains difficult to identify which solutions genuinely improve learning outcomes and which may inadvertently reinforce existing educational and digital divides.

Some low-tech and hybrid interventions, such as SMS-based programmes and blended open and distance learning (ODL) models in Indonesia and Cambodia, have shown promise in improving participation and learner retention, particularly among rural and out-of-school youth (↑Afzal et al., 2024; ↑Crompton et al., 2021). However, much of this evidence is at the pilot or anecdotal level. Most initiatives report on reach metrics, such as the number of learners served or lessons delivered, rather than outcome-level

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[4] See https://www.passerellesnumeriques.org/what-we-do/cambodia/. Retrieved 28 June 2025

data on learning gains, long-term retention, or cost-effectiveness, which are critical for informing scale and sustainability.

A 2023 regional review by UNESCO and SEAMEO observed that decisions on using technology are often not based on evidence, cautioning that EdTech solutions are frequently implemented in low-resource settings without rigorous evaluation or alignment to local needs (↑UNESCO, 2023b, p. 137). Similarly, the Asian Development Bank (ADB) noted the absence of formal assessment frameworks in EdTech programmes targeting rural and marginalised populations, with many initiatives lacking independent oversight or structured evaluation (↑ADB, 2023). For instance, in the Philippines, even large-scale government efforts faced challenges in digital uptake: in 2021, only 1% of students preferred online modules, while 83% relied on paper-based self-learning packs, underscoring persistent infrastructural and equity barriers (↑UNESCO, 2023a).

Taken together, these findings underscore a persistent *evaluation gap* and a lack of shared benchmarks for assessing effectiveness. To ensure that EdTech interventions genuinely serve marginalised learners, there is a pressing need for independent evaluations and a regionally relevant framework that incorporates robust methodologies. Without this kind of structured and inclusive evaluation, EdTech risks reinforcing existing inequities and failing to deliver on its promise of transforming education for those most in need.

3.2. Southeast Asia digital & EdTech policy landscape

The 2022 ASEAN Declaration on the Digital Transformation of Education Systems guides the region's development and implementation of technology in education settings. The declaration lists 35 commitments, focused on enhancing digital infrastructure, improving digital literacy, ensuring inclusive, equitable access to technology, maintaining online safety, and promoting regional collaboration. Marginalised and underserved groups are a key focus of the declaration, which emphasises the role digital technology can play in expanding their access to education, increasing participation, and fostering inclusive learning opportunities (↑ASEAN, 2022b)

More broadly, the ASEAN Digital Masterplan 2025 sets out the vision for a digital economy and society for the region. Although EdTech and marginalised communities are not specifically mentioned in the masterplan, it highlights the need to build digital skills, so citizens can fully participate in a digital workplace and take advantage of digital services (↑ASEAN, 2021). By promoting digital infrastructure, cross-border

collaboration, and digital literacy, the plan aims to ensure all Southeast Asians can benefit from the opportunities of digital transformation.

In addition, individual countries have strategic and development plans which address the use of technology in education. For example, in the Lao PDR National Education Sector Development Plan (↑Lao People's Democratic Republic, 2021), developing digital learning is a priority activity. In four countries, including Cambodia and Singapore, these plans are created and implemented by the governing body overseeing education (↑UNESCO, 2023a). However, EdTech governance is often shared with other governmental agencies or departments, such as those overseeing national information and communications. In Malaysia, for instance, the Ministry of Education shares responsibilities with the Government IT and Internet Committee in the implementation of education technology (↑UNESCO, 2023a).

National education strategies across Southeast Asia recognise that successful implementation can be enhanced through engagement with local partners. For example, in the Philippines, the Basic Education Development Plan (↑Department of Education, 2022) sets the national vision and goals while allowing regional departments and schools to tailor the strategies to address local challenges and opportunities. In Malaysia (↑Ministry of Education, Malaysia, 2013) and Thailand (↑EduBright, 2018), education strategies emphasise building partnerships with parents, communities, and other local stakeholders to mobilise resources and strengthen collaboration aimed at improving the delivery and quality of education services. These examples highlight how countries envision local engagement and its role in strengthening education systems.

Policies related to education technology align with some, though not all, elements of the ASEAN declaration.[5] Notably, all countries in the region have policy documents that promote access to education through technology, and many explicitly mention using technology and distance learning to reach marginalised populations (↑UNESCO, 2023a).

To align with regional and national policies, EdTech product design can include features that ensure access to quality learning through technology is equitable, particularly for marginalised learners. For instance, they can use learner-centred pedagogical practices, develop open-source and free-to-use digital content and build shared repositories of educational content designed for localisation, which are principles highlighted in the

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[5] A full policy scan is beyond the scope of this report; however, EdTech Hub has a series of country level rapid scans for Cambodia (↑Thinley et al., 2024), Lao PDR (↑Afzal et al., 2024), Timor-Leste (↑Honda et al., 2024b) and Vietnam (↑Honda et al., 2024a) in which EdTech policies are discussed.

ASEAN Declaration on the Digital Transformation of Education (↑ASEAN, 2022b).

3.3. EdTech funding landscape

Based on the literature, the role of EdTech funders in shaping the regional landscape remains underexplored, particularly in the Southeast Asian context. There is an active and growing market for EdTech investment in parts of the region, driven by rapid digitisation and increased government and household spending on education (↑Better Purpose et al., 2021; ↑UNESCO, 2023a) — the picture is uneven. For instance, countries such as Vietnam have seen rising investment activity, while others are experiencing a decline. Between 2018 and 2023, EdTech in Southeast Asia secured approximately USD 480 million in venture capital funding, with a notable surge following the Covid-19 pandemic (↑HolonIQ, 2020). However, funding levels still remain relatively low compared to other regions globally (see Figure 3.1). Recent trends also indicate a global downturn in EdTech investment, with fewer deals but larger individual investments observed in early 2025 (↑HolonIQ, 2025).

While venture capital investment is the most publicly visible, philanthropic contributions, donor funding, and other forms of financing — including grants, loans, and impact investments — remain largely undocumented in the region (↑Roddis et al., 2021). This highlights the need for more systematic tracking of diverse funding flows to fully understand how capital is shaping the EdTech ecosystem across Southeast Asia.

3.3.1. Impact of funders on the EdTech landscape

The literature on the impact of funders in the EdTech landscape primarily focuses on investors,[6] including early stage, corporate, private equity, impact, venture capital, and limited partners (↑Kucirkova, 2024, p. 3). Globally, these types of funders play a crucial role in driving innovation and progress in EdTech, influencing the development and scalability of technology-based learning tools and services (↑Kucirkova, 2024). Research done on venture capitalists in the United States finds that these types of funders often present their focus on profitability and market growth in terms that emphasise social impact and educational returns (↑Komljenovic et al., 2023). Additionally, funders who integrate evidence generation within the funding cycle and facilitate connections between academics and EdTech providers can lead to scalable solutions that are not only financially

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[6] See Definitions for the scope of the term "investor" used in this report.

viable but also effective in improving educational outcomes (↑Kucirkova, 2024; ↑Labun, 2023). While this has been the case globally, whether Southeast Asia's investment landscape fosters the same alignment between profitability and equitable long-term educational impact remains unclear due to the limited information available.

Further, this calls for more research on the broader nature of EdTech funding in Southeast Asia, as insights are still limited and more focused on other regions, such as South Asia and Africa (↑Roddis et al., 2021). Specifically, it is important to understand how EdTech funders shape the trajectory and principles of providers, their view of impact, and how funding allocation and priorities shape the industry's trajectory (↑Williamson & Komljenovic, 2023). In addition, there are still questions on whether there is a risk of EdTech funders, particularly investors, regarding education more as a market to be capitalised rather than a common public good to collectively advance (↑Shi, 2024).

On EdTech investments in different sectors of education, available evidence indicates that the majority of funding channelled to EdTech interventions in Southeast Asia is primarily focused on tutoring, test preparation, and STEM solutions, with the majority directed at the kindergarten-to-Grade-12 (K–12) market (↑HolonIQ, 2024). Similarly, the EdTech sector remains primarily focused on product development rather than problem-solving, with more emphasis placed on technology integration over addressing the core education challenges (↑Simpson et al., 2021). As a result, questions remain on whether or how priority is given to EdTech interventions that accommodate the needs of marginalised learners in the region.

Figure 1. *Southeast Asia distribution by sub-sector. Authors' own figure based on data from* HolonIQ, 2024

Southeast Asia EdTech 50 cohort distribution chart
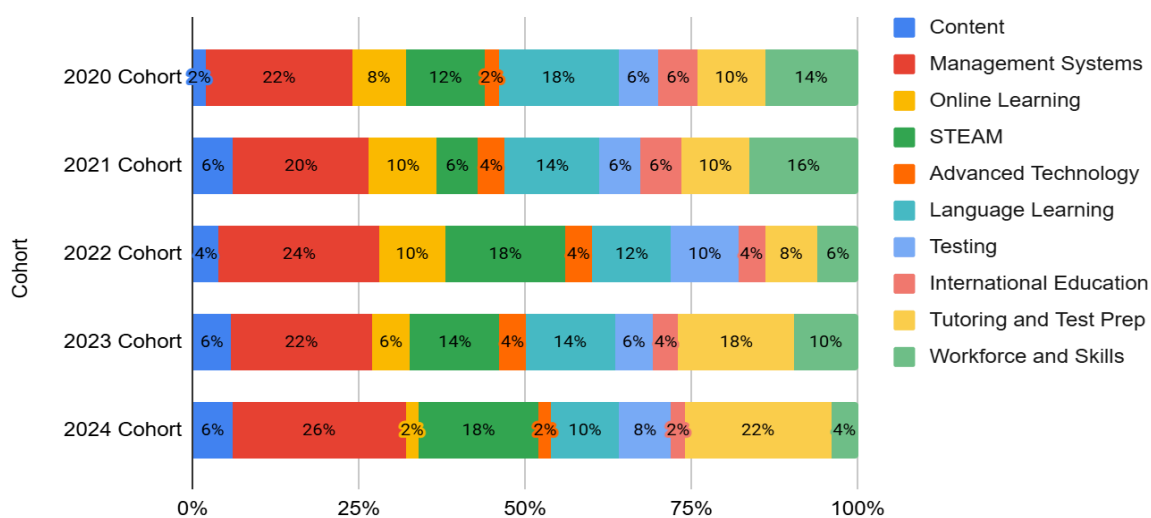
4. Summary of KII findings

This section discusses key challenges EdTech providers face when reaching marginalised learners, the strategies to address these challenges, and the kinds of product development and design tools used to cater to the different needs of marginalised learners. It will also touch on operational considerations EdTech providers need to make to ensure that their products can effectively reach target audiences.

Table 1 below showcases the EdTech providers that were interviewed, with a breakdown by country of the different providers, the service their interventions provide, primary target audiences, as well as the modality of their solutions (online, offline, or blended).

Table 1. *Summary of KIIs of EdTech Providers[7]*

Country	Organisation	Tools/service provided	Primary target user base (including a focus on marginalised groups)	Solution modality (online, hybrid, intermittent or offline)
Indonesia	CoLearn	A for-profit company with an online learning platform for K–12 STEM subjects with live classes and homework help	Serves B2C market, targeting students from low- to middle-income backgrounds in public and private schools	Online
	Ruangguru	A for-profit company with an online learning platform with video tutorials for various K–12 subjects	Serves B2C and B2S market targeting K–12 students in public schools & low-income private schools, including those in rural and remote areas	Online/Hybrid
	Roshan Learning Center	A non-profit organisation, providing various educational programmes to refugees through tech-enabled classrooms to support learning	School-aged refugees	Hybrid/Offline
	Kipin	A social enterprise, providing digital offline K–2 learning solutions for schools, including portable devices with content libraries	Serves B2B market targeting low-infrastructure schools from rural & remote areas and low-income areas	Offline

[7] Links to these providers' websites can be found in the Appendix.

Country	Organisation	Tools/service provided	Primary target user base (including a focus on marginalised groups)	Solution modality (online, hybrid, intermittent or offline)
Indonesia	Cakap	A for-profit company providing an interactive online language and vocational skills learning platform	Primarily serves B2C market, targeting students from high- and middle-income families; B2B model targeting marginalised learners on their corporate and social responsibility (CSR) projects	Online and offline
	Sekolah Enuma	A for-profit/social enterprise providing educational applications like 'Todo Math' and 'Todo Reading', focusing on literacy and numeracy skills for children	Serves B2C market targeting children aged 4–12, including those with special needs	Hybrid
	Bookbot	A social enterprise, digital library with an AI reading tutor that provides reading assistance	Serves B2C market targeting K3 children learning to read and learners with disabilities	Hybrid
	SoLeLands	A for-profit providing game-based learning experiences for kids, focusing on self-discovery and life skills through technology	Serves B2C market targeting children, in both public and private schools	Online
	SekolahMu	A social-enterprise organisation providing a blended learning platform with personalised and flexible curricula for various K–12 educational levels	Serves B2C market targeting K–12 learners, including those in remote and rural areas, as well as students with disabilities	Hybrid

Country	Organisation	Tools/service provided	Primary target user base (including a focus on marginalised groups)	Solution modality (online, hybrid, intermittent or offline)
Indonesia	Solve Education!	A tech-driven social enterprise and registered non-profit organisation that empowers youth by helping them master essential 21st-century skills, including English, maths, and digital and financial literacy	Underprivileged youth and adult learners	Online
	ErudiFi (Danacita)	A for-profit company providing affordable instalment plans for educational purposes through a platform	Serves B2C market, targeting college students from low- to middle-income families	Online
Vietnam	VUIHOC	A for-profit online learning platform offering interactive courses for K–12 subjects and English as a Second Language	Serves B2C market, targeting K–12 learners with a focus on Tier 2 *(urban hubs with over 250,000 people and domestic airports)* and Tier 3 cities *(smaller centres with 100,000–250,000 people and developing infrastructure)*	Online
	Library for All	A non-profit organisation providing tablets with a preloaded localised digital library in a waterproof case	Children, especially underserved communities	Offline

Country	Organisation	Tools/service provided	Primary target user base (including a focus on marginalised groups)	Solution modality (online, hybrid, intermittent or offline)
	KidsEdu	A social enterprise focused on delivering teacher training, a learning management system, and developing a kindergarten STEM curriculum	Primarily serves B2B/B2S markets targeting female teachers and students in early childhood education (via kindergarten)	Hybrid
	Let's Read Asia	A non-profit organisation providing mobile applications for early literacy	Young children (aged 3–10) in underserved communities	Hybrid/Offline
	Enuma	A for-profit/social enterprise providing educational applications like 'Todo Math' and 'Todo Reading', focusing on literacy and numeracy skills for children	Serves B2C market, targeting children (aged 4–12), including those with special needs	Hybrid
Philippines	Knowledge Channel Foundation	A non-profit organisation delivering government-prescribed, curriculum-based, video-based lessons and other digital lessons on-air, online, and offline for Pre-kindergarten to Grade 12, and capacity-building programmes for teachers and other care providers of children.	Students, teachers, and parents in the Philippines	Hybrid/Offline
	ErudiFi (Bukas)	A for-profit company providing affordable instalment plans for	Serves B2C market, targeting college students from low- to	Online

Country	Organisation	Tools/service provided	Primary target user base (including a focus on marginalised groups)	Solution modality (online, hybrid, intermittent or offline)
Philippines		educational purposes through a platform	middle-income families	
	Youth Impact (locally registered as TISA: Testing Innovations for Sustained Action)	A non-profit organisation providing mobile phone-based tutoring	Students aged 8–11 in remote and rural areas	Online
Timor-Leste	Catalpa International	A non-profit organisation providing an offline-first school management system and teacher training platform	Government and public school teachers	Offline
	Library For All	A non-profit organisation delivering a mobile digital library app, primarily accessible offline, with initial connectivity required	Children, especially underserved communities	Hybrid/Offline
Cambodia	Sisters of Code	A non-profit organisation promoting coding education for girls, offering workshops, online	Girls from low-income communities (public schools)	Hybrid/Offline

Country	Organisation	Tools/service provided	Primary target user base (including a focus on marginalised groups)	Solution modality (online, hybrid, intermittent or offline)
		courses, and bootcamps		
Laos	Library For All	A non-profit organisation delivering a mobile digital library app, primarily accessible offline with initial connectivity required (part of the ChildFund Programme)	Children, especially underserved communities	Hybrid/Offline
Malaysia	Solve Education!	A tech-driven social enterprise and registered non-profit organisation that empowers youth by helping them master essential 21st-century skills, including English, maths, and digital and financial literacy.	Underprivileged youth and adult learners	Online
Myanmar	Library For All	A non-profit organisation delivering a mobile digital library app, primarily accessible offline with initial connectivity required (part of the Save the Children programme)	Children, especially underserved communities	Hybrid/Offline

4.1. Key challenges EdTech providers aim to address in reaching marginalised learners

Out of the 20 EdTech providers interviewed, two key areas were identified that pose a challenge when it comes to supporting marginalised learners:

1. The 'demand side', encompassing the need to shift students' and parents' mindsets regarding learning — including certain preconceived notions or expectations.

2. The 'supply side', particularly regarding the recruitment of qualified personnel to support teaching and learning.

On the demand side, key challenges include students' mindsets towards learning, especially the perception of certain subjects, like maths and science, as particularly difficult. This issue was especially evident among providers working with children in rural areas, and notably among girls in Vietnam and Cambodia. Hence, EdTech providers catering to rural children and marginalised girls have specifically focused on developing curricula that strengthen STEM-related subjects, particularly encouraging the enrolment of girls in these programmes, and using methods such as gamification to encourage more interest in these subjects. Similarly, two EdTech providers working in Indonesia observe low levels of motivation and 'intrinsic drive' regarding independent learning, and they are therefore focusing on designing programmes to infuse more collaboration, engagement, and interactivity in their pedagogy to address these challenges. This was also the case for an EdTech provider working across Myanmar, Laos, and Timor-Leste — highlighting the need to focus on instilling a love of learning within the users of their intervention.

EdTech providers, particularly in Indonesia and Cambodia, highlighted the challenge of constructively supporting children while also meeting parental expectations. Parents in Southeast Asia often have high expectations regarding their children's academic performance and a tendency to compare their children's progress with their peers. In Cambodia, one provider noted how parents are more hesitant to invest in girls' education compared to boys'. In Indonesia, two EdTech providers indicated a reluctance to share learning data with parents, citing concerns that the information may be misinterpreted, compounded by the fear that parents may not fully understand their child's learning progression and

may instead focus mainly on performance metrics, driven by high expectations for academic success.[8]

On the other hand, three out of four EdTech providers who directly employed teachers in Indonesia noted issues with the supply-side of education provision — particularly that of poor teaching quality to support learning for marginalised groups. A similar concern was also raised by one provider interviewed in Vietnam, who directly works with and employs teachers for their intervention.

Providers also spoke about the different challenges of working in rural as opposed to urban areas. Rural areas have low compensation mechanisms for teachers, as well as poor standardisation of skillsets and certification. These challenges are exacerbated by efforts to recruit teachers from more rural and remote areas, where access to teacher training is particularly difficult. Some strategies providers used to address these challenges included deliberately providing teachers in rural and remote locations with competitive salaries, developing a customised online and offline training course to strengthen teachers' competencies, and leveraging alumni relations for programmes that have quick programme-graduation rates, where former students become trainers to deliver material to incoming students.

4.2. Product design and development

This section examines how EdTech providers in Southeast Asia reportedly craft solutions to meet the needs of marginalised learners, focusing on:

1. Teaching and learning design

2. Curriculum alignment and localisation

3. Feedback and testing mechanisms

4. Accessibility considerations.

During interviews, EdTech providers' descriptions of their intervention design and development processes appeared to align closely (albeit not always explicitly) with the principles of universal design for learning (UDL) and human-centred design (HCD). UDL promotes multiple ways to engage learners, present information, and demonstrate understanding (⬆Foster et

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[8] This parental expectation may also stem from high-stakes national examinations that are typically used to determine students' success in enrolling in higher education. Further systemic changes may be required to systematically shift this mindset.

al., 2023). This was reflected in how providers developed interactive modules and gamified content, which are designed to enhance learner engagement. Accessibility features like offline access and text-to-speech align with UDL by reducing barriers for diverse learners. Offline access ensures that learners in remote areas with limited internet can engage with content, supporting UDL's principle of flexible delivery. Text-to-speech aids learners with visual impairments or reading difficulties by providing auditory access to materials, embodying UDL's focus on multiple means of representation. HCD prioritises understanding the products' users and iterating the products based on user needs (⇡Interaction Design Foundation, no date). Providers demonstrate this by developing curricula tailored to local contexts and using pilot programmes and surveys to gather feedback, intending to support continuous improvement of their offerings to better respond to their audience's needs.

Additionally, while not all providers target marginalised learners as their primary beneficiaries, this section(4.2.) highlights how existing interventions could address the specific needs of these groups, offering insights into different providers' strategies and impact.

4.3. Teaching and learning design

Interviews from all the EdTech providers across Southeast Asia revealed two central pillars in designing effective teaching and learning processes:

1. Learning delivery methods — encompassing synchronous and asynchronous modalities

2. Curriculum alignment with localisation.

These pillars aim to accommodate the needs of marginalised learners by personalising learning experiences, incorporating strategies that encourage deeper engagement and meet students at their specific learning levels. To further enhance the learning experience, providers integrate features such as gamification and AI-driven personalisation, which bolster content delivery and engagement.

4.3.1. Learning and delivery methods

Two predominant methods of delivering learning emerged from the discussions with EdTech Providers in Southeast Asia: synchronous learning and self-paced learning. Each method has distinct strengths and limitations in addressing the needs of marginalised learners. Owing to its compatibility with mid- to low-tech solutions, such as offline-first

technology, self-paced learning was found to better accommodate the needs of marginalised learners than the synchronous modality.

Synchronous learning, defined as real-time, instructor-led sessions that mirror the interactivity of a traditional classroom, excels at delivering immediate feedback and hands-on guidance—and is often used in Southeast Asia for after-school tutoring programmes. However, its dependence on a stable internet connection and suitable devices (e.g., smartphones or laptops) creates significant barriers for marginalised learners, particularly those in rural or remote areas with poor infrastructure. Providers like Ruangguru, which operate in Indonesia, attempt to bridge this gap with low-bandwidth options, enabling participation on basic devices with weaker connections. Yet, these solutions fall short in addressing the needs of the most marginalised learners due to the need for constant internet connectivity as a prerequisite for access.

In contrast, self-paced learning empowers learners to engage with content independently. This method enables integration with offline access, allowing users to access data even with intermittent or no connectivity. This approach is especially advantageous for marginalised learners in low-connectivity settings, as it eliminates the need for constant internet access. However, two EdTech providers employing this model raised concerns that maintaining motivation can be a hurdle, as self-paced learning demands a high level of self-discipline. To counter this, providers integrate gamification features, such as interactive quizzes and progress badges and, where resources allow, AI-driven tools that personalise content to match individual learning needs and styles. While these innovations enhance engagement, their effectiveness remains limited due to the absence of real-time support, leaving gaps in meeting the diverse needs of marginalised learners.

Emerging as a bridge between these two approaches is a hybrid model that combines self-paced content that is accessible offline via preloaded devices or printed materials, with periodic face-to-face instruction aligned with the national curriculum. In this approach, students may or may not engage directly with the technology. In some interventions or programmes, such as Knowledge Channel in the Philippines or Kipin in Indonesia, content is primarily delivered through teachers, who act as the main users of EdTech tools. The providers of these solutions focus on equipping educators with both the training and technology needed to personalise instruction and support diverse learning needs in classrooms. While the hybrid model incorporates elements of blended learning, its implementation often centres more on enhancing teaching practices than on fostering independent digital learning by students. This makes it

especially relevant in low-connectivity settings, where ensuring equitable teacher support and curriculum alignment remains critical.

While self-paced and blended learning models offer promising offline-first solutions for marginalised learners, EdTech providers often face significant challenges in device provision and teacher quality. Many schools and learners lack essential devices — such as TVs, tablets, or computers — required for access, and the success of these models hinges on teachers skilled in technology and adaptive teaching methods. These challenges align with the findings in UNESCO's GEM Report, which identify inadequate digital infrastructure, lack of devices, and insufficient teacher training as major barriers to integrating technology in education (↑UNESCO, 2023b). To address these barriers, one provider emphasised the need for external support — such as partnerships with governments, NGOs, or private entities to provide devices or establish tech hubs — including ongoing teacher training in digital literacy and pedagogy development. This suggests that, while technology holds high potential to support marginalised learners, particularly in rural and remote areas by expanding access to learning opportunities, its success depends on overcoming key systemic barriers, including limited device access and the need for increased teacher development.

4.3.2. Curriculum alignment and localisation

EdTech products in Southeast Asia adopt two main curricular approaches to support marginalised learners: alignment with national K–12 curricula and bespoke, skill-focused programmes. K–12-aligned products enhance accessibility by mirroring official educational frameworks, a critical feature for underserved communities reliant on public education, especially in rural and remote areas. This alignment reinforces classroom instruction and prepares students for national assessments, promoting educational parity. However, national curricula have often been found to inadequately integrate 21st-century skills — such as problem-solving, collaboration, and critical thinking — into teaching and learning practices, despite government emphasis on their importance (↑Better Purpose et al., 2021). This is notable because 21st-century skills are considered to be particularly important for supporting the success of marginalised learners, but many underserved students reportedly lack them due to systemic inequities (↑Buasuwan et al., 2022; ↑Vivekanandan, 2019). Conversely, bespoke programmes, such as Sisters of Code in Cambodia, offer tailored curricula targeting specific skills for specific demographics, like STEM for girls, which can boost enrolment and empower more specific and niche marginalised groups. Yet, these initiatives face scalability constraints and, as ↑Better Purpose et al. (2021) highlight, they struggle to comprehensively

incorporate 21st-century skills in their programming due to challenges in operationalising and assessing their growth. Thus, while both approaches have their benefits in advancing equity, they fall short of fully equipping marginalised learners with the diverse skills needed for future success.

A promising innovation emerges through a conversation with Enuma, an EdTech provider operating in Indonesia, offering a blended model that integrates the national K–12 curriculum — covering subjects like Bahasa Indonesia, maths, and English — with personalised learning. After they sign in to the app, students explore the course structure and complete an introductory module before taking a placement test. This test determines their starting point; for example, in maths, a beginner might start at Level 1, while a student with prior knowledge could begin at Level 4, 9, or 11. This tailored approach, ensuring every child has their own path, directly benefits marginalised learners who face educational gaps due to resource scarcity or disrupted schooling, allowing them to progress at their own pace and learning level. By integrating the assumption that every child has foundational skills to some degree with a self-paced learning approach, while designing to address scalability limitations of bespoke programmes, Enuma's hybrid model aims to enhance EdTech's effectiveness in meeting learners' needs, particularly in accommodating a need for greater flexibility and learning support. Additionally, its focus on self-directed and student-centred learning could lay the groundwork for developing competencies like problem-solving and adaptability (⇡Morris et al., 2025). However, ⇡Better Purpose et al. (2021) caution that technical competence with digital tools does not guarantee the development of these skills, and more research is needed to confirm their integration. However, while Enuma's hybrid approach represents a significant step forward, the challenge of deeply embedding 21st-century skills and its implications for future design processes underscores the need for continuous innovation.

Beyond curriculum design, localisation connects education to learners' lived experiences, proving essential for marginalised groups. There is research to suggest that delivering instruction in students' first language significantly improves their ability to acquire foundational literacy in a second language (⇡Zhao et al., 2024b). Our interview with Let's Read, a digital literacy initiative under the Asia Foundation, confirms this finding's relevance in Southeast Asia, demonstrating how localisation and translation efforts enhance engagement and belonging among marginalised learners. According to Let's Read, in their work in Pagayawan (a municipality in Mindanao in the Philippines), they are "seeing cases of parents being more involved in the education of their children."

This illustrates how culturally tailored resources strengthen educational participation and community engagement in marginalised communities.

Localisation efforts were seen to affirm learners' identities and encourage community participation, amplifying educational impact. However, efforts towards localisation have been faced with resource challenges, including budget and limited expertise in regional dialects and the prevalence of English in fields like STEM, which restrict local language resources.

Additionally, as discovered through interviews, localisation efforts often require a nuanced understanding of cultural and linguistic diversity to navigate these barriers effectively. This could include understanding gender roles in specific communities, or being cautious about adapting material to certain languages, where sensitive translation may be required. Success stories often involve close collaboration with local communities or governments to co-create content that reinforces the cultural value of education across a region's diverse contexts.

4.4. User feedback and testing mechanisms

The EdTech providers we interviewed in Southeast Asia engaged with diverse user groups, including students, parents, teachers, and local communities across urban, rural, and remote areas with different and often specific needs. This subsection highlights the need for a robust framework in sampling and testing strategies, particularly for marginalised learners facing barriers like limited access and cultural differences, where representative feedback is critical to enhance inclusivity.

4.4.1. Sampling strategies

Interviews with 20 EdTech providers across Southeast Asia revealed that the inclusion of marginalised learners in the testing process depends heavily on the provider's organisational priorities. Providers such as Library For All, Let's Read, Knowledge Channel Initiative, and Kipin, who designate marginalised communities as their primary beneficiaries, actively involve these learners in their sampling process from the earliest stages of testing, ensuring their voices shape product development. In contrast, providers who view marginalised learners as secondary beneficiaries do not engage with them directly. Instead, they focus on related challenges, such as targeting users in smaller cities, those with low-end devices, or individuals with poor connectivity, which intersect with issues faced by marginalised learners but often fail to capture their full range of needs, such as linguistic diversity or socio-economic barriers.

Furthermore, the providers who prioritise marginalised learners face significant hurdles in reaching these communities directly. Challenges include an absence of established networks, limited physical access to marginalised populations, and infrastructural constraints like unreliable internet or insufficient resources. To address these challenges, providers have partnered with local organisations, such as NGOs and community experts, to reach and include diverse groups when gathering feedback more effectively. These collaborators serve as intermediaries, channelling the concerns and needs of marginalised learners into the design process. Such partnerships help providers better understand diverse requirements, reduce bias, and create EdTech solutions tailored to the specific challenges faced by marginalised communities, which interviewees identified as including affordability, cultural relevance, or offline accessibility (see Figure 2).

Figure 2. *Case study: Library for All*

EdTech provider: Library for All (programmes and resources delivered in Myanmar, Laos, and Timor-Leste; home operations based in Australia)

Non-profit

Strategy

- **A partnership-based approach**, collaborating with local organisations like Save the Children, ChildFund, and World Vision, as well as ministries of education, to promote education equity for marginalised learners. This approach engages local communities to co-create culturally relevant, localised content through engagement and consultation with teams embedded in the local communities.

Use case

- **Co-creation (through a writers' workshop programme)** in Myanmar, Laos, and Timor-Leste. Library for All gathers community feedback to ensure culturally relevant content and co-create manuscripts through their Writer's Workshop, collaborating with emerging local writers, illustrators, and cultural advisors to reflect community interests and perspectives.

Highlights

- **Leveraging local partnerships** in Myanmar, Laos, and Timor-Leste, Library For All co-develops localised libraries with local communities. For example, in Timor-Leste, they partnered with the government and universities to create the first children's books in

the Tetun language.

- ■ **Resource-light localisation.** Library For All's partnership model offers opportunities for localisation by working with local actors to leverage community expertise, demonstrating potential for flexible solutions that can meet diverse needs with further resource support.

Areas for consideration

The point(s) below are for further deliberation if undertaking a similar approach.

- ■ **Operational concerns:** Ensuring clearer communication channels would allow for more effective engagement of local stakeholders and innovative collaboration to support the co-development of contextually relevant solutions.

4.4.2. Multi-stage testing approaches

A multi-stage testing process, including early user testing, beta testing, pilot programmes, A/B testing, and focus groups, validates a product's relevance at different development phases. By iterating across these stages, EdTech providers enhance functionality and relevance in their interventions. These processes intend to capture insights to iterate their products, enabling providers to adjust their intervention as needed to meet users' needs.

However, despite its strengths, this process demands significant time, expertise, and resources, which are often limited. One provider highlighted the resource constraints often faced in the industry, noting that budget limitations curtail the ability to conduct thorough testing and engage experts who can address the needs of marginalised learners, such as those with SEND. Another provider pointed to the lengthy testing periods as a significant hurdle, with A/B testing alone spanning 6–12 months. Such delays can be particularly detrimental when immediate interventions are needed, especially for marginalised learners already at risk.

Adding to these challenges is the lack of evidence of engaging marginalised learners during the testing period, as they are often not the primary beneficiaries of these interventions, which are often tied to differing organisational priorities. This oversight in engaging marginalised learners aligns with insights in the ↑UNESCO (2023b) GEM Report, which emphasises that excluding these groups from the design and testing of EdTech interventions deepens inequity, highlighting the urgent need for equity in educational technology.

Table 2. *Overview EdTech providers' testing methods*

Testing method	Objective	Stage of development	Application of insights	Use cases
Early-stage user testing	Identifies user pain points, validates problems, and informs initial product design, often through rapid prototyping/Minimum Viable Product (MVP) development and testing	Early development (pre-prototype or early prototype phase)	Iterative refinement of product features and confirmation of problem–solution fit based on user feedback	*Ruangguru* uses a rapid MVP process to build and test features within one to two weeks with a small user group, iterating to enhance design. *Kipin* refines features iteratively, using teacher feedback to align with classroom needs. *Catalpa* co-designed its Bero platform through feedback sessions with teachers, including early prototype testing. As the product evolved, in-app data and user testing were used to refine its features.
Beta testing	Detects bugs, usability issues, and gathers feedback on a near-final product	Pre-release (after internal testing, before pilot)	Fixing technical issues and improving user experience before broader rollout	*Enuma* conducts beta testing to ensure technical stability before a pilot phase

Testing method	Objective	Stage of development	Application of insights	Use cases
Pilot phase	Validates product effectiveness, scalability, and impact in a real-world setting	Initial rollout (post-beta, small-scale implementation)	Assessment of operational feasibility and user adoption to inform scaling strategies	*Kipin* and *Knowledge Channel* use a pilot phase to *gauge* real-world feasibility, or understand user engagement better, to identify certain interaction patterns
A/B testing	Evaluates feature effectiveness and optimises user experience through data-driven comparisons	Post-launch or late-stage optimisation	Fine-tuning features based on user behaviour data	*Colearn* uses A/B testing as a data-driven method to evaluate and refine educational strategies, ensuring decisions are based on measurable impacts on student outcomes and operational efficiency *Ruangguru* employs A/B testing to refine features based on sustained user behaviour

Testing method	Objective	Stage of development	Application of insights	Use cases
Focus group/user interview	Gathers in-depth qualitative feedback from specific user segments	Throughout development (often during ideation or refinement)	Addressing specific user needs and mitigating bias in product design	*KidsEdu* and *SoLeLands* gather in-depth qualitative feedback from a specific user segment through focus group discussions *Catalpa* conducts classroom observations, interviews, and focus groups as part of regular cycles of feedback and programme evaluation to understand the impact of their programmes on the learning environment

EdTech providers rely on metrics-driven feedback loops to continuously refine their products and ensure they meet educational goals. By blending quantitative data, such as completion rates or usage patterns, with qualitative insights from classroom observations and user interviews, they gain a holistic view of product efficacy. However, not all metrics hold equal weight. One provider emphasised the importance of prioritising meaningful metrics, like improved test scores or the application of real-world skills, which reveal an intervention's actual educational value. In contrast, usage metrics, such as a surge in app logins, might look impressive but often fail to indicate genuine learning progress. For example, an increase in daily active users may appear promising, but it does not necessarily reflect meaningful learning mastery. To drive meaningful change, particularly in addressing the existing gap with marginalised learners, providers must prioritise metrics that reflect real learning progress, as this focus is essential for both meeting the needs of marginalised learners and ensuring these needs are central to the intervention's monitoring and evaluation design.

A data-driven, iterative process ensures products evolve to meet diverse learner needs effectively. As one provider from Indonesia, CoLearn, emphasised, "to be more inclusive, we must change standards based on evidence, not intuition". This underscores how employing rigorous, evidence-based feedback from key groups during critical stages of the design and development phase is essential for creating impactful and inclusive EdTech interventions. Such feedback enables providers to better understand and address the diverse needs of marginalised learners, ensuring solutions are tailored to promote equity and effectiveness.

4.5. Accessibility considerations

Accessibility and usability are key design concerns when targeting marginalised learners in Southeast Asia. Limited connectivity, low digital literacy, and resource constraints are among the key challenges EdTech providers need to address when designing their interventions.

Through the interviews conducted, two main delivery methods were identified: online- and offline-first approaches. Offline-first solutions emerged as a key approach to overcome connectivity issues, while inclusive design features, such as localised interfaces, simplified navigation, and accommodations for SEND, enhance usability for diverse needs, ensuring more equitable access.

4.5.1. Offline-first approach

Offline-first technology is vital for ensuring educational access for marginalised learners in Southeast Asia, where unreliable internet connectivity often limits equitable learning opportunities. By storing content locally on devices such as tablets, hard drives, or USB drives, this approach enables full functionality without constant internet access, with synchronisation occurring when connectivity is available. It addresses the digital divide by supporting rural and underserved communities and provides resilience during disruptions like climate emergencies, making it a key strategy for reaching learners in low-resource settings.

Interviews with EdTech providers in Southeast Asia reveal several innovative solutions that illustrate how offline-first technology is being deployed in the region. For example, in the Philippines, the Knowledge Channel initiative employs a portable media library that uses hard drives preloaded with educational videos, games, quizzes, and session guides. These libraries are distributed to schools without internet or broadcast access, enabling teachers to deliver digital lessons offline. While in Laos, Timor-Leste and Vietnam, Library for All equips schools with their 'Spark Box'—an offline classroom solution featuring preloaded tablets with digital libraries. It uses a mini router to update content during brief connectivity windows and a USB stick to collect usage logs, which are manually transferred for analysis. Similarly, in the Philippines, Let's Read offers downloadable books and apps requiring an initial internet connection, often facilitated by local government partnerships, before enabling offline access to support literacy development. In Indonesia, Kipin offers a comprehensive offline learning ecosystem tailored for educational content delivery in regions with limited internet access, such as rural communities. The ecosystem features tablet-sized devices preloaded with the K–12 curriculum and a rich variety of educational resources, including books, videos, quizzes, and literacy comics. Designed to function entirely without the need for an internet connection, this platform ensures that students in underserved locations can engage with high-quality learning materials, regardless of connectivity challenges.

The efficacy of an offline-first approach was reported by Library For All, where their 'Spark Boxes'—waterproof cases holding and charging 20–40 tablets preloaded with localised e-books—have enabled sustained use in schools across Vietnam. Field visits and children's feedback indicate these tools support consistent reading habits for marginalised children, even in remote areas or amidst environmental challenges like floods, by providing reliable access to tailored educational materials. The integrated mini router and USB data collection further ensure content relevance and measurable

outcomes. Additionally, the Knowledge Channel Foundation reported that schools in the Philippines using their offline portable media libraries outperformed those reliant on online resources, due to poor connectivity and high internet costs undermining online learning. These examples highlight how offline-first technology bridges infrastructure divides, offering consistent, cost-effective access to education for marginalised learners, enabling them to engage with digital content despite limited internet access.

Despite the successes of offline-first solutions in expanding educational access for marginalised learners in Southeast Asia, these approaches are not without their challenges when trying to achieve reach and impact. High initial costs for hardware, such as tablets, hard drives, or portable servers, strain the budgets of schools in impoverished areas, where students often lack personal devices and schools reportedly have challenges in device procurement, particularly public schools with limited and highly regulated budgets, as noted by EdTech providers. Additionally, delayed content updates due to reliance on intermittent connectivity risk leaving students with outdated material, particularly in regions with patchy internet access. Inconsistent data collection, stemming from the absence of real-time analytics, forces providers to rely on labour-intensive manual methods like USB-based log transfers or periodic surveys, resulting in incomplete or delayed insights into student progress. Technical and logistical constraints, including optimising software for low-end devices, ensuring functionality amidst unreliable electricity supply, and distributing or repairing hardware in remote areas, further complicate deployment and maintenance. These challenges indicate that while offline-first solutions improve access, their effectiveness remains partial, constrained by scalability and resource limitations (see Section 4.6 below for further details on this issue).

4.5.2. Inclusive features

Inclusive design in EdTech enables marginalised learners to have more equitable access to quality education and learning, where barriers like low digital literacy, limited device capabilities, and a lack of accommodation for SEND have been noted to hinder engagement.

EdTech providers frequently noted the adoption of a human-centric design, prioritising simplified user interfaces, opting for text-based navigation and larger fonts to address challenges faced by marginalised learners. The developers of Catalpa's Eskola app adapted the intervention based on results from structured user testing and usage data analysis, which showed that an interface relying solely on icons

confused learners with low digital literacy. In contrast, features like single sign-on capabilities streamline access for users with limited technical skills. Furthermore, lightweight applications, such as Kipin's offline K–12 platform and Knowledge Channel's portable media libraries, minimise processing demands, enabling compatibility with older or low-cost smartphones in low-connectivity areas. For learners with SEND in particular, accessibility features like adjustable text sizes, brightness controls, closed captions, and audio functions such as Let's Read's user-requested audiobooks, enhance usability across diverse needs. However, these features, while helpful, do not fully address the varied requirements of learners with SEND due to the lack of automated, scalable solutions, leaving providers reliant on manual adjustments that are inconsistent and resource-intensive. Efforts to close this gap are further constrained by high costs and technical barriers, including examples illustrated by the complexity of integrating and deploying AI-driven personalisation in interventions. As noted in the Section 4.4 on user feedback and testing mechanisms, iterative feedback from students, teachers, and communities is key to continuous refinement, offering valuable insights into additional features needed to enhance inclusion.

Figure 3. *Case study: Catalpa*

EdTech provider: Catalpa (operating in Timor-Leste, home operations based in Australia)

Non-profit

Strategy

Human-centred design (HCD) was incorporated into the solution design process. Co-led by the Ministry of Education.

Catalpa uses HCD to create intuitive, user-centric, contextually relevant solutions through iterative co-design, user testing, and feedback, prioritising usability and accessibility for users with low digital literacy, limited internet access, and diverse linguistic backgrounds.

Use case

Catalpa has deployed two flagship products in Timor-Leste:

1. **Escola**: A tablet-based, offline-first app for school management and data collection in low-bandwidth areas.

2. **Bairo**: A mobile app for teacher training, offering lesson plans and microlearning, designed for low-end smartphones

Highlights

- **Local dialects**: Catalpa integrates languages like Tetun, advocating

for its inclusion in open-source software to create a localised interface, thereby reducing language barriers.

- **User interface (UI) customisation**: Adjusts font sizes and uses text-based navigation to support users with low digital literacy, ensuring accessibility.
- **Offline access**: prioritises offline functionality and minimal data usage, enabling resource access in remote areas with limited internet.
- **Device equity**: Provides tablets and data deals to ensure access for users without personal devices, supporting equity.

Areas for Consideration

The point(s) below are for further deliberation if undertaking a similar approach.

- **Sustainability**: Using an open-source model reduces costs, but government transitions would require ongoing capacity-building due to limited technical expertise.
- **Scalability**: HCD may not scale easily to regions with greater linguistic diversity without significant adaptation.
- **Device and internet dependency:** Providing devices and internet access enhances equity, but relies on external funding and logistics.

4.6. Challenges and opportunities to scale

The assumption that EdTech could transform traditional education at scale has played a significant role in shaping its appeal, both as a tool to expand access to quality education (⇡Kucirkova, 2022) and as a means for investors to make large financial gains (⇡Komljenovic et al., 2023). This focus on user and financial growth suggests that reach is often prioritised over equity, potentially leaving the most vulnerable without access to digital learning solutions. While this trade-off is not unique to the Southeast Asian market, it is particularly salient in this context due to the region's diverse digital and economic landscape.

Fifteen out of the 20 providers in this study discussed ways that they were expanding their innovation, with examples of both vertical scale (expanding an innovation by reaching more people within a demographic) and horizontal scale (expanding an innovation by adding more content or a new demographic) (⇡Castillo et al., 2023). This section explores the challenges and opportunities to scale solutions and expand the reach of innovations to marginalised learners.

4.6.1. Challenges to scale

Irrespective of the scaling method, providers experience challenges in expanding their reach or services. These challenges are shaped by external factors such as funding priorities, as well as internal factors, including budgets and the availability of skilled personnel.

External funding and budget constraints

A prominent external challenge to scale was securing funding, either through external sources like grants, investments, or corporate social responsibility (CSR) programmes, or through generating revenue. Two providers from Indonesia see Southeast Asia as an overlooked region for education development investments. One provider, for example, introduced their product to Indonesia, but later shifted focus to other areas of the world where there was greater traction with donors and government stakeholders. This aligns with the other provider's observation that private sector engagement is limited, due to less global attention on the diversity and education challenges in Southeast Asia.

To address funding constraints, five providers discussed developing partnerships with corporations which provided alternative funding streams and enabled them to reach marginalised groups (see Section 4.6.2). However, the short-term nature of these CSR programmes created limitations. Once the engagement ended, there was usually no additional financial support to continue operations. Furthermore, the continuation of CSR programmes depended on the corporations' commitment to social impact and EdTech initiatives.

In addition to limited external funding, providers of all business model types described budgetary constraints that led to trade-offs in how to allocate their financial resources best. As one business-to-consumer (B2C) provider explained, marketing and advertising, which could bring in new clients and therefore revenue, is nonetheless a significant business expense. Money spent on these business aspects reduces resources that could be spent on product improvements. Another provider, who delivered a school-based solution, found that establishing relationships with schools could be time-consuming and resource-intensive, which was difficult when providers are under pressure to demonstrate profitability to investors. These budgetary constraints illustrate the difficult decisions providers have to make between opportunities to scale and maintaining quality or accessibility.

Market demands

When scaling horizontally to offer new services, providers are heavily influenced by user demand. Both for-profit and non-profit providers shared examples of introducing new content, such as financial literacy courses or interview preparation skills, in response to learners' requests. This attunement to users' specific interests can benefit marginalised learners. However, this market-driven approach left some providers — particularly for-profit ones — subject to shifting consumer preferences, at times requiring them to rapidly iterate and introduce new products or features to maintain engagement with their product. For instance, one provider in Indonesia observed that the market changed very quickly, "every six months or every year", and when the company noticed a growth in demand from users for a specific solution, they quickly pivoted to develop a feature to meet that interest. For this B2C company, retaining learners' attention and revenue was essential. Ultimately, this approach prioritises profitable products or services over those proven to achieve improved learning outcomes or meet the needs of marginalised students.

Infrastructure and local context

Another theme that surfaced during interviews was internet availability and quality, particularly when describing efforts to scale vertically and increase the reach of their products to new users. For instance, some providers in Indonesia were focusing their expansion on Java, noting that the lack of quality internet was a barrier to expanding to other islands. However, this was not the case in all contexts; a provider in Vietnam shared that the government's commitment to equip all schools with an internet connection facilitated expansion across the country.

While a few organisations had a presence in multiple Southeast Asian countries, there were limited examples of regional expansion. Although multiple providers shared beliefs that their EdTech solution was relevant to neighbouring countries facing similar challenges, such as limited internet connectivity and teacher quality, they also recognised that the local context required thoughtful consideration. As demonstrated by the KII with Kipin, the reason they had not expanded into other markets was because of their belief that "education is so local, you're going to need really strong partners who understand the people in that area to make something like this [our product] successful there."

Government capacity and transparency

Although EdTech providers viewed government partnerships as valuable in helping them scale (See Section 4.6.2), they also noted several barriers which prevented effective collaboration with governments. Some governments lack the capacity to maintain digital solutions, in part due to limited specialised IT and digital skills within a ministry of education. Bureaucratic processes, regulations around learning content, and the slow pace of information flow from central to local governments were also cited as challenges.

Four providers expressed a need for greater clarity and communication about ministries' visions and roadmaps for digital education, so they could better understand the governments' intended steps. That said, not all providers encountered this issue. Some appreciated aspects of government policy, such as an emphasis on gender equality, inclusive education, and clear performance indicators, allowed them to develop products and services that complemented the national strategy.

Internal capacity

Five EdTech providers also faced constraints due to the availability of qualified staff to support either the technical development or delivery of their programme. In some cases, this challenge could be addressed through professional development, for instance, by providing training to lead classes and workshops. Regarding technical development, particularly to make their solutions more inclusive, providers had to look for external experts. For example, the KII with KidsEdu in Vietnam suggested an interest in adapting their curriculum for ethnic minority languages and for students with disabilities, but noted that "We don't yet have an expert working with us in order to develop relevant content for them." However, the key informant was hopeful that AI could support this development in the future.

Additionally, there was limited evidence that EdTech providers had in-house expertise or resources to assess the impact of their solutions—an important step that has been widely called for when scaling EdTech (⇡Kucirkova, 2024; ⇡UNESCO, 2023a). Only three providers had evaluation reports of their innovations, and one additional provider reported using external support for research activities. However, most accounts of impact focused primarily on outputs, such as the number of learners reached, rather than learning outcomes.

This may partly reflect how different types of funders define and prioritise impact (See Section 5.3). For example, given their commercial imperatives

and focus on returns on investment, venture capital and equity investors are often more concerned with traction, such as user growth or market reach, than with educational outcomes. In contrast, philanthropic funders or public donors may be more interested in rigorous evidence of learning gains or equity-focused impact. Despite this, there appears to be limited interest from external sources in funding research studies. As one key informant from Knowledge Channel noted, corporate partners were typically more inclined to fund tangible deliverables like hard drives or TV sets: "Unfortunately, there will be very few of them who would like to fund a study."

4.6.2. Opportunities

To address scaling challenges, providers interviewed for this study primarily highlighted the role of partnerships for support. Partnerships with communities, corporations, governments, other non-profits, or universities played a central role in developing, designing and growing EdTech interventions. Technology was also mentioned as a facilitator in scaling efforts.

Partnerships

Government partnerships were particularly important for expanding access. Even when not directly involved with implementation, providers in this study reported that having government endorsement was seen as a key enabler of user trust and adoption. For classroom-based products, partnering with governments gave EdTech providers access to partnerships with public schools, potentially increasing national reach. This included having local or provincial governments encourage schools to use specific interventions, as schools and teachers may otherwise be reluctant to adopt an intervention or product without such encouragement. In addition, five providers expressed readiness to support national goals for digital transformation in education. They were eager to align their products and services with government priorities, as well as to share their expertise, such as knowledge about users' needs and cost-effective, sustainable practices, to inform policy implementation.

Apart from governments, EdTech providers partner with corporations, non-profit groups, and local communities. To address price barriers for many marginalised groups, for-profit EdTech providers partner with large companies to implement CSR programmes, which allows them to offer targeted communities tech-enabled learning for free. Non-profit organisations also relied on CSR funding. These programmes involved businesses funding short-term initiatives, such as workshops or content development, aimed at a specific demographic, such as rural learners or

learners with disabilities. Although projects are limited in duration and scope, EdTech providers are often able to make the content available beyond the original target group on their platform or apply learnings from implementation to future programmes.

In addition to CSR programmes, three providers shared examples of corporations, local governments, and other non-profit organisations providing in-kind contributions, such as devices, volunteers, or loaning spaces with internet connectivity for activities, which helped address challenges to delivering EdTech solutions to rural and remote communities. A few providers also expanded their reach through collaborations with like-minded organisations by sharing their content or training instructors to deliver a similar programme.

Partnerships with members of the community help drive organic growth and uptake. For instance, Kipin reported that enthusiasm from a school leader helped to integrate their product into a school. Organisations like Sisters of Code found success engaging youth, programme alumni, and local governments to champion their EdTech product or service and share its benefits (see Figure 4 below).

Technology

Although inadequate infrastructure was a common constraint, providers emphasised that technology enabled expansion. Once the initial technology was developed, it could be relatively easy and inexpensive to adapt it for new contexts. Additionally, two providers from Vietnam mentioned that AI could be a valuable tool to facilitate scale. One proposed use case for AI could positively impact marginalised learners by translating content across multiple languages, thereby broadening accessibility and reach.

Figure 4. *Case study: Sisters of Code*

EdTech provider: Sisters of Code (a female-only coding club; operating and based in Cambodia)

Non-profit

Strategy:

Sisters of Code leverage graduates of the programme to grow their reach in Cambodia. They have created ambassador programmes, in which graduates are provided with training so they can become leaders and create their own Sisters of Code clubs.

Highlights:

- ■ **Relatability:** As former students, alumni have an in-depth understanding of the programme. They know how to best support

current students' learning because they have first-hand experience.

- **Networking:** Personal connections are an entry point to new partnerships. Ambassadors have facilitated connections between schools in their community and Sisters of Code.
- **Capacity building**: Young women are empowered to be leaders.

Areas for considerations

The point(s) below are for further deliberation if undertaking a similar approach.

- **Sustainability**: Long-term engagement is uncertain, as it depends heavily on the time and availability of participating alumni ambassadors.
- **Geographic imbalance**: There is a risk of an uneven distribution among ambassadors, which may result in limited presence in certain regions.
- **Resource consideration:** Students from underprivileged backgrounds may have limited or no access to devices and the internet for online learning at home.

5. Findings from KIIs with EdTech funders

A total of six EdTech funders were interviewed, encompassing different types of funders and focus countries, which presented different characteristics and approaches to funding EdTech providers (see Table 3).

Table 3. *List of EdTech funders in Southeast Asia[9]*

Name of funder	Type of funder	Focus countries	Focus area
YCAB Ventures	Venture capital	Indonesia	Sector agnostic
Octava Foundation	Venture philanthropy	Southeast Asia	Education equity and social innovation in education
Kaizenvest	Private equity	Southeast Asia	Future of learning and work
Nguyen Phuong Family Foundation	Philanthropy / Foundation	Vietnam	Social impact and education
Wavemaker Partners	Diversified: private equity, blended finance	Emerging Asia and sub-Saharan Africa	Human capital in Asia; Child lens in Africa
Monk's Hill Ventures	Venture capital	Southeast Asia	Sector agnostic

5.1. Funders' focus and impact evaluation in EdTech investments

This section explores how and to what extent funders consider marginalised learners in their investment strategies, the tension between maintaining financial returns with social impact, and methods for collecting and assessing that impact.

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[9] Links to these funders' websites can be found in the Appendix.

5.1.1. Funders' approaches to equity and inclusion

Across the six funders interviewed, no single marginalised community or specific societal group emerged as the predominant focus. Instead, each funder demonstrated a broader commitment to addressing general educational inequities, with some prioritising particular groups within a broader mission.

This orientation was closely tied to each funder's institutional mandate and geographic or thematic focus. For instance, the Nguyen Phuong Foundation's emphasis on rural communities and low-income families reflects its mission to improve dignity and opportunity for underserved populations in Vietnam and Southeast Asia. Its support for educational access in rural areas arises from this regional grounding, rather than from a targeted equity strategy. Similarly, YCAB's efforts to empower women and youth are rooted in its founding premise of change, which links education to economic empowerment. While this includes specific support for mothers, scholarships for youth, and broader family welfare, these priorities flow from its systemic approach to poverty reduction, rather than from an exclusive focus on gender or age-based marginalisation. In this way, while several funders referenced marginalised or underserved groups—such as rural learners, women, or low-income families—being supported via their funding support, these were typically situated within the broader framework of the EdTech provider's mission, rather than as key decisions in their EdTech investment strategies.

5.1.2. Funders' approaches to balancing financial returns and impact

In exploring the balance between financial returns and impact, across the six funders, there was a strong focus on achieving impact through EdTech. However, their approaches varied depending on their institutional orientation, ranging from philanthropic grant-making to commercially driven venture investment. While financial sustainability was widely acknowledged as important, most funders viewed educational impact as either the primary objective or a necessary enabler of long-term success. For philanthropic organisations such as the Nguyen Phuong Foundation, EdTech investments are made with the understanding that financial returns will be modest, if any, with the primary goal being mission alignment and social outcomes. Similarly, the Octava Foundation emphasised its role as an impact-first venture and philanthropic funder, deploying catalytic capital in the format most needed to support innovators, build capacity, and provide access to network and technical

assistance, distinguishing itself from purely impact investors or foundations seeking blended returns.

Even among the remaining commercially focused funders, impact was not sidelined. Several funders, including Kaizenvest and YCAB, highlighted that the most viable EdTech ventures are those that effectively address real educational needs. Kaizenvest, for instance, argued that profitability and impact are not in conflict but are, in fact, interdependent: "There is very little long-term profitability one can achieve in education without being impactful." This view was echoed by YCAB, which, while attentive to business returns on investment, also seeks to understand how ventures reach users across socio-economic groups, even when impact is harder to quantify. Meanwhile, other funders, such as Wavemaker Partners and Monk's Hill Ventures, focused more heavily on commercial metrics like retention, engagement, and scalability but still acknowledged that product value and problem-solving were essential to their investment decisions. Overall, while the emphasis on returns and accountability varies, there is broad alignment that EdTech solutions must deliver meaningful educational value to be viable, whether the primary goal is social impact, financial return, or both.

5.1.3. Impact evaluation

Funders reported that they assess the impact of EdTech investments by blending quantitative and qualitative metrics, with a growing focus on the latter. While quantitative data like enrolment figures and completion rates provide a foundation, they often fail to capture deeper outcomes such as earning potential or societal benefits. Kaizenvest underscores this trend, noting that "efficiency measurements", like time spent on a platform, fall short of reflecting true learning. To address this, funders are increasingly seeking qualitative metrics, such as case studies, learner surveys, and individual success stories, to better evaluate meaningful learning gains, alongside quantitative indicators, where available, to enable a more comprehensive assessment of meaningful learning outcomes. However, collecting qualitative data poses challenges, such as the difficulty of standardising diverse narratives and outcomes across different contexts. To mitigate these obstacles and build a compelling case for impact, funders like Kaizenvest advocate embedding impact measurement into product design from the outset, while Octava Foundation encourages learning technology startups to be clear-sighted about the education problem they are aiming to solve and to develop use cases by validating the feasibility of implementations as well as the impact of their interventions, and piloting or test bedding interventions with end users and buyers.

Additionally, funders stress the need for growth metrics to evaluate both the scalability and impact of EdTech investments. Venture capitalists like Kaizenvest and Monk's Hill Ventures focus on indicators such as Customer Lifetime Value (CLTV),[10] retention rates, and user-base growth to confirm financial viability alongside educational value. For instance, Monk's Hill Ventures seeks a large user base with a high CLTV and a balanced Customer Acquisition Cost (CAC)[11] as markers of sustainable growth. Meanwhile, YCAB combines growth metrics, such as enrolment and retention, with outcome-focused measures like salary improvements among their programme beneficiaries, ensuring their investments achieve both scale and meaningful economic impact. This approach, identified through the interviews conducted, underscores the importance of growth as a key dimension of funders' evaluations of the interventions or EdTech providers they support.

5.2. Funders and market trends

To understand the markets in which EdTech funders operate, this subsection explores the trends in financial viability, production of evidence, business models, and emerging markets.

5.2.1. Market trends

Across funder interviews, a set of interrelated market challenges emerged, particularly around financial viability and the production of evidence. Several funders, including Kaizenvest, Octava Foundation, and YCAB, highlighted the structural difficulty of serving public education systems, where demand is less market-driven and paying customers are limited. As a result, most EdTech interventions focus on private consumers or schools with purchasing power, leaving a gap in impact-oriented innovations for the public sector. This commercial orientation has intensified in the wake of the Covid-19 pandemic, with Kaizenvest noting a sector-wide pullback of capital and increased scrutiny on profitability. In markets like Indonesia, YCAB pointed out high price sensitivity among consumers, which limits the scalability of direct-to-consumer models and forces startups to offer low-cost or 'freemium' approaches.

These financial constraints appear to have a knock-on effect on evidence generation. While Kaizenvest was the most explicit on this issue, noting

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[10] CLTV is a measure of the total revenue a company expects to earn over the ongoing 'lifetime' of the relationship with a particular customer (↑Corporate Finance Institute, no date b).

[11] A business metric that measures the cost required to acquire a new customer (↑Corporate Finance Institute, no date a).

that many entrepreneurs rely on intuition over rigorous methods, the theme resonates with Octava Foundation's observation of a "market disjointment" between what is needed to improve the quality of public education and what the EdTech sector currently delivers. In environments where both capital and revenue are constrained, investing time and resources into academic-style evaluation is often deprioritised. Although some funders are supportive of iterative, 'good enough' testing approaches, the overall picture suggests that without stronger incentives, evidence generation will remain fragmented, despite being a critical component for improving product quality and informing policy alignment.

It is important to note that no single dominant trend emerged across funders regarding targeted sub-sectors or innovation themes. Instead, funders reported diverse priorities, ranging from offline-first K–12 solutions and basic education content to higher education services like career counselling and workforce upskilling. Emerging areas included teacher training, social and emotional learning (SEL), blended learning, and even microloans for tuition management. Demand drivers were equally varied and included institutions, parents, and students, with notable regional differences such as student-led decision-making in Vietnam. While specific themes, such as STEM education, test preparation, and tutoring, emerged consistently across the region, the degree of emphasis placed on each varied notably depending on local priorities, market dynamics, and educational needs in different countries. As such, the current EdTech landscape appears exploratory, with funders and implementers testing multiple avenues rather than converging on a few clear investment priorities.

5.2.2. Business models

Across the funders, there is a clear trend toward business-to-business (B2B) and business-to-school (B2S) models as dominant approaches for scaling EdTech solutions, with limited engagement in business-to-government (B2G) models. This reflects a strategic focus on more commercially viable and scalable partnerships. The Octava Foundation notes:

> "[There is a] *significant gap between governments and non-state actors in EdTech, with many innovators bypassing complex public systems by going directly to consumers. However, to reach underserved learners sustainably and at scale, stronger collaboration and mutual understanding between public and private sectors is essential.*"

Private–private collaborations are seen as more effective in reaching scale within schools, particularly where public systems may be slower to adopt innovation. In Vietnam, for instance, B2C models face challenges due to limited customer willingness to pay directly, which affects the performance of fully online EdTech ventures. Meanwhile, upskilling and workforce-oriented solutions tend to lean on B2B models, offering cost-efficiency for corporate clients. Some funders and implementers also highlighted hybrid partnership models, where services provided to schools include not just transactional fees but also a collaboration element, suggesting a middle ground between commercial and mission-driven engagements. While public–private partnerships were mentioned, they were mentioned less frequently and were not identified as a core driver of EdTech scale across the contexts discussed.

5.2.3. Regional trends: Vietnam's growing appeal to funders

Vietnam is increasingly recognised as a promising EdTech market, with three out of four funders highlighting its potential. Notably, one funder, whose portfolio is specifically focused on Vietnam, offers valuable on-the-ground insight. However, their emphasis on the country may also reflect a degree of selection bias, given their investment focus. Vietnam shows strong cultural and parental emphasis on education, with high demand for STEM subjects, English language learning, and test-preparation services. The after-school and private tuition markets are particularly active, indicating room for further EdTech growth. Interestingly, funders observed that students in Vietnam tend to be more proactive in choosing their own educational pathways, often initiating the use of online tools and later involving their parents, who may have limited awareness of modern education options. Despite this enthusiasm, the adoption of EdTech within formal schools remains low, suggesting a market that is vibrant yet uneven, thriving in informal learning spaces while still developing within traditional institutions. As one funder noted, "There's a very strong cultural trend for education. Parents are very motivated […] it's a more vibrant funding market and there's a lot of different opportunities that are opening up."

5.3. Scaling

Like the providers interviewed for this report, funders consider scaling as an important component of a successful EdTech innovation. This subsection explores how funder type (see Table 5.1) influence the ways in which funders define and pursue the scale of companies in their portfolios.

5.3.1. The importance of scaling as a consideration for funders

When discussing the scalability of educational programmes, growth potential—whether in terms of reach, impact, or sustainability—emerged as a primary consideration for funders, with five of the six interviewed highlighting it to varying degrees. Investors and foundations such as the Nguyen Phuong Foundation, YCAB, and Kaizenvest emphasise the importance of a programme's ability to scale effectively in order to justify continued investment. The Nguyen Phuong Foundation suggests that scalability reflects a programme's momentum and its capacity to incorporate feedback loops for continuous improvement. This reflects a broader funder preference for models that are not only adaptable but also structurally equipped to grow by reaching more learners, entering new markets, or deepening their educational impact over time. However, some funders, like the Octava Foundation, raise important questions about the timing and evidence required for scale. While not opposed to scale, they stress the need for careful deliberation around what constitutes sufficient validation, highlighting that premature scaling can risk entrenching ineffective practices. This more reflective stance is explored further in Section 5.3.2 on how funders understand scaling in EdTech.

Similarly, Kaizenvest highlights that, from an investor's perspective, the potential to scale is often a significant factor in funding decisions, particularly in the EdTech sector. Scalability signals a programme's capacity to extend its impact beyond its current reach, which is crucial when assessing both social impact and financial return. As one representative from Kaizenvest explained: "On a funding or investor's side, the potential to scale [is] often a significant factor in deciding whether to invest or continue investing in an EdTech company." This perspective reflects a broader investor mindset—particularly among venture and equity funders—where scalability is associated not only with growth in size, but also with long-term sustainability and effectiveness. However, expectations around scale and return can vary significantly by funder type. For instance, philanthropic or donor-driven funders may prioritise scaling equitable access or learning outcomes over financial viability, while commercial investors tend to view scale in terms of market expansion and profitability. These differing priorities influence how funders assess value and risk in EdTech investments.

5.3.2. How scaling is understood

Funders increasingly view scaling as a multidimensional process that extends beyond simply expanding reach or increasing user numbers. It

involves ensuring that a programme can grow while maintaining the quality of learning, preserving relevance across diverse contexts, and supporting sustained engagement. This includes assessing whether a model that works in one city or region can be effectively adapted to others, particularly in more remote or underserved settings.

As one representative noted: "To really understand scale, you have to attach a qualitative (performance) framework to it—of efficacy and learning quality—and that determines true scale." This reflects a broader trend among funders to evaluate scalability not only through metrics such as reach or retention, but also through the strength of evidence and the adaptability of a solution. This is further supported by the Octava Foundation, which views scalability as something that must be grounded in strong teaching or learning efficacy and positive user experience—programmes must demonstrate incremental and positive change before they are expanded. As one representative explained:

> *"The question always is—and this is something we talk about a lot at the foundation—what should be scaled and at what level of evidence? Because it's so difficult to undo practices that have been scaled without validated evidence. What is the quality of evidence requisite before scaling? At the bare minimum, we seek the product design to be evidence-informed and science of learning aligned."*

There is a clear preference for deliberate, evidence-informed growth, with funders increasingly wary of scaling models that have not yet demonstrated impact or contextual fit.

5.4. Challenges

Funders, regardless of type, face several challenges which impact their ability to invest in EdTech innovations with the potential to scale. Several challenges had implications for funding, such as the tech winter, a lack of long-term government investment, and perceived low visibility of EdTech. Funders needed to navigate these, as well as multiple definitions and metrics to assess impact, and increasingly risk-averse markets to support equitable and sustainable EdTech expansion.

5.4.1. Tech winter and its impact on funding

The phenomenon often referred to as the 'tech winter' has had a noticeable dampening effect on EdTech momentum, with most funders acknowledging its impact. While investment has grown in parts of Southeast Asia in recent years, this growth has not been consistent across

the region. The tech winter reflects a broader global slowdown, particularly evident after the Covid-19 pandemic, where investor caution has increased and funding has become more selective (↗VOI Editorial Team, 2025). In contexts like Indonesia, YCAB highlighted that policy shifts have compounded these effects, leaving many start-ups struggling to adapt. Rather than signalling a complete reversal, the tech winter suggests a recalibration, with some countries experiencing contraction, even as others continue to attract investment.

Kaizenvest highlighted that this funding slowdown, particularly in the post-pandemic period, is a major obstacle to scaling. They note that "on a funding or investor's side, the potential to scale [is] often a significant factor in deciding whether to invest or continue investing in an EdTech company." Due to the tech winter, companies that had previously thrived on government-backed programmes now face difficulties as the programmes were restructured or discontinued. The reduced investment in the sector has led to fewer opportunities for EdTech companies to sustain and scale, forcing them to rethink their business models. This is further supported by the Octava Foundation, which highlighted the additional challenge of securing funding for public–private partnerships, asking: "How do you engage in a public education system if you don't have the working capital to go through the procurement cycles?"

5.4.2. Government challenges and regulatory barriers

Government challenges and regulatory barriers represent significant obstacles to scaling and innovation for EdTech companies, with four out of six funders highlighting these issues. Funders, including the Octava Foundation and Kaizenvest, note that many governments struggle to commit to long-term investments in EdTech, especially when existing resources are already allocated to other priorities. The Octava Foundation pointed out that public education systems often have limited financial flexibility due to access to additional finance and budgetary constraints: "The already limited Ministry of Education budget[s] in SEA countries are usually fully committed to existing delivery of education provision, the resource and bandwidth for innovation is limited."

Additionally, Kaizenvest highlighted that some governments lack the technical expertise required to effectively assess and integrate new technologies into education systems. Sokrates (part of the BINUS group) also observed that in countries such as Indonesia, public schools face regulatory restrictions that limit their ability to adopt technology solutions from private vendors. Taken together, these conditions potentially act as a

policy environment that makes it difficult for EdTech providers to scale solutions, even when demand exists. However, as the Octava Foundation noted, "When public education decision-makers are equipped with the right technical insight, education systems can leapfrog. Philanthropy can be the catalyst for this capability." This suggests that addressing the expertise gap through targeted support could be key to overcoming these barriers.

5.4.3. Internal challenges: Alignment on impact

One key insight that emerged was the internal challenge funders face in aligning on what constitutes 'impact' and how it should be measured. While all funders agreed on the importance of demonstrating effectiveness, their approaches vary significantly. Some prioritise quantitative metrics, such as reach and enrolment numbers, while others expressed interest in more qualitative, learner-focused outcomes.

The Nguyen Phuong Foundation was the most explicit in articulating this tension, describing impact assessment as largely case-by-case and heavily weighted towards scale: "The majority of the ones that we've been involved in [...] are more looking at just quantitative [metrics]." They noted a growing interest in learning from EdTech providers and organisations that take a more holistic impact approach, including tracking students' progress along their learning journeys. Two other funders also touched on related issues, including the limited capacity of some providers to define or demonstrate impact in meaningful ways, and the broader lack of consensus among funders themselves on how to approach impact and evidence generation. These perspectives suggest that, across the EdTech ecosystem, there is no shared framework for evaluating success, making it difficult for funders to compare interventions or make informed decisions.

5.4.4. External challenges and risks faced by funders

Another important insight was the external challenge funders face in navigating a risk-averse and saturated funding environment. In recent years, the EdTech sector has become more vulnerable to reputational risk and investor caution, particularly following high-profile failures and a series of underperforming investments in Asia. Kaizenvest pointed to an example — although without disclosing the exact details of the portfolio or instance — of an International Finance Corporation (IFC) investment in Africa that led to a noticeable reduction in support from development finance institutions, highlighting the broader ripple effects of perceived failures. These experiences have contributed to a more conservative

approach among funders, who are now more reluctant to support unproven or early-stage ventures without clear evidence of both impact and financial viability.

Beyond reputational risk, funders also face the broader challenge of competing for attention in a global funding landscape dominated by more visible and urgent issues such as climate change, global health, and humanitarian crises. Education, by contrast, suffers from what one funder, Kaizenvest, described as a "slow, invisible hurt". Unlike sectors with predictable, media-driven moments — like climate summits or health emergencies — education lacks trigger points that galvanise public concern or sustained philanthropic focus. As a result, it was suggested that funders must advocate for EdTech in a context where it is often deprioritised, despite its long-term relevance. This invisibility makes it more difficult to secure capital, forge public–private partnerships, or gain policy traction, particularly for solutions targeted at underserved learners, where returns (both social and financial) are longer term and harder to measure.

6. Insights and considerations

This landscape analysis reveals several cross-cutting insights, highlighting possible areas to strengthen the EdTech ecosystem in Southeast Asia in ways that are inclusive, scalable, and sustainable. While perspectives across stakeholders vary, specific themes stand out as both consistent and complementary. Three key themes—capacity building, evidence generation, and partnerships—emerge across both funders' and providers' insights, although viewed from different angles.

6.1. Key insights from the funders' perspective

6.1.1. Capacity building and technical assistance as enablers

Funders recognise that delivering impactful EdTech interventions requires more than just access to technology—it demands robust support systems. While many providers seek technical assistance to implement and sustain digital solutions, funders emphasised the tricky balance of listening to these needs while managing broader funding priorities. A key insight shared by funders was the necessity of greater capacity building, particularly in terms of technical skills for implementation, integration, and long-term sustainability. One funder highlighted that providing support should not solely focus on what's requested, but also on ensuring that solutions are effectively integrated into the system and aligned with existing resources: "It's not just about telling them what to buy […]. It's about how you integrate it [and] what other resources will you need to make this stick in your system? And by the way, who will finance all of that?" Funders also noted the value of offering support in a demand-responsive manner, tailoring assistance to meet schools' and providers' specific needs across hardware, content, pedagogy, and training. While this was seen as crucial for building readiness, the complexity lies in balancing these immediate support needs with the long-term goals of scaling and sustainability.

6.1.2. Improving evidence to support informed investment

A recurring insight from funders was the limited availability of robust, comparable evidence from EdTech providers, particularly in relation to learning outcomes. While many providers report reach or usage data, funders noted that these metrics often fall short of what is needed to assess effectiveness or justify further investment. In the current risk-averse funding climate, this presents a significant challenge. As one funder explained, the absence of credible evidence makes it difficult to distinguish

between interventions that are genuinely impactful and those that simply scale. This contributes to hesitancy in backing early-stage ventures, even those with promising missions. Funders also highlighted the lack of shared frameworks or common standards for assessing what 'impact' should look like in EdTech, making it harder to compare approaches or assess interventions. Greater investment in evidence generation—both from providers—was viewed as critical in enabling more confident, informed, and coordinated funding decisions.

6.2. Key insights from the perspective of EdTech providers

6.2.1. Strengthening capacity for evidence generation

A recurring insight that emerged during our interviews with EdTech providers was their limited capacity to assess and demonstrate the impact of their interventions, particularly in relation to evidence generation and drawing insights from data collected through their interventions. This issue emerged in several conversations, where providers openly acknowledged gaps in their ability to evaluate effectiveness beyond surface-level metrics. While many initiatives report on outputs such as the number of users reached, there is often far less emphasis on capturing meaningful educational outcomes. Several providers also explicitly requested support during the interviews, expressing a clear need for capacity building in monitoring, evaluation, and research. In some cases, they reported having access to data but lacked the technical skills to analyse it effectively. A further challenge was the absence of a shared understanding of what 'impact' entails within the EdTech context, with some providers struggling to define or align on this concept internally. These limitations could potentially hinder providers' ability to generate credible evidence, but also constrain their capacity to engage with funders and public sector partners, as funders did express an interest in seeing more evidence of effectiveness.

6.2.2. Collaborative partnerships are valued but resource-intensive

A second key insight that emerged from provider interviews was the importance placed on partnerships, both as a means of peer learning between other providers and as a strategy for scaling. Many EdTech providers expressed strong enthusiasm for greater collaboration within the sector and were eager to connect with other organisations. Several noted that such networks could offer valuable opportunities to exchange

insights, share challenges, and strengthen capacity across areas such as pedagogy, technology, and implementation. At the same time, providers recognise that partnerships—whether with fellow EdTech companies, public sector actors, or other stakeholders—require sustained time, energy, and resources to develop and maintain. While collaboration is seen as a critical enabler for impact and scale, it is equally clear that the process is not automatic. Providers suggested that effective partnerships need strategic alignment, trust-building, and institutional commitment, all of which will pose additional demands on providers' already limited operational capacity.

6.2.3. External constraints on digital access and marginalised learners

Providers recognise the significant barriers that marginalised learners face in terms of digital access, such as limited access to devices (e.g., tablets), unreliable electricity supply, and inconsistent internet connectivity. While these challenges were acknowledged, they were often seen as beyond the direct control of EdTech providers. It is not the case that addressing these issues is not a priority, but rather that broader systemic limitations in the regions they operate in make it difficult to implement scalable or sustainable solutions. In response, several providers described designing mobile-first platforms or exploring offline options to make their solutions more accessible. However, these solutions largely remain partial or exploratory rather than fully embedded, as Edtech users often face practical constraints such as inconsistent infrastructure or limited access to devices. This points to a broader need for more comprehensive, multi-stakeholder approaches to tackle these foundational barriers, alongside the development of educational content.

6.2.4. Community engagement is valued, but not systematically embedded

Community engagement emerged as a valuable strategy for several providers, although it is not always systematically integrated into their operations. In some cases, partnerships with local stakeholders contributed to the success of initiatives. For example, Solve Education! used community ambassadors to promote their programme, which proved effective in reaching and engaging underserved communities. While these approaches were recognised for their impact, there was a consensus that further and more structured engagement with local communities could enhance long-term sustainability and the deeper integration of EdTech solutions. This approach, which proved effective in this particular instance, could also be valuable for other EdTech providers

seeking to scale and ensure more successful outcomes. Local partnerships and community involvement appear crucial for fostering success in marginalised regions, making them an essential strategy for broader implementation across the sector.

7. Directions for further research

This report has primarily served as a scoping review to explore the extent to which existing EdTech interventions in Southeast Asia are catering to the needs of marginalised learners. In doing so, it has surfaced several important areas for further exploration that could strengthen the development of a more inclusive and resilient EdTech ecosystem in the region.

Future research could focus on deepening the understanding of EdTech's impact on learning quality for marginalised learners, particularly at the foundational level. Rather than focusing solely on access or exposure to technology, there is a growing need to assess how effectively EdTech interventions are contributing to closing the education quality gap. This includes identifying suitable indicators and metrics for measuring improvements in learning outcomes, to generate stronger evidence on what works, for whom, and in what contexts.

There is also an opportunity to explore how advanced technologies, including AI, can be used to improve foundational learning outcomes. As AI tools become increasingly accessible, understanding their relevance, feasibility, and impact in low-resource and marginalised contexts in Southeast Asia could provide valuable insights for both programme design and policy development.

Ethical considerations also warrant further attention. Future research could examine how EdTech can be designed and implemented in ways that are not only effective but also ethical and appropriate to local contexts. For example, how can learners and teachers be supported to gradually build digital literacy and confidence? How can interventions avoid overwhelming communities or education systems that are still developing digital capacity? Embedding ethical principles such as consent, inclusivity, digital safety, and responsible data use into EdTech design and evaluation frameworks will be crucial for ensuring equitable and sustainable outcomes.

As funding remains a complex and increasingly important issue in the EdTech sector, there is a continued need for robust evidence to support both funders and providers in making informed decisions. For funders, such evidence can help assess the impact and effectiveness of interventions, reduce investment risk, and ensure meaningful education outcomes. For providers, it can help refine EdTech solutions, attract

additional resources, and deliver more inclusive and equitable learning experiences.

In parallel, further investigation into how EdTech is being funded across Southeast Asia — by both public and private actors — would be especially valuable to government stakeholders. Understanding how governments, private sector actors, foundations, and philanthropists support the adoption of EdTech could offer insights into more sustainable financing approaches. This includes exploring innovative funding mechanisms and public–private partnerships, particularly in areas like technical and vocational education and training (TVET), where industry players may also play an important enabling role. Capturing and sharing lessons from countries across the region can help inform national strategies and promote regional learning.

Additionally, benchmarking global examples of successful EdTech interventions that have improved learning quality for marginalised learners may provide valuable insights. Such a study could identify good practices and assess how they might be adapted to Southeast Asian contexts.

Exploring opportunities for cross-sector collaboration, including deeper community engagement, may also be key to scaling EdTech solutions effectively and sustainably. While this review includes a wide range of perspectives, engagement from countries such as Thailand, Myanmar, and Laos was limited due to time constraints and limited responses. In contrast, countries like the Philippines, Indonesia, and Vietnam had a more prominent presence in the evidence base and stakeholder input. Future work should aim to include underrepresented voices to build a more comprehensive and regionally representative picture of EdTech in Southeast Asia.

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Appendix

KII EdTech providers and EdTech funders

Table 4. *EdTech providers and websites (listed alphabetically)*

Organisation	Country presence	Website
Bookbot	Indonesia	https://www.bookbot.id/
Cakap	Indonesia	https://cakap.com/
Catalpa International	Timor-Leste	https://catalpa.io
CoLearn	Indonesia	https://colearn.id/
Enuma	Indonesia, Philippines	https://enuma.com/en/enumaGlobal/
ErudiFi	Indonesia, Philippines	https://www.erudifi.com
KidsEdu	Vietnam	https://kidsedu.vn
Kipin	Indonesia	https://kipin.id/
Knowledge Channel Foundation	Philippines	https://www.knowledgechannel.org
Let's Read Asia	Philippines	https://www.letsreadasia.org
Library for All	Vietnam, Timor-Leste, Laos, Myanmar	https://libraryforall.org/
Roshan Learning Center	Indonesia	https://www.roshanlearning.org/
Ruangguru	Indonesia	https://www.ruangguru.com/

Organisation	Country presence	Website
Sekolah Enuma (Enuma)	Indonesia	https://www.sekolahenuma.com/id
SekolahMu	Indonesia	https://www.sekolah.mu
Sisters of Code	Cambodia	https://www.sistersofcode.org
SoLeLands	Indonesia	https://www.solelands.com/
Solve Education!	Indonesia, Malaysia	https://solveeducation.org
VUIHOC	Vietnam	https://vuihoc.vn
Youth Impact (TISA: Testing Innovations for Sustained Action)	Philippines	https://www.youth-impact.org/

Table 5. *EdTech funders and websites (listed alphabetically)*

Name of funder	Focus countries	Website
Kaizenvest	Southeast Asia	https://www.kaizenvest.com/
Monk's Hill Ventures	Southeast Asia	https://www.monkshill.com/
Nguyen Phuong Family Foundation	Vietnam	https://www.nguyenphuongfamily.org/
Octava Foundation	Southeast Asia	https://octavafoundation.org/
Wavemaker Partners	Emerging Asia and Subsaharan Africa	https://wavemakerpartners.com/

Name of funder	Focus countries	Website
YCAB Ventures	Indonesia	https://www.ycabventures.com/impact-investment/

Topics covered in interviews

The following topics were covered in the interviews with **EdTech providers**:

- **Target audience:** This section asked providers to describe the target audience of their product/initiative, particularly if the types of marginalised communities their product aimed to reach

- **Decision-making process for developing EdTech interventions or products:** This section asked providers to identify the factors they prioritised to ensure the product/programme met the needs of their users and stakeholders, and the ways they balanced competing priorities such as affordability and accessibility.

- **Use of data and feedback:** This section asked providers about the types of data they used to inform their decision-making, such as user engagement or learning outcomes. It also covered providers' methods for user testing and gathering feedback, and methods used to ensure representation from marginalised communities

- **Barriers and limitations:** This section asked providers about the significant barriers they faced when implementing EdTech solutions, and how these barriers impacted their adoption of their product / programme and their ability to scale

- **Reflections and lessons learned:** This section asked providers to share the impact their product has had on their target audience and marginalised communities. It also covered specific practices or strategies they used that were successful in achieving impact, particularly reaching marginalised communities.

The following topics were covered in interviews with **EdTech funders.**

- **Investment priorities**: This section asked funders about their motivations to invest in EdTech innovations. It also asked about the types of metrics and evidence they use to inform their investment decisions.

- **Market trends**: This section asked funders about the trends in products, sectors, models, and partnerships they were seeing in the region

- **Scale**: This section asked funders to describe their definition of scale and the metrics or factors they prioritised when considering an innovation's potential to scale. It also covered funders' perspectives on the role of EdTech in reaching marginalised communities.

- **Challenges and opportunities**: This section asked funders to identify challenges when working with EdTech companies. It also covered the key enablers and barriers to EdTech companies' success and the role of funders to address those barriers.