

Technology-Enabled Innovation in Education in Southeast Asia (TIESEA)

Report on Knowledge Sharing and Ideation Country Workshops and Regional Workshop

April 2022



Learning Possibilities

This report presents preliminary findings and an official ADB publication
will be produced in due time

**TECHNOLOGY- ENABLED INNOVATION IN EDUCATION IN SOUTHEAST
ASIA (TIESEA) – EDTECH DIAGNOSTICS AND INTERVENTIONS SUPPORT**

REPORT ON KNOWLEDGE SHARING AND IDEATION COUNTRY
WORKSHOPS AND REGIONAL WORKSHOP

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TABLE OF ABBREVIATIONS

ADB	Asian Development Bank
BEEP	Basic Education Equivalency Program
BETT	Basic Education and Teacher Training
CARES	COVID-19 Accessible and Responsive Educational Support
CEO	Chief Executive Officer
CTO	Chief Technology Officer
DepEd	Department of Education
DERF	Digital Education Readiness Framework
DTI	Department of Trade and Industry
EdTech	Education and Technology
EMIS	Education Management Information System
FLN	Foundational Literacy and Numeracy
GDP	Gross Domestic Product
ICT	Information and Communications Technology
IT	Information Technology
LMICs	Low- and Middle-Income Countries
MOET	Ministry of Education and Training
MOOC	Massive Open Course
NIEs	National Institute of Education
NTC	National Telecommunication Commission
OECD	Organization for Economic Cooperation Development
PA	Pedagogical Advisers
PBL	Problem-based learning
PDTS	Philippines Digital Transformation Strategy
PQF	Philippine Qualification Framework
PUSDATIN	Centre and Education Information Technology
RTTCs	Regional Teacher Training College

SCB	Single Board Computer
SEAMEO	Southeast Asian Ministers of Education Organization
SME	Small and Medium Enterprise
STEAM	Science, Technology, Engineering, Arts and Mathematics
STEM	Science, Technology, Engineering and Mathematics
TECs	Teacher Education Committees
TEIs	Teacher Education Institutions
TESDA	Technical Education and Skills Development Authority
TIESEA	Technology-Enable Innovation in Education in Southeast Asia
ToW	Tablet on Wheels
UIL	UNESCO Institute for Lifelong Learning
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USESDP	Upper Secondary Education Support Development

INTRODUCTION

The aim of the TIESEA project is to identify what works in Education Technology (EdTech) in the context of the four countries where the project is operating: Cambodia, Indonesia, Philippines, and Viet Nam. Based on a landscape review of existing EdTech in each country and an assessment of supporting infrastructure as well as teacher, student and parent capacity, a single intervention will be designed for each country. These pilot interventions will run in each of the countries for one year, and the impact on educational attainment and the quality of learning will be rigorously evaluated. The project will also undertake capacity-building workshops and host a major international conference during 2023 to share the findings of the project and to disseminate more widely the strengths and areas for development in the key interfaces between schools, homes, families, and technology. The TIESEA project has four main outputs:

- i. EdTech diagnostics in Cambodia, Indonesia, the Philippines and Viet Nam conducted and disseminated;
- ii. EdTech interventions in the four countries tested;
- iii. Impact of EdTech interventions evaluated;
- iv. Support for scaling up EdTech interventions in the four countries provided.

Under Output (i), the project team has conducted a survey of the ‘EdTech Readiness’ of each of the participating countries and consulted extensively with stakeholders to identify potentially impactful technology solutions. Their findings have been written up in the form of country diagnostic reports. Based on these assessments, pilot EdTech interventions have been designed, private sector and government partners identified, and pilots are currently being readied to be implemented from the second half of 2022.

As part of the consultation process, the TIESEA project team organised a series of workshops during February and March 2022. Due to COVID-19 restrictions, all workshops were held virtually, in a form of a webinar, using the Zoom platform.

Date	Workshop
09/02/2022	Knowledge Sharing and Ideation Workshop – Cambodia
10/02/2022	Knowledge Sharing and Ideation Workshop – Indonesia
14/02/2022	Knowledge Sharing and Ideation Workshop – The Philippines
03/03/2022	Knowledge Sharing and Ideation Workshop – Viet Nam
16/03/2022	Regional Workshop – EdTech in Southeast Asia: What Works?

The country workshops aimed to share the findings of the country diagnostic reports from the four countries. These webinars also provided an occasion to hold ideation workshops, to encourage people to use their creative thinking, collectively, to come up with ideas for pilot projects which would test proposals and find out what would be the best sort of EdTech intervention in each of the partner countries. Whilst the initial ideation propositions may be completely open-ended and ‘blue skies’ thinking, the ambitions needed to be contextualised in the situated reality of the TIESEA project: located in countries with often challenging

geography, diverse populations, and schools located in scattered rural areas. The chosen project interventions also needed to be affordable, scalable and sustainable and, above all, they should seek to bridge rather than deepen the digital divide.

Ideation is the process of generating a broad set of ideas on a given topic, with no attempt to judge or evaluate them. Unlike traditional brainstorming, ideation workshops are supposed to be unique because they take place in unusual settings and introduce new stimuli. Ideally, the workshops are held face to face in focus group discussions led by a skilful facilitator so that ideas do not get bogged down in mundane practicalities.

Constraints imposed on the TIESEA project team due to COVID-19 restrictions meant that the ideation element was held online, where facilitation can be tricky and interaction between the participants, often problematic. Moreover, with the consequences of the pandemic-induced school closures so fresh in everyone's minds it was hard to set the context for participants to gaze into a blue sky with a metaphorical blank sheet of paper. Most participants came to the workshops with two abiding preoccupations – firstly the unprecedented opportunities afforded to EdTech as a means of ensuring continuity of learning in the face of school closures, and secondly, how ill-prepared education systems have been to adapt quickly to the new learning paradigm. It was, nonetheless, possible to raise people's vision above these preoccupations to produce some insightful observations and guiding principles upon which to base the country interventions.

In each case, the country workshops were all held in the native language to enable maximum free expression from the participants; and on all occasions, they gave opportunities for the speakers, in many cases senior ministry officials, to speculate about possible futures, and proposals for areas where the TIESEA project might intervene. In most workshops it was possible to arrange the participants into breakout groups who would discuss their ideas for 20-30 minutes to be able to co-construct their output ideas before sharing them in the group plenary session as the end of the country workshops.

This report includes a summary of the country diagnostic reports as presented in the ideation workshops together with participant feedback from the breakout groups and tentative plans for pilot interventions in each country.

Finally, a regional workshop was held on the 16th March, 2022 to share, across the region, the ambitions of the TIESEA project, and the results of the country diagnostics across the four countries and to present possible EdTech pilot interventions for each country. The workshop also provided an analysis of the state of the Southeast Asia region for Education, Innovation and Technology, and an expert panel opened a discussion on the current status of technology in education, the opportunities and the challenges and prospects; with questions invited from the workshop participants.

Keynote addresses were made by Dr Jeffrey Jian Xu, Specialist in the ADB Expert Group on EdTech, Dr Ethel Agnes Pasua-Valenzuela, Director of the SEAMEO Secretariate and Professor Stephen Heppell, Global distinguished professor of EdTech.

National focal point experts from each of the participating countries shared their country diagnostic reports and the proposed interventions with presentations being made by likely commercial partners for each of the EdTech pilot interventions country by country.

Finally, the TIESEA key experts, Dr Philip Uys, Dr Deborah Wyburn and Dr Tim Denny presented on relevant education policy for the region, a landscape review of EdTech in LMICs and considerations for EdTech in low-resourced contexts.

This report presents an account of each of these presentations together with inputs made by participating stakeholders.

1. KNOWLEDGE SHARING AND IDEATION - CAMBODIA COUNTRY WORKSHOP

The Cambodia Knowledge sharing and ideation workshop was held on 9th February 2022. Due to IT connexion issues, the session was recorded and shared to the registered participants who were unable to connect. A total of 60 participants registered and the complete list is available in Annex 2. 32 % of the registered participants are women.

The workshop was divided into 3 main sessions, as per the detailed agenda below:

- Presentation of country report;
- Presentations from potential project partners about possible interventions;
- Ideation workshop and group discussion.

Time	Activity	Speaker
14.00 – 14.05	Opening Welcome - National Anthem	Dr. Mehool Sanghrajka – CEO Learning Possibility
15.00 – 15.15	Welcome Remarks – Ministry official	Mr. Phearoun Phel - Deputy Director, Department of Information Technology/Ministry of Education, Youth and Sports Cambodia
14.05 – 14.15	Introductory remarks	Dr. Michael Lightfoot - TIESEA Project Leader
14.20 – 14:50	Country Report (Presentation)	Mr. Kosal Chea- TIESEA National focal point
14:50 – 15:00	Q&A on Country Report	
15.15 – 16.30	EdTech Players in Cambodia	
15.15 – 15.35	Presentation: Sala	Mr. Sok Leap – Chief Executive Officer Sala
15.35 – 15.55	Presentation: KOOMPI	Mr. Rithy Thul – Co-Founder & CEO KOOMPI Co.
	Presentation : Tablet on Wheels	Mr Phearoun Phel – Deputy Director DTI
16.15 – 16.30	Q&A & Discussion	
16:30 -16:45	Fireside chat	Prof. Stephen Heppell – TIESEA Technology Specialist
16.45 – 17.10	Ideation & Group discussion	Breakout rooms
17.10 – 17.25	Reflection from group & Survey	
17.25 – 17.30	Wrap up and closing	Dr Michael Lightfoot - TIESEA Project Leader

Table 1: Cambodia country workshop agenda

Country report headlines

The results of the Diagnostic Assessment of Cambodia were presented by TIESEA National Focal point for Cambodia, Mr. Kosal Chea (presentation available in Annex 1). The country report headlines are summaries and described using the five pillars of the Digital Education Readiness Framework (DERF) developed by the ADB's Education Sector Group.

Infrastructure

- Fixed line connectivity is extremely low

- Most affordable mobile service in Asia - average of just \$4 monthly subscription cost - six mobile phone operators
- Mobile device (smartphone) penetration rate among the general population 125.8%
- TV is the most popular media type in Cambodia, reaching 96% of the Cambodian audience.
- Radio lost popularity with the rise of the Internet - ranked as third media sector after TV and online, reaching out to an audience of 35%.

Government

- As yet, no dedicated budget line for EdTech expenditure in schools and at the sub-national level
- The new ICT curriculum is not yet approved nor put into practice.
- No ICT integration into other subjects e.g. maths, physics, chemistry, etc.
- Cambodia's Education 2030 Roadmap and Education Strategic Plan 2019-2023: in-service and pre-service to include new and modern pedagogical approaches and integrate ICT; to develop teachers' capacity and reform the teacher training institutions at NIEs, TECs and RTTCs to ensure the equivalence of training outcomes especially in STEM and ICT.

Schools/teachers

- About 5% of the teachers surveyed create PowerPoint slides for teaching purposes on a weekly to daily basis
- 12% said they create videos on a weekly to daily basis
- More than 70% of the respondents said they 'rarely' or 'never' create online assessments/quizzes for students
- More than 76% of the surveyed teachers do not use email or file sharing tools (e.g., Google Drive, OneDrive, Dropbox) regularly
- Not all teachers seem to have access to a personal computer regularly to be able to effectively use a file sharing system
- Most tend to use social messaging apps such as Telegram or social media apps such as Facebook to share files among themselves or with students
- 40% of upper secondary schools have access to the internet; in most of the cases, the internet is solely used in the school administration office for administrative purposes.

Parents/students

- Parents lack knowledge regarding digital devices and their functionalities and provide little to no support at all to their children when using learning devices at home.
- Digital Literacy is unevenly spread across regions. Students in more advanced areas tend to have better ICT skills and more access to support programs.
- During the spread of COVID-19, many students did not have adequate digital skills to participate in online classes
- Only 13.3% of households had computers in 2019
- In 2017, 42.6% and 66.6% of households reported having radios and TVs at home.
- Only 1.1% of households possess fixed-line telephones
- By 2018, 40% of households enjoyed internet, compared to only 0.6% in 2009
- The Internet quality is severely constrained by poor infrastructure and electricity supply.
- Students prefer online learning and video platforms, social messaging apps and file sharing options, rather than directly watching lessons on TV channels

- Video lesson files typically vary from 50MB to over 1GB in size – not accessible with poor connectivity or even using 3G/4G
- The majority of parents choose mobile data packages instead of fixed broadband.
- Some parents borrow from relatives for upgrading their devices to a smart device.
- Many disadvantaged students living in remote areas with poor economic conditions, cannot properly access online educational resources.
- There is a lack of well-articulated plans to evaluate the use and effectiveness of the current remote learning system.

Summary of key providers

- The Basic Education Equivalency Program (BEEP) is based on the learning system Moodle (MoEYS/UNESCO)- 12,903 registered sites in Cambodia
- E-School Cambodia is an online learning platform for grades 7 to 12 following Cambodia Education Standard, Bacc II exam preparation – 100K downloads
- UNESCO, along with the Ministry of Education, developed elearning courses for lower secondary/basic education in 2019.
- The Cambodian Union of Youth Federations partnered with E-school Cambodia to create a platform that offers content for free to students at grades 1-12.
- UNICEF is working with the MoEYS to deliver online education.
- ADB has provided technical as well as financial assistance, including provision of ICT labs and equipment to selected Secondary Resource Schools.
- One Billion focuses on providing content for literacy and math, working with the Cambodian Children's Fund.
- OneSala is a top five grossing app. It is a platform that educators, institutions, or centers can use to post and manage their content.
- SALA is an online platform designed for K-12 and universities with features such as student management, HR and billing, payments and school administration.
- Koombi is a technology development company based in Phnom Penh, Sala Koombi is an eLearning platform that aims to enable a decentralized and open-ended education for Cambodian students.

Cambodia country ideation workshop

The ideation workshop was focused on the intention to generate practical ideas for an EdTech intervention pilot in Cambodia that would be achievable, scalable, affordable and sustainable. The experts discussed a range of ideas any one of which could serve the purposes of the TIESEA pilot intervention. The workshop members reflected on the factors behind successful and sustainable solutions. In a country like Cambodia, the interventions have to be sturdy and reliable as well as resilient and affordable.

The workshop participants recognised that any solution that could be scalable and sustainable with the capacity to enable improved learning outcomes for all learners and families in the country must not be reliant upon fast and reliable broadband connectivity and devices with a high technical specification. Several intermediate tech ideas were discussed, for example, solar powered school eLibraries with low-cost, high-capacity local content servers available over a local WiFi network and area-wide low-cost community WiFi access for learning resources and family learning.

In this light, the success and the appeal of the Tablet on Wheels (ToW) deployment as part of the ADB-funded Upper Secondary Education Support Development (USES DP) project was discussed. In this project intervention, devices were distributed to 50 Upper Secondary Resource Schools. These Secondary Resource Schools were designed to act as 'learning hubs' which both junior and senior high schools can visit and learn about best practice in resource-based learning.

The ToW mobile computer suites consist of a self-contained mobile charging cabinet for 30 tablet computers connected through a local WiFi network to a content server, built on low-cost Raspberry Pi technology, with rich subject-specific content for the STEM subject teachers and learners who are the target beneficiary group identified by the project. The benefit of this intervention is that there is no need for always-on Internet connectivity for the students to benefit from the interactive learning resources; secondly the STEM resources have direct relevance to the curriculum with many interactive science experiments and the graphical mathematics app GeoGebra. The success of this intervention is evident, in no small part, due to the extensive programme of professional development that was designed and implemented in support of the ToW deployment. The deployment of the ToW suites and their effective use was interrupted by the COVID 19-induced school closures so a full impact evaluation on their influence on learning outcomes has not been completed, but qualitative studies have consistently reported that both teachers and students greatly value the opportunity to see graphic illustrations of scientific experiments and concepts. Teachers report that using the STEM resources associated with the ToW suites reduces their lesson preparation time. Mathematics teachers report on the clear benefits of the onboard apps on the tablets, such as Photomath and GeoGebra.

One of the interesting phenomena emerging from schools' lockdown is that of students themselves leading the learning as they often have a better grasp of the functions of EdTech than many teachers, so students are often learning off each other. There was discussion of the need for being able to accredit units of learning which could lead to a full qualification, so-called micro-learning and micro-credentialling. Through giving agency to the learners they are encouraged to go further and explore more deeply. Since the maintenance of EdTech equipment in non-urban areas is always a problem there is a need, or an opportunity, to promote self-help communities. For instance, although tablet devices are durable, they will inevitably suffer from everyday wear and tear, so for example, screens may get accidentally cracked and need replacing. Fortunately, the 'fix' is not a difficult one, and, indeed, senior students can themselves be trained to do this sort of first-line maintenance. This is especially relevant in remote communities where support and maintenance expertise is a rarity.

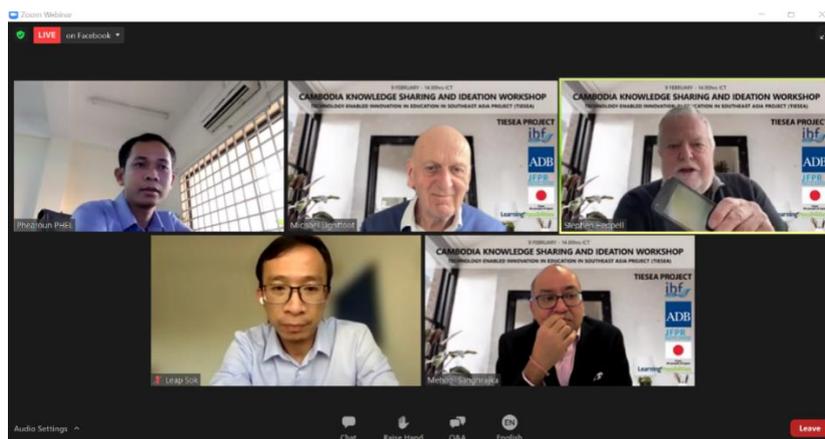
Discussion was held about how to refresh local content servers in those areas that lack Internet connectivity – and the concept of 'sneakernet' was invoked – this is the idea that periodically the local content servers have their materials refreshed by local partners who bring physical media packed with new and fresh resources, in the form of USB thumb drives or portable flash memory drives. Colleagues believed this to be a great idea for schools that use the content server as a library of resources – both print and multimedia, but not so good where there is a need for more dynamic interaction with resources – for example when a teacher is asking senior students to do research. Also, people were concerned about the cost and sustainability with the need for armies of volunteers who need to travel great distances to service the off-grid schools.

Finally, the discussion group wanted to understand how schools could use data more effectively to drive the standards-raising agenda. Only a tiny minority of schools currently have an electronic student and administration information system and there is a need for a unified Education Management Information System (EMIS) to gather data both for school-based needs and for the MoEYS to have a clear national picture of the schools' status.

Proposed intervention

KOOMPI (koompi.com) designs and builds low-cost, high-performance laptops equipped with ready-to-run, open-source software with its own KOOMPI Linux-based operating system. The company also operates computer suites in several schools under a public/private partnership arrangement with the MoEYS. The company, in partnership with the TIESEA project team, is proposing creating a solar-powered community WiFi network, based on mesh technology, in an island community to the north of the capital, Phnom Penh, where the Internet is currently inaccessible. The WiFi network would be connected to a content server in a local school and students would be issued with their own tablet devices to enable them to work on their STEM learning both in school and at home. Teachers would be provided with professional development workshops on resource-based integrated learning. For the purposes of the pilot, a matching control school would have its own school-based content server and WiFi network. Students would only have access to the devices and the digital resources whilst on the school premises. *Representative: Rithy Thul, Founder and CEO*

SALA (sala.co) is offering digital literacy capacity building to teachers with certification issued by MoEYS which is part of the motivation for teachers to join the training courses. Teacher professional development will be essential to ensure effective use of the proposed technology for the teaching of STEM subjects. Following an assessment of existing capacity, SALA will work with TIESEA to map out a workshop program for participating teachers. The training design will be evaluated for its suitability to support the anticipated upscaling of the intervention. *Representative: Leap Sok, Founder and CEO.*



Screenshot from Cambodia country webinar

2. KNOWLEDGE SHARING AND IDEATION - INDONESIA COUNTRY WORKSHOP

On 10th February 2022, the Indonesia Knowledge sharing and ideation workshop gathered a total of 50 participants (the complete list of participants is available in Annex 4). 50% of the registered participants are women.

The workshop was divided into 3 main sessions, as per the detailed agenda below:

- Presentation of country report;
- Presentations from potential project partners about possible interventions;
- Ideation workshop and group discussion.

Time	Activity	Speakers
14.00 – 14.05	Opening Welcome - National Anthem	Dr. Mehool Sanghrajka – CEO Learning Possibility
14.05 – 14.15	Report from Committee	Dr. Michael Lightfoot - TIESEA Project Leader
14.20 – 14:50	Country Report (Presentation)	Dr. Paulina Pannen - TIESEA National focal point
14:50 – 15:00	Q&A on Country Report	
15.00 – 15.15	Welcome Remarks from Director-General of Teachers and Educators	Dr. Iwan Syahril, Director General of Teachers and Education Staff, Ministry of Education, Culture, Research and Technology
15.15 – 16.30	EdTech Players in Indonesia	
15.15 – 15.35	Presentation: Microsoft	Mr. Obert Hoseanto, Learning and Skills specialist, Microsoft Indonesia
15.35 – 15.55	Presentation: Google	Olivia Basrin, Country Lead of Google for Education
15.55 – 16.15	Presentation: PUSDATIN MOECRT	Dr. Muhammad Hasan Chabibie, Head of Data Center and Education Information Technology (PUSDATIN)
16.15 – 16.30	Q&A & Discussion	
16:30 -16:45	Fireside chat	Prof. Stephen Heppell – TIESEA Technology Specialist
16.45 – 17.10	Ideation & Group discussion	Breakout rooms
17.10 – 17.25	Reflection from group & Survey	
17.25 – 17.30	Wrap up and closing	Dr Michael Lightfoot - TIESEA Project Leader

Country report headlines

The results of the Diagnostic Assessment of Indonesia were presented by TIESEA National Focal point for Indonesia, Ms. Paulina Pannen (presentation available in Annex 3). The country report headlines are summaries and described using the five pillars of the Digital Education Readiness Framework (DERF) developed by the ADB's Education Sector Group.

Infrastructure

- 3% or more than 6000 schools are without electricity
- 19% or ~42,000 schools still have no Internet access

- mobile connections in Indonesia in January 2021 were equivalent to 125.6% of the total population
- Literacy level 95.7%
- Internet quota support from the Government (MoECRT) starting June 2021: 12-15GB for teachers; 7-15GB for students

Government

- Policy on education transformation: *Emancipated Learning (Merdeka Belajar)* consist of five domains; Educational ecosystem, Teachers, Pedagogy, Evaluation system, and Curriculum.
- Newest Policy and Development: February 5, 2022 - *Merdeka Mengajar Platform* (Emancipated Teaching Platform); *Kurikulum Merdeka* (Emancipated Curriculum)

Schools/teachers

- ICT facilities and infrastructure; 6435 junior high schools received an ICT package consisting of 15 Chromebook units, 1 LCD projector unit, one wireless router, and one connector unit.
- Teacher ICT competency improvement programs: Agent of Change (Sekolah dan Guru Penggerak), "Pembatik" program, SEAMEO SEAMOLEC Training Program, Google Suite for Education Training Program, Microsoft Education, Teachers Share (Guru Berbagi) program, Teachers Learn (Guru Belajar) program.
- Online learning strategy: Project-based Learning

Parents/students

- In 2020, many students and parents reported not receiving feedback from teachers on assignments or exams
- Unequal access, low bandwidth and concentrated in more populated developed urban areas
- MoECRT and MoRA (2020) partnered with telecommunications operators to distribute free internet quotas for teachers, students, university students, and lecturers to maintain the continuity and quality of education during the pandemic

Selection of key providers

- Ruangguru, Zenius, and Google for Education are the major private platforms, in addition to Rumah Belajar, used by teachers and students

Indonesia country ideation workshop

There were sufficient numbers attending the Indonesia country workshop for there to be three break-out groups to conduct the ideation exercises.

The main points to be taken from the breakout ideation discussions were as follows:

Owing to the variable availability of user devices and reliable internet connectivity, there is a need for intervention at the policy level: to distribute ownership of programs to the local level and school/teacher level, while still being monitored and evaluated regularly by the central

government. Further, there is also a need for reward and sanction mechanisms that support the teachers' efforts to implement EdTech in their teaching.

We want all teachers to have the skills and ability to use EdTech to the maximum appropriate level in order to support student's learning. But the digital skills of most teachers is low, and, therefore, professional development is always needed, especially with the rapid changes in EdTech. Thus, there is a need for a capacity building strategy which provides meaningful and rewarding activities and flexible learning opportunities on EdTech topics which will assist teachers to implement EdTech in their teaching and learning.

We imagine a future where vendors are more user-oriented and are concerned with the applicability of their products in the real-life context of busy and turbulent schools: users' needs, users' capacity, and also the user ecosystem all need to be paramount in the vendors' consideration. Thus, user-friendly systems/apps are expected to be developed by the commercial sector with more and better training.

More specific instances taken from participants' direct experience were the following:

The pandemic situation has forced teachers to create digital learning resources. In the beginning, it was difficult since not all teachers were used to creating digital learning resources as well as implementing online teaching and learning. But since the pandemic has been prolonged, some teachers continue to produce digital content, enrich more digital resources, and share them with others. This expectation is in line with the Google Indonesia program that facilitates teachers to improve their ability to create educational content through the edu-content creator program.

Due to the COVID-19 pandemic, teachers who were previously not technology literate have had to become better at using technology at various levels of understanding and implementation. Teachers need a platform that is user-friendly and affordable. It is expected that EdTEch implementation by schools and teachers can be monitored by the Regional Education Office. EdTech vendors are expected not to limit the features in the system.

Some parts of Indonesia, especially in remote areas, have very limited access to the Internet and this will cause problems if blended learning is implemented. Not all students have proper devices to access learning materials from their teachers. Most of the time, they cannot access applications or software introduced by teachers because of the limitations of their gadgets. It would help if they received grants from the government in the form of "internet in a box", where they can access learning materials without having an Internet connection.

Although teachers' training or capacity-building activities are numerous, teachers are habituated to reverting to standard practice after the training. Teacher professional development needs monitoring and regular refreshing with a good and workable reward and sanction system. The learning process cannot be returned to the pre-pandemic practices; in the future, effective learning will be based on the use of technology.

Many teachers in remote areas are still untouched by EdTech. They are willing to participate in capacity building in ICT: not only how to use it, but also how to integrate the ICT into teaching and learning. Moreover, awareness of digital ethics issues is also needed, especially in using open digital learning resources.

The idea of blended learning in Indonesia needs to be synchronized with teachers' readiness to utilize learning technologies. There should be programs created to improve teachers' capacity, (i.e. online pedagogy, digital literacy, advanced searching, etc.). Many teachers

simply move their face-to-face delivery method in the class to online mode. They should be introduced to more responsive and relevant learning methods to be applied during the pandemic situation.

The relationship between teachers and parents should be strengthened. Teachers are expected to reach out to parents and provide guidance on how parents could help their children to access learning in flipped classrooms.

Education should not only focus on academic grades but students should also be allowed to experience fun and meaningful learning. Students should experience social engagement even though they are following online classes. Teachers should be creative in setting tasks for students in cooperative learning or competition, making them do group projects so they don't feel alone in learning.

A way forward for teacher development could include micro-credentials for teacher capacity building related to educational technology skills. This is the approach taken by the Association of Indonesian Educational Technology Study Programs in collaboration with the ICE Institute. This initiative is expected to give more opportunities for pre-service and in-service teachers to master required educational technology competencies.

The big international players in EdTech are heavily involved in the education sector in Indonesia. Due to Indonesia's decentralization policy of government, Microsoft's strategy that gives access for the district education officers to participate in the monitoring of the online learning process is considered a better strategy rather than that of Google. Ownership of the Microsoft for Education program and activities are held by the district education offices, schools, officers, and teachers; and are considered better by the users. Meanwhile, the implementation of new curriculum approaches, such as Belajar.id and other Google features are centrally managed by the education ministry's education reform and development agency, Pusdatin, and did not give any access to school supervisors and education offices.

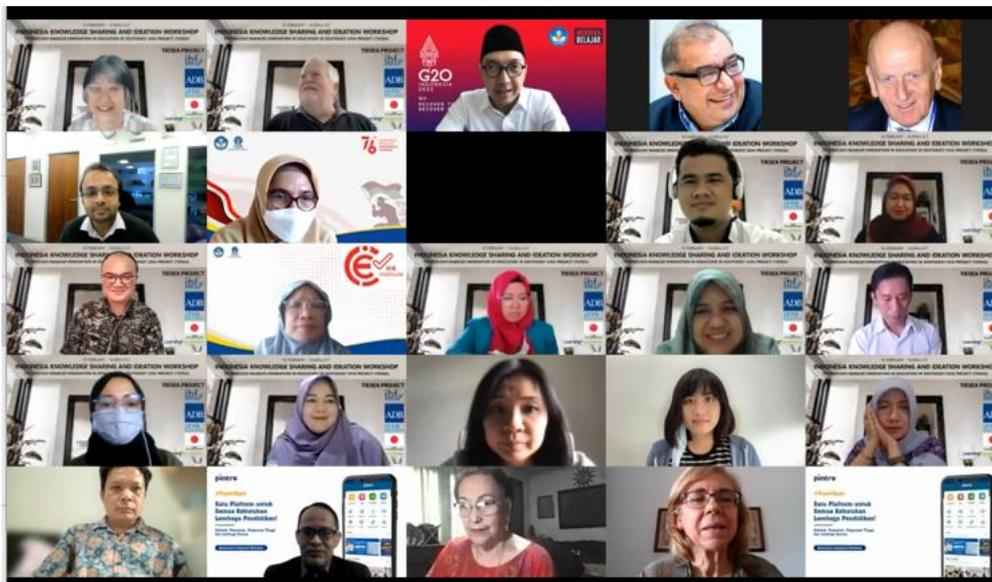
Further harmonization between central and regional policies is required related to the use of ICT in teaching and learning (e.g., the use of the belajar.id account, which is only 7% in West Sulawesi). Participants in this breakout group agreed that policy from the central government needs to be strengthened by regional policy to be operationalized. Moreover, further enhancement of the monitoring and evaluation mechanism is required.

Proposed intervention

The Indonesian Ministry of Education, Culture, Research and Technology (MoECRT) has initiated a comprehensive program of curriculum reform designed to scaffold the development of 21st century skills in students across the country through student-centered learning approaches that utilise the comprehensive suite of eLearning materials already available to Indonesian teachers. The curriculum is known as *Kurikulum Merdeka* and is supported by digital learning materials and tools on the *Merdeka Mengajar* platform. However, access to these tools and materials is only available through the Internet. The proposed intervention aims to demonstrate that the use of a local content server connected to student devices through localised (classroom only) WiFi connectivity, can provide 'last mile' opportunities to participate in the Kurikulum Merdeka transformation for teachers and students in areas where Internet connectivity is weak or unavailable.

In collaboration with the Director General of Teachers and Educational Personnel; the Director General of Basic and Secondary Education; the National Data and Information Centre; the Centre for Curriculum and Learning; and Google Indonesia, TIESEA will provide capacity building for teachers in four remote schools of Cianjur District, and Chromebook devices for teachers and students in two of the four schools, hereinafter referred to as the treatment schools. The intervention will involve 50 teachers and 200 eighth grade students although the primary targets of the intervention will be 2-3 STEM teachers and their classes in each school.

Initial workshops will introduce teachers to the *Merdeka Mengajar* platform including the underlying principle of student-centred learning and project-based learning and will include training in digital literacy. Teachers will subsequently participate in a workshop series to develop lesson plans and materials for teaching a single STEM competency. In treatment schools, these lesson plans are expected to integrate the active use of MoECRT EdTech tools and materials. Throughout the intervention, teachers will be mentored by *Guru Penggerak*. They will be assisted to develop a pre- and post-test to measure student learning gain through the intervention and an assignment that will allow students to demonstrate their collaborative and communication skills. Teacher and student perception surveys/interviews will be designed by the TIESEA team to assess reactions to the STEM teaching-learning process as scaffolded by EdTech and without EdTech support. Interviews with teachers, their mentors and workshop facilitators will enable the TIESEA team to identify challenges and enablers to scaling up the initiative.



Screenshot from Indonesia country webinar

3. KNOWLEDGE SHARING AND IDEATION – THE PHILIPPINES COUNTRY WORKSHOP

On 17th February 2022, the Philippines Knowledge sharing and ideation workshop gathered a total of 88 participants (the complete list of participants is available in Annex 6). 52% of the registered participants are women.

The workshop was divided into 3 main sessions, as per the detailed agenda below:

- Presentation of country report;
- Presentations from potential project partners about possible interventions;
- Ideation workshop and group discussion.

Time	Activity	Speakers
14.00 – 14.05	Opening - National Anthem	Dr. Mehool Sanghrajka – CEO Learning Possibility
14.05 – 14.15	A word of Welcome Messages	Dr Michael Lightfoot - TIESEA Project Leader Hon. Alain Del B. Pascua – Undersecretary, Department of Education
	Introductory Remarks	Hon. Rosanna A. Urdaneta – Deputy Director-General, Technical Education and Skills Development Authority
14.15 – 14:45	Plenary Session 1: Country Report Presentation	Dr. Zenaida T. Domingo – Independent education researcher
14:45 – 14:55	Q&A on Country Report	
14:55 – 15.00	Institutional Sharing of Ed Tech Projects	
15.00 – 16.15	EdTech players in the Philippines	
15.00 – 15.20	Presentation: Microsoft	Ms. Joanna Velez Rodriguez , Public Sector Director, Microsoft
15.20 – 15.40	Presentation: BDO Foundation	Mr. Mario A. Deriquito , President, BDO Foundation
15.40 – 16.00	Presentation: Philippine Business for Education - Youth Works	Ms. Lovelaine Basillote , Executive Director, Philippine Business for Education
16.00 – 16.15	Q&A & Discussion	
16:15 -16:45	Parallel Sessions: Ideation and Group discussion	Breakout rooms
16.45 – 17.00	Plenary Session 2: Sharing of Ideation Discussion Points	
17.00 – 17.10	Wrap up and closing	Dr Michael Lightfoot - TIESEA Project Leader

Country report headlines

The results of the Diagnostic Assessment of the Philippines were presented during the first session of the workshop (presentation available in Annex 5). The country report headlines are

summaries and described using the five pillars of the Digital Education Readiness Framework (DERF) developed by the ADB's Education Sector Group.

Infrastructure

- 2021: 152.4 million mobile connections (138.2% of the total country population). 89 million people (80.7% of population) used their mobile phones, mostly social media users.
- 96.5 % of the 73.91 million users access the Internet via their mobile devices There is high acceptance of mobile phones, especially amongst the youth aged 16-24 years old
- Major challenge: Internet speed.
- The household electrification level in the Philippines stands at 94.5%
- In 2020, there were 45,869 classrooms with television sets, projectors and laptops that support ICT-assisted teaching in school
- DepEd (Department of Education) and TESDA (Technical Education and Skills Development Authority) have partnership arrangements with the National Telecommunication Commission (NTC) in the airing and transmission of radio-based and TV-based lessons for free.

Government

- The Philippine Qualification Framework (PQF) is the main guiding body in education and performance measurement for both DepEd and TESDA ICT-based initiatives
- The Government of the Philippines leads the development of policy issuances on EdTech and ICT-based educational initiatives in the Philippines.
- The Philippine Digital Transformation Strategy of 2022 (PDTS 2022): developed by the Department of Information and Communications Technology prioritises the development of the ICT landscape focused on Internet infrastructure, to serve business, academia, sciences, and community.
- The Philippine Government leads in EdTech alliance building, partnership and networking with the private sector and non-government organizations, through the Department of Education (DepEd), the Technical Education and Skills Development Authority (TESDA) and the Commission on Higher Education,

Schools/teachers

- Teacher Education Institutes (TEIs) have EdTech courses in their programs
- Recent DepEd statistics: 51% of public elementary schools and 88% of public secondary schools have computers.
- However, many schools have limited access to computers, particularly schools with high enrolments.
- Schools with large populations have limited resources, difficulties in scheduling.
- Another challenge: unreliable Internet connectivity: reach is only 34% of households and 49% of schools.

Parents/students

- Filipino families have high acceptance of ICT gadgets, especially mobile phones
- During the pandemic, community leaders aided the delivery of materials to students by guiding them to the sites where students reside.

- If the students live in far-flung areas, the community leaders receive the learning packages on behalf of the students.
- Community leaders make available community facilities and resources to enable the students and the community to listen/view educational radio and TV broadcasts.

Summary of key providers

- ADB (SEHS/SERD) - “EdTech Solutions for Last Mile Schools in COVID-19” technical assistance project (TA 6670); “Supporting Innovation in the Philippine Technical Vocational Education and Training System (SIPTVETS).
- Partnerships with other international development agencies:
- World Bank’, United States Agency for International Development (USAID), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children’s Fund (UNICEF), Philippines, Korean Government.
- Business/private groups Microsoft, CISCO,.Globe Telecom, Knowledge Channel, PBED
- Non-government Organizations: Ayala Foundation; BDO Foundation; Philippine Business for Education (PBEd)

The Philippines country ideation workshop

The workshop included representatives from both the general education department, (DepEd), and from the Technical Education and Skills Development Authority (TESDA), including both teachers, trainers and senior officials. Colleagues from DepEd, specifically from the Bureau of Learning Delivery, provided an insight into how the department is currently working for future developments, including revising the curriculum and teacher upskilling to meet current needs in relation to EdTech; from TESDA there were discussions about the TESDA online programme (TOP) and how new courses, embracing hybrid learning, should be developed in the light of the experiences arising from COVID-19 pandemic.

In summary the participants shared the following considerations and suggestions, that have been brought into a sharp focus through the COVID-19 crisis:

EdTech should include capacity-building activities that targets the improvement of instructional delivery, and content development among teachers. This is to address problems concerning pedagogy and quality assurance in learning delivery.

A skills mapping among teachers needs to be conducted to have an overview of the gaps and points of improvement in the EdTech-related skills of teachers in the country.

Skills related to management, and management mechanisms should be considered in implementing EdTech to ensure proper monitoring in the progress of learners and for teachers to become more organized and efficient in the utilization of EdTech.

Expanded learning and training sessions for stakeholders apart from learners and teachers, such as parents and other members of the community should also be considered, perhaps as a minor priority. This is to consider setups that can accommodate lifelong learning and alternative learning which are often conducted outside the traditional school set-up.

Additional concepts, proposals and ideas were as follows:

- Urgent Investment is needed in ICT infrastructure given the large connectivity challenge the Philippines is experiencing all over the country.
- The use of mobile and radio in the delivery of EdTech is recommended
- On content of the EdTech, the following should be prioritized for development: digital literacy, foundations of AI, ICT, and life skills, including financial literacy
- Importantly, emphasis on child protection policy was highlighted by the group members
- Establishing a hybrid workplace environment is also one of the top suggestions.
- The compatibility of software used in devices in the conduct of EdTech must also be given attention
- The diversification of EdTech platforms is also highlighted. It must be taken into consideration that EdTech platforms/initiatives are not one size fits all
- There is a need to establish a national coordinating body to draft a national strategy to address EdTech issues in the Philippines.
- The online TESDA TOP programme, together with other LMS needs be put on wheels or kiosks to reach far-flung areas and locations with little to no internet access.
- New emerging platforms such as TikTok may be used in the delivery of EdTech initiatives.
- Hardware + Software + Peopleware = ICT Integration

Proposed intervention

Life Skills, focusing on entrepreneurship and productivity among the youth

Lead Project Convenor: Technical Skills Development Authority (TESDA), the Philippine Government agency in charge of technical education in the country

Project Partners:**BDO Foundation**

- Representative: Mario Deriquito, BDO Foundation President
- Focus on financial education
- Works with many partners

Microsoft

- Representative: Paolo Balinas, Enterprise Channel Manager - Education
- Work with industry and university partners
- Currently developing entrepreneurship courses

Project Concept: TIESEA will partner with TESDA to roll out an eLearning package hosted on TOP (TESDA Online Program). As a proof of concept, the eLearning package will be provided at one TESDA training institute through making use of a local content server and WiFi router to make the package available to students living in locations where broadband access is limited. At a second institute (also in a remote location), students will be able to access and download learning materials in the nearest urban centre using the TOP mobile app. A third institute in an urban area with good Internet connectivity will make the course available to its students through the TOP mobile app. Finally, a fourth institute will provide the

course only in its standard online format. The respective challenges and enablers for these four different approaches will inform recommendations for scaling up the eLearning program.

Candidates for the eLearning package include a financial literacy online program produced by the BPO Foundation, a Microsoft entrepreneurship course, a Gender and Development module and one of TESDA's own online courses on Photovoltaic systems installations. While the Central Bank of the Philippines (Bangko Sentral ng Pilipinas) is keen to support adaptation of the BPO financial literacy package to the needs of entrepreneurs in the vocational sector, development timelines will dictate whether the package is ready in time for inclusion in the TIESEA pilot.



Screenshot from Philippines country webinar

4. KNOWLEDGE SHARING AND IDEATION – VIET NAM COUNTRY WORKSHOP

On 3rd March 2022, the Viet Nam Knowledge sharing and ideation workshop gathered a total of 201 participants (the complete list of participants is available in Annex 8). 49% of the registered participants are women.

The workshop was divided into 3 main sessions, as per the below detailed agenda:

- Presentation of country report;
- Presentations from potential project partners about possible interventions;
- Ideation workshop and group discussion.

Time	Activity	Speakers
14:00 - 14:05	Opening welcome from TIESEA	Dr. Michael Lightfoot, TIESEA Project Leader
14:05 - 14:30	Opening welcome from MOET TIESEA Introduction	Dr. Luu Bich Ngoc, Chief of National Council for Education and Human Resource Development Dr. Michael Lightfoot, TIESEA Project Leader
14:30 – 15:00	Country report presentation	Nguyen Hong Hanh, Independent Education Researcher
15:00 – 15:10	Q&A on Country Report	
15:10 – 15:25	K12 Edtech during COVID-19 in Viet Nam	Dr. Ton Quang Cuong – Dean/ Edtech Faculty/ University of Education Edtech thought leader & MOET’s Consulting Specialist on Edtech for K12
15:25 – 15:30	Introduce 4 Edtech players in Viet Nam	
15:30 – 15:45	Presentation: Microsoft	Nguyen Hong Minh - Education Program Coordinator
15:45 – 16:00	Presentation: Google	Tran Ha Duong - Google for Education Pilot Manager
16:00 – 16:15	Presentation: ClassIn	Truong Le Quynh Tuong - Country Manager, ClassIn Viet Nam
16:15 – 16:30	Presentation: Galaxy Education	Dang Quang Hung – Deputy CEO HOCMAI Education System (Subsidiary of Galaxy Education)
16:30 – 16:40	Q&A and Discussion	
16:40 – 16:50	Fireside chat	Prof. Stephen Heppell – TIESEA Technology Specialist
16:50 – 17:15	Ideation & Group discussion (3 breakout rooms & 3 facilitators)	Nguyen Tri Hien - CEO/ GET JSC – Co-Head/ Edtech Village Dr. Ton Quang Cuong - Dean/ Edtech Faculty/ University of Education Nguyen Hong Hanh - Independent Education Researcher
17:15 – 17:25	Reflection from group & Survey	
17:25 – 17:30	Wrap up & Closing	Dr Michael Lightfoot - TIESEA Project Leader

Country report headlines

The results of the Diagnostic Assessment of Viet Nam were presented during the first session of the workshop (presentation available in Annex 7). The country report headlines are summaries and described using the five pillars of the Digital Education Readiness Framework (DERF) developed by the ADB's Education Sector Group.

Infrastructure

- 2010 – 2019: +45 million new mobile internet subscribers (46% of the population)
- In January 2011, there were 68.72 million internet users.
- Viet Nam has made great strides in expanding Internet connectivity from 0% of the population in the late 1990s to 64% today
- Internet penetration in Viet Nam stood at 70.3% - Jan, 2021, (Kemp, 2021).
- 99.4% of total population in Viet Nam have access to electricity (2019)
- Challenges: limited resources, teacher's motivation, distance learning assessment, coordinating different school systems

Government

- Significant spending on education (ca. 6% of GDP): Spending on education: approximately 20% of the total State budgetary expenditure
- There is a gap between the relevant education regulations and the practical processes due to the rapid development of EdTech in Viet Nam

Schools/teachers

- Online learning has become a must. Document 131_QD-TTg on 25 January 2022
- Teachers are largely unfamiliar with new technology and lacking in training to effectively utilize these new tools.

Parents/students

- The requirement to move to online education has exposed the digital divide in the region, between the children who have access to digital learning opportunities and those who do not, most of them living in remote areas.
- Many students lack Internet access, devices, and adequate digital literacy.

Providers

- There is a wide range of providers, over 650 in total; both Microsoft and Google are key players
- Local products are not yet fully-developed in term of quality requirements, meanwhile many imported ones are unaffordable to the general market.

Viet Nam country ideation workshop

The large number of participants for the Viet Nam workshop meant that it was possible to create three breakout groups for the ideation exercise which began as an exercise in imagined futures, based upon recent experiences, and concluded with some pragmatic proposals for possible TIESEA project interventions.

The main reflections from the breakout groups were as follows:

It is necessary to think about supporting the digital transformation in education post the COVID-19 pandemic. In this context, blended learning will integrate the advantages of both offline and online learning. International models of best practice should be assimilated so that professional development programmes can be both far-sighted and suitably focused on appropriate interventions for Viet Nam.

Personal and professional development programmes aimed at mitigating the difficulties teachers have in accessing technology for teachers should include communication and opportunities for the wider community of parents and other local stakeholders.

There should be better alignment between the commercial EdTech businesses and education professionals to ensure that products will deliver the most suitable education and training programmes; and so these programmes represent good value, in terms of educational outcomes of the learners and teachers, compared with the investments made.

Some practical considerations were shared in respects of the TIESEA interventions:

The program must be able to scale up after the pilot project and have clear benefits, for example:

- The academic achievement of students in some selected areas/subjects should be significantly improved after the programme
- The intervention should be scalable, suitable to all levels of teachers and students. It should feed into the general education curriculum and/or provide essential digital skills for students
- It is necessary to have proper criteria for choosing schools, choosing suitable provinces/cities to ensure the initial success of the project
- An established set of criteria to evaluate the outcomes of students' academic achievement after participating in the project must be agreed at the outset
- Equally, criteria to evaluate the effectiveness of schools and teachers must be agreed

It is planned that a minimum of 10 schools should be involved and that these will be situated in 2 - 3 cities/ provinces with middle income. The designated program should include blended/hybrid learning for secondary schools, focusing on a few high-demand subjects such as English language, STEAM/ STEM subjects.

Proposed intervention

The proposed intervention in Viet Nam will center around the use of smartphones as a language learning and assessment tool. Developing speaking and listening skills in English is a challenge for students in Viet Nam with teachers themselves often lacking confidence in spoken English and national tests being limited to assessing grammar, reading comprehension, and writing skills. The TIESEA team in Viet Nam will work with lecturers from the Faculty of Education Technology, University of Education, to research and design a hybrid

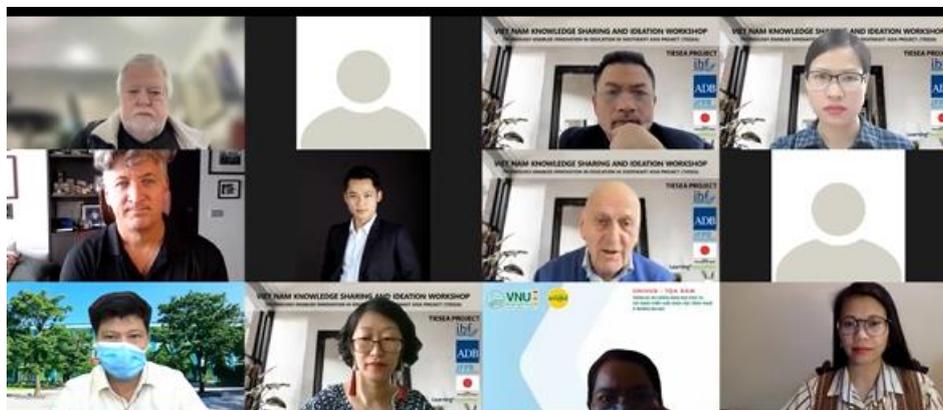
learning program suitable to the specific educational conditions found in Viet Nam. The curriculum will prioritize student-centered learning and the use of EdTech to support students to practice their language skills both at school and at home. Materials will be drawn from hocmai / Elsa/ Pearson e-learning courses as well as more general applications such as flash card apps, Google Read Along, eBooks, songs, poems and English language learning games. As part of school-based assessment, students will be able to record and upload verbal tests and assignments and it is expected that this will motivate them to work on their speaking and listening as well as their reading and writing skills.

The project is expected to launch in the 2022-2023 school year. A minimum of twelve schools (two classes per school) in 2 to 3 cities/ provinces with middle income will be selected to participate in the project. Schools will be selected to represent typical scenarios facing rural schools such as limited Internet connectivity, large class sizes and teachers with a range of experience in teaching English. Schools will be located in rural cities close enough to major population centers to support frequent monitoring and mentoring visits. The target level will be grade 8.

Students and teachers at six of the selected schools (chosen at random from schools in the locality) will be provided with smartphones. Students at the six treatment schools will be able to take the devices home to practice. Teachers at all twelve schools will participate in similar training programs. All students will participate in pre- and post-tests based on the Common European Framework of Reference for languages (CEFR). Tests will include speaking and listening components consistent with the CEFR standard. Monitors will observe classes through the academic year as part of an ongoing process evaluation. Their visits will also provide an opportunity to mentor teachers and solve any problems they may be facing.

It is important that the pilot provide an effective, technology-applied training model for K12 that is approved by MOET and capable of national scale-up. To achieve this goal, the implementation team in Viet Nam plans to connect the project with relevant ministries and agencies to get official support and companionship from Viet Nam's Ministry of Education and Training (MoET).

The program is expected to be successful and has a relatively far-reaching impact on Vietnamese education during and after the pandemic.



Screenshot from Viet Nam country webinar

5. REGIONAL WORKSHOP - EDTECH IN SOUTHEAST ASIA: WHAT WORKS

On 16th March 2022, the Regional Workshop was the opportunity to share a comparative analysis across four project partner countries in the region and present the likely commercial partners for each of the EdTech pilot interventions country by country. The webinar was also an opportunity to reflect, internationally with the benefit of a panel of experts, on the ‘new normal’ in schools, and the role that EdTech has to play in keeping children learning, under all conditions, whether or not face-to-face schooling is disrupted.

There were 143 participants when the workshop commenced, it reached a peak of 173 and in the afternoon averaged 114 participants. A total of 297 participants registered. List of attendees is available in Annex 10, as well as “photos” (screenshots) of the workshop in Annex 9. 49% of the registered participants were women.

The workshop was opened by Stephen Heppell, Global Distinguished Professor, who shared some introductory comments based on his three decades of leading EdTech interventions in all parts of the world. He emphasised his passionate belief that the most important beneficiaries of the TIESEA project are the students and their families in South-East Asia.

TIESEA - Technology-enabled Innovation in Education in Southeast Asia project

EdTech in Southeast Asia: What works?

[Register here](#)
16TH MARCH 2022 - 9AM - 4PM INDOCHINA TIME (ICT)

An opportunity to present the comparative analysis across Cambodia, Indonesia, Philippines and Viet Nam and the EdTech pilot interventions that the TIESEA project is planning in each country

Reflecting on the 'new normal' in schools and on the role that EdTech has to play in keeping children learning, under all conditions, whether or not face-to-face schooling is disrupted.

Keynote speakers

Dr. Jeffery Jian Xu
Specialist in the ADB Expert Group on EdTech

Dr. Ethel Agnes Pascua-Valenzuela
Director of SEAMEO Secretariat

Prof. Stephen Heppell
Global Distinguished Prof. of EdTech

The workshop was divided into 2 main sessions, as per the detailed agenda below:

- **Morning session** was the opportunity to share the main findings from the country reports (Cambodia, Indonesia, Philippines and Viet Nam) and to present each of the project partners of the indicative project interventions, in each of the four countries
- **Afternoon session** addressed the state of the Southeast Asia region for Education, Innovation, Technology and Impact and featured an expert panel discussion

Time	Activity	Speakers
09:00 – 12:30	Sharing of the country diagnostic reports and the proposed interventions	Presentation from the TIESEA National focal points experts: <ul style="list-style-type: none"> • Cambodia: Kosal Chea • Indonesia: Dr Paulina Pannen • Philippines: Dr Zenaida Domingo • Viet Nam: Nguyen Hong Hanh

12:30 – 13:00	Lunch break	
13:00– 14:00	<i>The state of the SE Asia region for Education, Innovation, Technology and Impact</i>	Presentation from the TIESEA Key Experts <ul style="list-style-type: none"> • Dr Philip Uys • Dr Deborah Wyburn • Dr Tim Denny
14:00 – 15:00	<i>Keynote addresses from Global Experts in the field</i>	<ul style="list-style-type: none"> • Dr Jeffrey Jian Xu, Specialist in the ADB Expert Group on EdTech • Dr Ethel Agnes Pasua-Valenzuela, Director of SEAMEO Secretariat • Prof. Stephen Heppell, Global Distinguished Professor of EdTech
15:00 – 16:00	<i>Expert panel discussion Q&A</i>	The TIESEA expert panel and the distinguished keynote speakers discuss the current status of technology in education, the opportunities and the threats and prospects; with questions invited from the webinar participants
16:00	<i>Wrap up and close</i>	Dr Michael Lightfoot, TIESEA Project Team Leader

Regional and International picture

In the afternoon session, the TIESEA Key Experts: Dr Philip Uys, Dr Deborah Wyburn, and Dr Tim Denny presented an overview of the regional and international picture in EdTech.

EdTech plans

Recent plans are summarised in primary and secondary schools re EdTech in low-middle income ASEAN countries Lao PDR, Malaysia, Myanmar, Thailand, but also including Brunei-Darussalam and Singapore. The four countries in the TIESEA Project namely Cambodia, Indonesia, Philippines and Viet Nam are dealt with separately above in the country presentations. The following main sources were used to identify recent country plans regarding EdTech use in primary and secondary schools:

- UNICEF 2020 country reports
- UNESCO resources
- OECD resources
- ICTs in Education (ICT4E) Policies and Plans worldwide
- Planipolis Education Plans.

Recent plans re EdTech in Singapore

- Singapore's SkillsFuture Strategy aims to provide Singaporeans with the opportunities to develop their fullest potential throughout life.
- There is a strong emphasis of parenting for a child's school outcomes and several initiatives have been put in place by the government to impart essential parenting skills, for instance, the Moments of Life application, which was launched in 2018.
- There have been four ICT-in-Education Masterplans since 1997. MOE's Masterplan for ICT-in-Education has been renamed the Educational Technology (EdTech) Plan from

2019. It is a rolling Plan that comprehensively, yet succinctly, guides the development of a technology-enriched school environment for teaching and learning.

Recent plans re EdTech in Brunei-Darussalam

- There seems to be unstable internet connection issues as late as October 2020 that were planned to be addressed.
- The use of EdTech does not seem to be a key planning priority for any level of education.
- The Government wishes to provide ICT services for education, but this is done in a general sense being listed separately from educational infrastructure.
- However, more recently, the Department of Information and Communication Technology through “Educational Technology Development” encourages the use and integration of various services and educational technologies provided by the Department to strengthen teaching and learning in Schools and encourages the use of ICT in education.
- UNESCO reports a steady reform recently (2018 – 2021) of the education system to enhance the use of ICT in schools, new monitoring systems and teaching methods, literacy and numeracy programs. However, there is a lack of professional development of teachers especially in ICT.

Recent plans re EdTech in Lao PDR

- Working with UNICEF there are recent plans underway to use ICT to improve blended learning for students and teachers.
- The Ministry of Education and Sports (MoES) technical team led by the Department of Teacher Education has been developing a training package on the broader provision of remote learning based on international guidelines, using Khang Panya Lao [which is a MoES online, mobile and offline Teaching and Learning Platform].
- The MoES with external support will support access to the platform by purchasing and distributing tablets for selected schools (prioritization for schools in remote areas), Pedagogical Advisers (PAs) and education staff in districts and provinces. Partnerships with internet service providers will be explored to provide free or subsidized access to the platform. In addition, a Windows 10 App is under development that would allow transfer of all the contents between computers in rural areas using USB memory sticks without a need for internet connection.
- The MoES also plans to reach out to lower-secondary-aged dropouts with a pilot of a blended non-formal equivalency programme. This project covers (1) digitalization of teaching-learning content; (2) development of a learning management system; and (3) provision of training on blended learning.
- The Education and Sports Sector Development Plan 2021-2025 have as one of eight high level outcomes to improve graduates’ 21st Century skills with one of 14 policy actions being “Promotion of digital learning as a possible remote learning option, especially during school closures during emergencies minimizing disruptions to learning.”
- This Plan has “Intermediate Outcome 1.3: Increased intake and progression rates at all levels leading to increasing graduation rates with one of 14 policy actions being “Promotion of digital learning as a possible remote learning option, especially during school closures during emergencies minimizing disruptions to learning.”

Recent plans re EdTech in Malaysia

- The UNICEF Country Report states that in future, “programme interventions need to incorporate data packages, internet bundles and access to digital devices to increase engagement particularly for the most marginalised groups what would require further strengthening public-private partnerships in ICT areas”.
- The “Malaysia Education Blueprint 2013 – 2025” indicates that the Ministry will also conduct a diagnostic of teachers’ content and pedagogical skills to enable the provision of targeted upskilling programmes, and explore the use of blended-learning models that leverage technology to enhance student learning.
- This Blueprint also planned for ICT to enhance how teaching and learning happens. There will be more self-paced learning and distance-learning programmes. There will be no urban-rural divide, and with all teachers and students equipped with the skills necessary to use this technology meaningfully and effectively. There would be internet access and virtual learning environments for all 10,000 schools.
- The Ministry will also invest in ICT-competency training for all teachers and will also experiment with utilising new, less resource-intensive alternatives for ICT facilities compared to current computer labs, such as a lending library for notebooks and computers-on-wheels.
- There would be a video library of the best teachers delivering lessons in Science, Mathematics, Bahasa Malaysia, and English language. There would also be greater personalisation of students’ educational experience.
- It further includes initiatives for parents that promote adult literacy, ICT and parenting skills – which would have been highly valuable and critical during the COVID-19 lock-downs.
- From 2016-2020 the Blueprint has “Accelerating ICT innovations especially for distance and self-paced learning” while from 2021-2025 it has “Rolling out ICT innovations and programmes for groups with specific needs”.
- 21st Century Skills as defined in Malaysia do not include ICT skills or EdTech usage but is dealt with as a separate matter.
- In 2021, the “UNESCO - Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Southeast Asia” points to Malaysia having set up a “digital community for teachers to prepare them for their new role as facilitators of blended learning and is conducting training via a Massive Open Online Course (MOOC) complete with a bank of 1,000 resources for teachers”.

Recent plans re EdTech in Myanmar

- The “National Education Strategic Plan 2016-21 Summary” has programme component 6 to “provide basic ICT tools and undertake pilots using new ICTs...” but the focus is not on EdTech but “to strengthen education management efficiency and effectiveness at all levels of the national education system”. This is also the case under “Student assessment and examinations” in strategy two where it notes “development of assessment-related information and communication technology infrastructure to improve current work processes and the provision of examinations-related services”.
- In the extended “National Education Strategic Plan 2016-21” there is reference to EdTech in assessment that will include “software to conduct item response analysis to calibrate and evaluate items in tests in order to improve test scoring and development of test items; and a custom-built, off-line item bank”.
- Very little is thus made of EdTech and blended/distance learning in this Plan that commenced in 2016.

- However, the COVID-19 National Response and Recovery Plan for the Education Sector has an expanded and accelerated vision for EdTech that includes distance learning; various online, off-line and mobile strategies; high-tech, low-tech and no-tech options; wide internet access. Other phases though promote a return to face-to-face education with sadly little blended/distance learning being envisaged. The Plan also uses EdTech to deliver training programs while the monitoring of the plan includes analytics on distance learning.
- In the “Myanmar Sustainable Development Plan (2018 – 2030)” it aims to “expand access to both the hard and soft infrastructure necessary to enable access to a comprehensive, quality, free basic education, ensuring provision of gender and disability-sensitive school facilities, technologies...”. While “21st century skills” are not defined, it could include use of ICT, and in this plan it aims to “develop a comprehensive national curriculum which will provide our youth with 21st century skillsets to enable them to serve the nation as drivers of a competitive, innovative and creative economy”.
- In the “Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Southeast Asia - Sub-regional Report” Myanmar seems to be planning to address equity issues (1) in the use of EdTech, and (2) that may require particular EdTech.

Recent plans re EdTech in Thailand

- The “UNICEF-Country Office Annual Report 2020” refers to the review of the national learning platform and identifying next steps on promoting equitable education around technology in Thailand. It points out that during the past 12 months the trend of digitalization is no longer emerging but has now consolidated and must be a central consideration in future programming. It emphasises the need for digital access in homes across the country.
- The “Twelfth National Economic and Social Development Plan (2017-2021)” refers in the Flagship Projects to having Nationwide Free Wifi for Education to “enable students of all ages to access information that is useful for their learning and research. It will also serve as a modern learning channel”. It further aims to see an increase in the use of the Internet for learning purposes, and promote inclusive growth and quality of life, such as with educational technology, and ICT. It further projects expanding distant learning education by using information technology networks as a tool to help resolve the shortage of teachers in remote areas.
- The “National Scheme of Education B.E. 2560-2579 (2017-2036)” describes a main aim as “People of all ages receive more opportunities in education through digital technology for education. The main indicators include a modern network of digital technology for education which satisfies the needs of students and users effectively, and a high speed and quality Internet access at every educational institution.” Under “Vision, Objectives, Goals, Indicators, and Strategies of the National Education Plan” it notes that learners are to be developed who have “high qualifications and 21st Century Skills” that include “...Information, and Media Literacy, Computing and ICT Literacy, Career and Learning Skills, and Compassion”.

Recent relevant regional plans regarding EdTech

- There is an urgent need to invest in teachers’ continuing professional development
- A range of content is needed to cater for marginalized groups such as those with minority languages as well as for children with disabilities

- The availability and potential of technology means that digital learning should be a part of a basic basket of essential services for every child and young person
- Alert teachers, parents and students about the possible harmful aspects of Internet use
- Students need to acquire not only the necessary digital skills but also other twenty-first-century skills, such as basic literacy and numeracy, communication skills, and critical thinking skills to exploit the potential of the Internet
- There is a blurring of ICT use in school and at home that has ethical and professional development implications.
- The COVID-19 response and recovery planning have brought EdTech and digital learning to being a center-piece in educational strategy.

EdTech tools: a landscape review

The pandemic has taught us that EdTech has to become part of our learning ecosystem but where to allocate ever-diminishing budgets given an increasingly complex and diverse range of options?

'It is imperative that decisionmakers take a close look at the evidence, not just to know "what works" but rather to understand which needs can be best addressed by technology, what types of interventions are available to address those needs, and in what contexts they have worked most or least well'.¹

The first question that needs to be answered is, 'Should EdTech substitute for teachers?'. I think that we all know that the answer to that question is NO! but let us look at the evidence.

What can we learn from the Pakistan government's eLearn program? Beg et al. (2020)² conducted a RCT in middle schools in Pakistan. The intervention consisted of expert-led videos with simulations to demonstrate complex ideas integrated into lesson by the teacher. This resulted in increased test scores in math and science by 0.3 SDs. Teacher subject mastery also improved. The control consisted of the same material recorded onto personal tabs being given to students. Over the same period of time their test scores decreased by 0.4 SDs.

De Baros (2020) evaluated a program with grades 9 & 10 in India which substituted teachers with instructional videos and printed workbooks. After 11 months, Math achievement decreased by 0.08SD, and there was no effect on science marks.

In contrast to this, Chiplunkar et al. (2020) evaluated a program in India with grade 9 students where they were given short videos + worksheets + instruction + peer learning after school for one hour every day. This had a large effect on Science and Math class tests but no effect on high stakes exam. The evaluators concluded that the students being in grade 9 had already fallen so far behind that it was impossible for them to reach the level where they could compete successfully in an exam pitched at grade level.

Buchel et al. (2020) evaluating an after-school offline delivery of Khan Academy portal in primary schools in El Salvador which effectively doubled the time that students were exposed to Math instruction found very positive results. Even with the teachers simply teaching math

¹ Ganimian, A.J., Vegas, E., & Hess, F.M. (2020), *Realizing the promise: How can education technology improve learning for all?*, The Brookings Institution.

² Beg, S.A., Lucas, A.M., Halim, W., & Saif, U. (2020), *Engaging Teachers with Technology Increased Achievement, Bypassing Teachers Did Not*, NBER Working Paper No. 25704

in the same way as they did in class, there was an improvement of 0.15 SD. When the teachers' inputs were supplemented by the use of Khan Academy, this rose to 0.24SD. Apart from increasing the length of time students studied, the intervention also used differentiated instruction. Both factors contributed to the improved results.

Hence, we can conclude that teaching at the right level is effective when at least some of the class has fallen behind. Supplementing instruction after school invariably works better than substituting for the teacher. And differentiated instruction is a important.

Differentiated instruction involves using formative assessment to be able to teach students at the level they are at - at the Right Level. The traditional approach in teacher-centered classrooms of teaching to the middle of the class will not address the needs of children who have fallen behind and often results in 'learning poverty' whereby children complete their schooling without FLN skills. It has been determined that 53% of children in LMICs cannot read and understand a simple story by the end of primary school³.

If a school has a strong online connection, programs like Nearpod™ generate differentiated lesson plans based on student progress data. Other programs rely on the teacher to set entry levels (e.g., ASSISTments in Canvas). Khan Academy provides a simple diagnostic test on entry. The use of Khan Academy supports the flipped classroom approach.

Let's have a look at the evidence of using differentiated instruction. Banerjee et al. (2007)⁴ evaluated work in India where grade 4 students played games that involved solving math problems with level of difficulty adjusted based on scores. This improved student achievement by 0.47 SD after 2 years. Then there is the well-known Mindspark study where Indian students in grades 4 – 9 received 45 mins of personalized learning software + 45 min of small group instruction after school. After 4.5 months, their math results improved by 0.37 SD and Hindi by 0.23 SDs with lowest performing students benefiting the most.

However, when personalised Adaptive Learning Software (software that implements differentiated instruction automatically) was used in a Dutch secondary school, Ma et al. (2020)⁵ found no difference between adaptive v's non-adaptive software except for a negative effect for higher ability students (0.08SD). This was attributed to the higher ability students becoming bored with having to sit through tests at lower levels before they encountered material at their own level and an absence of much difference in ability level within the class.

Hence, this leads us to some guidelines on when to use Adaptive Learning Software:

- Adaptive learning software is most suitable for classes with substantial differences in learning levels.
- With teachers who are not SMEs, software can allow students to progress beyond their teacher's level of knowledge
- Many success stories are based on Math software because it is easier for software to identify right and wrong answers accurately. It may not be as successful for other subjects.
- Software should be aligned with preferred teaching practices

³ The World Bank (2021), *'What is Learning Poverty?'*, Education Brief April 2021, <https://www.worldbank.org/en/topic/education/brief/what-is-learning-poverty>

⁴ Banerjee, A.V., Cole, S., Duflo, E., & Linden, L. (2007), *Computer-Assisted Learning Project with Pratham in India*, Accessed at <https://www.povertyactionlab.org/evaluation/computer-assisted-learning-project-pratham-india>

⁵ Ma, Y., Fairlie, R.W., Loyalka, P., & Rozelle, S. (2020), *Isolating the "TECH" from EdTech: Experimental evidence on computer assisted learning in China*, National Bureau of Economic Research, Working Paper 26953, Cambridge, MA

- Should be in local language and closely aligned with national curriculum
- Can increase student motivation

Next, we look at the effectiveness of Games, Gamification, eBooks and Nudges to Motivate students. A meta-analysis of 39 studies published 1990 – 2012 showed that gamification is significantly more effective than typical instructional methods in improving learning (Wouters et al. 2013). However, it can negatively impact subject-related anxiety and willingness to collaborate with peers. This was found by Araya et al. 2019 in a study of grade 4 students in Chile. Examples of gamification include: the SimCalc™ math simulation game. In a study by Escueta et al. 2020, this was found to have improved math scores by 0.63 SD for grade 7 and 0.56 SD for grade 8 students in Texas. Similarly, the game, MotionMath™ improved grade 4 students' fractions test scores by average of 15% over a one-week period compared to control group (Riconscente 2013).

The Role of Parents has also been shown to be very important. Several studies have been done on the effectiveness of teachers sending 'nudges' to parents re grades, attendance, assignments not handed in. An evaluation of the use of 'nudges' in parents of high school students in low-income area of Los Angeles resulted in math scores 0.20 SD greater than in a comparison group where parents were not sent nudges⁶. The PowerMyLearning™ program where students are required to teach a member of their family what they have learnt in class was found to improve Math scores of 7th graders in USA by 0.33 SD.

What about tools to improve Foundation Literacy and Numeracy? An evaluation of Google Read Along™ in India found 42% of learners in Hindi improved by at least one reading fluency level (Sattva Consulting 2019). Many organisations also provide eBooks in local languages. However, an RCT conducted in Kenyan primary schools: where, in Group 1, multimedia materials were given to teachers; in Group 2, e-Readers in local language were given to students; and in Group 3, standard training for teachers and print books for students, resulted in no significant difference in outcomes. The difference in the two contexts was that the students in India had poor or no learning opportunities while the students in Kenya had quite capable teachers.

How can EdTech help us to develop the 21st century skills of:

- Collaboration
- Communication
- Creativity
- Critical thinking and problem solving
- Citizenship, and
- Character

Problem-based learning (PBL) is one approach that teachers can use to help their students develop these skills. PBL challenges students to apply what they know to real world problems. There are structured versions such as WebQuests, Minecraft Education Edition, Edpuzzle, Science Court, and Newsela. Or students can experiment with virtual laboratory software. Teachers can use Google tools and 360 cameras to create virtual reality field trips. Students can use digital tools to:

⁶ Escueta, M., Nickow, A.J., Oreopoulos, P., & Quan, V. (2020), Upgrading Education with Technology. Insights from Experimental Research, *Journal of Economic Literature* 2020, 58(4), 897-996

- Communicate, share ideas and brainstorm
- Record and analyse experimental or research data
- Present ideas to an audience.

Digital literacy is also an important 21st century skill. 'Digital literacy involves critically (and safely) engaging with technology and developing a social awareness of how a number of factors including commercial agendas and cultural understandings can shape the ways in which technology is used to convey information and meaning'.⁷

Can we use EdTech to make learning inclusive? We must always consider whether our actions will exacerbate inequalities that already exist. Questions to ask are:

- Are girls equally likely to own digital devices?
- Will parents be reluctant to allow daughters to go online because of risk?

How can schools support children with disabilities to realize their full potential? There are apps to teach sign language and lip-reading, assistive technologies such as JAWS screen reader, talking books, software to generate and output Braille, apps such as Empowered Brain featuring augmented reality social-emotional learning games to support students with autism, ADHD etc.

However, children studying in rural and remote regions with limited connectivity and/or frequent load shedding may not have access to any of these tools.

EdTech for low-resourced countries – the rural/remote conundrum

Far too often educational outcomes are aimed at more resource-rich areas of countries. This is often an indirect consequence of geography, visibility, politics and funding. Urban areas tend to get more visibility for their schools as they are more often accessed by communities simply due to the fact that they are in areas of higher population density. They are then often better resourced as funding tends to flow through multiple channels to schools that are used as showpieces. Yet the question that Professor Sugata Mitra⁸ answers, in his decades long research on the application of EdTech in the lowest resources communities, is whether children with less access to technology-assisted learning tools benefit more than those with more ready access.

Knowing that EdTech is necessary in a world that demands 21st century skills, the question we all must ask is, how to help schools in rural/remote areas overcome EdTech barriers? It is then understood that schools must provide access to computers (tablets, laptops and/or desktops) for students as an essential stage in building digital literacy (21st century information literacy – communication, collaboration, creation, etc.). In addition, school must also provide access to rich learning materials in the form of content sharing across devices. With that question as a framework and a focus on selecting appropriate devices (any device) for low resourced schools there are a series of challenges that must be explored, namely:

1. Electrical consumption (power) – lower wattage=lower costs

⁷ Hague, C. & Payton, S. (2010), *Digital literacy across the curriculum - a Futurelab handbook*, Accessed at <https://www.nfer.ac.uk/publications/futl06/futl06.pdf>

⁸ Mitra, S. (2012). *Beyond the Hole in the Wall*. Discover the power of self-organised learning [ebook].

2. Usability – can the device do what you need it to do
3. Maintenance – need for robust devices that are easy to repair
4. Cost – is maintenance and parts replacement affordable to a school
5. Connectivity – how can devices share resources

Computer Access: there are three types of devices that are often talked about in terms of school teaching and learning: desktop computers, laptops and tablets. Each of the devices has strengths and weaknesses yet when selecting the best device for schools the following criteria must be considered.

1. Robust – the device must be sturdy and capable of standing up to constant use
2. Low energy consuming – with so many devices needed in schools the cumulative energy draw will tax potentially weak electrical systems and add unnecessary costs to energy bills if not taken into consideration
3. Low maintenance – tech devices are only as good as they are maintained, thus it is important to select only devices that can be easily maintained while being appropriate to the needs of the schools
4. Low Cost – the entry point for the device should be affordable at scale and within range for community level replacement if needs be

With these criteria in place, through extensive research on the various products available, it is agreed that laptop and tablet type computers are not appropriate for low resourced schools as they only meet one of the four criteria (low energy consumption). While traditional desktop computers may meet only the first criterion in being robust, it is found that there is another lesser used device that fits all four criteria. That being the single board computer (SBC). SBCs are a fairly new introduction to EdTech in that they have only been a viable option for less than four years. SBCs are noted for being extremely robust as they have no moving parts (totally solid state), they are low power consuming typically in the range of 1-5 watts and due to robust construction, small size, and low heat generation they are also very low maintenance. An example SCB is the extremely popular \$35 Raspberry pi computer (available in three versions \$35/\$55/\$75) as shown in the figure below.

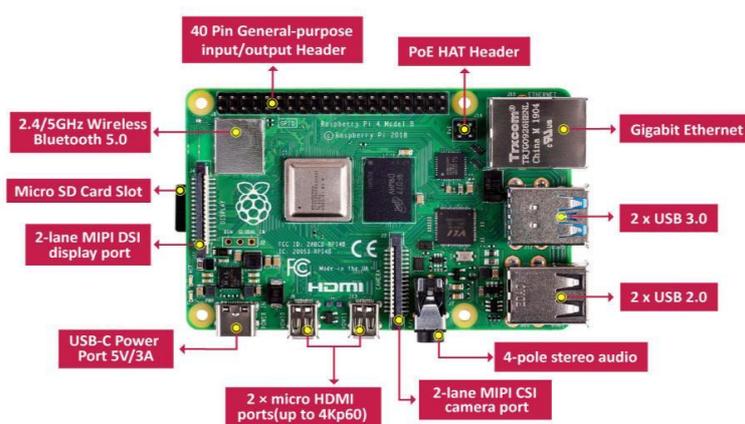


Figure 1: Specifications of Raspberry Pi 4 Model B (from www.seedstudio.com)

Information access: It can be said that the library is a gateway to knowledge and culture as they form a fundamental role in shaping society by providing shared information. Libraries

have a central function in schooling as the place teachers and students can gain access to a potentially wide range of written materials that extend and complement regular curricular study while providing pathways to explore and learn the unexpected, thereby shaping ideas for innovation and creativity.

Sadly so, few low resourced schools can afford to build and maintain libraries with ample materials to engage the school community and, more often than not, they simply do not have a library at all. Some typical barriers to low resourced schools in providing a qualified library to the community may include;

1. Poor staffing practices – unqualified librarians where the position is looked at as manual rather than technical
2. Poor funding – high costs incurred in establishing and maintaining libraries deters most schools
3. Lack of a library policy – where considerable thought to set library policy and plan for the integration of such libraries is not done, the school community suffers
4. Poor library facilities – far too often the library is looked at as a burden thus it receives the leftover space
5. Lack of awareness of the importance of school libraries – school cultures that ‘teachers to the text’ and focuses on ‘capstone examinations’ may not value libraries as they are not central to the school purpose

As exemplified in Sugata Mitra’s (ibid) experiments in provision of computers to children in slum areas, it can be said that all teachers and students prosper when we have ready access to a wide choice of digital materials that can be used to enhance our teaching and learning. The issues have long been dealt with in a ‘well-resourced’ mindset through development of cloud-based systems that serve as content repositories. The key problem for low resourced areas is inability to access world resources due to lack of internet-based connectivity. Thus, even though the world is highly connected and a large portion of written materials are easily accessed online through efforts like www.worldcat.org (brings together online catalogs of more than 10,000 libraries worldwide) the capabilities are of no consequence to low resourced schools as they lack devices and internet connectivity.

The solution to provision of digital content in low resourced schools is to provide offline digital libraries. When the necessity for internet connectivity is removed the focus can be on amalgamation of innumerable freely available teaching and learning resources as exemplified in the OER2go (<https://oer2go.org/>) project that purports to connect offline learners to an extensive range of freely available digital materials. This goal is accomplished by providing a repository of downloadable material which can then be shared by any means possible including through offline digital libraires. Such libraires can contain up to millions of resources in the form of audio, video, graphics, text and interactive resources available to the school community via wireless connected devices (smartphone, tablet, laptop, desktop etc...).

Modern technology has made this possible through the ability to create extremely small “micro-servers” utilizing single board computers that can cost as little as \$35. With additional case, power supply and backup battery sources an offline digital library can be provided with freely available materials at a cost of around \$100 per unit and as little as \$150 per unit with solar power to provide endless usage where electrification is troublesome. It is important to note that there is no software or content charge as, in such examples, the operating system

selected is based on Linux (free operating system) and the content can be sourced through the aforementioned methods in addition to innumerable additional content repositories. This revolution in the way we store, share and organize digital learning materials will potentially provide a modality for all teachers and students at the school to access a seemingly endless library of materials at all times while at the school.



Figure 2: Solarspell offline digital library with solar panel

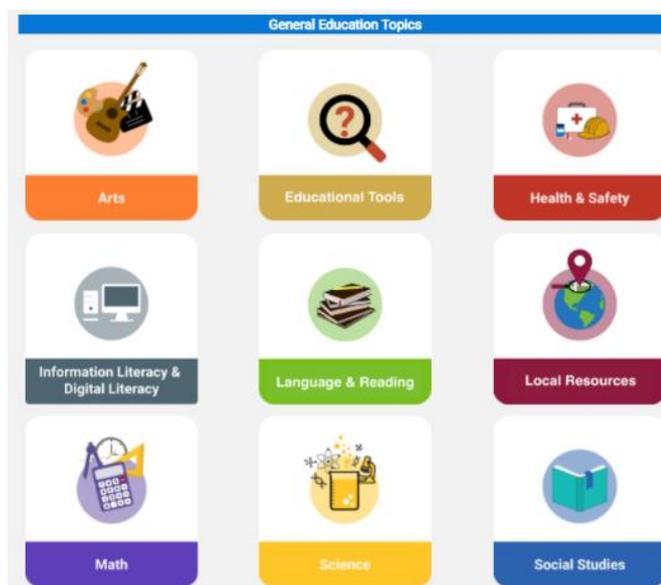


Figure 3: Example of an offline digital library user interface

EdTech implementation process

The following cyclical implementation process for EdTech implementation was proposed as put forward by Dr Philip Uys, Key Expert Education of the TIESEA project:

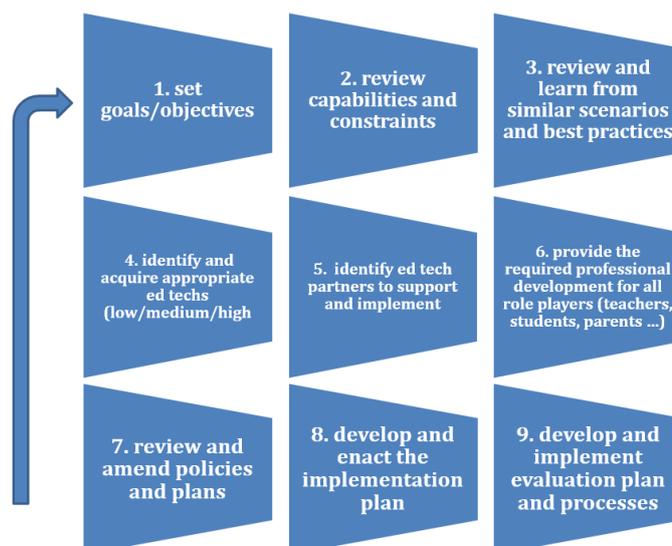


Figure 4: Proposed EdTech Implementation Process

Main points made by keynote speakers

Jeffrey Jian Xu, Specialist in the ADB Expert Group on EdTech.



Dr. Jian Xu serves in the ADB's Education Technology expert group. His work at the ADB covers the use of ICT and education technology to promote education equity, improve efficiency and efficacy in teaching and learning. He is a seasoned professional in the field, and prior to joining the Bank he was CTO of one of the largest education companies in the world transforming the education industry using digital technology and led several educational support projects to rural poverty provinces to solve educational inequity in the People's Republic of China.

Key points included:

- The trilemma: enduring; equitable; effective
- Global EdTech trends including blended learning
- The ADB DERF Framework: has a total of 55 indicators based on five pillars

Recommendations:

- EdTech is not for the sake of technology, it's about education and about learning
- Each EdTech project needs to consider alignment among different pillars of the ecosystem
- EdTech master plan integrated into education sector plan
- Make project assessment evidence-based, output driven as opposed to input driven.

Ethel Agnes Pasual-Valenzuela, Director of SEAMEO Secretariat

Dr Ethel is the director of the SEAMEO Secretariat, which serves as the executive arm of the SEAMEO Council of Ministers of Education from 11 member states that make up SEAMEO. Prior to joining SEAMEO, Dr Ethel also served in the Philippines as Commissioner of UNESCO National Commission (2003-2010). She is an advisory board member of UNESCO Institute for Lifelong Learning (UIL), the ASEAN TVET Council and UNESCO ISCED-T Advisory Group.



Key points included:

- Smart education is growing significantly in Southeast Asia – identified smart learning cities
- There is unequal access to ICT infrastructure, Internet connectivity, online learning resources
- A SEAMO COVID-19 Accessible and Responsive Educational Support (CARES) Programme Fund has been set up.

Stephen Heppell, Global Distinguished Professor of EdTech



Professor Stephen Heppell is one of the founding fathers of computers in education. As an early promoter of multimedia in education, he led research teams in software design for Apple Computer's Renaissance Project in 1990. Stephen's long track record of supporting children in making, creating and programming with their computers, rather than just using, has led to a string of constructivist projects. In recognition of his many projects, which have cemented his international reputation as an EdTech visionary,

he is the holder of many prestigious awards for his lifetime services to technology in education from, for example, the Royal Television Society and BETT – the international EdTech trade organisation.

Key points included:

- Kids are full of initiative and thinking about the future and keen on EdTech
- “It’s all about learning” - inside class and outside!

Expert panel discussion summary

The expert panel was moderated by Dr Tim Denny, and comprised:

- Dr Jeffrey Jian Xu, Specialist in the ADB Expert Group on EdTech
- Prof. Stephen Heppell, Global Distinguished Professor of EdTech
- Dr Michael Lightfoot, TIESEA project leader
- Dr Deborah Wyburn, Key Expert
- Dr Philip Uys, Key Expert



Figure 5: Expert Panel

Key points made:

- The attendees identified “digital infrastructure” and “readiness of teachers” as the key barriers to digital learning – discussed that teachers are key to EdTech implementation
- “Playful learning” should be encouraged
- Learner agency should be provided for the students as active learners also in being co-creators of content
- Technology should EMPOWER, not REPLACE the teacher.

Workshop closing remarks

Sameer Khatiwada - Technology and Innovation Specialist (Social Sectors) of the ADB closed the Webinar and indicated that

- Technology adoption does not always happen in a linear fashion - sometimes jump over steps leading to rapid adoption e.g. in Asia people moved from “no phone” to smart phone, skipping landlines and even feature phones. In this fast-changing environment, it is critical to understand how it’s changing, how we can adapt to these changes and make good use of it. There is a variety of challenges faced in Southeast Asia (lack of infrastructure, connectivity etc.), however, other factors are equally important such as involving parents and understand how to use the technology.
- EdTech needs to be tested for its impact including “how much do learners retain”. It is crucial to understand if new technologies are having an impact on the learning outcomes. This is one of the main question the TIESEA project will have to answer after evaluating the pilot interventions across the four countries.



Figure 6: Closing remarks by Sameer Khatiwada

GENERAL CONCLUSIONS

The country diagnostic reports have identified a wide range of EdTech tools and applications including locally produced products at different stages of maturity. Major international actors in the EdTech space such as Google and Microsoft are also engaged with governments in the four countries, mainly through their CSR initiatives. At the same time, governments are taking action to improve Internet accessibility and, with the exception of Cambodia,⁹ more than 90% of schools in each of the countries are on the national grid. Mobile phone subscription rates are extremely high, exceeding 100% of the population in all countries and youth are increasingly familiar with learning and sourcing information online. Finally, the COVID-19 pandemic has forced teachers, students, and even parents, in all countries to adopt new technologies. They and their governments recognise the need to improve the resilience of education systems by building a hybrid teaching-learning environment.

However, Internet availability and signal strength is variable across all four countries and teachers often responded to the challenge of moving online by simply transferring didactic teaching practices to the new medium. This leaves TIESEA with two main challenges which are addressed across all the proposed initiatives:

1. The need for extensive teacher professional development to ensure that adoption of new technologies is effective and will result in improved student outcomes.
2. The need to ensure that any proposed solution is inclusive and addresses the needs of students and teachers in rural and remote communities as well as those in urban areas.

Finally, in searching for evidence of what works in LMICs, the TIESEA team have been challenged by the limited availability of robust impact evaluations of EdTech interventions. TIESEA hopes to contribute to the body of evidence through building an evaluation plan into each pilot intervention that makes use of a counterfactual for each treatment group.

⁹ World Bank data from 2018 indicated that 71.5% of households were connected to the national grid in Cambodia.

ANNEXES

Annex 1: Cambodia country report presentation



**CAMBODIA
COUNTRY E-READINESS**



Digital e-Readiness Assessment Structure
Chea Kosal
16th March, 2022







Presentation Outline

- Introduction
- 5 pillars of E-Readiness
 - Infrastructure
 - Government
 - Schools/Teachers
 - Home students/parents
 - EdTech providers
- The Outlook for Edtech in Cambodia







Introduction: Cambodia stats at a glance (Jan 2021)

- Cambodian population: **16.83 million** (51.2% female)
- Internet users in Cambodia : **8.86 million** (52.6% internet penetration)
- Social media users: **12.00 million** (71.3% of the total population)
- Mobile connections: **21.18 million** mobile connections **125.8%** of the total population
- Network Readiness Index (NRI) ranking: **106th** out of the 130 economies included in the NRI 2021 – Strongest=Impact (quality of life)







Infrastructure: Telephony and Internet

- **Telephony**
 - Fixed line connectivity is extremely low.
 - Most affordable mobile service in Asia - average of just **\$4 monthly** subscription cost - six mobile phone operators
 - **21.18 million** mobile connections in Cambodia in January 2021 (Kemp, 2021)
- **Internet**
 - ranks **66th** in terms of mobile data rates in the world, averaging \$1.50 for 1 GB of mobile data (Cable.co.uk, 2020)
 - **8.86 million** internet users (**52.6%** internet penetration) (Kemp, 2021)
 - government supported the development of backbone fiber optic cables that increased to **37,441 km** in 2017 and two undersea optic cable networks
 - Inclusive Internet Index Simulator - Overall Rank and Score: **83rd** in the world



TIESEA PROJECT



Infrastructure: Devices and Hardware

- **Lack of computers in households;**
 - **41.1%** of households in the Asia & Pacific region have access to computer, **13.3% of Cambodian households have access to a computer** (ITU, 2019)
- **Mobile device (smartphone) penetration rate among the general population 125.8%**
 - Assumption the majority is held by the younger generation (over half of the population is under 24)
 - Over **90%** schoolteachers likely to have access to mobile devices (Cambodia EdTech Country Situation Analysis Asian Development Bank (ADB) 25 January 2021).
 - Oppo and Huawei (half the cost of Apple and Samsung) - driving force behind the increasing smartphone adoption by the Cambodia population.



TIESEA PROJECT



Infrastructure: Power Supply and electricity access

- **97.6%** of Cambodia households have access to at least one source of electricity **71.5%** from the grid and **26.1%** off the grid, such as solar home system and rechargeable batteries (World Bank, 2018)
- **Significant energy shortages, making electricity in Cambodia the most expensive in the region, as high as \$0.15 per kilowatt hour (kWh).** Compared to;
 - Vietnam, customers pay only **\$0.07** per kWh,
 - Thailand averages **\$0.10** per kWh
(Beam Exchange, 2018)(Globalpetrolprices.com, 2020).



TIESEA PROJECT



Infrastructure: TV/Radio Broadcasting

- **TV**
 - **18** TV stations
 - TV is the most popular media type in Cambodia, reaching **96%** of the Cambodian audience.
 - Covid-19: education TV programming broadcast on National Television of Kampuchea and other cable TV networks throughout the country, such as a newly created TVK2 for educational broadcasting, Decho DTV's channel 22, and 55 new cable TV networks.
- **Radio**
 - **Lost popularity with the rise of the Internet**
 - ranked as **third** media sector after TV and online, reaching out to an audience of **35%**.
 - **175** radio stations: **4** most popular radio stations gather **43%** of listenership
 - April 2020, MoEYS rolled out radio broadcasts in **three** of Cambodia's most widely spoken ethnic minority languages – Tumpoun, Kreung and Phnong
 - however, many of the target families do not have radios at home (Aide et Action Southeast Asia, 2020).



TIESEA PROJECT



Government: Policy and Funding

Policies

- Rectangular Strategy Phase IV,
- ICT Master Plan 2020,
- Telecom/ICT (T-ICT) Development Policy 2020,
- Law on Telecommunication, and the
- ICT Strategic Framework.
 - **124th** in the UN's E-Government Development Index and **129th** in the E-participation index, Thailand was ranked 57th and 51st respectively (UN, 2020)
 - A need to translate policy documents into practice and actionable plans

Funding

As yet, no dedicated budget line for EdTech expenditure designated for usage in schools and the sub-national level



TIESEA PROJECT



Government: Curriculum and content

- MoEYS adopted a curriculum framework in 2016 and course syllabus at all levels in 2018
 - student centered concepts and approaches by using an inquiry-based learning
- Computer Programming integrated into the new national curriculum for students from Grade 4 to Grade 12
 - But, the new ICT curriculum is not yet approved nor put into practice yet.
 - ICT classes require ICT major teacher and computer lab – only **17%** upper secondary schools have computer labs.
 - No ICT integration into other subjects e.g. maths, physics, chemistry, etc.
- Examples of content providing 21st century skills;
 - New Generation Schools focus on STEM, ICT, and critical thinking skills, etc.
 - Caring for Cambodia - increase workforce-readiness and academic skills so that students can work in growth fields



TIESEA PROJECT



Government: Education performance measurement

- Education Development Sector Plan - by 2030, a system that maximizes the use of ICT opportunities and data connectivity for real time information sharing, analysis and reporting, and feedback.
 - EMIS (Education Management Information System) will manage, plan, and monitor for stakeholders (school managers and administrators, parents and local communities, MoEYS national and subnational, Ministry of Economic and Finance (MoEF), National Institute for Statistics (NIS), ODA partners)
 - shift from a client server system to a web-enabled and integrated system under EEQP2
 - decentralization with a new focus on Student Tracking Systems and School Information Systems (SIS)
 - financial support from the CDPF (Capacity Development Partnership Fund) managed and financed under UNICEF's guidance in partnership with MoEYS, EU and SIDA.



TIESEA PROJECT



Government: ICT pedagogy integration in pre-service teacher education

- Policy: Cambodia's Education 2030 Roadmap, Education Strategic Plan 2019-2023:
 - in-service and pre-service to include new and modern pedagogical approaches and integrate ICT; to develop teachers' capacity and reform the teacher training institutions at NIEs, TECs and RTTCs to ensure the equivalence of training outcomes especially in STEM, ICT
- Practice:
 - Limited ICT training for most teachers, only on basic office skills, not in pedagogy



TIESEA PROJECT



School/teachers: Teacher capacity in Edtech

- Centralized pre-service and in-service government training institution (the National Institute of Education and four Regional Teacher Training Centers)
 - time-based training framework rather than outcome-based modular framework.
 - pre-service training on ICT, but no or little in-service training
 - pre-service training typically focuses on MS Office suite, internet browser, or using Windows operating system on a PC



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School/teachers: Teacher capacity in Edtech

- ADB Situational Analysis 2021 found that;
 - older teachers typically do not understand how a computer works, its full functionality and features as no ICT related training has been provided in schools.
 - about **5%** of the teachers surveyed create PowerPoint slides for teaching purposes on weekly to daily basis
 - **12%** said they create videos on weekly to daily basis
 - More than **70%** of the respondents said they 'rarely' to 'never' create online assessments/quizzes for students



TIESEA PROJECT



School/teachers: Teacher capacity in Edtech

- ADB Situational Analysis 2021 (contd.);
 - more than **76%** of the surveyed teachers do not use email or file sharing tools (e.g., Google Drive, OneDrive, Dropbox) regularly
 - not all teachers seem to have access to a personal computer regularly to be able to effectively use a file sharing system.
 - most tend to use social messaging app such as Telegram or social media app such as Facebook to share files among themselves or with students

This signals a lack of understanding of the collaborative power (value) of the file sharing systems by the teachers or a lack of suitable devices to use them.



TIESEA PROJECT



School/teachers: Equipment and software

- Major barriers to EdTech use in schools include:
 - Lack of computers.
 - No or poor Internet access, particularly unreliable and/or insufficient bandwidth.
 - Absence of or unreliable LAN infrastructure in schools.
 - Lack of competent staff to manage the EdTech infrastructure and support users in schools.
- MoEYS, 2019: **only 17% of upper secondary schools and 5% of lower secondary schools have access to computer labs.**
- **40%** of upper secondary schools have access to the internet; in most of the cases, the internet is solely used in the school administration office for administrative purpose only.



TIESEA PROJECT



School/teachers: Governance

- Cambodia has invested significant time and resources into creating and implementing plans to increase the effective use of ICT in education.
 - However, more long-term efforts are needed to develop the infrastructure and information base to incorporate ICT to the desired level.
- Schools use several paper-based forms to manually collect data for monitoring and evaluation purposes such as student enrollment information, grades and attendance records etc for the EMIS system once a year; then key in that information into the computer at the school administrative office.
- Schools lack a data management system to manage the school efficiently.



TIESEA PROJECT



School/teachers: Community outreach

- More than **95%** of the (ADB 2021) teacher survey respondents believe that abilities to share ideas, teaching experiences and advice is 'important' or 'very important' for a community of practice.
- **95%** of teachers still use traditional method of sending letters or making phone calls to parents through students or classmates (about academic problems, absenteeism, and behavior problems).
- Schools should leverage existing Social Messaging tools such as Telegram Group or Facebook Group, which teachers and parents are familiar with, to create parents' group for each class and the whole school as communication channels for teachers and school to reach out to all parents.



TIESEA PROJECT



Home students/parents: Digital literacy of students

- In the Global Competitiveness Report 2019, Cambodia ranked **112th** out of 141 countries for digital skills among the active population.
 - **27.8%** of youth and adults in Cambodia have copied or moved a file or folder,
 - **26.8%** have used copy and paste tools to duplicate within a document,
 - **37.6%** have sent e-mails with attached files, and
 - **20.6%** have transferred files between a computer and other devices.
- only **1.5%** of youth and adults have connected and installed new devices,
- **2.5%** have created an electronic presentation with presentation software,
- **0.6%** have found, downloaded, installed, and configured software, and
- **0.1%** wrote a computer program



TIESEA PROJECT



Home students/parents: Digital literacy of students

- Most of the students interviewed have no knowledge about online safety at all, while most of teachers interviewed admitted that they did not teach their students regarding safety measures online
- Parents lack knowledge regarding digital devices and their functionalities and provided little to no support at all to their children when using learning devices at home.
- Literacy unevenly spread across regions. Students in more advanced areas tend to have better ICT skills and more access to support programs.
- During the spread of COVID-19, many students still do not have adequate digital skills to receive classes online.
- **54.5 percent** of young people want to see further digital transformation in the education sector in the future.
 - This may be influenced by the recent surge in digital adoption and adaptation in the education sector caused by the outbreak of COVID-19.



TIESEA PROJECT



Home students/parents: Connectivity and devices at home

- Cambodia ranks **71** out of 141 economies concerning ICT adoption
- The requirements of remote learning have created greater challenges for Cambodia's ICT system during the COVID-19 crisis.
- Students use a combination of smartphones, computers and TVs and Radios, to access online education resources and remote learning.
 - Only 13.3% of households have computers in 2019
 - In 2017, 42.6% and 66.6% of households reported having radios and TVs at home.
 - Only 1.1% of households possessed fixed-line telephones.
 - By 2018, 40% of households enjoyed internet, compared to only 0.6% in 2009.
 - The internet quality is severely constrained by poor infrastructure and electricity supply.



TIESEA PROJECT



Home students/parents: Online access to curriculum content

- Cambodia faced significant challenges to its education system due to the spread of COVID-19 and massive school closures.
- MoEYS efforts to ensure the well-functioning of remote instructions, offering various e learning options, with UNICEF and UNESCO, are taking a proactive engagement.
 - used a combination of lessons and exercises provided by the homeroom teachers in combination with online content provided by the ministry through various platforms such as Facebook pages and Youth and e learning platform such as the E-School Cambodia mobile app.
 - Students use snapshot of textbooks captured and sent by teachers through social messaging apps such as Telegram and Facebook Messenger.



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Home students/parents: Online access to curriculum content

- Challenges to remote learning:
 - Students prefer online learning and video platforms, social messaging apps and file sharing options, rather than directly watch lessons on TV channels
 - However, electronic copies of school textbooks are not available.
 - Video lesson files typically vary from 50MB to over 1GB in size – not accessible with poor connectivity or even using 3G/4G
 - The majority of parents choosing mobile data packages instead of fixed broadband.
 - Some parents borrowed from relatives or upgrading their own devices to a smart device.
 - Many disadvantaged students living in remote areas with poor economic conditions, cannot properly access online educational resources.
 - A lack of well-articulated plans to evaluate the use and effectiveness of the current remote learning system.



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Home students/parents: Community support

- In big cities such as Phnom Penh and Siem Reap, students can get access to Wi-Fi hotspots in café or at schools, most communities in sparsely populated and remote areas lack digital capability to support learning (online).
- Students across the country use Telegram and Facebook to access and share content. There are hundreds of groups and channels on Telegram and Facebook on school subjects such as Math, English, Physics Chemistry or activities such as syllabus, learning content, assessments. – teachers or schools share resources using these modes
- Urban areas provide more resources – access to devices, service of devices, rural areas have limited resources – technical skills, affordability.



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Providers – public/private partnerships: E learning systems

- The Basic Education Equivalency Program (BEEP) is based on the learning system Moodle (MoEYS/UNESCO)- 12,903 registered sites in Cambodia
 - few experts on Moodle in Cambodia. There is no reliable data on users and costs of elearning systems in Cambodia
- ClassDojo is an elearning management application for teachers to provide easy communication with students and parents.
- Trey Visay (Compass) is an e-counseling mobile app for grades 9-12. It provides support for things like evaluating major and career, suggesting schools, vocational skills, and education career videos.
- E-School Cambodia is an online learning platform for grade 7 to 12 following Cambodia Education Standard, Bacc II exam preparation – 100K downloads
- POSCAR Cambodia offers different products and services, such as a school management system (through WikiSchool), smart card, attendance, online library management (WikiLibrary), document storage (WikiSpace), WikiLMS, and Education TV. – 10K downloads



TIESEA PROJECT



Providers – public/private partnerships: Online content

- **iE-school Cambodia** – free access; an app for grades 1-12, with content that includes subjects like Math, Physics, Chemistry, and Biology, and to help students prepare for their grade 9 and grade 12 examination - in partnership with the Cambodian Union of Youths Federation.
- **Future School** is an online platform that offers grades 1-12 curriculum Maths and Literacy (up to G10) - cost up to \$USD 351 annually. 30 days free trial is available.
- **OneSala** is another top five grossing app. It is a platform that educators, institutions, or centers can use to post and manage their content.
- Google Playstore and IOS platforms provide various educational apps free or at a cost eg Duolingo, Udemy, Babbel



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Providers – public/private partnerships: Integrators, emerging tech

- The sector is in need of advanced operators capable of software development.
- RGC efforts: Techo Startup Center whose core mission is to build emerging tech startups borne out of innovation that can be launched and scaled up.
- a few startups in the country tried to utilize the Augmented Reality/Virtual Reality (AR/VR) technologies into their educational apps but failed due to high cost of producing such high-tech content.
- There is no dedicated education technology system integrator.



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Providers – public/private partnerships: Partners, sponsors

- UNESCO, along with the Ministry of Education, developed elearning courses for lower secondary/basic education in 2019.
- Cambodian Union of Youth Federations partnered with E-school Cambodia to create a platform that offers content for free to students at grades 1-12.
- UNICEF is working with the MoEYS to deliver online education.
- ADB, provided technical as well as financial assistance, including provision of ICT labs and equipment to select Secondary Resource Schools.
- One Billion focuses on providing content for literacy and math, working with the Cambodian Children's Fund.
- JICA, in coordination of the Ministry of Education, has developed online lessons that will be available on an app called "Think! Think!" for students in grades 1-6.



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Providers – public/private partnerships: Partners, sponsors

- **SALA** is an online platform designed for K-12 and universities with features such as student management, HR and billing, payment and school administration.
- **Koompi** is a technology development company based in Phnom Penh, Sala Koompi is an eLearning platform that aims to enable a decentralized and open-ended education for Cambodian students.
- **Tablet on Wheels (ToW)** is a small mobile computer suite that can be taken from one classroom to another. The ToW program includes 30 tablets and a storage unit that can transmit data or lessons to the tablets on wheels via the WiFi network from Rachel.
- **Other providers in Cambodia:** KAPE, EDEMY, E-School Cambodia, STEM Cambodia, E2STEM, Go Digital ASEAN Initiative, InSTEDDiLab, ArrowDot, SystemExperts, IT STEP Academy



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Outlook for Edtech in Cambodia

- Cambodia expressed its interests in developing its digital economy starting from 2018 with the introduction of the Rectangular Strategy Phase IV
- The IR4.0 policy direction is to incorporate the Digital Economy and Society Policy Framework 2035, which focuses on;
 - the development of high-speed broadband network infrastructure, to support the smart living of **95%** of its citizens,
 - additional regulations on infrastructure,
 - promote infrastructure sharing,
 - have a government data centre and cloud, and
 - the promotion of public-private partnerships to respond to the current infrastructure gaps and also technical support for EdTech development.



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Outlook for Edtech in Cambodia

- The role of EdTech in public education was brought into the spotlight as the government announced remote-study during the global COVID-19 pandemic. Since that time, reviews of the EdTech environment have raised the following key takeaways for further improvement;
 - Develop and implement a national EdTech capacity building plan
 - Initiatives to raise awareness within communities on how to support students in terms of accessing devices and connectivity
 - Ensure equitable access to quality/affordable internet for students, focusing on rural populations
 - Improve digital content development and distribution
 - Aim for data-driven decision making at all levels, with unified digital EMIS
 - Low-cost, easy-to-maintain, scalable devices and software for schools
 - Establish an EdTech policy-based-action framework, translated into actionable plans
 - Develop a unified content repository platform
 - The national curriculum to be revised based on international, outcome-based competency standards



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THANK YOU

ANY QUESTIONS?

Contact Email: kc@tiesea.org



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Annex 2: List of Cambodia country workshop participants

No	First Name	Last Name	Organisation	Job Title	Gender
1	Chamroeun	Seth	Sovannaphumi School	School Principal	Male
2	Chan	Sophon	DoEMIS/MoEYS/Cambodia	Head Office	Male
3	Chanchamnan	Um	STEM Education Organization for Cambodia	Director	Male
4	Chanmony	Ung	World Education	M&E Manager	Male
5	Chhomchanda	Sam	NTC Group	Vice Chief Academic Officer	Male
6	Dara	Kim	World Education Cambodia	Country Director	Male
7	Deborah	Wyburn	TIESEA	MEL Specialist	Female
8	Dou	Sok	Good Neighbors Cambodia	Program Development and Fundraising Department Manager	Male
9	Dr Philip	Uys	IBF Project	Education Specialist	Male
10	Estelle	Day	World Education	advisor	Female
11	Hanh	Nguyen	Edtech Agency	CEO	Female
12	Hem	Sara	NTC Group	School Principal	Male
13	Heng	Rath	Sovannaphumi School, Poipet II Campus	School Principal	Male
14	Hok	Chour	Primary education department	Chief officer	Male
15	Jan	Noorlander	CARE International in Cambodia	Deputy Country Director Programs	Male
16	Jay	Gadhvi	LP	PA	Female
17	Junsu	Kim	KOICA	Deputy Country Director	Male
18	Kakada	Chheang	InSTEDD	Technical Project Manager	Male
19	Kim Eng	Hean	Ministry of Education, Youth and Sports	teacher	Female
20	Kimsroy	Khy	NTC	SP	Male
21	Klot	Koeun	Sovannaphumi School, Toul Tum Pong Campus	School Principal	Male
22	Kosal	Chea	TIESEA PROJECT	Independent consultants	Male
23	Kouy	Chanra	Sovannaphumi School	School Principal	Male
24	Krab	Phos	NTC group	ICT officer	Male
25	Lavy	Moung	CCF	Educator	Male
26	Leng	Socheat	PTEC	Associate lecturer	Male
27	Lisa	Math	STEM Education Organization for Cambodia	Communication Coordinator	Female
28	Maeva	Mottin	IBF International Consulting	Senior Project Manager	Female
29	Mao	Tannavy	Ministry Education Youth and Sport	Vice Chief Office	Female
30	Morkoath	Pring	General Secondary Education Department	Director	Male
31	Nop	Vannpisey	E-School Cambodia	Admin	Female

32	Or	Thim	SOVANNAPHUMI School	Khmer General Education Manager of NTC Group	Male
33	Pisey	Chet	Translation Agency	Interpreter	Male
34	Puthy	Kann	Primary Education Department, Ministry of Education, Youth and Sport	Deputy Director	Male
35	Salin	Ros	Committee for Education, Youth, Sport, Religion, Culture and Tourism of National Assembly	Advisor of the President of National Assembly	Male
36	Samsideth	Dy	Ministry of Education, Youth and Sport	DDG for Education	Male
37	Sangva	Lim	ArrowDot Co., Ltd.	Managing Director	Male
38	Sieng	Sovanna	National Institute of Education	Director	Male
39	Silvia	Stuffmann	IBF International Consulting	Junior Project Manager	Female
40	Sineth	Seng	DIT, MoEYS	Deputy Director	Female
41	Sokchannin	Kram	Cambodian Children's Fund	Education Manager	Female
42	Sophanak	Sar	Kampuchea Action to Promote Education (KAPE)	Educational Technology Coordinator	Male
43	Sophat	Monh	NTC group	Academic Manager (Khmer General Education Program)	Male
44	Sophea	Phan	Teacher Training Department	Deputy chief of office	Female
45	Sothea	Prak	Sovanaphumi School	Management Trainee	Male
46	Sothea	Keo	CARE	Senior ICT Officer	Male
47	Sovanna	Ouch	Freelance Translation-Interpretation Services	Translator-Interpreter	Male
48	Sovireak	Biv	NTC Training Center	Training Manager	Male
49	Sroeun	Nisay	Sovannaphumi School	School Principal	Male
50	Tes	Theaphy	NTFP-EP	Finance-Adm.HR Coordinator	Female
51	Tim	Denny	IBF	consultant	Male
52	Vang	Samieat	Cambodian children's trust (CCT)	Operation senior manager	Male
53	Vathana	Serey	NTC Group	Academic Research and Development Manager	Female
54	Veasna	Meach	NTC	School Principal	Male
55	Ven	Thol	Ministry of Education, Youth and Sport	Deputy Director of Primary Education Department	Male
56	Vuth	Doung	Department of Community Development of the Ministry of Planning of Cambodia	Senior Officer	Male
57	Vuthyda	Pen	KOICA	Education Program Officer	Female
58	Zenaida	Domingo	Consultant		Female

Annex 3: Indonesia country report presentation

INDONESIA COUNTRY E-READINESS



Digital e-Readiness Assessment Structure
Paulina Pannen
10th February, 2022





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Indonesia

Population: 272,200,000 (① 0-14 years: 23.3%; ② 15-64 years: 70.7%; ③ ≥65 years: 6%)
49.7% female, 50.3% male; 57.0% in urban, 43.0% in rural



Kepadatan Penduduk Per Km²
Population Density Per Sqkm

-
 < 30
-
 30 - 59
-
 60 - 99
-
 100 - 499
-
 500 - 1000
-
 > 1000





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Schools, Teachers, and others in Indonesia

ISCED Level	Indicative age at entry into school grade	School Grade	Approx number of schools				Approx number of students****				Approx number of teachers				Approx number of non-teaching personnel				
			MoE/CT Data Sources AY 2020/2021*		Total Approximately Number of Schools	MoE/CT Data Sources AY 2020/2021		Total Approximately Number of Students	MoE/CT Data Sources AY 2020/2021*		Total Approximately Number of Teachers	MoE/CT Data Sources AY 2020/2021		Total Approximately Number of Non-Teaching Personnel					
			SMA	SMK		MA	SMK		SMA	SMK		SMA	SMK						
ISCED 3 Senior High School	17	12																	
	16	11	SMA 13,865	SMK 14,078	MA 8,807	36,750	SMA 9,027,314	SMK 5,238,807	MA 1,375,546	Other religious schools 10,692	11,882,129	SMA 338,810	SMK 295,985	MA 71,266	746,062	SMA 63,192	SMK 59,745	MA 9,261	132,198
	15	10																	
	14	9																	
ISCED 2 Junior High School	13	8																	
	12	7	SMP 40,597	MTs 18176	58,773	SMP 10,090,484	MTs 3,324,285	Other religious schools 2,371	13,417,040	SMP 720,959	MTs 130,873	861,532	SMP 125,626	MTs 14,808	140,424				
	11	6																	
	10	5																	
ISCED 1 Primary Education	9	4																	
	8	3	SD 148,743	MI 21,593	174,336	SD 24,848,813	MI 4,124,646	Other religious schools 2,482	28,975,741	SD 1,853,619	MI 130,905	1,784,524	SD 125,232	MI 10,375	135,607				
	7	2																	
	6	1																	
ISCED 0-2 ES	5	KES1	TK 90,051	RA 29,842	119,893	TK 3,563,183	RA 1,271,054	4,834,457	TK 358,057	RA 55,382	408,459	NA (Included in number of teachers)	RA 2,823	2,823					
	4	KES1																	
			Total schools: 389,752				Total students: 59,085,147				Total Teachers: 3,780,537				Total Non-Teaching Personnel: 412,052				





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1. Infrastructure: Electricity, Internet Access, Digital Devices

Electricity consumption in Indonesia reached 1,064 kWh pc in 2018, compared to Malaysia, which had reached 4,460 kWh in 2016¹



Electricity

97%

3% or more than 6000 schools without electricity²

Indonesia is the **6th largest country** of Internet users globally¹ and third in Asia², with a user penetration of **76.84%** out of the population³



Internet Access

81%

19% or ~42,000 schools still have no internet access⁴

IDR 1.3 trillion was allocated to purchase **189,840-unit laptops**, **12,674 access points**, connectors, and projectors, as well as **45 units of speakers**. The procurement of **284,147 units of domestic laptops**



Digital Devices for Learning

tablets, laptops, LCD projectors, printers, etc.

¹ National mid-term development plan 2020-2024
² The basic education data (Dapodik), April 2021
³ Ministry of Communication and Information Technology (kominfo.go.id)
⁴ Indonesia's Internet Users Rank 3rd Most in Asia | Datahub (datahub.co.id)
⁵ IHRW WORLD ATLAS – Indonesia
<https://www.kompas.com/tren/read/2021/07/30/184500665/mengenal-laptop-chromebook-yang-sangat-bertanggung-jawab-dan-unggul?page=all>





TIESEA PROJECT



LearningPossibilities

1. Infrastructure

- <https://www.statista.com/statistics/255235/active-social-media-penetration-in-asian-countries/>
- Social media penetration 61.8%
- mobile connections in Indonesia in January 2021 was equivalent to 125.6% of the total population
- Literacy level 95.7%
- Internet quota support from the Government (MoECRT) starting June 2021:
 - 12-15GB for teachers
 - 7-15GB for students



2. Government

Policy on education transformation:
Freedom Learning (Merdeka Belajar)

- increase the quality of learning
- increase the quality of educational services

Educational Ecosystem (including e-management)

Pleasant school environment, openness to collaborate among educational stakeholders and active collaboration among parents and communities (Sekolah Penggerak, Organisasi Penggerak)

Evaluation System
 more formatives and utilize more portfolios, no national exams

Curriculum
 flexibility, competency-based, and focused on the characters and soft skills development, new 2022 "prototype curriculum" for Sekolah Penggerak

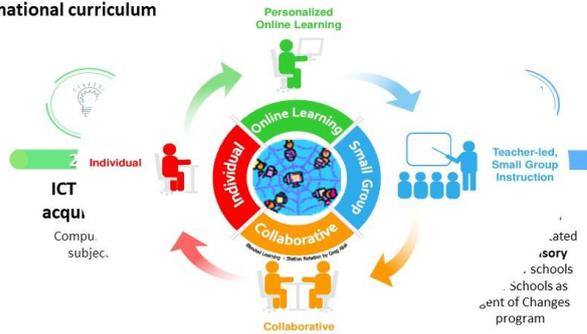
Teachers
 promotes teachers' role as learning facilitators: Guru Penggerak

Pedagogy
 Promote the heterogeneous approaches, e-learning, innovative learning



2. Government

Integration of EdTech in the national curriculum



ADB JFPR TIESEA PROJECT ibf LearningPossibilities

2. Government

Newest Policy and Development

February 5, 2022

1. Merdeka Mengajar Platform (Freedom Teaching Platform)
2. Kurikulum Merdeka (Freedom Curriculum)

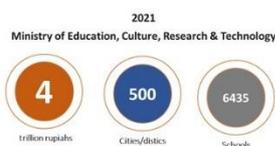
ADB JFPR TIESEA PROJECT ibf LearningPossibilities

2. Government

ADB JFPR TIESEA PROJECT ibf LearningPossibilities

3. School/Teachers

ICT Facilities and Infrastructure



The package consisted of 15 Chromebook units, 1 LCD projector unit, one wireless router, and one connector unit

"Direktorat Sekolah Menengah Pertama," Kemdikbud Ristek, 01 10 2021. [Online]. Available: <https://ditamp.kemdikbud.go.id/mengenal-fungsi-wi-less-router-bantuan-tik-direktorat-smp/>

- Agent of Changes (Sekolah dan Guru Penggerak)
- “PembaTIK” Program
- SEAMEO SEAMOLEC Training Program
- Google Suite for Education Training Program
- Microsoft Education.
- “Guru Berbagi” program
- “Guru Belajar” program

Teacher ICT competency improvement programs

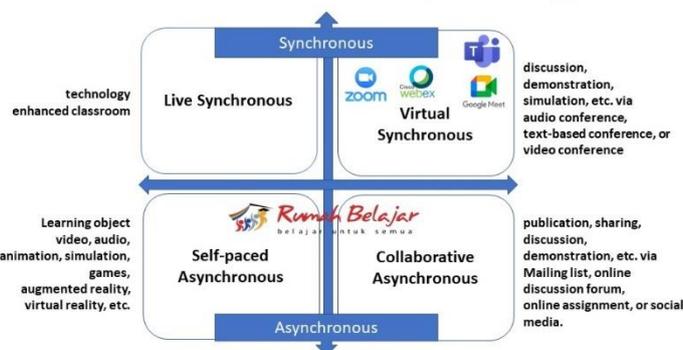


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3. Schools/Teachers: Online learning strategy

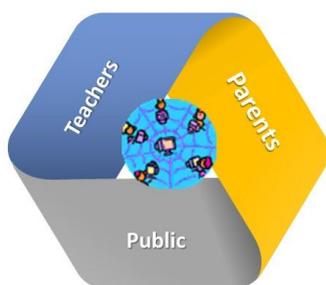
Project-based Learning



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4. Home students/parents



- in 2020, many students and parents reported **not receiving feedback** from teachers on assignments or exams¹
- unequal access, low bandwidth and concentrated in more populated developed urban areas
- MoECRT and MoRA (2020) partnered with telecommunications operators to **distribute free internet quotas** for teachers, students, university students, and lecturers to maintain the continuity and quality of education during the pandemic

1 World Bank Group, "EdTech in Indonesia- Ready for take-off", 2020
2 Strengthening Digital Learning Across Indonesia: Research Summary, UNICEF, 2020, p.4

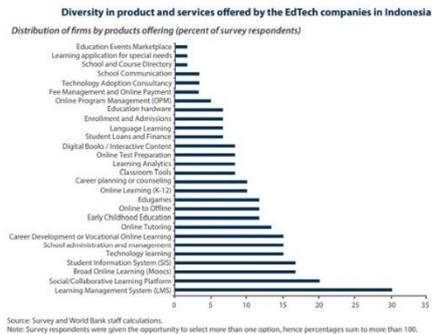


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5. Providers – Public-Private Partnerships

Ruangguru, Zenius, and Google for Education are **major private platform**, in addition to **Rumah Belajar**, used by teachers and students



6. Inventory of EdTech Firms in Indonesia

Student-focused Interventions	Teacher-focused Interventions	Admin-focused Interventions	Skills-focused Interventions

7. Future Prospects for EdTech in Indonesia



Education Challenges in Indonesia¹

1. technological disparities between schools in big cities and regions (internet, gadgets, literacy)
2. limited teacher competence (skills) in the use of learning applications
3. limited resources for the use of educational technology such as the Internet and quotas
4. the relationship between teacher-student-parents in online learning is not yet integral

¹ Suhawoto, 2020. <https://pusdatin.kemdikbud.go.id/pembelajaran-online-di-tengah-pandemi-covid-19-santangan-yang-mendesakkan/>.

8. Proposed Intervention - Indonesia

The screenshot shows the Merdeka Mengajar platform interface. On the left, there are callouts for 'Students Assessment' (pointing to 'Asesmen Murid'), 'Teaching & Learning Resources' (pointing to 'Perangkat Ajar'), 'Independent Capacity Building' (pointing to 'Pelatihan Mandiri'), 'e-portfolio' (pointing to 'Bukti Karya Saya'), and 'Merdeka Curriculum' (pointing to 'Tentang Kurikulum Merdeka'). The interface includes sections for 'Kembangkan Diri untuk Menginspirasi dan Mengajar Lebih Baik', 'Asesmen Murid', 'Perangkat Ajar', 'Pelatihan Mandiri', 'Bukti Karya Saya', and 'Tentang Kurikulum Merdeka'.

8. Proposed Intervention - Indonesia

- Teaching & Learning Resources (with MS)**
- Focus on developing digital literacy (data and technology literacy) for Junior High students (FGD)
 - Integration of ICT skills into subject matter (workshop)
 - Training Teachers to develop online courses (workshop)
 - review & revise (independent work)
 - pilot test (with students – several subjects)

- Independent Capacity Building (w/Google)**
- Focus on developing digital literacy for teachers: Merdeka Mengajar Platform
 - Additional topics: trends in edtech for teachers: game, online assessment
 - 3 times training (workshop)
 - pilot test (with students – several subjects)

8. Proposed Intervention - Indonesia

- Teaching & Learning Resources (with MS)**
- two schools with Guru Penggerak (Sekolah penggerak and Sekolah regular)
 - two schools without Guru Penggerak (Sekolah penggerak and Sekolah regular)
 - Guru Penggerak: developer of training materials
 - Workshop and training: for all teachers
 - pilot test will be for 2-3 teachers only.

- Independent Capacity Building (w/Google)**
- two schools with Guru Penggerak (Sekolah penggerak and Sekolah regular)
 - two school without Guru Penggerak (Sekolah penggerak and Sekolah regular)
 - Workshop and training: for all teachers
 - Training materials (online course): through Future Learn or EdX via ICE Institute.
 - pilot test will be for 2-3 teachers only.

THANK YOU



TIESEA PROJECT



Annex 4: List of Indonesia country workshop participants

No.	Name	Last Name	Organisation	Job Title	Gender
1	Adam	Ramdan	Seknas SPAB Kemendikbudristek	Staff	Male
2	Afriani	Afriani	Universitas Terbuka (UT) - ICE Institute	Lecturer	Female
3	Agus	Margiwiyatno	Project Management Unit of AKSI-Project	Manager	Male
4	Aline	Almandha	SEAMEO SEAMOLEC	Marketing and Publication Manager	Female
5	Andy Fitri	Nur Vidayanti	SMP Negeri 1 Tidore Kepulauan	Guru Penggerak dan Duta Rumah Belajar	Female
6	Arie	Susanty	SEAMOLEC	R&D Staf	Female
7	Atiko	SS MMPd MM	DINAS PENDIDIKAN KOTA SURABAYA	Kepala Seksi Kurikulum Sekolah Menengah	Female
8	Badriyatu	Sholihah	Ministry of Education, Culture, Research, and Technology	Analyst	Female
9	Cahya Kusuma	Ratih	SEAMOLEC	Ad Interim Deputy Director for Program	Female
10	Deborah	Wyburn	TIESEA	MEL Specialist	Female
11	Dona	Octanary	SEAMEO SEAMOLEC	Research and Development Staff	Male
12	Dr Philip	Uys	IBF Project	Education Specialist	Male
13	Esra	Sinaga	Setditjen Pendidikan Vokasi	Pengelola Informasi Kerja Sama	Female
14	Esy	Andriyani	Ministry of Education, Culture, Research, and Technology	Analyst	Female
15	Fanensca	Tetelepta	SMP Katolik Ambon	Teacher	Female
16	Fauzy Rahman	Kosasih	ICE Institute	Lecturer	Male
17	Hanh	Nguyen	Edtech Agency	CEO	Female
18	Hasbi	Asyadiq	ASSEMBLR	Founder & CEO	Male
19	Hilman		SMP Negeri 1 Papalang	Teacher	Male
20	Ilham	Penta	SEAMOLEC	R&D team	Male
21	Isro	Hendar saputra	SMPN 1 BANSARI	Teacher	Male
22	Iwan	Syahril	Kemendikbudristek	Dirjen GTK	Male
23	Jamaludin	Udin	Pusat Pengembangan Multi Media	Dosen	Male
24	Jamjam	Muzaki	Kemendikbudristek	Tenaga Ahli SPAB	Male
25	Kelik	Yan Pradana	SMP Kristen Krista Citra Parakan	Guru & Duta Rumah Belajar	Male
26	King	Dhillon	Learning Possibilities	CTO	

27	Lestari	Kurniawati	SMPN 1 Rangkasbitung	Teacher	Female
28	Lys	Johnson	Heppell.net	PA	Female
29	Maeva	Mottin	IBF International Consulting	Senior Project Manager	Female
30	Marisa	Marisa	Universitas Terbuka	Head of Study Program	Female
31	meena	jamfava	LP	PA	Female
32	Mirwan	Saputra	SMP Negeri 7 Mesuji	Teacher	Male
33	Muhammad	Hasan Chabibie	Center of Data and Information Technology MECRT Indonesia	Head	Male
34	Ni Wayan Sanjiwani	Tirta Wirya	SMP NEGERI 2 KEDIRI	Teacher	Female
35	Obert	Hoseanto	PT Microsoft Indonesia	Education Programs & Skills Lead	Male
36	Oky	Adrian	BSKAP Kemendikbudristek	Policy Analyst	Male
37	Olivia	Basrin	Google for Education	Google for Education Indonesia Country Lead	Female
38	Posma	Sihombing	SMPN 4 Langke Rembong	Teacher	Male
39	Rahayu	Ucu	Universitas Terbuka	Dr.	Female
40	Rahayu Dwi	Riyanti	Universitas Terbuka	Lecturer	Female
41	Rudi	Susilana	Universitas Pendidikan Indonesia	Dean of Educational Science Faculty	Male
42	Silvia	Guarch	IBF International Consulting	Junior Project Manager	Female
43	Suhartono	Arham	Ministry of Education, Culture, Research and Technology	Director	Male
44	Supiansyah		PT Indoglobal Nusa Persada	Head of Strategy & Business Transformation	Male
45	Tatang	Muttaqin	Bappenas	Director	Male
46	Tim	Denny	IBF	consulant	Male
47	Triana	Januari	Kemendikbudristek	Direktorat Jenderal Pendidikan Vokasi	Female
48	triana	januari	ditjen vokasi	korbid kerjasama	Female
49	Umi	Syarifah H	Dit. SMP	PTP Pertama	Female
50	Vishaal	Shah	Learning Possibilities Ltd	Finance	Male
51	Wartanto	Wartanto	Kemendikbudristek	Sesditjen Pendidikan Vokasi	Male

Annex 5: The Philippines country report presentation

PHILIPPINES COUNTRY E-READINESS



Digital e-Readiness Assessment Structure
Zenaida Domingo
17th February, 2022





TIESEA PROJECT



Demographic factors that have a bearing in the utilization of educational technology in the country:

- 1) An archipelago – 7,641 islands
- 2) Population – 100.98 million in 2015 and the 2020 estimate 108.77 million
- 3) Calamities – frequent typhoons, volcanic eruptions, floods, and earthquakes.
- 4) Eight (8) major languages and more than 170 indigenous languages.
- 5) Filipino and English are official languages of instruction and business, and:







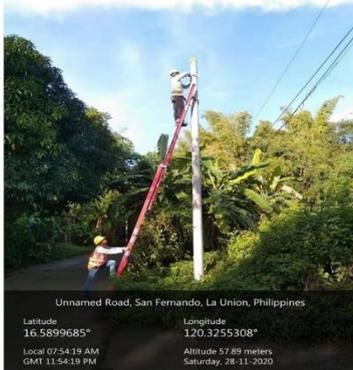
TIESEA PROJECT



Network Readiness Index (NRI) Rank of the Philippines in 2021

- **83rd** out of the 130 economies included 2021 NRI.
- **Strong performance** is in the area of **Impact** while **Technology** needs attention
- Indicators where the country has high performance: **E-commerce legislation, High-tech exports, and ICT services**
- **Weak indicators:** digital payments, and **SDG 4: Quality Education**

Source: Portulans Institute (Source: Portulans Institute)



Unnamed Road, San Fernando, La Union, Philippines
 Latitude: 16.5899685° Longitude: 120.3255308°
 Local 07:54:19 AM Altitude 57.89 meters
 GMT 11:54:19 PM Saturday, 28-11-2020





TIESEA PROJECT



INFRASTRUCTURE:

The telecommunication sector of the country is improving,

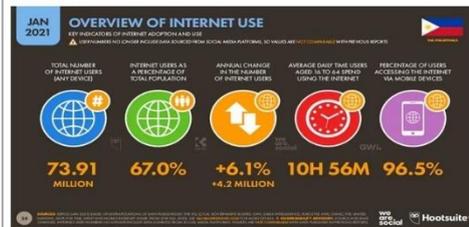
- However, the **geographically dispersed** country spread and **natural disasters** impede upon connectivity.
- The **digital economy** country is a **robust sector** in the Philippines. USD7.5 billion and is expected to grow 30 per cent annually --USD28 billion by 2025
- With an estimated **reach of 67.0% of the population in January 2021**, the Internet sector contributes significantly to the Philippine economy.



- 2021: 152.4 million mobile connections (138.2% of the total country population). 89 million people (80.7% of population) used their mobile phones , mostly social media users.
- By 2025, it is estimated that mobile phone users in the country would reach almost 90 million.

- Mobile phones (any type), as well as smart phones: **most popular among users aged 16 to 64.**
- Laptop or desk top computers are the second most use, followed by tablet devices, non-smart mobile phones, games consoles, smart watch or wristbands, streaming sticks or devices, smart home devices, and lastly, virtual reality devices.
- 2021: 152.4 million mobile connections (138.2% of the total country population). 89 million people (80.7% of population) used their mobile phones , mostly social media users.

- By 2025, it is estimated that mobile phone users in the country would reach almost 90 million.



- Internet users aged 16 to 64 spend about 10 hours daily for social purposes.

- 96.5 % of the 73.91 million users access the Internet via their mobile devices There is high acceptance of mobile phones
- Internet users aged 16 to 64 spend about 10 hours daily for social purposes.



- **Major challenge: Internet speed.**
- **Many sectors, especially the business sector and the education sectors.**

(Source: Kemp, 2021)

**Power Supply and Electricity Access:
2020 Household Electrification Level**

Year	Electrification Level (%)
2008	83
2009	84
2010	85
2011	86
2012	87
2013	88
2014	89
2015	90
2016	91
2017	92
2018	93
2019	94
2020	94.5

- The household electrification level in the Philippines stands at 94.5%
- Infrastructure remains expensive,
- The geographically scattered islands– difficult to get good telecom infrastructure

Electrification of households/schools

- 2019: **1,885,507 unserved households** (7.7 %) of total households in the country
- 2020: **2,414 schools** that did not have electrical supply, (DepEd Memo, 2020)
- **350,000 learners and 14,000 teachers** were not to avail of the remote learning materials

ADB JFPR Japan The People of Japan TIESEA PROJECT ibf LearningPossibilities

RADIO TV BROADCASTING STRUCTURE

- Robust communication structures: 952 radio stations; 3 major TV channels with nationwide coverage, with provincial sister stations; more than 400 cable stations and community stations
- In 2020 --- **45,869 classrooms with television sets**, projectors and laptops that support ICT-assisted teaching in school
- **DepEd and TESDA have partnership arrangements** with the National Telecommunication Commission (NTC) in the airing and transmission of the radio-based and TV-bases lessons, for free.

CONTENT CREATION

- **DepEd: 2020 Learning Continuity Plan (LCP)** distance education via Radio-based and TV-based lessons. Develops **Digital Literacy Skills** via 39,052 ICT packages.
- **TESDA Online Program (TOP):** a web-based platform that offers **Massive Open Online Courses (MOOCs)**, training at the learner’s own space and time.

ADB JFPR Japan The People of Japan TIESEA PROJECT ibf LearningPossibilities

ONLINE ACCESS TO CURRICULUM CONTENT

- Aired by radio/TV facilities, for free. Printed modules are provided to the learners by delivery outfits.
 - Parents are trained to guide their children and help them with their lessons/ related activities. Parents meet the teachers once a week to get the weekly learning guides and consult the teachers on their concerns/ difficulties.

GOVERNMENT POLICY

Policy Development.

- The Philippine Digital Transformation Strategy of 2022 (PDTs 2022): developed by the Department of Information and Communications Technology
- Strides in the development of the ICT landscape focuses on Internet infrastructures, to serve business, academe, sciences and community

Funding: ICT Budgets of DepEd and TESDA: increases in budget for their computerization program.

- For 2022: **P19.7 billion DepEd budget** includes funds for ICT equipment/facilities.

ADB JFPR Japan The People of Japan TIESEA PROJECT ibf LearningPossibilities



ECCD Council

- Health, Nutrition, Early Education, and Social Services for children ages 0-4 years



DepEd

- Kindergarten
- Elementary
- Junior High School
- Senior High School
- Alternative Learning System



TESDA

- Post-Secondary Non-Tertiary Education
- Associate Degree / Short-Cycle Tertiary Education



CHED

- Associate Degree / Short-Cycle Tertiary Education
- Bachelor level education
- Advanced / Post-Graduate level
- Post-Baccalaureate
- Master
- Doctorate

Interface between the four components of the Philippine education system.

- The Senior High School Level SHS is two years of specialized upper secondary education
- Learners master concepts, knowledge and skills to prepare for
 - tertiary education, or
 - middle-level skills development or employment.

SHS offers four tracks: Academic; Technical-Vocational-Livelihood; Arts and Design; and Sports.





TIESEA PROJECT



LearningPossibilities

Philippine Qualification Framework (PQF) is the main guiding body in education and performance measurement of both DepEd and TESDA ICT-based initiatives

LEVEL

- L8
- L7
- L6
- L5
- L4
- L3
- L2
- L1

BASIC EDUCATION

GRADE 12

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT

- NC I
- NC II
- NC III
- NC IV
- DIPLOMA

HIGHER EDUCATION

- BACCALAUREATE
- POST BACCALAUREATE
- DOCTORAL AND POST DOCTORAL

- inter-agency program composed of DepEd, TESDA, CHED, Professional Regulation Commission (PRC) and Department of Labor and Employment (DOLE).
- Aims to address gaps in the education, training, professional, and industry sectors. Its goal is to align the national training programs with international standards.
- Establishes: Levels of educational qualifications and sets the standards for qualification outcomes.
- A quality-assured national system for the development, recognition, and award of qualifications based on standards of knowledge, skills and values acquired in different ways and methods by learners and workers of the country.





TIESEA PROJECT



LearningPossibilities



Training: ICT Pedagogy Integration in pre-Service Teacher Training

- 847 schools offering IT courses
- Teacher Education Institutes (TEIs) have Ed Tech courses in their programs

School/Teachers: Teacher Capacity in Educational Technology

- School administrators/teachers feel the need for adequate training on ICT
- Not only teachers need preparation but also government, heads of educational institutions, academic staff, students, parents, academic recognition bodies.





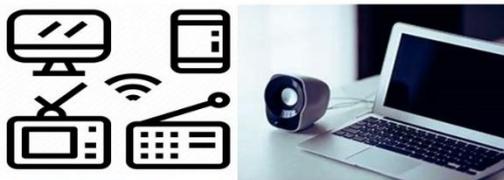
TIESEA PROJECT



LearningPossibilities

Equipment and software

- **Recent DepEd statistics:** 51% of public elementary schools and 88% of public secondary schools have computer.
- However, many schools have limited access to computers.
- Schools with large population limited resources, difficulties in scheduling.
- Another challenge: unreliable Internet connectivity: reach is only 34% of households and 49% of schools.



TIESEA PROJECT



Family and Community Support

- Filipino families have high acceptance of ICT gadgets, especially mobile phone
- Community leaders provide assistance to the delivery outfits by guiding them to the sites where students reside.
- If the students live in far-flung areas, the community leaders receive the learning packages on behalf of the students.
- Community leaders make available community facilities and resources to enable the students and the community to listen/view educational radio and TV broadcasts.



TIESEA PROJECT



ICT PROVIDERS:

Public/private partnerships on systems development and conduct of ICT-based projects

(1) **Academe**

(2) **Business sector:** Ed Tech companies

(3) **Non-government organizations.**

(4) **Publishing houses** are likewise active in developing ICT-based learning materials for Filipino learners in and out of school



TIESEA PROJECT



Alliances and Sponsorships of Ed Tech projects:**ADB (SEHS/SERD)**

- "EdTech Solutions for Last Mile Schools in COVID-19" technical assistance project (TA 6670);
- "Supporting Innovation in the Philippine Technical Vocational Education and Training System (SIPTVETS).

Partnerships with other international development agencies:

- World Bank, United States Agency for International Development (USAID), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children's Fund (UNICEF), Philippines, Korean Government.

Business/private groups Microsoft, CISCO, .Globe Telecom, Knowledge Channel, PBED

Non-government Organizations:

- Ayala Foundation
- BDO Foundation
- Philippine Business for Education (PBE),



TIESEA PROJECT

**Way-forward Prospects of Educational Technology in the Philippines: Recommended Blue print for Action**

There is a universal observation that if countries initiate measures to support continued learning during the pandemic, they turn complex educational challenges into opportunities.

The above observation is now strongly in the Philippine landscape

- ICT-assisted "remote" learning has made the education sector recognize the value of Ed Tech in the educational landscape;
- learners who are already adept at using ICT for social purposes, have learned to regard them as educational media
- Parents too, generally like being 'teachers' to their children— going through the lessons they go through with their children, learning new ideas especially those they can use in their work/ and/or home.
- Community engagement is also felt in many areas of the country.



TIESEA PROJECT

**Leveraging the use of these ICT tools/media in the interest of learning presently happens in various Philippine educational settings**

While there are issues that need to be addressed, the country has made significant progress in Ed Tech.

RECOMMENDED BLUEPRINT FOR ACTION

1. Government support for EdTech is getting stronger... let us not lose it.
2. There is a growing market for Ed Tech management systems, and content repositories with curriculum-aligned resources.
3. Many organizations, government and non-government, are involved in Ed Tech, particularly teacher training.
4. EdTech needs a national dedicated coordinating body which shall craft the national ICT vision and strategy.
5. Develop champions who can serve as role models in the spread of Ed Tech. Ensure that there are incentives and motivation for all teachers to develop their ed tech expertise.



TIESEA PROJECT



6. School leaders should be capacitated to take lead roles in building teaching capacity, setting expectations for technology use, supporting evaluation of technology benefits and selecting products to be used.
7. Develop appropriate standards on Ed Tech integration, selecting products, and leveraging the attributes of technology for quality learning..
8. Improve marketing/distribution channels for open educational resources as well as commercial products.
9. Help teachers find resources that meet their needs before embarking on digital lesson development.
10. Conduct more independent evaluation of what works, for whom, and under what circumstances needs to be coupled...communicating results and encouraging teachers to act upon these findings.



TIESEA PROJECT



Ed Tech is a learning strategy whose time has come **MABUHAY!**



TIESEA PROJECT



Annex 6: List of Philippines country workshop participants

No.	Name	Last Name	Organisation	Job Title	Gender
1	Adrian Brian	Sabanal	TESDA	TESDS II	Male
2	Albert	Flores	Rex Education	Chief Design Officer	Male
3	Anthony	Cortez	TESDA	Sr. TESD Specialist	Male
4	Ariel	Delos Santos	Department of Education- Las Pinas City National Science High School	Master Teacher 1- Senior Educational Technology Specialist	Male
5	Bernadine	Belgrado	NIRAS International Consulting	Project and Bid Manager	Female
6	Caraga - Marcelino Ahon		DepEd Caraga	IT Officer	Male
7	Charlyn	Justimbaste	Technical Education and Skills Development Authority	Acting Assistant Executive Director	Female
8	Cherylee	Artates	Department of Education Region III	Information Technology Officer	Female
9	Chihiro	Kanno	Embassy of Japan	First Secretary	Male
10	CLGPD Sonny Ubana		Center for Local Governance and Professional Development, Inc.	Consultant for External Affairs	Male
11	Constantino	Constantino	Technical Education and Skills Development Authority	Executive Director	Female
12	Cynelle Khent Ann	Vasquez	Provincial Training Center-SIMTRAC	Job Order	Female
13	Deborah	Wyburn	TIESEA	MEL Specialist	Female
14	Diosdado	San Antonio	Department of Education	Undersecretary	Male
15	Donne	Quirante	Philippine Business for Education	Executive Assistant	Female
16	Edward	Dela Rosa	TESDA	Chief TESD Specialist	Male
17	Eileen	Dizon	Daughters of Mary Help of Christian	Program Staff	Female
18	Erlinda	Sevilla	Department of Education	Project Development Officer III	Female
19	Esther	Care	EdTech Solutions in Last Mile Schools - Philippines	Team Leader	Female
20	Fausto Jr.	Barrete	Supervising TESD Specialist	Center Administrator	Male
21	Florencio	Sunico, Jr	TESDA	Regional Director	Male
22	Gamaliel Jr	Vicente	TESDA Region VII	Regional Director	Male

23	Georgita	Arles	DOPI	Assistant Professor IV	Female
24	Hanh	Nguyen	Edtech Agency	CEO	Female
25	Hanibal	Camua	Philippine Business for Education	Deputy Chief of Party	Male
26	Hanna	Cortes	Department of Education	Department of Education	Female
27	Hannah	Remulla	Embassy of Japan in the Philippines	Senior Economic Assistant	Female
28	Hannah	Remulla	Embassy of Japan in the Philippines	Senior Economic Assistant	Female
29	Imelda	Go	TESDA BCAT	Vocational School Superintendent	Female
30	Jekyll	Cadungog	DEPED ZAMBOANGA SIBUGAY	Information Technology Officer	Male
31	Joan	Tacadena	Department of Education	Project Development Officer	Female
32	Joseph Jeric	Umangga	Department of Education	TA I	Male
33	Josue	Vacunawa	Tesda bcata	Instructor 1	Male
34	Karen	Hipol	Department for International Trade - British Embassy Manila	Senior Trade Manager	Female
35	Klarise	Cajucom	Consuelo Zobel Alger Foundation	Program Director	Female
36	Kotaro	Yamaguchi	Embassy of Japan in the Philippines	Second Secretary	Male
37	Leomar	Nepomuceno	Baguio City School of Arts and Trades	Instructor I	Male
38	Levi	Espinosa	Rex Education	Strategic Partnerships Manager	Male
39	Loida Elaine	Tibong	Department of Education	Information Technology Officer	Female
40	Lourdes	Castante	TECHNICAL EDUCATION AND SKILLS DEV. AUTH	ITO III	Female
41	Love	Basillote	Philippine Business for Education	Executive Director	Female
42	Lynette	Ysalina	TESDA	TESDS II	Female
43	Lys	Johnson	Heppell.net Ltd	PA	Female
44	Ma. Camila Francia	Meneses	TESDA	TESD Specialist I	Female
45	Madison	Mesa	TESDA	TESDA Trainer/LMS Administrator	Male
46	Maeva	Mottin	IBF International Consulting	Senior Project Manager	Female
47	Mandeep		Learning Possibilities	CTO/CIO	Male
48	MARIA	Roque	TESDA	Center Chief	Female
49	Maria Magdalena	Pomar	TESDA-DOPI	Assistant Professor I	Female
50	Maria Natividad	Uylangco	Petron Foundation /Binhi Foundation	Admin/Finance/Program Officer	Female
51	Maribeth	Chua	Department of Education	Project Development Officer	Female

52	Maricel	Barredo	TESDA-Simeon Suan Vocational and Technical College	Instructor II	Female
53	Marikit	Naguiat	BDO Foundation	Program Manager	Female
54	Mario	Deriquito	BDO Foundation	President	Male
55	Mario	Deriquito	BDO Foundation	President	Male
56	Mark	Wilson	Learning Possibilities	Support Analyst	Male
57	Mark Anthony	Sy	DEPED ICTS	Senior Technical Assistant IV	Male
58	Mark Timothy	Manaois	Department of Education	Senior Education Program Specialist	Male
59	Marylin	Muncada	Retired	not applicable	Female
60	Meena	Jamfava	Lpplus	Pa	Female
61	Mehool	Sanghrajka	Learning Possibilities	CEO	Male
62	Michael	Lightfoot	Learning Possibilities	Senior Education Consultant	Male
63	Michelle	Cruz	Department of Education	Project Development Officer	Female
64	Noel Donell	Narida	DepEd	ITO	Male
65	Noemi	Silva	Notre Dame of Marbel University	University Professor	Female
66	Novielita	Dispo	TESDA	Acting School Administrator	Female
67	ODDG-PP		TESDA	Deputy Director General	Female
68	Paulo	Yanson	TESDA	Senior TESDA	Male
69	Philip	Uys	IBF project	Education Expert	Male
70	Ptc	Simtrac	PTC-SIMTRAC	PTC-SIMTRAC	Female
71	QSO Jojo Emanuel	Guillermo	TESDA Qualifications & Standards Office	Acting Executive Director	Male
72	Redilyn	Agub	TESDA	Division Chief	Female
73	Rey	Valenzuela	Department of Education Region 4A CALABARZON	ITO 1	Male
74	Ricardo	Guinto	DepEd Region XI	Regional Information Technology Officer	Male
75	Richard	Biglete	DepEd - Schools Division of Bulacan	IT Officer I	Male
76	Ronald	Solis	Leon Ganzon Polytechnic College	Trainer	Male
77	Salvador	Deyto Jr	DepEd Regional Office V	IT Officer	Male
78	Samuel	Calado	TESDA/QSO	Sr. TESD Specialist	Male
79	Shek	Wenceslao	ADB	Associate Project Analyst	Female
80	Shirley	Panglima	MBHTE-TESD	Trainer	Female
81	Silvia	Stuffmann	IBF International Consulting	Junior Project Manager	Female
82	Solomon B.	Garcia Jr.	CASIFMAS TESDA	Assistant Professor III/Campus Head	Male
83	Stephen	Cezar	TESDA	Supervising TESD Specialist	Male
84	Stephen	Heppell	Heppell.net	CEO	Male

85	Venzel	Concoles	TESDA	Supervising TESD Specialist	Male
86	Victoria	Sibal	British Embassy Manila	Trade Manager ADB	Female
87	Zenaida	Domingo	Early Childhood care and development Council	Consultant	Female

Annex 7: Viet Nam country report presentation

VIET NAM

COUNTRY E-READINESS



Digital e-Readiness Assessment Structure
Hong Hanh Nguyen
16TH March, 2022





TIESEA PROJECT



BRIEF COUNTRY PROFILE ON EDUCATION

Population (2021)	97.75 M	Female 50.1%; Male 49.9%
K12 students	17.6 M	Non-public: 4,8% = 845K students
Universities & vocational students	1.7 M	65/ 237 non-public universities
Highest-paid-on-education region	The South East region	3.6X higher than other regions
GDP per capita	2,700 USD	
Government budget spent on education	20% - 22%	5% - 6% of GDP
Per student expenditure	700 – 1000 USD	Gov \$400 vs Family \$300 Cities/ Provinces budgets (NA)
Family income spent on education	40% – 47%	(Just after food & shelter)

- Increasing English speaking population allows easy access to international education.
- Vietnam is in a good but uneven position to become a digital powerhouse.





TIESEA PROJECT



TABLE OF CONTENT

- 01

Infrastructure

Telephony, internet connectivity, user stats | Devices, hardware | Power, electricity access | TV, radio broadcasting
- 02

Government

Policy, funding | Curriculum and content | Education performance measurement | Training
- 03

School/ teachers

Teacher capability in EdTech | Equipment and software | Governance | Community outreach
- 04

Home students/ parents

Digital literacy of students | Connectivity and devices at home | Online access to curriculum content | Community support
- 05

Providers

E-learning system | online content | Integrators, emerging tech | Partner, sponsor





TIESEA PROJECT



BRIEF MARKET INSIGHTS

- The country's **digital transformation in education** is highlighted by the Government.
- About **650** Edtech startups & providers
- The penetration rate of learning devices like smartphones & laptops is high: **~90%**
- We also have high internet connectivity rate but low speed & unstable (4G & 5G)
- Digital skills are fairly good in general (after almost 3 years coping with Covid)
- **80%** of Vietnamese students study online, higher than the world average of 67.5%
- We also have strong consumer market
- Busines in Vietnam still diven by relationships
- Following Beijing's constrains on education, Vietnam might become the next stop for foreign investments



TIESEA PROJECT



01

INFRASTRUCTURE

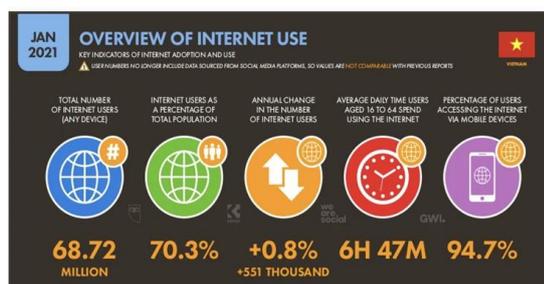
*Telephony, internet connectivity, user stats | Devices, hardware
| Power, electricity access | TV, radio broadcasting*



TIESEA PROJECT



IF 1 Telephony, internet connectivity, user stats



Source: Kemp (2021)

Internet users in Vietnam

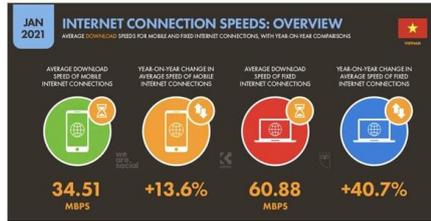
- 2010 – 2019: +45 million new mobile internet subscribers (46% of the population)
- In January 2011, there were 68.72 million internet users.
- Vietnam has **made great strides in expanding internet connectivity** from 0% of the population in the late 1990s to 64% today
- Internet penetration in Vietnam stood at 70.3% - Jan, 2021, (Kemp, 2021).



TIESEA PROJECT

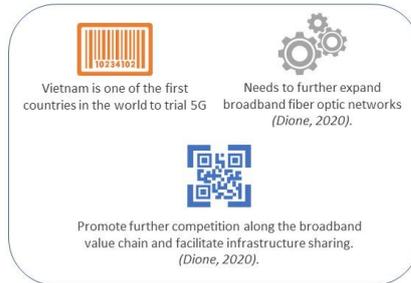


INTERNET PENETRATION



Internet connection speed in Vietnam: Overview
Source: Kemp (2021)

Vietnam needs to improve the quality and speed of its internet infrastructure
(World Bank, 2021)



Vietnam is one of the first countries in the world to trial 5G

Needs to further expand broadband fiber optic networks
(Dione, 2020).

Promote further competition along the broadband value chain and facilitate infrastructure sharing.
(Dione, 2020).

IF3 Power, electricity access

99.4% of total population in Vietnam have had access to electricity (2019)

IF4 TV/radio broadcasting

The broadcasting teaching sessions: digital divide, students' engagement with online learning, regional differences.

Challenges: limited resources, teacher's motivation, distance learning assessment, coordinating different school system, etc.

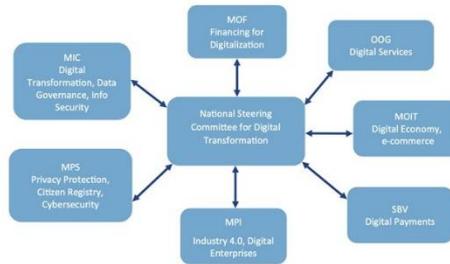


02

GOVERNMENT

Policy, funding | Curriculum and content | Education performance measurement

GOI Policy / funding



Note: MIC = Ministry of Information and Communications; MOF = Ministry of Finance; MOIT = Ministry of Industry and Trade; MPI = Ministry of Planning and Investment; MPS = Ministry of Public Security; OOG = Office of the Government; SBV = State Bank of Vietnam.

Ministerial responsibilities for the digital transformation in Vietnam



TIESEA PROJECT



Government's EdTech-related policies, plans and funding

Significant spending on education (ca. 6% of GDP)
Spending on education: approximately 20% of the total State budgetary expenditure

The Government of Vietnam's commitment to EdTech is demonstrated through policies, master plans and national initiatives

To support investment in kindergartens and K-12, in 2018, the government issued Decree No.86/2018/ND-CP, replacing Decree No.73/2012/ND-CP



Vietnam has a complex and diverse classification of the educational system

EdTech still remains a vague area under the Vietnamese legal framework

There is a gap between the relevant education regulations and the practical processes due to the remarkable development of EdTech in Vietnam



TIESEA PROJECT



03

SCHOOLS / TEACHERS

Teacher capability in EdTech | Equipment and software | Governance



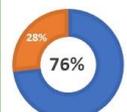
TIESEA PROJECT



ST1 Teacher capacity in edtech

Before Covid-19

- Online learning received limited attention.
- MOET issued the Circular No. 21/2017/TT-BGDĐT



Vinh, Le and others (2019)

During the Pandemic

- MOET promotes the E-learning content resources
- MOET is promoting its e-learning system.

<http://elearning.moet.edu.vn>
<https://eitsc.edu.vn>

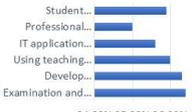
- Online learning has become a must.
- Document 4003/BGDĐT-CNTT on 7 Oct 2020

Main focusing ICT application targets

- ICT in educational administration and management
- ICT to support innovation
- Fostering IT/Digital skills
- Strengthening Infrastructure and equipment

Content for teacher's training

Content for teacher's training



24,00% 25,00% 26,00% 27,00%







TIESEA PROJECT





ST2 Equipment & Software



Available online platforms for teaching & learning in Vietnam







TIESEA PROJECT




04

HOME STUDENTS / PARENTS

Digital literacy of students | Connectivity and devices at home

Online access to curriculum content | Community support







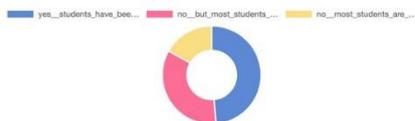
TIESEA PROJECT




SP1 Digital literacy of students

2200 teacher's responses in January 2022

4. Hầu hết các em học sinh/sinh viên đã được đào tạo để sử dụng các công nghệ cần thiết cho việc học tập trực tuyến chưa?
 TYPE: "SELECT_ONE", 2141 out of 2141 respondents answered this question. (0 were without data.)



Value	Frequency	Percentage
yes_students_have_bee...	1040	48.58
no_but_most_students_...	739	34.52
no_most_students_are_...	362	16.91



TIESEA PROJECT



SP2 Connectivity and devices at home



Early 2020
 (beginning of Covid-19 outbreak)

- The requirement to move to online education has exposed the digital divide in the region, between the children who have access to digital learning opportunities and those who do not, most of them living in remote areas.
- Many students lack Internet access, devices, and adequate digital literacy.
- Teachers are largely unfamiliar with new technology and lacking in training to effectively utilize these new tools.



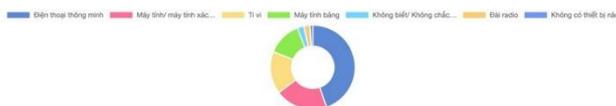
TIESEA PROJECT



SP2 Connectivity and devices at home

2200 teacher's responses in January 2022

1. Theo thầy/cô ước tính, hầu hết các em học sinh/ sinh viên (tức là > 75% học sinh/ sinh viên mà thầy/cô dạy) có thể sử dụng thiết bị nào sau đây ở nhà?
 TYPE: "SELECT_MULTIPLE", 2141 out of 2141 respondents answered this question. (0 were without data.)



Value	Frequency	Percentage
Điện thoại thông minh	1841	85.99
Máy tính/ máy tính xách tay	826	38.58
Ti vi	669	31.25
Máy tính bảng	536	25.04
Không biết/ Không chắc chắn	104	4.86
Đài radio	93	4.34
Không có thiết bị nào	47	2.2



TIESEA PROJECT



05

EDTECH PROVIDERS PUBLIC/PRIVATE PARTNERSHIPS

E-learning system | online content | Integrators, emerging tech Partner, sponsor

TIESEA PROJECT
Hanoi 3rd March 2022

LearningPossibilities

EdTech landscape Vietnam 2022

www.nguyentrihien.com

Kids – Early Childhood Education

K12

Students & Workforce

Language

For enterprise LMS, SAAS, Tool

Mentor & Venture & Agency

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LearningPossibilities

ĐƠN VỊ LÃNG TỐ CHỨC

PHÂN KHÚC MẦM NON

ĐƠN VỊ HOÀNG SA

TOP CÁC SẢN PHẨM EDTECH TRÊN THỊ TRƯỜNG VIỆT NAM

ĐƠN VỊ TRƯỜNG SA

PHÂN KHÚC GIÁO DỤC PHỔ THÔNG

PHÂN KHÚC ĐÀO TẠO DOANH NGHIỆP

ĐƠN VỊ TỔ CHỨC HOẠT ĐỘNG BANKING

ĐƠN VỊ TÀI TRỢ

TRENDS & MARKET SEGMENTS

Trends

- Blended / hybrid learning/ OMO
- LSM & CMS
- Personalized learning
- AI application
- Mobile learning
- Blockchain in education
- Gamification
- STEM/STEAM

Market segments

- K12: Test-prep & Private tutoring, STEAM / STEM content
- English language: Ielts & ToEIC
- Upskills: Soft skills & computing skills



TIESEA PROJECT



TIESEA PROJECT



THANKS FOR LISTENING!

Annex 8: List of Viet Nam country workshop participants

No.	Name	Last Name	Organisation	Job Title	Gender
1	N/a	N/a	Cantho Technical Economic College	Head Department	Male
2	Anh	Vu	Oxford University Press	Educational Consultant	Female
3	Anh Quan	Vu	Tiếng Anh Hướng Đối Tượng	Founder	Male
4	Bách	Nguyễn Duy Xuân	University Information Tehnology	Lecturer	Male
5	Bich	Duong	Duy Tan University	Teacher	Female
6	Bich Hien	Nguyen	Vinh University	Lecture	Female
7	Binh	Trần Văn	Trường Cao đẳng Cộng đồng Kon Tum	Phó Trưởng phòng	Male
8	Bổn	Lê	Trường cao đẳng cộng đồng kon tum	truong khoa	Male
9	Cahya	Ratih	SEAMOLEC	Ad Interim Deputy Director Program	Female
10	Carmen	Dang	Hocmai	Hocmai	Female
11	CDLTTP- Nguyễn Thị Mai		Trường Cao đẳng Lương thực - Thực Phẩm	Tổ trưởng Tổ Công nghệ thông tin	Female
12	Chau	Nguyen	Teach For VietNam	Fellow	Female
13	Cuong	Vu	Vinh University	Lecture	Male
14	Dân	Nguyễn Bình	Trường Cao đẳng Cộng đồng Kon Tum	Phó Hiệu trưởng	Male
15	Danh	Dương Văn	Trường Đại học Xây dựng Miền Trung	Giảng viên	Male
16	Đào Thi	Hanh	Academy of Policy and development	Teacher	Female
17	Daryl	Chung	N/A	N/A	Male
18	Đhgd. Lâm		University of Education	Lecturer	Female
19	Diep	Bui	eJOY Learning	CEO	Female
20	Diep	Nguyen Thanh	Smart Home School	CEO	Female
21	Do	Thinh	CFI	Rector	Male
22	Duc	Le Viet	Viet Nam	Business	Male
23	Đức Anh	Tạ	Học viện Chính sách và Phát triển - Bộ Kế hoạch và Đầu tư	Chuyên viên	Male
24	Dũng	Nguyễn	ĐH Vinh	Lecturer	Male
25	Dũng	Phan Hoàng	Trường Trung cấp Bách Nghệ Thành phố Hồ Chí Minh	Hiệu trưởng	Male
26	Dũng	Phan Hoàng	Trường Trung cấp Bách Nghệ Thành phố Hồ Chí Minh	Hiệu trưởng - Nhà giáo Ưu tú, Tiến sĩ	Male
27	Dụng	Huỳnh Tấn	Trường Đại học Kỹ thuật Y-Dược Đà Nẵng	Giám đốc Trung tâm CNTT-TT và Thư viện	Male
28	Duong	Do The	APD	Technician	Male
29	Dương	Bùi	FAROS Education & Consulting	Manager	Male

30	Dương	Đỗ Thế	Học viện Chính sách và Phát triển - APD	Lecturer	Male
31	Duy	Duy	Talent Mind	Director	Male
32	Giã Tấn Việt		Trường cao đẳng công đồng Kon Tum	Giáo viên	Male
33	Giang	Trịnh	Đại học Phenikaa	Giảng viên	Female
34	Giang	Le	Beacon Media	Reporter	Female
35	Ha	Nguyen	Electric Power university	Lecturer	Female
36	Ha	Le	Galaxy Education	Associate Marketing Director	Female
37	Ha	Nguyen	Ngvina	CEO	Male
38	Ha	Dau	KidsOnline	Cofounder	Female
39	Hà	Hoàng	Trường Đại học Tây Bắc	Giảng viên	Female
40	Hà	Đặng	Trường Đại học Hoa Lư	Giảng viên	Female
41	Han	Nguyen	iGroup MangoSTEEMS Vietnam	Product Manager	Female
42	Hang	Nguyen	N/A	N/A	Female
43	Hau	Le Long	Center for Training, Research and Consulting in Economics and Business	Director	Male
44	Hieu	Nguyen	Dream Viet Education	Cofounder	Male
45	Hoang	Huyen	Đại học Phenikaa	Giảng viên	Female
46	Hoàng	Nguyễn	KDI Edu	GD Chuyên môn khu vực	Male
47	Hoàng	Nguyễn Minh	Trường Cao đẳng Cộng đồng Kon Tum	Phó Trưởng phòng Đào tạo	Male
48	Hoàng	Nguyễn	Manabie	BI Analyst	Male
49	Hoang Hai	Tran	Hanoi University of Science and Technology	Lecturer, Vice Director of Network and Information Center - HUST	Male
50	Hong Hanh	Nguyen	TIESEA team member	National Focal Point _ Vietnam	Female
51	Hung	Nguyen	Truong cao dang cong nghiep va xay dung	Giang vien	Male
52	Hung	Nguyen The	Academy of Policy and Development	Vice president	Male
53	Hùng	Tô Trọng	APD	teacher	Male
54	Huong	Tran Thi Thanh	Phenikaa University	Lecturer	Female
55	Huong	NGUYEN	HUST	Teacher	Female
56	Huong	Nguyen	Amber Online Education	L&D Specialist	Female
57	Hương	Hồ	Duy Tan University	Lecturer	Female
58	Hương	Trần Thị	Đại học Tài nguyên và Môi trường Hà Nội	Giảng viên	Female
59	Huy	Tran	Flexidata	Managing Director	Male
60	Huyen	Nguyen thi thu	đại học phenikaa	thạc sĩ, bác sĩ	Female
61	Janr	Vu	Diggin	Product Designer	Male
62	Jay	Ruparelia	Smartay Education Vietnam	Senior Partner	Male
63	John	Denny	IBF consulting	digital policy specialist	Male
64	Khang	Bùi	Tada edtech platform	Account management officer	Male
65	Khanh	Tran Ngoc	GARASTEM	Teacher	Male
66	Khanh	Nguyen	Stemhouse	Teacher	Female
67	Khanh	Nguyễn	Công ty CP Công nghệ Giáo dục Tri thức số Việt Nam DK EDTECH	Trợ lý Tổng Giám đốc	Female

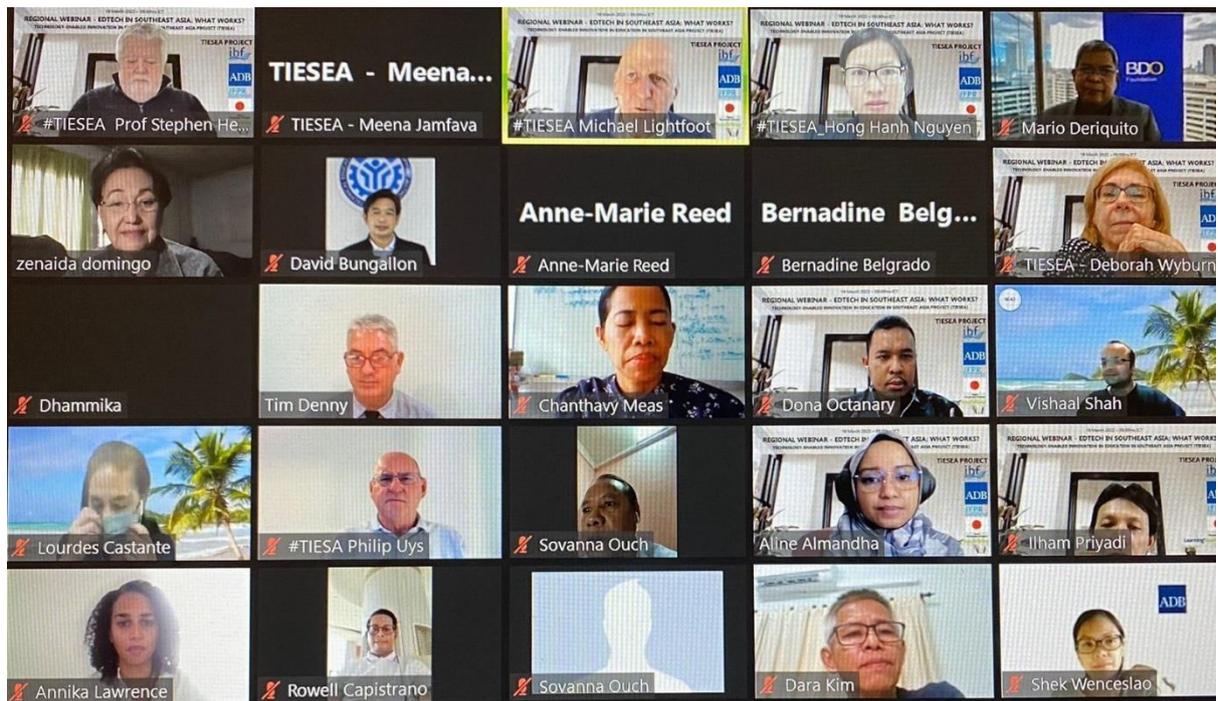
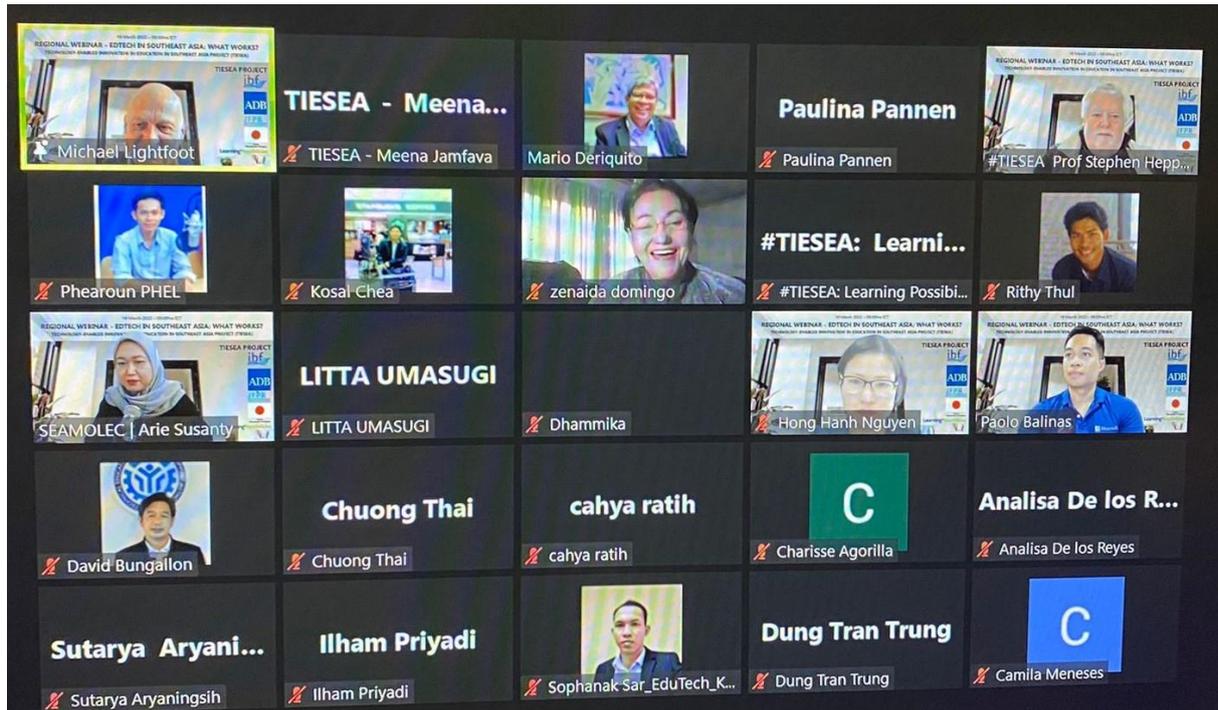
68	Khanh Do		Phenikaa University	Lecturer	Male
69	Kien	Nguyen	KDI Education	Curriculum R&D Manager	Male
70	Kiên	Vũ	Trường CĐ nghề Hà Nam	Phó hiệu trưởng	Male
71	Lam	Dong	Duy Tan University	Specialist	Female
72	Larry	Nelson	Microsoft Corp	Regional GM, Education	Male
73	Laura	Phan	iZi	Founder/CEO	Female
74	Le	Dinh Luc	DOL English	CEO	Male
75	Lê Thành Vinh	Lê	Trường CĐCD Kon Tum	Trưởng khoa Y	Female
76	Lê Thị	Nhi	Talent Mind Education	Instructional Designer	Female
77	Lê Văn	Mạnh	Trường Cao đẳng cộng đồng Kon Tum	Phó trưởng khoa	Male
78	Lien	Pham	APD	Lecturer	Female
79	Lily	Nguyen	Wisestudy	Academic Manager	Female
80	Linh	Tong	Smartay Education	Director of Business Development	Female
81	Linh	Trần	VTVlive	Giám đốc kinh doanh	Female
82	Linh	Nguyen	ClassIn	Business Development Manager	Male
83	Linh	Đào Ngọc	Thuongmai University	Lecturer	Female
84	Linh	Nguyen	Phenikaa University	Lecturer	Female
85	Linh	Nguyen	Phenikaa university	Doctor	Female
86	Linh	Nguyen Hoang	Academy of Policy and Development	Giảng viên	Female
87	Luan	Can	Linagora	Elearning Manager	Female
88	Luận	Lê Minh	Trường Cao đẳng Y tế Đồng Tháp	Trưởng phòng	Male
89	Meena	Jamfava	LP	PA	Female
90	Michael	Lightfoot	LP	Senior Consultant	Male
91	Minh	Tran	Academy of Policy and Development	Lecturer	Male
92	Minh Anh	Nguyễn	OMT	Edtech	Female
93	Minh Trang	Ngo	Vietnet-ICT	Director	Female
94	Mui	Luong	Victory School	Teacher	Female
95	Nam	Lai	ClassIn	BD	Female
96	Natrisha	Kaur	Tech JDI	Business Development Executive	Female
97	Ngan	Huynh	Talent Mind Education	E-learning Course Developer	Female
98	Ngô	Thị Hiếu	Tay Nguyen university	Lecturer	Female
99	Ngọc	Vũ	Phenikaa University	Coordinator, External Engagement Office	Female
100	Ngoc Phuoc Thinh	Dinh	Duy Tan University	Admissions Specialist	Male
101	Ngọc Thuý	Nguyễn	ĐH Tây Bắc	Giảng viên	Female
102	Ngọc Tú	Lê Đàm	Trường Đại học Xây dựng Miền Trung	Head of Science and International	Female

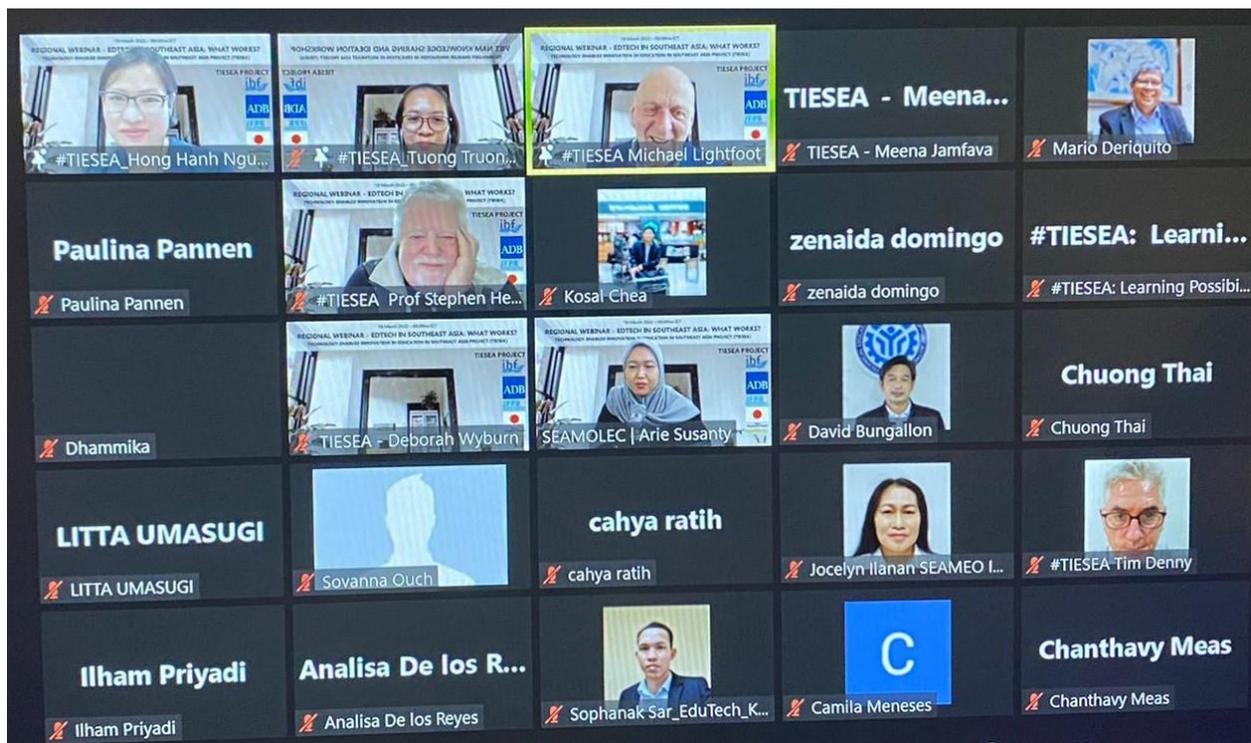
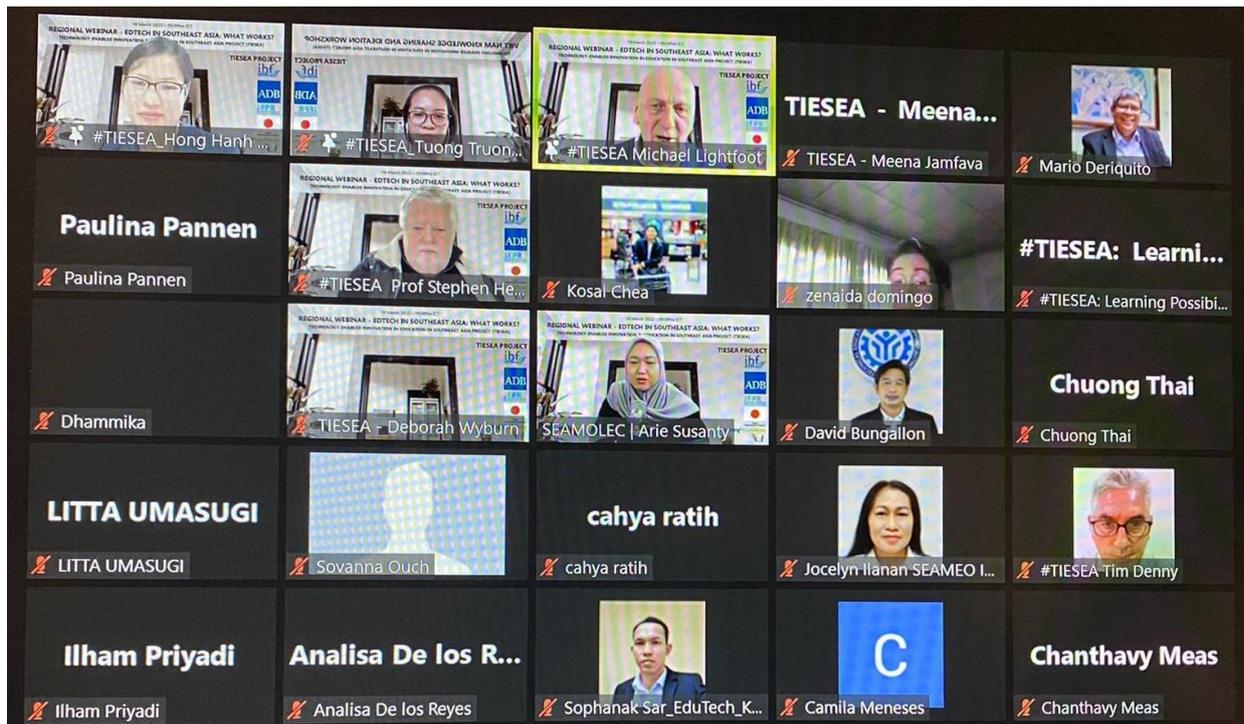
				Cooperation Department	
103	Nguyen	Le	DKEDTECH	Project manager	Female
104	Nguyễn	Hoàng Tuấn	iSMART	Specialist	Male
105	Nguyễn	Mỹ Chánh	Happy Homeschool	teacher	Female
106	Nguyễn Đình	Nam	Phenikaa University	Senior Lecture of Medicine	Male
107	NGUYỄN THỊ	VÂN	Electric Power University	English Lecturer	Female
108	Nguyễn thị Bích hạnh		Trường cao đẳng cộng đồng kon tum	Giảng viên	Female
109	Nguyễn Văn	Đức	Trường Cao đẳng Lương thực - Thực phẩm	Trưởng phòng Đào tạo	Male
110	Nhan	Do	ClassIn	Head of Product	Male
111	Nhi	Truong	iSMART EDUCATION	Product Content Manager	Female
112	Nhi	Pham	Galaxy English Center	English Teacher	Female
113	Nhung	Thu	Soonsu	marketer	Female
114	Nương	Võ Thị	Trường Đại học Xây dựng Miền Trung	Chuyên viên Phòng KH&HTQT	Female
115	Paulina	Pannen	ICE Institute, Universitas Terbuka	Chairman	Female
116	Pham Dinh	Tai	DTU university	lecturers	Male
117	Phan Công	Nam	Trường đại học Duy Tân	Chuyên viên - Phòng Đào tạo	Male
118	Phat	Nguyen	BenQ	BDE	Male
119	Philip	Uys	IBF project	ed expert	Male
120	Phúc	Trần	Technology and Economics Lam Dong College	Teacher	Male
121	Phúc	Đỗ	VNG	Staff	Male
122	Phục	Nguyễn	Trường Cao đẳng Cộng đồng Kon Tum	KTCC	Male
123	Phước	Hà Vĩnh	VLU	Staff	Male
124	Phuong	Phan Kim	Ban Mai school	English Teacher	Female
125	Phuong	Phan	GARASTEM EDUCATIONAL TECHNOLOGY JOINT STOCK COMPANY	Co-founder & COO	Male
126	Phuong	Nguyen	HOCMAI Education Inc	Head Of Mobile Growth	Male
127	Phuong	Phung	IEG Global	Facility Manager	Female
128	Phuong	Nguyen	Academy of Policy and Development	Lecturer	Female
129	Phương	Nguyễn Hoài	Trường Cao đẳng THACO	Trưởng phòng Hợp tác	Male
130	Quang	Mai	Online Music Education JSC	CEO	Male
131	Quang-Vinh	Tran	Phenikaa University	Dean	Male
132	Quốc Toàn	Phùng	Đại học Phenikaa	Giảng viên	Male
133	Silva	Nguyen	HPS	CTO	Male
134	Silvia	Boscolo	IBF International Consulting	Senior Project Manager	Female
135	Son	Pham	OP	Founder	Male
136	Sơn	Trương	Education	Teacher	Male
137	Sơn	Lê	Robusta	MD	Male
138	Sorina	Chiva	IBF International Consulting	Senior Manager	Female
139	Stephen	Heppell	Heppell.net	CEO	Male

140	Tám	Trần Văn	Trường CĐ nông nghiệp nam bộ	Nông nghiệp	Female
141	Tám	Trần Văn	Trường CĐ Nông nghiệp Nam Bộ	Phó Hiệu trưởng	Male
142	Tara	Nguyen	Yolearn	COO	Female
143	Tất Thành	Phạm	Trường Cao đẳng nghề Hà nam	Giảng dạy CNTT	Male
144	Thai	Hoang	Phenikaa University	Teacher	Male
145	Thai Son	Nguyen	Tra Vinh university	Dr.	Male
146	Thang	Le Toan	AT.COM Ltd	CIO	Male
147	Thanh	Pham	Trường Đại học Hoa Lư	Lecturer	Female
148	Thanh	Nguyen	Sài Gòn Mio	Vice director	Male
149	Thanh Huy	Võ	MienTrung University of Civil Engineering	Head of Department	Male
150	Thanh Nam	Tran	VNU	lecturer	Male
151	Thanh Phong	Phạm	Cantho Technical Economic College	Head Department	Male
152	Thanh Tuấn	Nguyễn	College of Industry and Construction	Head of Training	Male
153	Thảo	Phạm Thị Phương	Đại học Phenikaa	Lecturer	Female
154	Thảo Nguyễn		Talent Mind Education	Elearning developer	Female
155	Thị Hoài Thanh	Lê	Nha Trang National College of Pedagogy	Lecturer	Female
156	Thị Nhung	Dao	Phenikaa University	Lecturer	Female
157	ThongChau V.T		University of Agriculture and Forestry, Hue University	Lecturer	Male
158	thu	Pham	Singapore International School	Deputy General Manager	Female
159	Thu	Vo	PHX Smart School	Marketing	Female
160	Thu Anh	Pham	Phenikaa University	English Lecturer	Female
161	Thuy	Nguyen	Smartay Education	Marketing Director	Female
162	Thuy	Bui	Hanoi University of Science and Technology	Deputy Head-External Affairs Office	Female
163	Thúy	Nguyễn Thị	Phenikaa university	Doctor	Female
164	Thùy Dương	Nguyễn	Cantho Technical Economic College	Officer	Female
165	Tiêm	Phan	Trường Cao đẳng THACO	Hiệu trưởng	Male
166	Tiến	Võ	Trường Đại học Phạm Văn Đồng	Giảng viên	Male
167	Trà	Trần	APD	Teacher	Female
168	Tram	Nguyen	Snapask	Program Manager	Female
169	Tran	Kim Khanh	Tra Vinh University	MS	Female
170	Trần Quang Huy		Kon Tum Community College	Vice Dean	Male
171	Trần Thị	Hợp	Doan Thi Diem Ha Noi Primary School	RnD Executive	Female
172	Trần Thị Quỳnh Chang		Vietnam	Study	Female
173	Trang	Trinh	Google Education	Project Coordinator	Female
174	Trang	Tran	Đại học Fulbright Việt Nam	YSEALI Academy Interim Director	Female
175	Trang	Bui	Insignia Ventures Partners	Investor	Female
176	Tri	Bui	Ruangguru	Product Manager	Male

177	Trong Tin	Nguyen	iSMART Education	Senior Product Content Development Specialist	Male
178	Trung	Nguyễn	Viet Nam	giảng viên	Male
179	Truong	Huong	Unilever	HR	Female
180	Tu	Nguyen	Galaxy Education	Director Assistant	Female
181	Tuan	Tran	Trường cao đẳng Công nghiệp Thanh Hóa	Giảng viên	Male
182	Tuan	Nguyen	Tbump	IT	Male
183	Tuan	Pham	EA	PM	Male
184	Tuấn	Hoàng Anh	AT.COM Co., Ltd.	CEO	Male
185	Tuấn Anh	Mai	Hoang Minh JSC	Pre-Sale - Designer	Male
186	Tung	Nguyen	Smartay	Director	Male
187	Tung	Pham	Amber Academy	L&D	Male
188	Tuyet	Ngo	UNICEF	Digital Learning & Skills Officer	Female
189	Vân	Lê Thị Ngọc	ĐH Cần Thơ	Chuyên viên có tham gia công tác giảng dạy	Female
190	Văn Long	Phạm	Haiphong College of Tourism	Principal	Male
191	Văn Lực	Ngô	Phenikaa University	Lecturer	Male
192	Văn Nam	Nguyễn	Trường Cao đẳng Cộng đồng Kon Tum	Trưởng phòng NCKH&HTQT	Male
193	Vicky	Vo	TechJDI	Business Development Manager	Female
194	Viện INCRETI	Trường Đại học Tôn Đức Thắng	Trường Đại học Tôn Đức Thắng	Chuyên viên Hợp tác Quốc tế	Male
195	Việt Tú	Vũ	Easy Group	Nhân viên Marketing	Male
196	Vinh	Đặng	HOCMAI	Planner	Female
197	Vu Le Huy		Phenikaa University	Assoc. Prof., Dean	Male
198	Vương Quốc Duy		Cantho Technical Economic College	Deputy Head Department	Male
199	Xuân	Lê	Nha Trang National College of Pedagogy	Head of QA	Female
200	Yen	Cao	DTP education	Business Analyst	Female
201	Yến	Ngô	ABC	Manager	Female

Annex 9: Regional Webinar group picture





Nhung Thu Nhung Thu	Handi Pradana... Handi Pradana - SEAMOL...	MARIA ROQUE MARIA ROQUE	 Mark Timothy Manaais	 Christopher Espero
Maeva Mottin Maeva Mottin	Rob Kindness Rob Kindness	Quang Hùng Đ... Quang Hùng Đặng	Quan Ta Quan Ta	 Kaylene Fernandez
Farish Alauddin Farish Alauddin	BDO Foundatio... BDO Foundation- Marikit...	Rose Espinosa Rose Espinosa	Khải Trần Quan... Khải Trần Quang - Tay Ba...	Quyên Pham Quyên Pham
Jessa Marie Mo... Jessa Marie Motea	Ni Wayan Sanji... Ni Wayan Sanjiwani Tirta ...	Hoàng Minh N... Hoàng Minh Nguyễn	 Redilyn Agub	Hannah Legaspi Hannah Legaspi
 JERWIN RODRIGUEZ	erlinda sevilla erlinda sevilla	Anh Trinh - NHG Anh Trinh - NHG	Tuấn Hoàng Anh Tuấn Hoàng Anh	Zhigang Li Zhigang Li
 Marilyn Muncada	 Jocelyn Ilanan SEAMEO I...	 SEAMEO INNOTECH Aur...	 cahya ratih	 sorina chiva
Jian Xu	 SEAMOLEC Arie Susanty	Analisa De los R... Analisa De los Reyes	 Sophanak Sar_EduTech_K...	 Camila Meneses
Abdul Hakim Abdul Hakim	NOEMI SILVA NOEMI SILVA	Xin Long Xin Long	Chung Huỳnh V... Chung Huỳnh Văn	Morkoath Pring.. Morkoath Pring, MoEYS, ...
 Nam Nguyễn Văn	Stephen Cezar Stephen Cezar	 Lely Novia	Vesna Janevski Vesna Janevski	 DepEd Region XI - Jashua
PISEY CHET-Int... PISEY CHET-Interpreter	 SEAMEO INNOTECH-Yola...	Minh Chau Cao Minh Chau Cao	 #TIESEA - Tuan Pham - EA	Thang Le Toan Thang Le Toan

Annex 10: List of regional workshop participants

Nº	Name	Last Name	Organisation	Job Title	Gender
1	Abdul	Hakim	Educational Technology UNM	Lecturer	Male
2	Agung	Udiyanto	Bakti Nusa School	Principal	Male
3	Ahmed	Alkoofi	Quality House Consultancy	CEO	Male
4	Albert	Park	Asian Development Bank	Chief Economist and Director General	Male
5	Aldrin	Carabio	TESDA	TESD Specialist	Male
6	Alecsa	Geronimo	SEAMEO INNOTECH	Associate	Female
7	Alex	Ng	EduSpaze	MD	Male
8	Alexandra	Mocanu	IBF	Tender Manager	Female
9	Amreet Kaur	Jageer Singh	UPSI	Lecturer	Female
10	An	Le	Sylvan Learning Vietnam	Academic Head	Male
11	Ana	Rohdiana, M.Pd.	SMPN Unggulan Sindang	English teacher	Female
12	Analisa	De los Reyes	Maritime Industry Authority	Accounting Clerk (Job Orde)	Female
13	Andy Fitri Nur	Vidayanti	SMP Negeri 1 Tidore Kepulauan	Teacher	Female
14	Anh	Nguyen Tuan	Phenikaa University	Teacher	Male
15	Anh	Trinh	Nguyen Hoang Group	Platform Application Specialist	Male
16	Anne	Taylor	Microsoft	Industry Advisor	Female
17	Anne-Marie	Reed	Optimi	Mathematics Instructional designer	Female
18	Annika	Lawrence	ADB	Education specialist	Female
19	Arie	Susanty	SEAMOLEC	R&D	Female
20	Arthur	Shears	North Star Skills for Development	Owner	Male
21	Arthur Philip	Sevilla	NEDA	Senior EDS	Male
22	Attiq	Sadiq	Mott Macdonald	Education Adviser	Male
23	Aury	Atienza-Santos	SEAMEO INNOTECH	Senior Associate	Female
24	Avi	Tania	Special Olympics Asia Pacific	Manager, Health & Program Development	Female
25	Ayako	Inagaki	ADB	Director	Female
26	Benito	Benoza	SEAMEO INNOTECH	Manager, Knowledge Management and Networking Office	Male
27	Benny	Kusuma	Cloudsywft	Business Consultant	Male
28	Bernadine	Belgrado	NIRAS International Consulting	Project Manager	Female
29	Billy Andrew	Buenaflor	TESDA	TESD Specialist II	Male
30	Binh	Trần Văn	Trường Cao đẳng Cộng đồng Kon Tum	Phó trưởng phòng	Male
31	Blaise	Subbiondo	www.etap.org	President	Male
32	Bunchhang	Srun	DIT	Officer	Male
33	Cahya	Ratih	SEAMOLEC	R&D Manager	Female
34	Camila	Meneses	TESDA	TESD Specialist I	Female

35	Chan	Sophon	EMIS/MoEYS	Head Office	Male
36	Chandra	Embuldeniya	NSF Technology Development Arm	Chairman	Male
37	Chang	Trần Thị Quỳnh	Vietnam	Student	Female
38	Chánh	Nguyễn Việt	Ông	Trường ĐH Đồng Nai	Male
39	chanmony	ung	World Education Inc	M&E Manager	Male
40	Chanphoumy	Choeun	Azizas's Place Organization	General Manager	Female
41	Chanthavy	Meas	IBF International Consulting Firm	Gender Expert	Female
42	Charisse	Agorilla	TESDA	TESDA II	Female
43	Chea	Sok	school	Teacher	Male
44	Cherylee	Artates	DepEd RO 3	Information Technology Officer I	Female
45	Cheska	Castillo	NIRAS	Project Management Assistant	Female
46	Christian Leubert	Milambiling	SEAMEO INNOTECH	Researcher	Male
47	Christopher	Espero	Pangasinan State University	Instructor	Male
48	Chung	Huỳnh Văn	Trường Cao đẳng Cộng đồng Kon Tum	Giảng viên	Male
49	Chuong	Thai	Cohota	CEO	Male
50	Cinthia	Martiana	SMPN Satu Atap Pesanggrahan 2 Batu, East Java, Indonesia	Teacher	Female
51	Cinthia	Martianingsih	SMP Negeri 02 Malang, East Java - Indonesia	Teacher	Female
52	Đặng	Nguyen	PAYME	BDM	Male
53	Dara	Kim	World Education	Country Director	Male
54	David	Isaacson	Learning Design Tools	Consultant	Male
55	David	Bungallon	TESDA	Executive Director	Male
56	Deborah	Wyburn	TIESEA	MEL Specialist	Female
57	Dhammika		Ewis	Lecturer	Male
58	Định	Lường	Tay Bac University	Lecturer	Female
59	Dini AP		SMP IT Insan Mulia Boarding School Pringsewu	Laboratory Assistant	Female
60	Dirwan	Jaya	State University of Makassar	Educator	Male
61	Dona	Octanary	SEAMEO SEAMOLEC	Research and Development Staff	Male
62	Dr. Meliyanti	.	Ministry of Education Culture Research and Technology	Young policy analyst	Female
63	Dung	Tran Trung	Ninh Thuan Vocational College	Vice Rector	Male
64	Duy	Duy	Talent Mind	Director	Male
65	Eka	Julianti	Universitas Terbuka	Lecturer	Female
66	Elena	Grankova	IBF Consulting	Senior Project Support Manager	Female
67	Erlene	Umali	SEAMEO INNOTECH	Senior Associate	Female
68	erlinda	sevilla	department of education	project development officer	Female
69	Ertana	Sulooca	Mite Bogoevski	Teacher	Female
70	Estelle	Day	World Education	Senior Advisor	Female

71	Esther	Care	EdTech Solutions in LMS in the Philippines - Niras	Team Leader	Female
72	Ethel Agnes	Valenzuela	SEAMEO	Director	Female
73	Evangelyn	Medina	Asian Development Bank	Events Coordinator	Female
74	Fanensca	Tetelepta	SMP Katolik Ambon	Teacher	Female
75	Farida	Febriati	UNM MAKASSAR	LECTURER	Female
76	Farish	Alauddin	Bappenas	Staff	Male
77	Faton	Deshishku	Indeson	CEO	Male
78	Florian	Schultz	SoftwareONE	WW EDU Lead	Male
79	Giang	Nguyễn Ninh	Phung Khac Khoan High School	Chairman of the board	Male
80	Ha	Le	Galaxy Education	Associate MKT Director	Female
81	Ha	Nguyen	Electric Power University	Lecturer	Female
82	Ha	Hoang	Tay Bac university	Lecturer	Female
83	Handi	Pradana	SEAMOLEC	IT Network Officer	Male
84	Hang	Nguyen	OUP	Regional BDM	Female
85	Hanny	Maya Sari	SMPN 14 Banjarmasin	Teacher	Female
86	Hartoto	Hartoto	UNIVERSITAS NEGERI MAKASSAR	Dosen	Male
87	Hayunita Niki	Fadhilla	SDN 4 Tanggel	Headmaster of school	Female
88	Heath	Nguyen	iZi	COO	Male
89	Hian Seng	Tang	University of Manchester	Advisory Board Member	Male
90	Hien	Nguyen	Funix	Manager	Female
91	Himatullah	Masoudi	Kardan University	Executive Assistant to Registrar	Male
92	Hoàn	Trần	Phenikaa University	Lecturer	Female
93	Hoàng	Minh Nguyễn	Trường Cao đẳng Cộng đồng Kon Tum	Phó Trưởng phòng Đào tạo	Male
94	Hong Hanh	Nguyen	Edtech Agency	CEO	Female
95	Hotimah	S.Pd.Si., M.Pd.	UNM	Lecture	Female
96	Huong	Ho	UTC	Head of Elearning DP	Female
97	Hường	Ngô	Phenikaa University	Lecturer/ Researcher	Female
98	Huy	Tran	Flexible Data Co. Ltd.	Managing Director	Male
99	lin	Ariyanti	Universitas muhammadiyah banjarmasin	Lecture	Female
100	Ilham	Priyadi	SEAMOLEC	R&D STAFF	Male
101	Imran	Asnawi	SMP Muhammadiyah Lajoa	Teacher	Male
102	Indah Eko	Cahyani	SMKN 1 SLAWI	Teacher	Female
103	Jacqueline	Ali	TESDA	Supervising TESD Specialist	Female
104	Jailyn	Puerto	SEAMEO-INNOTECH	Senior Associate	Female
105	Jamjam	Muzaki	Seknas SPAB Kemendikbudristek	Expert	Male
106	Janr	Vu	Diggin	Designer	Male
107	Jashua	Wong	DepEd Region XI	CMT-I	Male
108	Jasmina	Debeljak	Cardno Emerging Markets, US Ltd.	Deputy Chief of Party	Female
109	Jefri	Wungko	SDN TANAMAWAU	KEPALA SEKOLAH	Male

110	Jeremiah Ligaya	Benabaye	TESDA VII-Cebu	TESD Specialist II	Female
111	Jerwin	Rodriguez	TESDA	TESD Specialist II	Male
112	Jessa Marie	Motea	TESDA-Central	Civil Engineer	Female
113	Jian	Xu	ADB	Sr. Education Specialist	Male
114	Jocelyn Rose	Ilanan	SEAMEO INNOTECH	Officer	Female
115	John	Henly	Independent Consultant	Education Specialist	Male
116	Junaedy	N/A	KPI	GA	Male
117	Kamnab	Kuoch	DIT	Vice chief of office	Male
118	Kaylene	Fernandez	SEAMEO INNOTECH	Senior Associate	Female
119	Khải	Trần Quang	Trường Đại học Tây Bắc	Giảng viên	Male
120	Khang	Bui	TADA EDTECH PLATFORM	ACCOUNT MANAGEMENT OFFICER	Male
121	Kiên	Nguyễn Minh	Galaxy Education	Product Manager	Male
122	Kosal	Chea	Country Expert	Independent Consultant	Male
123	Larry	Nelson	Microsoft	General Manager	Male
124	Latifah Pisak	A Rahman	SMPN 5 Seteluk	Teacher	Female
125	Laura	Phan	iZi	Founder/CEO	Female
126	Lauren Nerisse	Bautista	SEAMEO INNOTECH	Specialist	Female
127	Lay	Davy	Ministry of Agriculture Forestry and Fisheries	Vice official	Female
128	Lê Huy	Vũ	Phenikaa University	Assoc. Prof., Dean of Faculty of Mechanical Engineering and Mechatronics	Male
129	Lê Văn	Mạnh	Trường Cao đẳng cộng đồng Kon Tum	Phó trưởng khoa	Male
130	Lely	Novia	Universitas Negeri Makassar	Lecturer	Female
131	Leng	Socheat	PTEC	Lecturer	Male
132	Linh	Nguyen	tập đoàn nguyên hoàng	Tk ct hđqt	Male
133	Litta	Umasugi	SMP NEGERI 5 TIDORE KEPULAUAN	ENGLISH TEACHER	Female
134	Lolita	Andrada	PPH Educational Foundation	Consultant	Female
135	Loren Alyssa	Campeña	Consuelo Foundation	Program Officer	Female
136	Lorraine	Parkin	Inclusiv Education	Educational Designer	Female
137	Lourdes	Castante	TECHNICAL EDUCATION AND SKILLS DEV. AUTH	ITO III	Female
138	Lovemore	Gwanzura	University of Zimbabwe	Professor	Male
139	LUAN	CAN	LINAGORA	ELEARNING MANAGER	Female
140	Lynn	Lynn	Special Olympics Asia Pacific	Director	Female
141	Madhu	Sharma	Gyan Global Consultancy	Founder	Female
142	Maeva	Mottin	IBF	Senior Project Manager	Female

143	Maka	Makhatadze	IT Academy STEP	Director	Female
144	Mandeep	Dhillon	LP	CTO	Male
145	Manuja	Somarathne	EWIS	General Manager	Male
146	Maria	Roque	TESDA	Chief TESDS	Female
147	Maria Natividad	Uylangco	Petron /Binhi Foundation	Senior Officer	Female
148	Maricel	Barredo	TESDA-Simeon Suan Vocational and Technical College	Instructor II	Female
149	Marikit	Naguiat	BDO Foundation	Program Manager	Female
150	Mario	Deriquito	BDO Foundation	President	Male
151	Mark Anthony	Sy	Department of Education	Senior Technical Assistant IV	Male
152	Mark Timothy	Manaois	Department of Education	Senior Education Program Specialist	Male
153	Marvin	Daguplo	SLSU-Tomas Oppus	Faculty	Male
154	Marylin	Muncada	None	Individual Consultant	Female
155	Maulina	Zaidatul Ma'rifah	School	Young Teacher	Female
156	Mayra Christina	Ambrocio	Laguna University	Associate Professor 2	Female
157	Meena	Jamfava	LP	PA	Female
158	Memet	Casmat	Universitas Terbuka	Lecturer	Male
159	Merel	Luichies	VVOB in Cambodia	Country Programs Manager	Female
160	Michael	Lightfoot	LP	Consultant	Male
161	Michelle	Cruz	Department of Education	Project Development Officer III	Female
162	Mike	Michalec	EdTech Asia	Director	Male
163	Minh Chau	Cao	Phenikaa University, Hanoi, Vietnam	Teacher	Male
164	Moh. Fikri	Bungel	SMP N 1 Balantak	Teacher	Male
165	Moh. Iqbal	Assyauqi	UIN Antasari	Lecturer	Male
166	Morkoath	Pring	General Secondary Education Department, MoEYS	Director	Male
167	Nam	Pham	Microsoft	CSM	Male
168	Nam	Lai	ClassIn	BD	Female
169	Nam	Nguyễn Văn	Trường Cao đẳng Cộng đồng Kon Tum	Trưởng phòng Nghiên cứu khoa học và Hợp tác quốc tế	Male
170	Nancy	Dhiman	Apar	Business Head	Female
171	Natalja	Rodionova	IT Academy STEP Cambodia	Managing Director	Female
172	Nenalyn	Toledo	Jose P. Rizal National High SCHOOL	Teacher	Female
173	Nghi	Nguyen	VNPT	PO	Male
174	Ngô	Lực	Phenikaa University	Lecturer	Male
175	Nguyen	Van Vo	VOZGA	CEO	Male
176	Nguyen Ngoc Bich		N/A	Educator	Female
177	Nguyễn Thị Thu Châu		Đại học Tây Bắc	Giảng viên	Female
178	Nhan	Do	ClassIn	Head of Product and Partnership	Male
179	Nhung	Thu	Soonsu edu	Marketer	Female

180	Ni Wayan	Sanjiwani Tirta Wiryana	SMP NEGERI 2 KEDIRI	Teacher	Female
181	Nida	Quimuyog	University of Rizal System	Administrative Officer	Female
182	Noemi Silva		Notre Dame of Marbel University	University Professor	Female
183	Nugraha	Sofian ST	SMP Harjamukti Depok	Teacher	Male
184	Nuke	Prabawati	SMA N 1 SEYEGAN	Teacher	Female
185	Nur	Hikmah	UNM	Lecturer	Female
186	Nuri	Martini	Sekolah Victory Plus	Teacher	Female
187	Olivia	Basrin	Google Education Indonesia	Country Lead	Female
188	Paolo	Balinas	Microsoft	Manager	Male
189	Paulina	Pannen	ICE Institute, Universitas Terbuka	Chairman	Female
190	Phearoun	Phel	Ministry of Education, Youth and Sport/Cambodia	Deputy Director	Male
191	Philip	Uys	IBF	Ed expert	Male
192	Phuong	Phung	IEG Global	Facility Manager	Female
193	Pisey	Chet	Freelance Interpreter	Interpreter	Male
194	Puthy	Kann	Primary education department	Deputy director	Male
195	Putri	Sri Jayanti	SMA Negeri 3 Banjar	Teacher	Female
196	Quan	Ta	Free	Investor	Male
197	Quan	Vu	Tiếng Anh Hướng Đối Tượng	Teacher	Male
198	Quang Giảng	Vũ	Trường Đại học Tây Bắc	Hội thảo	Male
199	Quang Hùng	Đặng	Hệ thống giáo dục HOCMAI	Phó tổng giám đốc	Male
200	Quyên	Pham	Microsoft	Business Development Manager	Female
201	Rabiul	Awal	SMP Negeri 2 Suralaga	English Teacher/ Vice Principle	Male
202	Rahma Dhani	Tanjung	SMKN 1 Tugala Oyo	Teacher	Female
203	Ratha	Nou	KAPE	Monitoring and Evaluation Officer	Male
204	Remi	Kalir	Independent Consultant	Independent Consultant	Male
205	Rey	Lorenzo	TESDA	Senior TESD Specialist	Male
206	Richard	Biglete	DepEd - SDO Bulacan	IT Officer I	Male
207	Rithy	Thul	KOOMPI	CEO	Male
208	Rob	Kindness	CENTURY Tech	International Schools Manager	Male
209	Rochelle S.	Mercado	DepEd	Head Teacher I	Female
210	Rommel	Rosita	DepEd - Alitagtag National High School	Teacher III	Male
211	Ronald	Solis	Leon Ganson Polytechnic College	Trainer	Male
212	Ronel	Geraillo	Arellano University Elisa Esguerra Campus	SHS Teacher	Male
213	Rosalina	Constantino	Technical Education and Skills Development Authority	Executive Director	Female

214	Rose	Espinosa	BDO Foundation	Program Director	Female
215	Rowell	Capistrano	Department of Education	Supervising Education Program Specialist	Male
216	Rowena	Reyes	DepEd- NNHS	Teacher III	Female
217	Ryan	Tran	UEH	User Management	Male
218	Saiful	Bari	MOE Indonesia	Policy Analyst	Male
219	Samang	Mengheng	MOEYS	Teacher	Male
220	Sameer	Khatiwada	Asian Development Bank	Technology and Innovation Specialist (Social Sectors)	Male
221	Sammy	Legaspi	Department of Education	ITO I	Male
222	Samsideth	Dy	Ministry of Education, Youth and Sport	Deputy Director-General for Education	Male
223	Sari	Purnamawati	PP Paud dan Dikmas Jawa Tengah	Widya Prada	Female
224	Saugadi	'	Universitas Madako Tolitoli	Dosen	Male
225	SEAMEO	Secretariat	SEAMEO	Specialist	Female
226	Setiana	Gregorius	Darma Bangsa School	Teacher	Female
227	Shek	Wenceslao	ADB	Associate Project Analyst	Female
228	Sherlyne	Almonte-Acosta	SEAMEO INNOTECH	Senior Specialist	Female
229	Shriyananda	Rathnayake	Bileeta	Senior Consultant	Male
230	Sieng	Sovanna	National Institute of Education	Director	Male
231	Silvia	Stuffmann	IBF International Consulting	Junior Project Manager	Female
232	Silvia	Boscolo	IBF International Consulting	Senior Project Manager	Female
233	Sineth	Seng	MoEYS Cambodia	Deputy Director	Female
234	Sofandy	Hardiman	SD Negeri Brebes 01	Teacher	Male
235	Son Hai	Nguyen	Information Technology (IT) Department (MOET)	Director	Male
236	Sophanak	Sar	Kampuchea Action to Promote Education (KAPE)	EdTech Coordinator	Male
237	Sophat	Monh	Sovannaphumi School	Teacher	Male
238	Sophea	Mar	ADB	Sr. Social Sector Officer (Education and Skills)	Male
239	Sorina	Chiva	IBF	Expert Relation Manager	Female
240	Sovanna	Ouch	Interpreter (English-Khmer)	Interpreter (English-Khmer)	Male
241	Sovireak	Biv	NTC Training Center	Training Team	Male
242	Sri	Rejeki	BAP	Teacher	Female
243	Sri Renani	Pantjastuti	Ministry of Education, Culture, Research and Technology, Indonesia	Widyaprada Ahli Utama (Senior Expert for Education Quality Assurance)	Female
244	Stephen	Heppell	Heppell.net	CEO	Male
245	Stephen	Cezar	TESDA	Supervising TESD Specialist	Male
246	Steve	Tran	VietED	PM	Male
247	Susanto	Susanto	Unikal	Lecturer	Male

248	Sutarum	Wiryono	ADB	Senior Project Officer	Male
249	Sutarya	Aryaningsih	SDN 003 Batu Aji	Teacher	Female
250	Sutarya Aryaningsih, S.Pd		SDN 003 Batu Aji	Teacher	Female
251	Tam	Vu	VKX	Head of Software Division	Male
252	Tara	Nguyen	Yolearn	COO	Female
253	Tatang	Muttaqin	Bappenas	Director	Male
254	TESDA - Bianca Himaya V. Luna		TESDA	Senior TESD Specialist	Female
255	Thang	Le Toan	AT.COM Ltd	CIO	Male
256	Thanh Tung	Diep	Tra Vinh University	Vice Rector	Male
257	Thao	Nguyen Thi Phuong	UTB	lecturer	Female
258	Thu	Vo	PHX Smart School	Marketing	Female
259	Thuy	Bui	Hanoi University of Science and Technology	Deputy Head - External Affairs Office	Female
260	Thủy	Vũ	Phenikaa University	Teaching Assistant	Female
261	Thyda	Pich	JICA Cambodia	Program Officer	Female
262	Tibong, Loida Elaine G.		Department of Education	Information Technology Officer	Female
263	Tim	Denny	IBF Consulting	TIESEA digital policy specialist	Male
264	Ton	Cuong	Vietnam National University- Hanoi	Dean	Male
265	Tra-My	Nguyen	Kidspire Vietnam	Country Director	Female
266	Trần Quang Huy		Kon Tum Community College	Vice Dean	Male
267	Trang	Tran	Fulbright University Vietnam	YSEALI Academy Interim Director	Female
268	Trang	Nguyen	TEACH FOR VIET NAM EDUCATION CONSULTING COMPANY Ltd.	CEO	Female
269	Tri	Bui	Ruangguru	Product Management	Male
270	Trung	Vu	Tada Edtech Platform	Chief User Officer	Male
271	Truong	Huong	Unilever	HR	Female
272	Tu	Le Manh	Phenikaa University	Lecturer	Male
273	Tuan	Pham	EdTech Agency	PM	Male
274	Tuấn	Hoàng Anh	AT.COM Co., Ltd.	CEO	Male
275	Tuong	Truong	ClassIn	Country Manager, Vietnam	Female
276	Van	Doan	Microsoft	Education Lead	Female
277	Van Long	Pham	Haiphong College of Tourism	Principal	Male
278	Vang	Samieat	CCT	Operation Manager	Male
279	Venus Ara	Francisco	TESDA	TESDS 1	Female
280	Vesna	Janevski	WYG Turkey	Team Leader of the project	Female
281	Việt	Hà	S Edu	Teacher	Male
282	Vincent	Quah	Microsoft APAC	Regional Director, Education	Male
283	Vũ	Sen	Đại học Tây Bắc	Giảng viên	Female

284	Wahyu	Rinaningsih	SLB Negeri 10	teacher	Female
285	Wayne	James	Conceptarian Worx	ICT Manager	Male
286	Weerawat	Mongkolchoste	Nexplore	Partnership Development	Male
287	Wening Aulia	Zulkarnain	Bappenas	staff	Female
288	Xin	Long	Asian Development Bank	Senior Social Sector Specialist	Female
289	Yamanto	Isa	APSTPI	Dosen	Male
290	Yên	Ngô	ABC	Manager	Female
291	Yenny	Handayani	SMA N 3 Kota Bengkulu	Teacher	Female
292	Yinghui	Ang	3DCerts Pte Ltd	COO	Female
293	Yolanda	De Las Alas	SEAMEO INNOTECH	Senior Specialist	Female
294	Yuekun	Li	ClassIn	Global Business Development--East Asia	Male
295	Zenaida	Domingo	TIESEA	Philippines Coordinator	Female
296	Zhigang	Li	Asian Development Bank	Social Sector Specialist	Male