March 2022, No. 9

AIC Working Paper

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Acknowledgments

Authors are grateful to Dr. Prabir De, Professor and Coordinator, ASEAN-India Centre (AIC) at RIS for his guidance, valuable comments and constant support. Authors are also thankful to the reviewers of RIS for their valuable suggestions that helped improve the paper. Authors sincerely acknowledge the interactions with the TCIL team that had led to access the field level data and current status of the project. Views expressed are those of the authors. Usual disclaimers apply.

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Executive Summary

Ever since the Indian Space Research Organisation (ISRO) has launched the tele-medicine programme in 2001, it has benefitted the patients in remote areas by improving digital connectivity in the healthcare sector, saving costs of treatments, providing timely advices to the patients and assisting the medical students with continuing medical education. ISRO's tele-education programme helps in bridging the rural-urban gap in the education sector as well. With the same aim and objectives, the Government of India has initiated e-Vidhya Bharati and e-Arogya Bharati Network (e-VBAB) in 2019 as the second phase of Pan African e-Network Project (PAeNP) to help the African countries in narrowing the gaps in development and providing timely services in the areas of education and healthcare utilizing Information, Communication & Technology (ICT).

This study is a background analysis to map the opportunities India has in telemedicine and tele-education in the ASEAN region. If implemented, expansion of e-VBAB in ASEAN can serve two purposes for India: first, it will strengthen ASEAN-India partnership under ASEAN's objectives of achieving success in Industrial Revolution 4.0; and second, it secures India's position as one of the Indo-Pacific leaders in tele-medicine and tele-education though development partnership.

The primary findings of this study are as follows.

One, India's current position in medical tourism is noteworthy; however, India needs to generate public awareness about its potential to offer tele-medicine services to the world. The Covid-19 pandemic and vaccine diplomacy have extensively helped India towards this direction. More bilateral and multilateral networks and institutional mechanisms will further assist India in gaining an eminence in this field.

Two, in the case of tele-education, India is yet to be a global leader. India is yet to witness the rise in intake in higher educational institutes from the ASEAN region. This gap can be bridged by using tele-education services and by reaching out to the countries in the ASEAN region. Studies to identify the barriers in tele-education in countries like Myanmar, Cambodia and Lao PDR would help India utilize the scenario better. Simultaneously, India needs to think about short-term programmes and projects in education and the then company like EdTech to help these countries recover from the learning losses and digital divides on an immediate basis.

Three, the official position of ASEAN including the ASEAN Leaders' Statement on Advancing Digital Transformation in ASEAN and other declarations/statements allow ASEAN to cooperate with external partners in preparing the region as a digital socio-economic space. The ASEAN as a regional grouping and the countries of the region have close cooperation with Australia, the USA, China and a few other countries to facilitate the region's transformation as a cyber resilient society. India as a strategic partner of ASEAN needs to leverage on this, especially in the aftermath of the Covid-19 pandemic.
Four, India can establish institutional mechanisms with the countries of ASEAN at the bilateral level as well as at the multilateral level and strengthen the existing mechanisms to enhance digital partnership in tele-medicine and tele-education.

Five, expansion of e-VBAB to ASEAN will not be a challenge-free scenario. Challenges include issues pertaining to data privacy and customer security, regulations relating to tele-medicine, digital divide, cost of tele-education and tele-medicine and so on. More difficulties are noted down in the challenges section.

Six, to address some of the concerns, the proposed action plan has outlined the scope for short-term training and internship opportunities for students, young entrepreneurs mentoring programme, preparation of Information and Communication (IC) materials for teachers and educators on subjects based on demand, virtual networks between RMPs, patients and health workers, e-Information Center for e-VBAB at the Indian Mission to ASEAN (IMA) in Jakarta, digital literacy programme for rural areas, etc. More recommendations are given at the end of the study.

Seven, this study finally serves the purpose of the policy makers and the private sector enterprises who would like to consider ASEAN as India's next stop for e-VBAB.

1. Introduction

Since 2019, the world has experienced several unprecedented health challenges imposed by the COVID-19 pandemic. The sudden shock of the crisis makes digital platforms an imperative element to everyone's life. The ongoing pandemic has accelerated the process of digital transformation in various fields including education and medical treatment, which primarily require face-to-face interactions. The pandemic has led the countries to intensely approach education and medical consultation services on the digital platforms. Although, the online (virtual) education and consultation have already been there for a few years, however, in the time of pandemic, tele-medicine and tele-education services have grown up exponentially to mitigate the challenges both within and across borders [1].

Both India and Southeast Asia have emerged as key players in the information and communication services and made an effort to manage this unprecedented crisis with its technology know-how. Tele-medicine and tele-education had a modest beginning in India in 2001 when the Indian Space Research Organisation (ISRO) has introduced tele-medicine and tele-education programmes to improve the quality of education and reduce the knowledge gap among the backward sections within India. This can be considered as India's introduction of tele-medicine and tele-education in the beginning of the century.

Besides domestic initiatives, India has also successfully implemented tele-education and tele-medicine services in Africa. The first phase, Pan African e-Network Project (PAeNP), was initiated in 2009 and provided services through satellite and fiber-optic networks to 54 African countries. The second phase of the project was commissioned in 2019 with the aim to provide good quality education in an affordable and effective way. The redesigned project was named e-Vidhya Bharati and e-Arogya Bharati Network (e-VBAB) to make a "digital bridge" between India and Africa through two dedicated web-based portals for tele-education and tele-medicine services. Under this project, India offered 15,000 scholarships over five years, which gain high reputation among African students. This digital cooperation is an effort from the Indian side to enhance educated African youth "to meet the challenges of the 21st century knowledge economy".[2]

In this given context, this article proposes to conduct a background analysis of India's scope for expansion of e-VBAB into ASEAN region. The crucial question is what are the likely benefits of India from the expansion of e-VBAB to ASEAN? The answer to this question lies in the geo-strategic and non-tangible benefits that a country like India can count for its image as a soft and smart power in the Indo-Pacific. This is to uphold the spirit of "*Vasudhaiva Kutumbakam*" and "*Jagatguru*". The socio-cultural cooperation, knowledge sharing and capacity building are important elements of strategic partnership between countries in the contemporary international affairs.[3] In the same spirit, Prime Minister of India in his speech at the Parliament of Uganda in July 2018 reiterated that,

> "Our development partnership will be guided by your priorities. It will be on terms that will be comfortable for you, that will liberate your potential and not constrain your future… We will build as much local capacity and create as many local opportunities as possible".[4]

The existing e-VBAB is an important Indian development cooperation project that intends to link Indian universities, institutions and super-specialty hospitals in India with African educational institutions and hospitals through the internet. This programme has been popular among the African youth and is able to offer quality education in an affordable and efficient way. The success of the programme can also be replicated with other development partners, especially with countries of ASEAN. At the 18th ASEAN-India Summit in 2021, Mr. Lee Hsien Loong, Prime Minister of Singapore has stated that ASEAN could leverage India's 'vibrant technology and start-up scene' to facilitate ASEAN-India economic cooperation and enhance trade. He has also referred to the potential of ASEAN and India in digital transformation and public health cooperation.

1.1 Objectives

- To analyse the scope and opportunities for India to enhance its strategic partnership with the ASEAN region, both at the bilateral and multilateral levels, in the field of tele-medicine and tele-education.
- To list and discuss the challenges facing India and ASEAN in expanding their partnership in the field of tele-medicine and tele-education.
- To briefly understand the market potential of India in extending its reach to ASEAN, through tele-medicine and tele-education.
- To look at the existing programmes between ASEAN and other external partners in the field of tele-medicine and tele-education and recommend likely ways for India to assist ASEAN in its digital transformation.

1.2 Research Questions

In the pursuit to achieve the objectives, the article seeks to answer the following research questions:

- What is the current scenario of ASEAN's health services and education services and how it will determine the scope of India's engagement with ASEAN in tele-education and tele-medicine services?
- What are the challenges surrounding the ambitious proposal of extending e-VBAB in ASEAN and particularly the CLMV countries?
- What are the prospects of extending the e-VBAB in ASEAN countries in creating opportunities for both?
- What is the pattern of student movement between India and ASEAN?
- What are the existing infrastructural and institutional frameworks in ASEAN for telemedicine and tele-education?

1.3. Scope and Limitations

In the given context, this article analyses the scope for India to enhance its strategic partnership with the ASEAN region, both at the bilateral and multilateral levels in the field of tele-medicine and tele-education. This also narrates the challenges as well as elaborates the opportunities in

India-ASEAN partnership in tele-medicine and tele-education. A brief attempt to explain the market potential of the same has also been made to justify the objective of this paper which is, to understand and explore India's efforts in expanding e-VBAB in Southeast Asia. ASEAN's existing mechanisms in enhancing digitalization of the region, especially in the sectors of tele-medicine and tele-education are also highlighted to see where India can fit in to provide better services and emerge as a market leader. Taking this forward, the monograph also recommends some actionable programmes to achieve the desired goals.

The monograph has its limitations. It does not include the entire gamut of e-health; rather it is restricted to the field of tele-medicine. Also, this is not a market feasibility study to investigate the trade related barriers in tele-medicine and tele-education; rather, it represents the background of extending India's development partnership to some of the ASEAN countries in tele-medicine and tele-education. The strategic benefits of such an expansion would be counted as India's image as a responsible partner of ASEAN as the later wishes to achieve the goals of Industrial Revolution 4.0. This will have the potentials to serve India's interests in assisting ASEAN in Initiative for ASEAN Integration (IAI) to narrow the developmental gaps within ASEAN region. India has already started the Quick Impact Projects in Cambodia-Lao PDR-Myanmar-Vietnam (CLMV) sub-region. Therefore, expansion of e-VBAB to those areas can strengthen the existing Indian footprints in Southeast Asia. As far as the private players are concerned, this study can also offer them a pretext to conduct a market feasibility study to gauge the profitability of joint ventures or establishments of tele-medicine services and tele-education branches.

The rest of the article is arranged as follows. Section 2 discusses an overview of tele-education and tele-medicine markets and Section 3 presents India's e-VBAB initiative in Africa. A brief overview of ASEAN-India relations is then discussed in Section 4. Digitalisation in the education and health sectors of ASEAN is discussed in Section 5. Section 6 presents the existing institutional mechanisms to transform Southeast Asia as a digital socio-economic space. The scope of digital cooperation between ASEAN and India, and scope of bilateral cooperation between ASEAN countries and India is illustrated in Section 7 and Section 8, respectively. Section 9 identifies ASEAN's initiatives in tele-medicine and tele-education with other external partners. Some possible challenges for e-VBAB in ASEAN are identified in Section 10. To address these challenges, the article has classified some policy recommendations and actionable programmes in Section 11. Lastly, the conclusions are drawn in Section 12.

2. Market Overview of Tele-medicine and Tele-education: The Case of India

The progress of information and communication technology (ICT) has opened up new opportunities for education and medical services. The concept of traditional way of teaching and medical consultation is no longer considered as the primary way of receiving these services. Growth of the internet has made it possible for these conventional services to move into the web-based world. This digital transformation is slowly growing over the last thirty years. However, there has been an exponential rise in the usage of internet in the time of pandemic due to lock-down and social restrictions. It is evident that digital technology has removed the geographical barriers and has been providing services at an affordable rate.

Curran (2006) defined tele-education as "the application of information and communication technologies (ICTs) in the delivery of distance learning, has been used for many years to deliver continuing education programmes to rural health-care professionals."[5] Tele-education not only is beneficial for the medical professionals, it has been used for rural students as well and provides e-education through audio visual modes. Televisions and computers are the main modes of these distance learning programmes. According to the WHO, tele-medicine has been defined as "The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities" [6] Therefore, what follows is that the tele-education and tele-medicine are the effective ways in bridging distance and deliver the necessary services to people in need.

According to various secondary sources, the global tele-medicine market size was valued at US$ 40.21 billion in 2020, and is estimated to reach US$ 431. 82 billion by 2030, growing at a CAGR of 25.90 per cent from 2021 to 2030.[7] On the other hand, a group of researches indicated that global e-learning is expected to hit a market value of US$ 1 trillion by 2027.[8] This includes e-learning usages across the government, corporate and academic platforms. Asia-Pacific tele-medicine and tele-education markets are no exception in this trend. The Asia-Pacific is set to observe a rise from US$ 8.5 billion to US$ 22.5 billion in tele-medicine market between 2020 and 2025. Similarly, the e-learning market size is expected to reach US$ 162.16 billion by 2030.[9] Annexure 1 presents details for India's position as a destination country for higher education and medical tourism from the ASEAN region.

2.1 Tele-education and India

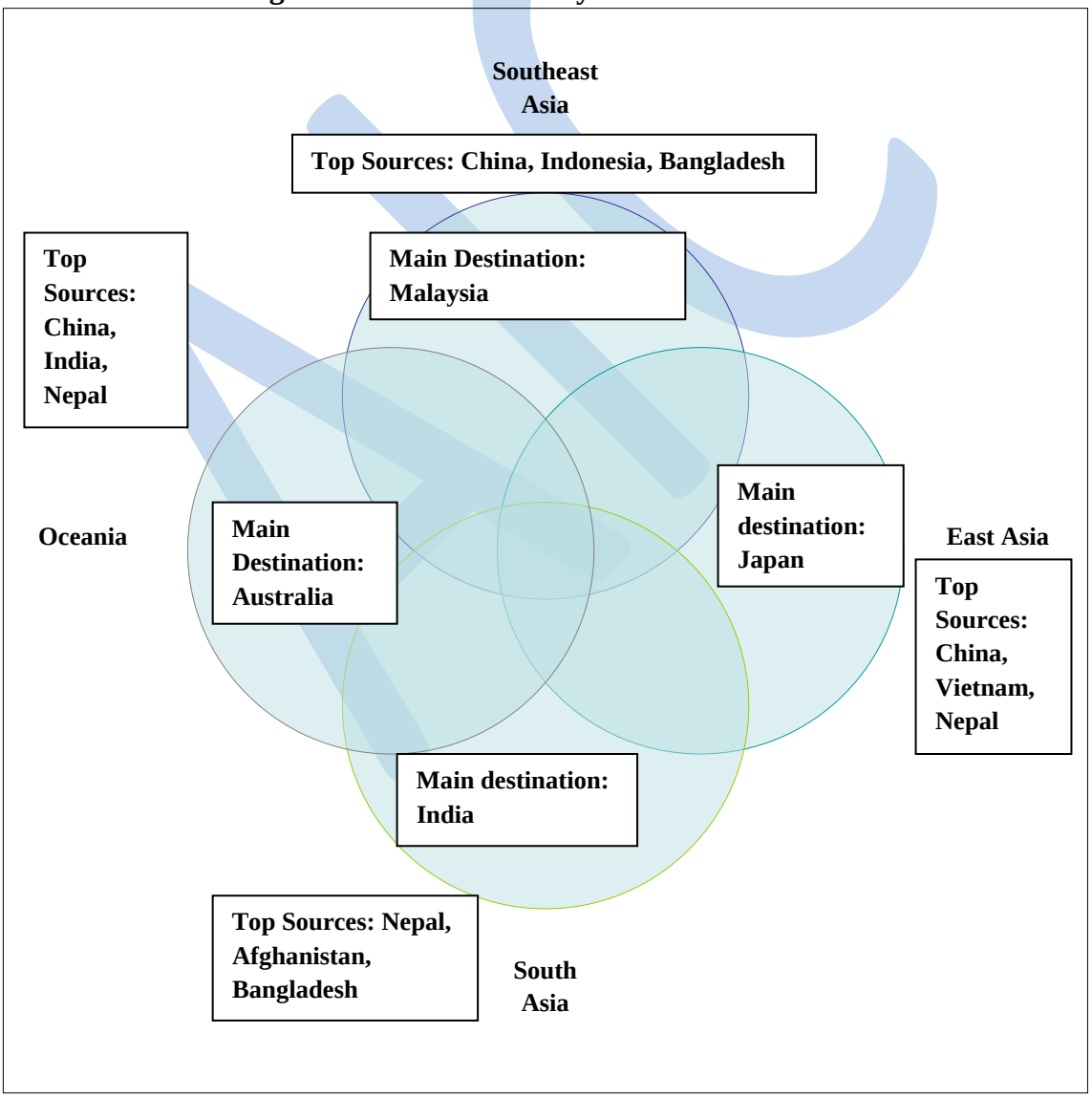
Tele-medicine and tele-education offer ample opportunities, which need to be exploited. Opportunities have increased by manifolds in post Covid-19 period.

The Government of India has already started taking initiatives in enhancing digital infrastructure to strengthen e-learning system in the country. Some of these initiatives include DIKSHA (Digital Infrastructure for Knowledge Sharing), Swayam Prabha TV Channels, E-textbooks, National Repository of Open Educational Resources, digital classrooms and so on. Replicating some of these programmes in ASEAN may pose India as an emerging tele-education market, depending on the requirements and situation analyses of the region.

India has already established several mechanisms to assist the ASEAN countries in education. It offers Special Courses for Young ASEAN Diplomats, and conducts Exchange Programmes for Young Farmers', Media Exchange Programmes, Programmes for Young Parliamentarians, as well as started implementing PhD Fellowships at different Indian universities including the Indian Institutes of Technology (IITs). Not only India, student mobility within the Asia-Pacific shows that Malaysia, India, Japan and Australia are the main destination countries as far as higher education is concerned.

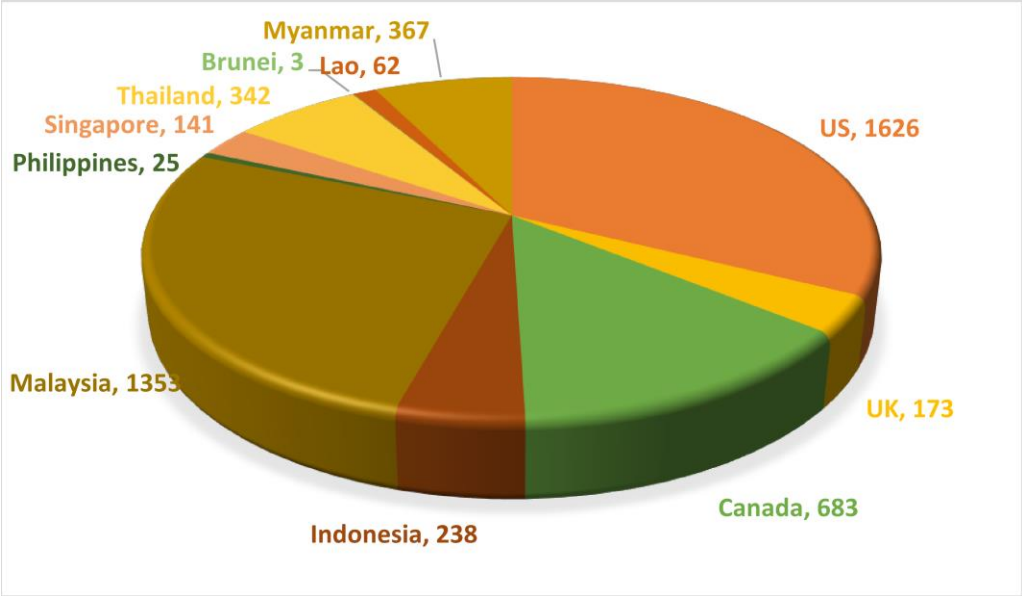
Figures 1 and 2 depict that though India stands as one of the top destinations in higher education related student mobility in South Asia, it is still not able to attract many students from Southeast Asian countries, compared to other destination countries like Malaysia or Japan. ASEAN sends its students mostly to Japan, Australia, the US and the UK. Even though India's top-most institutes and universities offer education in English, the unsatisfactory level of inbound student mobility to India from the Asia-Pacific region (and the world at large) is an unfortunate incident (refer, Figures 1 and 2 for more details). Offering opportunities in tele-education including e-learning or online learning and remote learning and reaching to the ASEAN countries with a basket full of varied courses, curriculum development, ICT materials, video content, standardized degrees and diplomas may open new windows for the Indian higher educational institutes eyeing global businesses as well as government-to-government cooperation.

Figure 1: Student Mobility within Asia-Pacific



Source: Palit (2021)

Figure 2: Country-wise Inbound Students in India in 2020



Source: Authors' own, based on UNESCO Institute of Statistics (UIS), 2020

Box 1: Pradhan Mantri eVidya

The Covid-19 pandemic has divested the education of million Indian students in particularly rural area and unprivileged children. Taking this into account, the Ministry of Education has initiated Pradhan Mantri eVidya in order to facilitate multi-mode access to digital/online teaching-learning contents of various types among students and teachers. The PM eVidya scheme was launched in May 2020 under the One Nation One Digital Platform to ensure the education of the students in the time of Covid-19 pandemic. Under this scheme, 12 eVidya TV Channels were introduced in the line of One Class-One Channel for class 1 to 12 to broadcast educational content according to the respective classes, top 100 universities were permitted to start online courses and the Sawyam Prabha DTH channel was promoted to support students who do not have any access to the internet. To further ensure quality education, Finance Minister Nirmala Sitharaman emphasised on 'One Class, One TV programme' and proposed to expand from 12 TV channels to 200 TV channels in February 2022. These channels will facilitate all the states to provide supplementary education in regional languages.

Source: Authors' own

2.2 Tele-medicine and India

Size of medical tourism indicates the scale of tele-medicine opportunities. India's current engagement in medical tourism stands better. In the field of medical tourism, India is ranked 10th, out of the top 46 countries in the world in the Medical Tourism Index 2020-21 by the Medical Tourism Association.[10] From the ASEAN, India receives a large number of medical tourists from Myanmar. However, the percentage share of medical tourists from Southeast Asia to India is still

low. In order to bridge some of the gaps and address a few issues pertaining to face-to-face medical treatment, several governments have turned to tele-medicine services.

In sync with the global trends in tele-medicine, the Government of India has taken many initiatives to enhance its infrastructure including the Integrated Disease Surveillance Project (IDSP), National Cancer Network (ONCONET), National Rural Telemedicine Network (NRTN), National Medical College Network (NMCN) and the Digital Medical Library Network (DMLN) and so on. The Ministry of Health and Family Welfare, Government of India has set up a National Tele-medicine Portal to execute green-field projects on e-health aiming at a National Medical College Network (NMCN) to link the medical colleges in India for the purpose of e-Education.[11] Tele-medicine services are currently running at the Sir Ganga Ram Hospital, Delhi; oncology department at the Regional Cancer Center, Trivandrum; surgical services at the Sanjay Gandhi Postgraduate Institute of Medical Sciences; School of Telemedicine and Biomedical Informatics and so on. India has also launched tele-medicine networks with Africa and South Asia.

3. India as a Provider of Tele-medicine and Tele-education Services: e-VBAB in Africa

India has been providing the tele-education and tele-medicine for many years. The ISRO's initiative on tele-education and tele-medicine was a pioneer initiative to deliver quality education to the rural and unprivileged parts of India. The programme titled 'EDUSAT' was India's first satellite-based educational service that provides a wide range of interactive educational sessions through one-way TV broadcast, video conferencing, computer conferencing, web-based instructions, etc. This programme has connected about 59,700 schools and colleges across 26 states and 3 UTs of India.[12] In tele-medicine, 384 nodes, set-up across the country with 60 specialty hospitals, connected to 306 remote/rural/district hospitals and medical colleges; and 18 mobile tele-medicine units have been set up for this purpose. The initiative has facilitated satellite-based technology to the common people in narrowing the gap of knowledge and distance. Box 1 and Box 2 present for further details on Indian capabilities in telemedicine.

This programme has made a path for India to provide tele-education and tele-medicine services to the world. With the technology base, India gave a new direction to its capacity building programme through the Pan African e-Network Project (PAeNP) in 2009 and e-Arogya Bharati Network Project (e-VBAB) in 2019 for African countries.

India and Africa have a long history of shared cultural ties. Over the years, India-Africa cooperation has gained mutual respect in building strong partnership towards development cooperation. Education and capacity building are the core features of India-Africa development cooperation. India has taken many steps in developing human resources to enhance the growth of African countries. Study in India, Indian Technical and Economic Cooperation (ITEC) and strengthening African Centers of Excellence (ACEs) are some of the initiatives India has taken to deepen cooperation with African countries. The newly launched digital knowledge sharing programmes would add another feather in this direction. The achievements of ITEC programme make India and African countries closer to each other. Moving towards that direction, India has initiated the Pan African e-Network Project (PAeNP) programme, which was conceived and

launched by former Indian President Dr. A.P.J. Abdul Kalam in 2009. Under this programme, India has been providing the tele-medicine and tele-education to African countries through satellite communication. Over 48 African nations participated in the PAeNP and this knowledge sharing programme has gained high popularity among young African students. Indian Cabinet had approved Rs. 5.42 billion under this project for the years from 2009 to 2017. Under tele-education of PAeNP project, participant Indian universities had awarded total 6962 degrees/ certificates to the students of Africa in the first phase. Total 771 tele-medicine consultations were provided by Indian doctors from super specialty hospitals to African doctors of nominated hospitals under tele-medicine format.[13]

After a successful completion of the first phase PAeNP, India then launched the e-Vidhya Bharati and e-Arogya Bharati Network Project (e-VBAB) in 2019, which is the second phase of the project, dedicated to tele-education and tele-medicine. The second phase is still a work in progress. The project aims to build capacity and upgrade the skill of African youth and empower them through quality education. The e-VBAB Network Project was redesigned into two web-based portals for tele-education and tele-medicine and the services are offered through specially developed web-based platforms. The project intends to link Indian universities, institutions and super-specialty hospitals in India with African educational institutions and hospitals through internet. In PAeNP programme, the services were offered from Indian universities and Indian super-specialty hospitals to students, doctors, and paramedical staff in Africa through telecommunication links (MPLS/IPLC/satellite based). The e-VBAB is one of the largest projects being executed by the Ministry of External Affairs (MEA) and fully funded by the Government of India. The initiative aims to build "digital bridge" between Africa and India, and the e-VBAB plays an important role and also seeks to provide good quality, affordable and effective tele-education and tele-medicine (including continued medical education and tele-medicine consultation) services. Under this project, Indian government had approved at the cost of Rs. 865.02 crore for over the time of five years. [14]The Telecommunications Consultants India Ltd. (TCIL) was assigned a designated implementing agency for the project. The project aims to offer 15,000 scholarships to African students over the period of five-years. The tele-education and tele-medicine services are then aimed to empower African youth, enhance educational and health cooperation and strengthen India's development partnership with African countries. According to the Ministry of External Affairs (MEA), Rs. 240 million was spent under this project during the last five years.[15] Table 1 presents list of LOCs extended to African nations.

3.1 India's Tele-education in Africa

The project provides over 500 courses in various disciplines including engineering and technology, mathematics and sciences, humanities and arts and teacher training for African students. The curriculum offers certificates, diplomas, undergraduate and postgraduate degree programmes in various disciplines. These services are provided by the empanelled Indian universities to the students from African partner countries. The education portal www.iLearn.gov.in was launched by the External Affairs Minister (EAM) of India in 2019. Through this portal, African students can register themselves to avail the courses. Figure 3 shows the recognised Indian partner institutions for the e-Vidhya Bharati programme that are working with African education institutions to enhance capacity and capability of the African youth. India also offered short-term Massive Open Online Courses (MOOC) under this tele-education project through SWAYAM

portal. For the January and July 2020 academic sessions, 1222 scholarships were approved under this project. According to the TCIL, about 3561 African students have enrolled for various courses till March 2022 (refer Box 3).

Under the present structure of the e-VBAB, African countries such as Benin, Comoros, Cote d'Ivoire, Democratic Republic of Congo, Eritrea, Federal Republic of Nigeria, Federal Republic of Somalia, Ghana, Malawi, Mali, Mauritius, Mozambique, Republic of Guinea, Republic of Seychelles, Republic of Sudan, Sierra Leone, the Gambia, Uganda and Zambia have already enrolled for educational cooperation.

Figure 3: Partner Institutions

Source: https://ilearn.gov.in/

Box 2: India's Capabilities in Providing Tele-medicine

Prior to March 2020, the IT Act 2000 was the primary legal system to regulate telemedicine in India. Government of India has adopted new guidelines in telemedicine in March 2020. This is in sync with Digital India (launched in 2015), National Health Policy (2017), National Digital Health Blueprint (2020). The outcome of the changed approach towards telemedicine is the E-Sanjeevani OPD (Stay-at-Home OPD). E-Sanjeevani (doctor-to-doctor) and E-Sanjeevani OPD (patient to doctor) are parts of GOI's National Telemedicine Service, which is currently operational in 31 states /UTs in India catering to over 35,000 patients everyday on digital platforms. In August 2020, the National Digital Health Mission was announced by GOI to support universal health coverage with a budget of US$ 63.3 million. It will also ensure health IDs, personal health records, Digi Doctor and a health facility registry. This will enhance Indian capabilities in telemedicine. ISRO, Department of Information Technology, MEA and MoHFW are involved in India's telemedicine service provisions in India and abroad.

Source: Esanjeevaniopd.in

Table 1: Government of India's Line of Credit to Africa

Year	Country	Amount (US$ million)	Purpose
2009-10	Cote D'ivoire	30	Transmission Line
2009-10	Eswatini	20	Information Technology Park
2009-10	Lesotho	4.70	Vocational Training Centre
2017-18	Rwanda	81	10 vocational training centres and 4 business incubation centre
2017-18	Zambia	18	Pre-fabricated health posts
2019-20	Guinea	20.51	Construction & upgradation of regional hospitals in Kankan & Nzerekore

Source: India EXIM Bank, Line of Credit Statistics

Box 3. Interaction with TCIL

The first phase of the e-VBAB project was implemented successfully at Africa, both with Vidya Bharati and Aarogya Bharati components. The second phase started in Africa in 2019, but had to postpone initially due to the Covid-19 outbreak in Africa and India. There have been 3561 students enrolled for e-VB as on March 2020. In the first phase, total 21280 students enrolled, of which 8501 students passed out, showing one-third of total enrolled students cleared the examination. India has gained enormously from the e-VB programme in the first phase. In the second phase, the MoUs were signed with 19 countries, out of which 14 countries have received the e-VB support as on date.

The e-VB project has many important features to offer for ASEAN countries. The TCIL is planning to introduce the e-VB programme to ASEAN and has identified 3Es as focus – education, empowerment, employment. Out of 10 ASEAN countries, according to the TCIL, only four ASEAN countries have offered opportunities, such as Cambodia, Lao PDR, Vietnam and Myanmar. According to the TCIL, Indonesia also offered opportunities for e-VB programme. The TCIL has submitted the proposal to implement the e-VB in ASEAN countries to the Minister of External Affairs and they are waiting for clearance before they start the project. In ASEAN, the three things are very important according to the TCIL, digital marketing, selection of institute of excellence in India, and assessment/examination, both virtual and physical format. Given India's strength in higher education and the digital implementation of the technology, the e-VB project will nonetheless strengthen the ASEAN-India relations.

Source: Based on the interactions with the TCIL team handling the e-VBAB project in Africa

3.2 India's Tele-medicine in Africa

Under the e-VBAB programme, tele-medicine services are offered to two hospitals and institutions in African partner countries. It provides tele-medicine and medical education for African doctors, paramedics and patients. Indian super-specialty hospitals/institutions provide these services. Like tele-education, a dedicated portal for e-AarogyaBharati (tele-medicine) is being designed to facilitate the services. The programme is being offered by the MEA in partnership with the Ministry of Health and Family Welfare, Center for Development of Advanced Computing and other stakeholders. Continuing Medical Education (TM-CME) and Tele-Consultations (TM-TC) are the two segments under the tele-medicine services. The web portal for tele-medicine services

has been under trial. The tele-consultations trial has been conducted between Zambia and PGIMER, Chandigarh. The tele-medicine project got delayed due to the pandemic scenario and so, the tele-medicine portal is yet to be launched.[16]

India is one of the top five educational destinations for African students for higher education and capacity building initiatives of India have trained thousands of public officials, teachers, entrepreneurs and doctors. Bridging the knowledge and connectivity gap, digital platforms are playing a vital role in India's technical cooperation with Africa. The e-VBAB programme has the potential to create a new generation of skilled and technology-empowered African work force.[17]

4. ASEAN and India in Digital Economy

ASEAN has been at the centre of India's Act East Policy (AEP). There is a potential for enhanced cooperation in education and healthcare services given the proliferation of digital technologies and the internet footprint in the region. Table 2 presents a snapshot of the socio-economic structure of India and the ASEAN countries along with some indicators on infrastructure availability indispensable for a project like e-VBAB to function smoothly.

Table 2 explores the potential of ASEAN countries and India to partner in imparting tele-medicine as well as tele-education to the people of ASEAN region. Southeast Asian profile shows that internet connectivity is significantly higher in the countries like Brunei Darussalam, Malaysia, Singapore and Thailand and they also have high per capita income. However, in countries such as Lao PDR, Indonesia and the Philippines, the internet usage by individuals is low. Majority of the ASEAN countries have a comparable mobile penetration barring a few countries like Lao PDR and Myanmar. This gap suggests the need for increased efforts regarding digital infrastructure in the lower middle-income countries of the ASEAN region to impart tele-medicine and tele-education services.

Cyber security issues are also important for projects like e-VBAB as the tele-medicine diagnosis would require usage of digital electronic records of the patients. In this direction, only a handful country (Singapore, Brunei Darussalam, Malaysia) in ASEAN extends convincing number of secure internet connections while Laos and Myanmar show dismally low secure internet servers. Good thing is that the tele-medicine has been practiced since traditional times. However, the modern approach to tele-medicine differs heavily in the various forms of new technologies used.

Table 2: Socio-Economic Profile of India and ASEAN in 2020

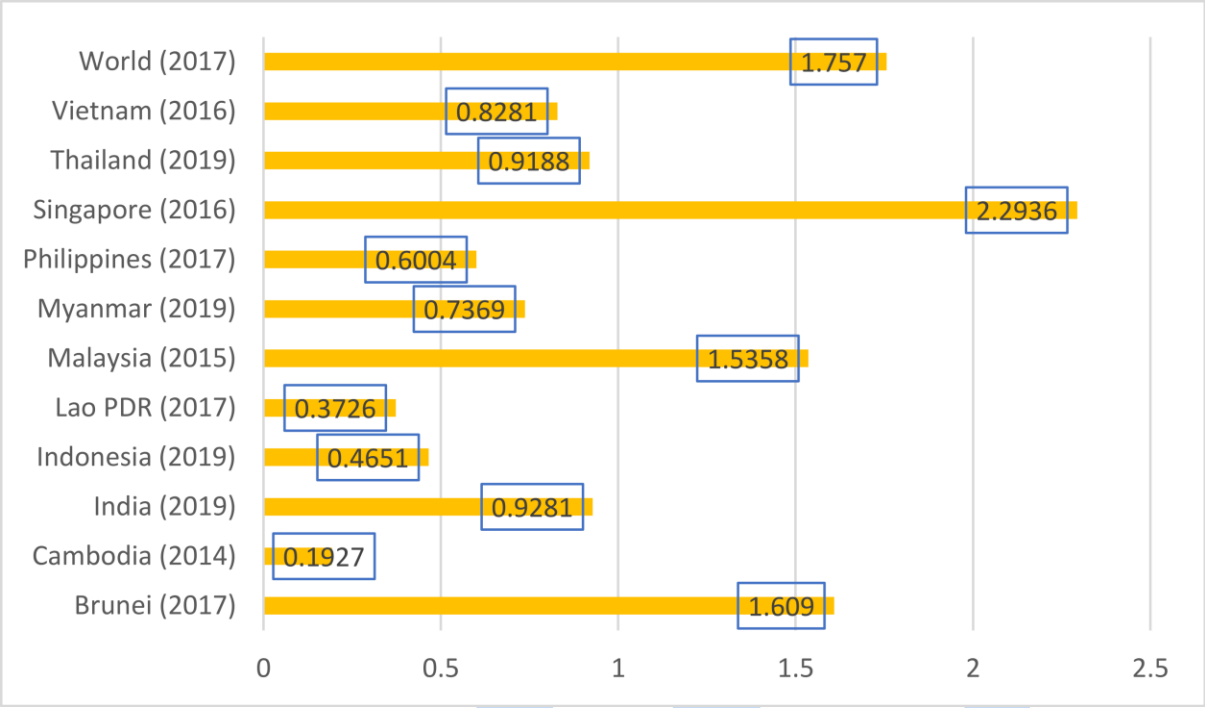
Country	GDP			Access to electricity (%)	Mobile cellular subscriptions (per 100 people)	Individuals using internet (%)	Secure internet servers (per 1million people)	Population aged 15-24 years (in 000's)	Population aged 15-64 years (in 000's)	Population aged 65 years or older (in 000's)
	GDP (US$ million @ current prices)	GDP per capita (US$)	GDP per capita (US$ PPP)							
Brunei Darussalam	12016.0	27466.2	64724.1	100	120.4	95	15749.1	69	246	24
Cambodia	26835.1	1605.0	4574.4	93	129.9	78.8	188.5	2989	7749	811
Indonesia	1057912.5	3867.7	12312.5	98.85	130.06	53.72	1877.5	45972	139481	17129
Lao PDR	19277.07	2649.5	8187.7	100	60.84	18.2	52.7	1401	3241	310
Malaysia	336665.5	10401.8	29564	100	135.09	89.5	7494.4	5533	16919	2325
Myanmar	92102.4	1692.7	5412.9	68.35	77.81	2.10	14.05	9830	27320	3393
Philippines	345475.4	3152.6	9291.03	95.62	154.76	46.88	113.55	20567	50053	6040
Singapore	337880.1	57753.9	101936.7	100	144.05	75.87	128377.7	-	-	-
Thailand	499668.5	7158.5	19208.5	99.9	166.61	77.84	1908.06	9186	40015	9044
Vietnam	268899.2	2762.5	8381.2	99.4	142.73	70.29	3105.78	13321	53784	7657
India	2679578.4	1941.7	6994.0	97.8	83.60	54	479.9	248550	679716	90720

Source: UNCTADstat, World Development Indicators (WDI), World Bank, UNESCO Institute of Statistics (USI), 2020

The ASEAN is a vibrant region with promising growth of its economy and population. The Southeast Asian region is prognosticated to grow at a rate of 3.4 per cent by in 2022 as opposed to 3 per cent in 2021.[18] Countries in South Asia are together projected to grow at a rate of 8.8 percent by 2022. The Covid-19 pandemic has highlighted the need of tele-medicine all the more as more and more ASEAN countries grapple with recurrent waves of new Covid-19 variants.

The ASEAN region offers a huge potential to India in extending the tele-medicine and tele-education portals under the umbrella of e-VBAB. Figure 4 presents the access to healthcare services in the ASEAN region by looking at the indicator of physician to patient ratio. It offers a contrasting picture of healthcare in the ASEAN region wherein the high-income countries have a high incidence of physicians to patient whereas the low middle-income countries battle a plummeting physician to patient ratio. This is also visible in their dismal trend vis-à-vis the world average.

Figure 4: Physicians per 1000 people, India and ASEAN Countries (latest year)

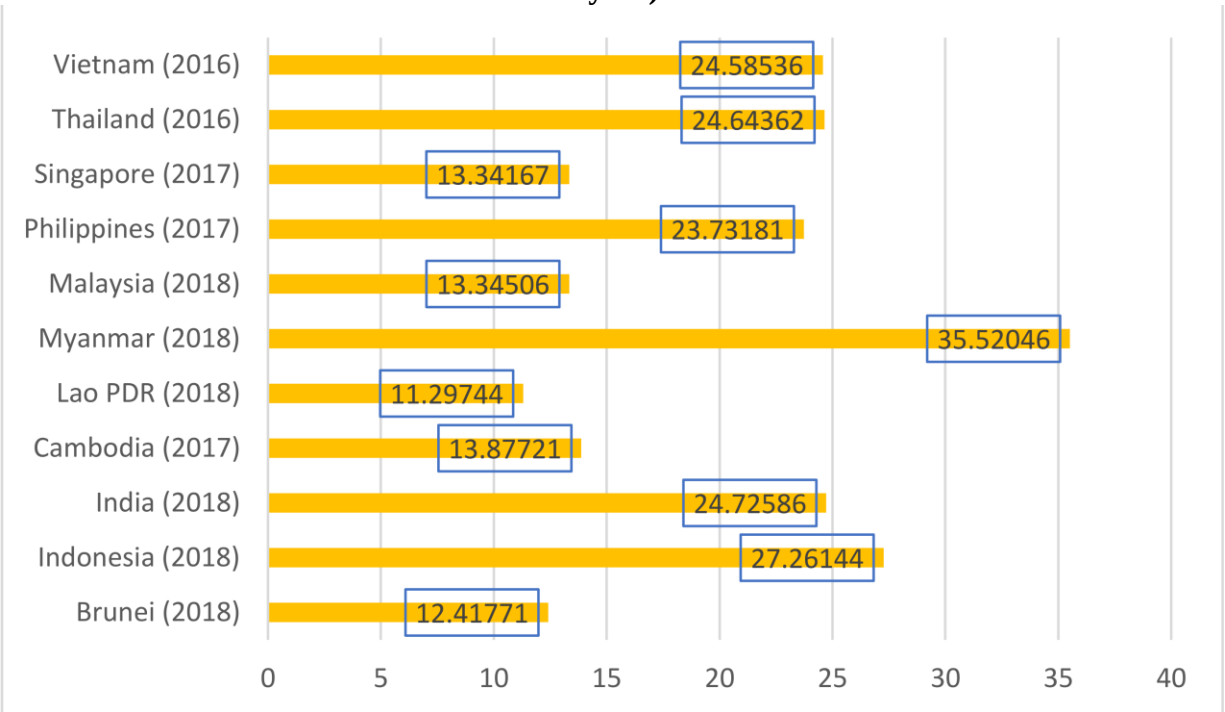


Source: World Development Indicators (WDI), 2020

The WHO guidelines recommend doctor-patient ratio of 1:1000 (Kumar and Pal, 2018). By that standard, the low performance of some of the ASEAN countries is evident. It is interesting to see only three countries of the high-income category i.e., Singapore, Brunei Darussalam and Malaysia faring above the WHO standard. Even countries of upper middle-income status fare low in terms of availability of physicians per 1000 people. For instance, in Thailand, the availability of physicians per 1000 people is below 1. Indonesia performs even worst. The CLMV remain low on the measure with Cambodia faring the least of 0.19. Several studies have projected that India will touch the WHO standard shortly. This makes tele-medicine a viable option for the medically un-served countries in the ASEAN region. ASEAN countries could avail tele-medicine services from Indian doctors and medical personnel in various fields such as tele-radiology, tele-pathology, tele-dermatology and tele-psychiatry, etc. Tele-medicine is also a cost-effective option for less developed ASEAN countries given that these poor countries face an increasing out of pocket expenditure on health services. For instance, in Cambodia, the out-of-pocket expenditure has climbed to 74.19 per cent in 2014 from 60 per cent in 2010[19]. Figure 4 illustrates that ASEAN countries fare well below the global average of physicians per 1000 people, excepting the high-income countries of ASEAN. The Covid-19 pandemic has further distanced physical healthcare services from the people making tele-medicine a crucial pillar of universal access to healthcare. The use of digital technologies in healthcare sector has been expedited due to the pandemic. Thus, India's extension of its tele-medicine network project into the ASEAN countries could furnish promising health outcomes in the member countries, particularly the lesser developed and/or overlooked countries. As of 2020, most of the demand for tele-medicine has emerged from Indonesia. The lack of healthcare personnel coupled with a push from government policies has led Indonesian people to seek tele-medicine services. India has a huge potential to serve ASEAN

countries in delivering tele-medicine services as the ASEAN countries like Malaysia are looking at a paucity of healthcare personnel along with the increasing costs of healthcare services.

Figure 5: Teacher-Student Ratio, Tertiary Education, India and ASEAN Countries (latest year)



Source: World Development Indicators (WDI), 2020

Around the whole gamut of cooperation areas, education has surfaced as the most important one. In this vein, India's initiatives of ITEC fellowships and ICCR fellowships have cemented partnership with the ASEAN countries. The tele-education projects like e-vidyabharti could make a foray into ASEAN region as well. Figure 5 presents the teacher-student ratio in ASEAN countries and India. In tertiary level education, teacher to student ratio in most of the ASEAN countries is quite high. Only Singapore experiences a low teacher to student ratio implying the effective of the tertiary education services there. By connecting with ASEAN countries, the unavailability of teachers for tertiary education could be resolved. People from ASEAN could be able to avail tele-education in a plethora of subject areas such as arts and humanities, engineering, architecture, law, management, commerce, etc. With the Covid-19 induced restrictions on travel and mandatory quarantine and vaccine recognition procedures acting as hindrance to overseas education, tele-education can cater to the increasing needs of the students in ASEAN countries to pursue undergraduate and post-graduate courses from Indian universities or partner institutions.

Apart from the regular courses in arts, science, etc., the imparting of continuing medical education to doctors, nurses and para-medical staff could also boost health systems in ASEAN countries. The medical education market is expected to swell during the period 2021-26 at a CAGR of 6.7 per cent[17]. Increasing demand for continuing medical education has opened up opportunities for countries like India to increase their footprint in markets like ASEAN, where the need has

ballooned following the pandemic. The cost-effectiveness of tele-education has given it a boost over the traditional system. Overall, the tele-medicine market in India has shown phenomenal growth. This has become more evident since the pandemic hit the world. The tele-medicine market in India is projected to grow at a CAGR of 31 per cent between 2021 and 2025.[20]

Seeing the double digit growth projected for tele-medicine market in India, it makes a case for India's venture into other emerging markets such as the ASEAN. The pandemic has accentuated the pace of digital revolution in the health sector. With it, the demand has overshot the supply. The member countries of ASEAN in their Digital Master Plan, 2025 have underscored the importance of international cooperation and collaboration in improving the digital deliverance of services. At this juncture, India could assist the ASEAN countries with its expertise in digital technologies and interface. Particular countries in ASEAN such as Malaysia have given a push for digital medical services. India's venture into ASEAN for telemedicine services could thus witness a growth. Also, the large size of ageing population in some ASEAN countries such as Singapore provides an impetus for tele-medicine services as well as tele-education for doctors and para-medical staff.

5. The ASEAN Scenario in Education and Health Care

The Covid-19 pandemic has brought a few challenges in the education and health sectors in the world and Southeast Asia too had to face the same. Broadly, the two-fold challenges faced by Southeast Asia are as follows.

First, the educational institutions and education communities faced the unique challenge of mental and physical health of the students due to the restrictions on movement, closing of schools/colleges and social distancing norms which forced the young ones to stay at home. In addition, the educational institutes also faced issues with teachers and educators who were not used to teach online as some of them lacked capacity in using different teaching technologies and some of them did not have sufficient support system (technical/emotional and infrastructural) available to continue online teaching.

Second, as the education system quickly transited to online platforms, many families found it difficult to adjust to the *new normal* resulting from lack of capacity to use various online forums, dearth of enough space at home to create a school-like scenario and non-availability of resources and infrastructure. Approximately 1.5 billion students in Southeast Asia were directly or indirectly affected by the closing of the schools and higher educational institutes during the pandemic and lockdown[21].

The following section evaluates the health and education systems in Southeast Asia and the impact of the Covid-19 on the same.

5.1 Educational Scenario in Southeast Asia during Covid-19: Some Observations

The educational system in Southeast Asia is very diverse. Brunei and Singapore with smaller population have relatively limited number of educational institutes compared to their larger

counter-parts like Indonesia and the Philippines. In Southeast Asia, there are approximately 674,800 private K-12[22] schools, and of these, half the schools are in Indonesia, followed by the Philippines[23]. Also, schools in Southeast Asia vary in terms of quality education, infrastructure, average school years, accessibility, affordability and job market orientation. The primary constraint in Cambodia is lack of enough classrooms, whereas, in Indonesia the major problem is absence of competent teachers in remote areas. On the other hand, in the Philippines the main issue is overcrowding in the urban schools.[24] These general problems in the education systems in Southeast Asia were multiplied and complicated during the pandemic time. The immediate result of school closure included and not limited to learning loss and increased rate of drop out among certain sections of the society furthering inequality among students. This was truer in countries like Myanmar, Cambodia and Lao PDR, where number of internet subscribers was already low, compared to countries like Singapore or Brunei and Malaysia. Internet penetration in Singapore, Malaysia and Brunei has been over 80 per cent of the total population, whereas the same is estimated at less than 60 per cent in Myanmar, Thailand, Lao PDR, Cambodia, Vietnam, etc.[25] Therefore, students from the CLMV region faced relatively more learning losses and temporary drop outs, compared to their fellows in rest of Southeast Asia adding to the digital divide within the region. The gaps between urban and rural areas also increased due to the lack of resources in local languages. Students based in rural areas lost interest in online education as many of the educational resources shared online were not in their native languages. Girl students were more vulnerable compared to their male counterparts as shown in a study conducted by the Plan International in 2020[26]. School and university shutdowns imposed more household responsibilities on girls including taking care of younger siblings which doubled their emotional burden resulting in lesser interest in education. A report by the World Vision (2020)[27] indicated that in Cambodia, approximately 30 per cent of parents did not teach their young children during school closure, 60 per cent of parents were not able to provide support to their children's learning, and 74 per cent of parents had limited knowledge on how to teach their young children. For students who were able to attend the online classes also felt strange at postponement of examinations and evaluation of their learning level was not done properly.

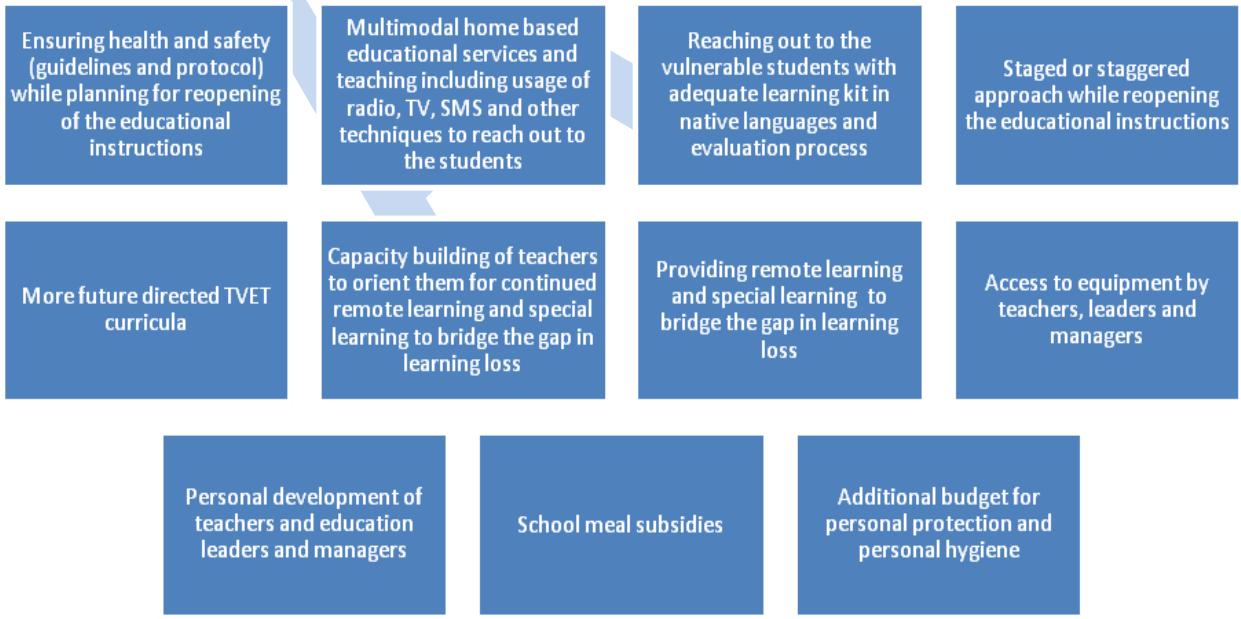
The Covid-19 has invariably pinpointed some of the challenges in the education scenario in Southeast Asia, particularly with respect to online learning. However, online education and remote learning are not a new phenomenon in the region. In higher educational institutes and technical-vocational training institutes, Massive Open Online Courses (MOOCs) and EdTech (Educational Technology) had already gained prominence. Various studies have shown how e-learning and remote learning can support the educational system in a country (refer Table 3). In addition, Southeast Asian countries have also started taking initiatives and recovery plans in the education system in the post Covid-19 period. Figure 6 portrays some of those efforts in managing the losses in education system in Southeast Asia post the pandemic.

Table 3: Benefits of Remote Learning and e-learning

Benefits of Remote Learning and e-learning	Facts from Southeast Asia
Compensating the unfair teacher-student ratio causing difficulties in offline education because of shortages of teachers and educators	Average student-teacher ratio in Southeast Asian primary school is 26.5-1 and in higher secondary schools is 22.8-1. The problem of teacher shortages can be compensated through remote learning and e-learning where trained and skilled educators and teachers can directly or indirectly interact with the students.
Breaking the space-time constraints	Any student from any part of the country can participate in remote learning process irrespective of location and time constraints – Quipper, an Edtech company in Philippines helped the school education system in reforming the schooling year without causing any learning gap to the existing system.
Degrees and Certificates at Low Cost	Through MOOCs and Edtech, obtaining a professional degree or certificate from a foreign or national university becomes easier for the university students as well as vocational training aspirants. Kyna, an EdTech company in Vietnam, has been successfully involved in providing such services. This is also considered as "massification'[28] of education by providing affordable and easy access to specialized degree/certificate programmes which would have remained inaccessible by a large segment of students.
Imparting new age skills	Remote learning, e-learning and EdTech also help in imparting 21st Century skills among the youths including communication, networking and use of new-age technologies necessary for the job market.

Source: Cross Asia, von Xin Qiu (2017)

Figure 6: Efforts by Southeast Asian Countries to manage the post Covid-19 Educational Scenario



Source: Authors' own compilation and information gathered from TVET@Asia[29]

5.2 Healthcare Services Scenario in ASEAN during Pandemic: Some Observations

Similar to the educational sector, Southeast Asian countries are grappling with gaps in health care services as well. Developed economies like Singapore, Brunei and Malaysia's scores in providing health care services to their people are relatively higher than the developing and under-developed economies in the region. If number of physicians per thousand population is any indicator to understand the general situation of health care services, then, most Southeast Asian countries will fall short in that criterion. For example, besides Singapore, in rest of Southeast Asia, the number of physicians per thousand populations is lesser than 1.57, which is the world's average. Such scenarios call for urgent implementation of rapid tele-medicine access to everyone in the region. The requirement of tele-medicine will further increase in ASEAN with the rising ageing population in the region too. The proportion of people above 60 is projected to be 10.3 per cent of the total population by 2030 in Southeast Asia indicating more people waiting for healthcare services in near future. With this, there will be a significant rise in health care expenditure as well enabling more ways to create telemedicine facilities in the region. A study by McKinsey and Company found that 12 per cent (of approximately US$ 100 billion) of the total health care market size in Asia will be in the field of telemedicine and remote monitoring by 2025.[30] Use of tele-medicine basically implies that when a person requires medical treatment or healthcare, he or she will use an online platform to be connected to a hospital or doctor, get diagnosed, receives medicines through e-pharmacies and if necessary, get medical tests done through e-networks of diagnostic centers and receives remedial treatment. This can continue under a hospital or clinic's direct supervision to avoid further medical deterioration. In Southeast Asia, there are existing digital platforms available to offer telemedicine facilities to the common people. Details are presented in Table 4.

Table 4: Famous Digital Health Platforms in ASEAN Region, 2020-2021

Country	Digital Health Platforms
Singapore	My Doc, DoctorAnywhere, Speedoc, White Coat
Indonesia	Aldokter Halodoc
Malaysia	DoctorOnCall Speedoc DoctorAnywhere
Philippines	Medgate Philippines Healthnow SeeYouDoc
Thailand	DoctorRaksa DoctorAnywhere
Vietnam	Viettel DoctorAnywhere VieVie Healthcare

Source: HKTDC Research[31]

6. Institutional and Regional Mechanisms in ASEAN to Transform Southeast Asia into a Digital Socio-Economic Space

6.1 Cha-Am Hua Hin Declaration on Strengthening Cooperation on Education to Achieve an ASEAN Caring and Sharing Community, 2009

In the Cha-Am Hua Hin declaration, adopted in 2009 in Thailand, the ASEAN leaders acknowledged that education has a strong role to play in establishing ASEAN community pillars (political-economic, socio-cultural and economic). Therefore, the ASEAN leaders decided to develop a regional catalogue of information materials of education to be offered to the ASEAN Member States. They also decided to encourage the development of a common standard of competencies for vocational and secondary education as a benchmark to enable mutual recognition across ASEAN. Schools were to develop common content for teachers training and offer ASEAN languages as optional foreign languages in schools and universities to offer graduate courses on ASEAN arts and cultures. The declaration also mentioned about promoting ASEAN Awareness programmes for youth, ASEAN School Tours, ASEAN Student Exchange Programme, ASEAN Youth Cultural Forum, ASEAN University Youth Summit, AUN Educational Forum and Young Speakers Contest. Additional thrust was given on wider access of rural communities to quality education by establishing an ASEAN community-based programme for young volunteers to support the learning centers in rural areas and for indigenous people in Member States; life-long learning in ASEAN Member States in support of the Education for All (EFA); and an ASEAN educational research convention to promote collaborative research and development (R&D) in the region. Finally, emphasis was given on supporting ASEAN's Five Year Work Plan on Education.[32]

6.2 ASEAN Sectoral Bodies and Committees in Education and ASEAN Work Plan on Education 2016-2020

The ASEAN Education Ministers Meeting (ASED) is the main sectoral body in education that undertakes major cooperation works in the field of education. Besides that, ASEAN also maintains external collaborations with its dialogue partners and other countries in education through ASEAN Plus Three Education Ministers Meeting (APT EMM) and East Asia Summit Education Ministers Meeting (EAS EMM). Senior Official Meetings at the levels of ASEAN, APT and EAS also take place regularly. ASEAN University Network is another outcome of close cooperation within ASEAN educational institutions. ASEAN has also established Working Groups for out-of school children, higher education mobility and quality assurance of education in APT. [33] The ASEAN Work Plan on Education 2016-2020 had identified a priority area themed as Advancing ASEAN Studies Programme and courses at higher education level through online and cross-border mobility which are linked to tele-education and online learning. Joint researches, twinning programmes, Model ASEANs, ASEAN Studies Centers and scholarships to students are few of the expected outputs that ASEAN has recognized under the online and cross-border mobility priority theme. Sub-goal 3 of the education work plan elaborates on ASEAN's vision for the use of ICT in enhancing educational cooperation. Indonesia has been chosen as the lead country to deliver model cross-border schools with effective use of ICT. Japan was identified as an external partner in the project. Vietnam and Cambodia are also working with the USAID in preparing teaching materials on ICT for the teachers and educators.[34]

6.3 ASEAN Sectoral Bodies and Committees on Health and ASEAN Post-2015 Health Development Agenda (APHDA)

The ASEAN Health Ministers Meeting, ASEAN Senior Officials Meeting on Health Development and Health Clusters are the primary bodies responsible for health related activities within ASEAN. The APHDA was adopted for the period of 2016-2020 to accelerate health care services in ASEAN. It had identified three clusters- promoting healthy lifestyle, responding to all hazards and emerging threats and strengthening health systems and access to care. The Agenda also designed a guideline to follow for the national governments in ASEAN to ensure better health care services for the citizens (refer to Box 4).

Box 4: Guidelines as designed by APHDA, 2016-2020

Accountability: using evidence-based approaches in setting health priorities and agreed upon common goals and targets which must be measureable, with the commitment in implementation by all parties, including strengthening health information system.

Leadership: pre-active delivery of AHMM policy leadership supported by a responsive SOMHD Mechanism.

Operational and resource efficiency: Effective uses of scarce health resources, flexibility, transparency, good governance, maximize synergies, partnerships, and participation and avoid duplication with other relevant organizations and stakeholders.

Capacity building: enhancing active engagement in ASEAN Health Cooperation by the application of the principle of shared responsibility.

Positioning ASEAN in Global Health: strengthen ASEAN's role and image through active contributions to global health in various platforms and strengthening collaboration with other countries and development partners

Source: APHDA, ASEAN secretariat

6.4 ASEAN Leaders' Statement on Advancing Digital Transformation in ASEAN

The ASEAN as a regional organization represents the collectiveness of Southeast Asia and it has started taking efforts to transform the region as a digitalised socio-economic space long before the emergence of the Covid-19. The three pillars of ASEAN, namely, the political-security community, the economic community and the socio-cultural community, extensively depend on the region's adaptability and readiness towards digital transformation. At the 38th and 39th ASEAN Summits, held in the fourth week of October 2021, ASEAN has released a Statement on Advancing the Digital Transformation in ASEAN. This statement has acknowledged the important role of the ASEAN Digital Integration Framework Action Plan (2019-2025), ASEAN Agreement on Electronic Commerce, (2019), ASEAN ICT Master Plan 2020, Master Plan on ASEAN Connectivity (MPAC) 2025 and the Consolidated Strategy on 4IR for ASEAN, 2021 towards the direction of creating a digitalized ASEAN region representing a society and economy which is digital-ready. ASEAN has already established several regional platforms including ASEAN

Digital Ministers' Meeting (ADGMIN), ASEAN Economic Ministers' Meeting (AEM), ASEAN Ministerial Conference on Cyber security, ASEAN Regional Forum Inter-Sessional Meeting on Security of and in the Use of Information and Communication Technologies (ARF ISM on ICTs Security), ASEAN Cyber security Coordinating Committee (ASEAN Cyber-CC), ASEAN Network Security Action Council (ANSAC) and so on. The Covid-19-led pandemic has definitely accelerated the speed of the digital transformation in ASEAN which has the potential to create avenues for tele-medicine and tele-education. ASEAN is also negotiating for ASEAN Digital Economy Framework by 2025. Notably, this may lead ways for ASEAN's external partners, international organizations, ASEAN led mechanisms and private sectors to assist and cooperate with ASEAN in enhancing its capacity in the digital transformation of the region and making a digital society.

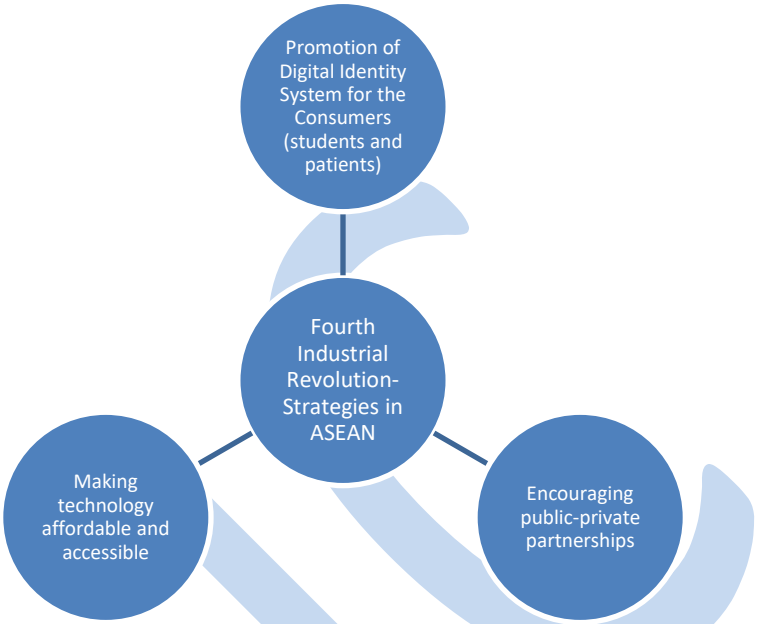
6.5 Industry 4.0 in ASEAN and Tele-medicine and Tele-education[35]

The ASEAN has also adopted a Comprehensive Strategy on 4IR, 2021 (4th Industrial Revolution) to facilitate the countries in narrowing the gaps in digitalization in Southeast Asia and create a few enablers for the region in the fields of technology and cyber security. To enhance the competitiveness in the digital-centric service sector, ASEAN has specifically identified six sub-sectors to start the work, namely, healthcare services, finance, logistics, education, tourism and professional services other than the first five. In healthcare sector, the World Health Organisation (WHO) has referred to the importance of digitalization and use of telemedicine since the beginning of 21st Century, and following that, many countries have started taking initiatives. Use of telemedicine can help ASEAN in increasing the quality of healthcare services, simplifying healthcare delivery, promoting equal access to the common people, providing health care within ASEAN region, enhancing efficiency in resource allocation and, finally, mitigating health risks to the population. ASEAN governments need to use the expertise and skills available in the private sector and partner countries and utilize sustainable financing models in exploring telemedicine in the region. Tele-medicine will reduce the burden on hospitals and help the people with any diseases taking medical consultations using a mobile application while sitting at their home. This was evident during the Covid-19 when users of app-based medical consultations and health care services almost doubled in the region due to the restrictions on physical mobility.[36] Tele-medicine inevitably can help ASEAN in widening the health care service scope to the remote and under-developed areas and make the health care affordable for all. This can be converted as a regional approach in coherence with the national governments in Southeast Asia.

Coming to the tele-education part, given the fact that youths are normally more agile towards digital way of life including use of smart phone, social media and various online platforms, ASEAN needs to utilize their potential in creating a region well-prepared for 4IR including the use of tele-education. The ASEAN is currently working on the ASEAN Work Plan on Youth 2021-2025 to prioritize activities to promote innovation in technology; mental health and well-being, and using technology to create more employment for the youths. This implies that the students in ASEAN need to be oriented towards problem solving, critical thinking, and creativity through the use of digital technology in order to minimize the learning gaps built during the Covid-19 among the girl children, weaker students and vulnerable youths. Tele-education through remote learning,

online classes and proficient use of technology will also enable the youths for the competitive job market.

Figure 7: Goals of ASEAN in Digital Transformation and 4IR in Synchronization with Tele-medicine and Tele-education



Source: Consolidated Strategy on the 4IR for ASEAN, 2021

6.6 Collaborative Efforts in Digital Healthcare at the Time of Covid-19

At the backdrop of Covid-19 and rising trend towards tele-medicine, Southeast Asia has developed multiple collaborative efforts to raise awareness about the benefits of telemedicine as well as use of the same by the end-users. In 2021, GDEX Bhd (a Malaysian investment firm), DOC2US, a tele-medicine provider from Malaysia, and Alpro Pharmacy from Malaysia, collaborated together to provide easy medication delivery services by secure and real-time tracking of medication. They are aiming at enhancing their productivity, back-end processes, and ensuring better patient experiences. The DOC2US concluded another strategic collaboration with AIA Malaysia in the field of wellness programmes and virtual health services. Pfizer made collaboration with the DocOnCall and launched a digital therapeutic platform to focus on vaccination, smoking cessation and heart health. Indonesia has introduced in collaboration with the Grab, the Good Doctor Technology to provide free online Covid-19 screening and public awareness programmes.[37]

7. ASEAN-India Partnership in Tele-education and Tele-medicine

ASEAN and India have started working to enhance their cooperation in education, health and related sectors since the beginning of their partnership. In 2004, ASEAN and India adopted the first Plan of Action (POA) on Peace, Progress and Shared Prosperity where many of the clauses and sub-clauses were directly related to improving cooperation in the fields of education, health care services and utilization of technology for the same purpose. Information & Communication

Technology (ICT), Research and Development, Technology Management, Human Resource Development and Pharmaceuticals and Health sectors were identified as some of the key areas to continue India's partnerships with ASEAN. These were reiterated in the next three POAs adopted later to ensure the bonhomie between the two. A closer look at this existing partnership can explore avenues to make Indian footprints in e-VBAB in Southeast Asia.

Relevant Points on Education, Health and Use of Technology to enhance ASEAN-India Partnership as Designed in Plan of Action to Implement the ASEAN-India Partnership for Peace, Progress and Shared Prosperity (2010-2015)

- **Information, Communication and Technology (ICT)**

  - Enhance cooperation on Information and communication technology (ICT) such as sharing of best practices in policy, regulation and technological development, including through existing high level meeting between ASEAN and India on ICT.
  - Promote and facilitate ASEAN-India ICT workshops and training of ICT capacity building; such as in the areas of software development; e-governance, e-commerce, satellite and spectrum technology, Radio Frequency Identification (RFID), and ICT to mitigate impacts of climate change.
  - Conduct consultations between governments, private sector and industry group to facilitate investments in ICT, focusing on broadband connectivity and broadband applications in ASEAN.
  - Strengthen cooperation and capacity building in information security and cyber-security, cyber laws and regulations; joint research and development activities in the area of interactive digital media.

- **Health Science and Technology Sector**

  - Enhance capacity building on Occupational Safety and Health Management System (OSHMS).
  - Undertake activities and develop programmes/projects under the ASEAN-India Science and Technology Development Fund.
  - Promote policy dialogue in the area of science and technology, support joint industrial, R&D projects in mutually identified areas, promote public outreach programmes, including participation of children in Science Congresses and internship programmes for ASEAN and Indian young scientists.
  - Work towards developing low cost drugs and traditional medicines to make medicines more affordable to people, and to explore a framework as appropriate for cooperation in these areas.
  - Enhance consultations, including on stockpiling of antiviral and other essential medicines and medical equipment to jointly prevent and control the HIV/AIDS, influenza A(H1N1) and other pandemic diseases; and provide technical and financial assistance for capacity building to cope with emerging infectious disease;
  - Promote sharing of information and exchange of experts in the field of public health, medicine, physical and health education.

- **Education and Education Technology, and Training in IT**

- Establish IT Training Centres in CLMV and other interested ASEAN Member States; set up software development and training centres in CLMV and consider appropriate accreditation to these training centres.
- Provide assistance in information technology curriculum development and IT teacher trainings to CLMV.
- Enhance the IT skills of the workforce in ASEAN through provision of scholarships for ASEAN students, joint training programmes and courses, e-Learning, seminars, workshops as well as exchange of visits of IT experts.
- Enhance cooperation in education in line with the Cha-Am Hua Hin Declaration on Strengthening Cooperation on Education to Achieve an ASEAN Caring and Sharing Community adopted on 24 October 2009.
- Further increase the number of fellowships for ASEAN students, especially to those from CLMV to pursue higher education in India and provide scholarships in the area of performing and visual arts;
- Promote academic curriculum benchmarking to enhance comparability of educational systems, and develop academic credit transfer schemes between ASEAN and Indian academic institutions; and further promote closer collaborations between universities in ASEAN and India through the ASEAN University Network (AUN).

- **Miscellaneous points related to health and education in the broader ambience of socio-cultural community of ASEAN**

- Promote dialogue between government officials and civil societies of ASEAN and India in the areas of rural development, poverty eradication, women empowerment, and protection of children against exploitation, empowerment for persons with disabilities, gender equality and old age care that will help provide additional income to rural households and improve the quality of lives, through among others
- Training programmes on good practices in rural development and poverty eradication
- Establish Rural Development Research Institute (RDRI) in CLMV to promote training and sharing experiences on poverty eradication
- Study tours to the poverty reduction projects in ASEAN Member States and India
- Promote cooperation in biotechnology through capacity building and joint researches for mutual benefit
- Promote scientific and technological research and development of advanced materials for development of value-added product
- Continue to promote people-to-people contacts, including through visits to ASEAN and India of students, youth, academia, scholars, librarians and diplomats, which help to foster ASEAN-India relations at the peoples level; as well as organise regular mass-media exchange programmes to ASEAN and India
- Strengthen parliamentary contacts, including through the framework of ASEAN Interparliamentary Assembly (AIPA)

Relevant Points on Education, Health and Use of Technology to enhance ASEAN-India Partnership as Designed in Plan of Action to Implement the ASEAN-India Partnership for Peace, Progress and Shared Prosperity (2016-2020)

- **Information, Communication and Technology (ICT)**

  - Enhance cooperation on Information and communication technology (ICT) such as sharing of best practices in policy, regulation and technological development, including through existing high level meeting between ASEAN and India on ICT.
  - Promote and facilitate ASEAN-India ICT workshops and training for ICT capacity building, in areas such as software development, e-governance, e-commerce, satellite and spectrum technology, Radio Frequency Identification (RFID), and the use of ICT to mitigate impacts of climate change.
  - Conduct consultations between governments, private sector and industry groups to facilitate investments in ICT, focusing on broadband connectivity and broadband applications in ASEAN. Strengthen cooperation and capacity building in information security and cyber-security, cyber laws and regulations, joint research and development activities in the area of interactive digital media.
  - Provide assistance in information technology curriculum development and IT teacher trainings to narrow development gaps in ASEAN.

- **Health and Pandemic Preparedness and Response**

  - Work together to enhance ASEAN's preparedness and capacity in responding to communicable and emerging infectious diseases including pandemics and other potential public health and biological threats.
  - Preparedness planning, prevention efforts and capacity building would include, among others, the strengthening of areas on surveillance, laboratory networking, human resource capacities and information networking.
  - Work towards developing affordable quality medicines and traditional medicines that is accessible to the people, and explore the development of a framework for cooperation in these areas as appropriate.
  - Promote sharing of information and exchange of experts in the field of public health, medicine, health education and promotion.

- **Education, Youth, Culture and People-to-People Exchange**

  - Focus on greater cooperation in educational exchanges and sharing of knowledge, focusing on women and children.
  - Promote greater awareness and appreciation of both ASEAN and India through the implementation of educational and vocational training exchanges and people-to-people activities, especially among the youth.

- Support ASEAN capacity building through Indian scholarship programmes, the exchange of teachers and lecturers, joint research and university partnerships, in collaboration with ASEAN University Network (AUN) and other regional higher education networks.
- Further increase the number of fellowships for ASEAN students, to pursue higher education in India and provide scholarships in areas of mutual interests, including the performing and visual arts.
- Promote closer collaboration between universities in ASEAN and India through the ASEAN University Network (AUN).

Relevant Points on Education, Health and Use of Technology to enhance ASEAN-India Partnership as Designed in Plan of Action to Implement the ASEAN-India Partnership for Peace, Progress and Shared Prosperity (2021-2025)

- **Information, Communication and Technology (ICT)**

- Promote further ICT cooperation through relevant mechanisms, including capacity building and knowledge sharing, in areas such as e-commerce, Artificial Intelligence, Fourth Industrial Revolution, Internet of Things (IoT) & 5G, ICT in Disaster Management, Creating smart societies through ICT, Cyber Forensics, Next Generation Transmission Technologies, Future Trends in Mobile Communication, Advanced Satellite Communication and Regulatory and Policy issues.
- Strengthen cooperation, capacity building, and policy coordination on cybersecurity, including in personal data protection and support the implementation of the ASEAN Cybersecurity Cooperation Strategy by engaging relevant ASEAN mechanisms and institutions.
- Promote sustainable and inclusive economic growth and prosperity through increasing digital trade, entrepreneurship, preparing MSMEs for digital transformation and developing a digital-ready workforce equipped for the Fourth Industrial Revolution.

- **Public Health**

- Promote sharing of information in the field of public health, medicine, health education and health promotion relevant to the health priorities of the ASEAN Health Sector under the clusters of promoting healthy lifestyles; responding to all hazards and emerging threats; strengthening health systems and access to care; and ensuring food safety

- **Education, Youth, Culture and People-to-People Exchange**

- Continue to enhance cooperation in educational exchanges and sharing of knowledge, focusing on women, children and youth to promote greater awareness and appreciation of ASEAN-India relations and people-to-people ties.
- Strengthen the promotion of women and youth participation in programmes or projects that contribute to human development, digital skills development, education, social protection, and addressing gender issues in local governance as well as in natural and human-induced disasters.

- Continue to support ASEAN capacity building through Indian scholarship programmes, the exchange of teachers and lecturers, joint research and university partnerships, in collaboration with ASEAN University Network (AUN) and other regional higher education networks.
- Further increase the number of fellowships for ASEAN students, to pursue higher education in India and provide scholarships in areas of mutual interests, including the performing and visual arts.

8. Designing the Scope of Cooperation between ASEAN and India in Tele-education and Tele-medicine

With every natural calamity and disaster, the world changes significantly and seldom goes back to the pre-existing scenario. The Covid-19 is one such calamity with a larger destructive characteristic which has upended not only the world economy but also permeated the nook and cranny of homes and livelihoods. Albeit, with every calamity comes scope for innovation. As the world cowered to lockdowns and restrictions in economic activity and normal day to day life, the swift switch to digital platforms came as a major respite at multi-sectoral level. The imminent industrial revolution 4.0 received a push due to the surge of Covid-19 and with new variants smearing the world map with its sporadic spread, there is both a greater need and scope for digital technology and services to feature prominent in national and supra-national agendas. The Covid-19 pandemic has led the countries to fiercely approach education and medical consultation services over the digital landscape. Intergovernmental organizations have been formulating action plans to govern these services through the digital mode. India's march towards bilateral cooperation with its long-standing partners such as Africa in imparting educational services to para-medical staff and nurses and roping in the Indian institutes and universities to provision educational services to 48 African countries has been counted as a huge success. The same could be replicated with other development partners, especially with countries of ASEAN.

Box 5: CoWin

The CoWIN seems to have garnered a lot of global attention. CoWIN (Covid Vaccine Intelligence Network) is an Indian government web portal for Covid-19 vaccination registration, owned and operated by India's Ministry of Health and Family Welfare. It displays booking slots of Covid-19 vaccine available in the nearby areas and can be booked on the website. CoWIN has been used for universal immunisation programme in India. India has been using a vaccine intelligence system called eVIN (electronic vaccine intelligence network), which provides real-time feedback of vaccine stocks, power outages, temperature fluctuations, etc. CoWIN is essentially an extension of eVIN. It is a cloud-based IT solution for planning, implementation, monitoring, and evaluation of Covid-19 vaccination in India. CoWIN system on a real time basis will track not

only the beneficiaries but also the vaccines, at national, state and district level. This will allow the system to monitor the utilisation, wastage, coverage of Covid-19 vaccination at national, state, district and sub-district level.

The rationale for India-ASEAN cooperation in tele-medicine and tele-education, with an e-vidya Bharti and Arogya Bharti programme of similar scope and vigour initiates from the relatively sound and steering digital landscape in the region. The preliminaries (infrastructure) for a successful ASEAN wide cooperation with India in tele-education and tele-medicine are already present and gaining traction. For instance, the internet penetration and mobile phone subscribers in many ASEAN countries have increased over the past decade. India's movement in digital payment interface and platforms such as CoWIN also signals its march toward digital revolution (Box 5). That being said, the CLMV countries in the ASEAN region require proactive action and this deems ASEAN-India cooperation in tele-education and tele-medicine profound importance.

Brunei Darussalam

Brunei Darussalam is one of the richest member states of ASEAN with the second highest GDP per capita after Singapore[38]. The oil and petroleum resources give the country mileage over the other countries in ASEAN and Southeast Asia. Education and public health scenario in Brunei Darussalam is considerably at an edge over other ASEAN member states. For instance, Brunei Darussalam stands tall in adult literacy rate, primary school enrolment ratio and pupil to teacher ratio, etc. It, however, garners attention in boasting primary school enrolment ratio higher than that of Singapore but faring low in secondary school enrolment relative to member states like Singapore, Malaysia and Vietnam. In the health sector, the indicators speak in favour of Brunei with the incidence of malaria and tuberculosis, immunization rates, infant mortality rate and life expectancy at birth all foreboding the signs of a stable and sound healthcare system. Moreover, healthcare services are free in the country. Contrasting the glorious record of the healthcare system, access to healthcare services remains dismal due to wide disparities across the four districts of Muara, Belait, Tutong and Temburong. Remote districts like Temburong face dismal healthcare access. Both private and public healthcare utilization is low in Temburong district[39]. For other remote areas in the four districts, people require long hours of travel to avail healthcare services. This dissuades people to avail healthcare services. India-ASEAN cooperation in imparting tele-medicine consultations can help reach the remote areas. Given the increased internet penetration and mobile subscriber base, Tele-medicine could be a viable option for remote locations facing dearth of physical doctors and clinics. Additionally, the Ministry of Health in Brunei has initiated an online repository of data regarding patients called 'BRU-HIMS). India, on the other hand, has also put in function Digital Health Records (DHR) for easy handling of patient records and data management. Through the e-VBAB program, India and Brunei Darussalam could foster partnership in both education and health.

Cambodia

Cambodia is a lower middle-income country in ASEAN and its populace commands a GDP per capita of US$ 1512 as of 2020. The country faces a burdened education as well as healthcare sector. Many of the indicators prove the point. For instance, the incidence of non-communicable

diseases is high in comparison to other ASEAN member states. Rural areas of the community are particularly at a disadvantage because of low internet penetration. There is a strong link between mobile availability and health outcomes. Due to low penetration of mobile handsets and low prevalence among the people who require healthcare services the most such as the elderly, health outcomes remain far from optimal. Through the e-VBAB program, India could help thin the wedge between digital infrastructural gaps between poor ASEAN countries and the richer ones. A year ago, India signed an MoU with Cambodia pledging to foment digital interface in the area of health and medicine. With the signing of the MoU, India and Cambodia have vowed to embrace digital technologies in the health sector, and utilize these digital technologies to impart medical education for para-clinical, clinical and management skills. There are ample new avenues for cooperation between India and Cambodia in the healthcare sector. The two could work out capacity building exercises for training the medics and paramedics using the disruptive technologies. Much like Cambodia's partnership with other countries like the United States in the programme named 'Operation Village Health', where partner institutions open up a physical facility for rural communities in Cambodia, India could also scale up its efforts in tele-medicine in Cambodia by opening telemedicine clinics and facilities and email based tele-medicine services.

Indonesia

Indonesia is an archipelago country in ASEAN, the largest in the world, and is thus battered by natural disasters and untoward climatic events more than the other countries in the region. Indonesia is also placed low in internet penetration and other socio-economic indicators. In its digital transformation plan for 2021-25, Indonesia has identified 10 priority sectors needing a digital overhaul, in which digital education and digital health feature prominently. Between India and Indonesia, an MoU was signed in 2018 to promote health cooperation and it took due cognizance of medical training. The e-VBAB project of the Ministry of External Affairs furthers the impending exchange of training and capacity building between India and Indonesia. India sees a huge influx of Indonesian students seeking admissions in several reputed Indian universities. Though the Covid-19 has disabled the physical movement, it has opened up fresh avenues of cooperation especially in the area of tele-education. Tertiary education enrollment remains dismal in Indonesia. The presence of Indonesian universities is markedly low in comparison to India. Thus, India-Indonesia relationship could bear fruits if tele-education services are taken up a notch. Certifications and licenses are a bottleneck in this direction. However, ironing out these barriers could expand the relationship. India's digital technology and dedicated government initiatives has sped tele-medicine services. Technology transfer and sharing of best practices could nurture tele-education and tele-medicine services to the island parts of Indonesia.

Lao PDR

Lao PDR is a landlocked country in ASEAN with Myanmar, Thailand, China and the Philippines bordering it. Lao PDR has been battling low infrastructure availability, be it internet penetration, fixed broadband or Wi-Fi broadband. In short, Lao PDR suffers from constrained digital resources imperative for smooth flow of tele-education and tele-medicine services. Lao PDR also surfaces as an underperformer in international bandwidth per user[40]. In terms of access, affordability and

quality of internet services, Lao PDR bore no positive results. The plight of Lao PDR could be understood from the finding that less than half of the population in Lao PDR has access to electricity. In these circumstances, both education and health services suffer. India's own experience with handling digital connectivity issues in its own landlocked regions of the northeast could be replicated in the growth of tele-education and tele-medicine services in Lao PDR. Tele-consulting, tele-lectures, operative videos etc. could increase healthcare access in the land-locked countries such as Lao PDR and substantially reduce the emergence of diseases. India, under the framework of e-VBAB could accommodate the promotion of m-Health application in Lao PDR where the prospects of getting timely consultation from doctor and regular monitoring are slim. Also, there is a huge potential for India to emulate its mobile tele-medicine kiosk in Lao PDR as it can help cater to the unserved population.

Malaysia

Malaysia has seen quick progress in adopting disruptive technologies in the healthcare sector. Malaysia came out with its Telemedicine blueprint in 1997. With the surge in Covid-19 cases, people in Malaysia have transitioned abruptly to digital health solutions, in which tele-medicine has shown a tremendous climb. India has put in action state level as well as national level directives for tele-medicine. India and Malaysia could collaborate and speed up information sharing to boost tele-medicine services. Malaysia has gained considerably well in innovative health technologies and thus this has increased the use of tele-medicine consultations in the country. In the present times of the Covid-19, the increasing dependence on tele-medicine in Malaysia has also reduced instances of overwhelmed hospitals. Between Malaysia and India, there is a huge potential for increasing cooperation in tele-medicine and tele-education by sharing knowledge in traditional medicines. In this respect, discussions were underway between the National Medicinal Plants Board and Malaysia. In the area of tele-education as well, India and Malaysia face a host of opportunities. As many as 4000 Malaysian students seek medical education in India while 20 scholarships have been offered under the Ministry of Ayush for courses pertaining to traditional medicine.[41] Given the Covid-19 making physical movement tough, there is an increased scope of imparting scholarships through digital learning modes under the e-VBAB.

Myanmar

With the ongoing Covid-19 pandemic, demand for tele-medicine has skyrocketed in even low middle-income countries such as Myanmar. Among them, tele-consultation, tele-radiology appear to be leading tele-medicine demand. Myanmar has a single digital healthcare platform called 'Telecare". However, countries of Southeast Asia especially from ASEAN have started their venture into delivery of tele-medicine services in Myanmar. For instance, Malaysia's DOC2US, a tele-medicine platform has inked a technical agreement with Myanmar's Telecare to provide tele-medicine services. India could also increase its presence in the tele-medicine scenario of Myanmar by striking business relationships and joint ventures with providers in Myanmar. Further, there is ample opportunity for Indian investors to invest in Myanmar's tele-medicine sector as India's Digital India and Start Up India initiatives seek to give leverage to small start-ups. Myanmar also sought cooperation from India in the field of education. Much can be leveraged in this direction as

well. The political turmoil in Myanmar and the Covid-19 pandemic simultaneously has led to major drop-out of students. This could be restored with the aid of tele-medicines.

The Philippines

The Covid-19 pandemic had a debilitating effect on the Philippines economy, dragging it to lower middle income country status. A significant proportion of the Philippines population falls under the age group 20-54. This raises the demand for education services in the Philippines. Population living in urban areas only comes to 47 per cent, while several countries in the ASEAN exhibit a more ferocious movement to urbanization. In contrast, urbanization in the Philippines has hovered around 45 per cent. This signifies the majority of the rural population and the impediments to connect them to tele-education or tele-medicine innovation. The paraphernalia required for the smooth functioning of tele-medicine and tele-education services is however gaining strides. Demand for tele-consultations has soared following the Covid-19 pandemic and this has culminated into the government partnering with the private sector to deliver services. India can share its expertise and experience with the Philippines in areas concerning vaccine provision, online payment interface, continuing nursing, medical and pharmacy education. India's insurance companies could also join forces with tele-medicine providers in the Philippines as other ASEAN countries such as Singapore are doing. However, it remains constrained due to regulations in the Tele-medicine sector in the Philippines.

Singapore

Singapore is the most developed country in the ASEAN region and it is displayed in the phenomenal social and economic indicators. Education and Health have been paramount in Singapore's growth trajectory. Internet penetration and mobile phone availability is the highest in Singapore and with the Covid-19 pandemic, the population has shifted enormously to availing tele-medicine services especially tele-consultation and diagnosis. An increasing number of tele-medicine providers have emerged in the country. However, Singapore has formulated licensing and other regulatory requirements over tele-medicine and the regulations have seen constant renewal following the Covid-19. With an increasing population being online to avail various services, privacy and security issues have become increasingly important. To make tele-medicine more organized and user friendly, it is important for people to have trust in tele-medicine. Around 85 per cent of the patients trusted their privacy in case of visits to hospital, while only 44 per cent revealed trust related to data privacy in case of tech companies.[42] Data privacy issues are more prone to lapses in India. India and Singapore can thus collaborate on data privacy and cyber-security issues. Furthermore, India's stellar pharmaceutical sector could be a point of convergence between India and Singapore bilateral cooperation. Besides, Singapore's expertise in cold chain capabilities can fructify cooperation with India in vaccine storage.

Thailand

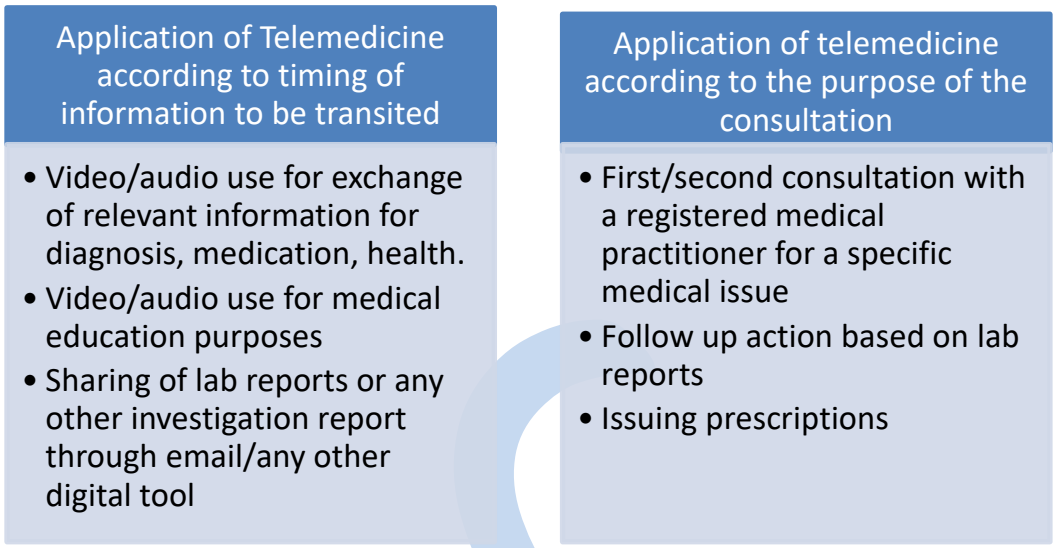
Thailand put into work its e-health strategy 2017-2026 and gave impetus to the use of digital technologies in healthcare. India and Thailand have acted together in a number of areas and education and medicine remains a critical avenue for bilateral cooperation. There is an increased

need for digital solutions pertaining to the education and health sector. Thailand's education sector faces widespread disparities between the rural and urban areas, both in terms of allocation as well as efficiency. The education sector in Thailand also witnesses a dearth of investment. India-Thailand partnership could be elevated in bridging this knowledge gap between the rural and urban areas. In this pursuit, India and Thailand can share their encounter of impediments to education access with each other and learn from each other's experiences. Similarly, collaboration in the area of continuing medical education could be fruitful in narrowing the gap between rural and urban areas. Other areas of cooperation like vaccine sharing, and data privacy issues are also important.

Vietnam

Vietnam has made enormous progress in its education sector since 2000. This has been exhibited in the net enrolment ratio moving notches upward for both male and female. The pandemic exposed the economy to great trouble when colleges went shut. However, distance learning through online mode was encouraged even prior to the pandemic. The technical equipment required for conducting virtual classrooms have sped up to a large extent in not only urban areas nut also in rural areas of Vietnam. Among the developing countries of the world, Vietnam exudes excellence in its electrification as well broadband access rates. The progress of Vietnam is notable as rural electrification reached 100 per cent. This makes the country stand in contrast to other developing countries while also showing the path for other developing countries. India and Vietnam can come together and amplify efforts in bridging the rural-urban divide in provisioning of tele-education and tele-medicine services. Collaboration should be intensified in vaccine exchange, research and development and supply chain resilience. It is to be noted that Vietnam approved India's Bharat Biotech Covaxin lately. In a latest development, Vietnam and India have also signed an MoU for manufacturing of Covid-19 vaccine, named, Nano Covax.[43]

Figure 8: Application of Tele-medicine according to Time and Purpose of the Consultations



Source: MoHFW (2020)

9. ASEAN's Initiatives in Tele-medicine and Tele-education with Other External Partners

9.1 ASEAN-Pacific Alliance (PA) Partnership

The Pacific Alliance (PA) is a regional integration initiative founded in April 2011 through Lima Declaration. The member countries of PA include Chile, Columbia, Mexico and Peru. As a group, PA is the eighth economic power and 8th export club worldwide. In May 2011, PA had requested ASEAN to convene ASEAN-Pacific Alliance Foreign Ministers meeting at the sideline of the United Nation General Assembly sessions and the first Ministerial Meeting between the two groupings was held in 2014. On 24 September 2016, the ASEAN-Pacific Alliance Framework for Cooperation was adopted at the 3rd ASEAN-PA MM. This Framework has identified four priority areas of cooperation between the two blocks including Economic Cooperation, Education and People-to-people contacts, Science, technology and innovation and Sustainable Development. Box 6 presents the details of list of potential activities relevant for education and technology lined up for implementation under the Prioritized Areas of Cooperation in ASEAN-PA Framework for Cooperation.

9.2 ASEAN-Australia Partnership

Australia became ASEAN's first dialogue partner in 1974 and in the last forty years, the relationship between ASEAN and Australia has evolved extensively. While a substantial number of Southeast Asian formers students are alumnus in Australian universities and institutes, student mobility from Australia to Southeast Asia has been painfully abysmal.[44] The second aspect is Australian aid to Southeast Asian educational system and students which is worthy to mention. Australia and ASEAN have also worked on a regional network of higher educational institutes. Institutionalization of cooperation in digital education and digital health services have also been

started between Australia and ASEAN. The Plan of Action to Implement the ASEAN-Australia Strategic Partnership (2020-2024) along with the Leaders' commitments from ASEAN-Australia Summits, the Joint ASEAN-Australia Leaders' Statement on the 40th Anniversary of ASEAN Australia Dialogue Relations towards a Strategic Partnership for Mutual Benefit (2014) and the Joint Statement of the ASEAN-Australia Special Summit: The Sydney Declaration (2018) have laid the basics about cooperation between ASEAN and Australia in various sectors including health, education and technology.

Box 6: ASEAN-PA Cooperation in Education and Technology: List of Activities

- To share experiences in higher education, and technical and vocational education and training.
- To promote the establishment of scholarships, academic visits and seminars by universities and colleges for nationals of the PA countries in ASEAN and vice versa, focused on the priority areas for cooperation mentioned in this Framework.
- To promote cooperation between diplomatic academies.
- To promote exchange of knowledge and best practices in cultural and creative industries.
- To promote cooperation in the field of Science, Technology and Innovation.
- To exchange experiences on innovation and research and development policies.
- To promote the exchange of scientists, researchers and university professors between ASEAN and PA countries, as well as exploring the possibility of cooperation between universities and research centers.

Source: Pacific Alliance details available on ASEAN Secretariat website

The following points are important in ASEAN-Australia partnership in the areas of educational, health sector and technological cooperation.[45]

- Promote cooperation and information sharing on ICT, including broadband and mobile telephone connectivity, with support for the implementation of the ASEAN ICT Master Plan 2020 and its successor documents.

- Promote sustainable and inclusive economic growth and prosperity through increasing digital trade, entrepreneurship, preparing MSMEs for digital transformation and developing a digital-ready workforce equipped for the Fourth Industrial Revolution.

- Enhance cooperation on digital integration, including e-commerce, with support for the implementation of the ASEAN Agreement on Electronic Commerce and the ASEAN Digital Integration Framework Action Plan.

- Enhance inclusiveness and quality of early childhood care and development (ECCD), primary, secondary, Technical and Vocational Education Training (TVET) and higher education through sharing of best practices in regard to education curricula and syllabuses, teaching pedagogies, and resource development.

- Promote regional collaboration in the area of TVET, such as by promoting a shared understanding of the principles and quality indicators of the EAS TVET Quality Assurance Framework in the quality assurance systems for TVET of ASEAN Member States, and providing policy input to the EAS TVET Provider Network, as appropriate.

- Promote an open, secure, stable, accessible and peaceful ICT environment.

- Improve joint efforts to promote security, peace and stability in cyberspace as well as the protection of online personal information, where appropriate, including through the biennial ASEAN-Australia Cyber Policy Dialogues.

- Promote a rules-based cyberspace based on international law, cooperative capacity building, practical confidence building measures, and voluntary and nonbinding norms of responsible behaviour taking reference from the voluntary norms recommended in the 2015 Report of the United Nations Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security (UNGGE).

- Cooperate on national CERT-to-CERT cyber response, efforts and cyber information exchanges especially where cyber incidents have direct impact to ASEAN and Australia by leveraging on the ARF Points of Contact Directory on Security of and In the Use of ICTs and established contacts in the CERT community.

9.3 ASEAN-US Partnership

ASEAN's partnership with the US in the field of technology, ICT, health and education occupy a central position in their bilateral relation. In October 2021, both the sides issued the ASEAN-US Leaders Statement on Digital Development. The US has committed to support ASEAN in establishing a digital community with a focus on cyber security.

Strengthening human capital development in ASEAN which includes promotion of digital skills and literacy, as well as 21st century skills in basic education, Technical and Vocational Education and Training (TVET) through the ASEAN TVET Council (ATC), and higher education is another aspect of US-ASEAN cooperation in the digital area. Leaders have mentioned to encourage universities and TVET institutions in ASEAN Member States and the U.S. to collaborate on projects on curriculum exchanges and vocational training in the areas of business administration, science, technology, engineering, and mathematics (STEM) and other related fields. [46]

9.4 ASEAN-China Partnership

Assisting ASEAN in its digital transformation is one of the bilateral aspects of China-ASEAN cooperation. ASEAN-China Joint Statement on Cooperation in Support of the ASEAN Comprehensive Recovery Framework, issued in October 2021, both sides have reaffirmed their commitment in the same direction. Minimizing the digital divide, capacity building of the existing ASEAN centers, formulating the Action Plan on Implementing the ASEAN-China Partnership on Digital Economy Cooperation (2021-2025) and strengthening cooperation under the ASEAN

Digital Master plan 2025 are mentioned in the Framework. As far as telemedicine and distance education are concerned, it is mentioned that they will 'actively promote distance education and telemedicine, and develop a digital economy and society that are innovative, sustainable and inclusive of the vulnerable groups of the society to bridge the digital divide'.[47] China's telemedicine services have already been available in the international market including countries like Zambia where Chinese medical teams provided on-time medical assistance to Covid-19 patients through the use of digital platforms. China has also established a benchmark by using robots in telemedicine in Wuhan, the first epicenter of corona virus in 2019.[48]

10. Barriers to e-VBAB

As the saying goes, "Necessity is the mother of invention", so can be seen the efforts in tele-medicine and tele-education prompted by the pandemic. The Asian region grapples with twin problems that have acted as a catalytic force for the population and providers to quickly embrace the digital platforms provisioning medicine and educational services. The twin issues of concern are ageing population and deficiency of doctors as well as education providers. Though time and over, ASEAN countries and India have mooted the need for expediting the transition to telemedicine and tele-education especially in the backdrop of the recurring pandemic, a host of challenges looms over the prospects of raising the telemedicine and tele-education services to regions afar. Some of the challenges are noted and divided into three segments: common challenges, challenges specific to tele-medicine and challenges specific to tele-education. A few of the challenges are duly discussed in this section as follows:

10.1 Common Challenges

Time and Cost

The hardware and software needed for a seamless use of tele-medicine and tele-education services imply lofty costs to the countries concerned. While the richer nations in ASEAN such as Singapore, Brunei Darussalam, Thailand, and Malaysia have ample hardware and software congruence for telemedicine and tele-education to be a reality, the predicament of CLMV countries stand in stark contrast. The reach of the needed hardware and software into the remote areas and hinterlands is altogether a different ordeal for the under-developed countries such as Cambodia, Lao PDR, Myanmar as well as Vietnam. The geographical seating of some countries owing to their landlocked position also leads to the delay in reaching of the needed apparatus.

Implementation failures

No matter how well the technologies are interspersed in the countries, difficulties in implementation of the systems and programmes need for telemedicine and tele-education could derail the prospects or prolong the timely implementation, at the least. Countries in the ASEAN region still brave implementation failures. However, users in poor countries such as Cambodia, Laos and Myanmar may need regular technical assistance to rid of continual implementation glitches. Regular and time to time support is also needed to overcome the implementation challenges, especially in the hinterlands.

Data Privacy and Security

Phishing scams and data breaches have become a regular activity in the medicine sector. Thus, the greatest challenge in enlarging the scope of tele-medicine services beyond the borders is putting user's information and privacy at risk from unknown phishing thefts and ransom ware. Medical records are at the risk of ransom ware and theft attempts. Similarly, students record in tele-education is in danger of proper cyber-security mechanisms are not in place to tackle the issues. Proper Information Security Management (ISM) programmes must be brought into tele-education to ensure safety of confidential information and minimize confidentiality assaults.

Lack of Uniform Tele-medicine and Tele-education Guidelines across ASEAN Region

Within ASEAN region, the countries do not follow any identical telemedicine and tele-education guidelines. In few countries, telemedicine is permitted only for known patients who are suffering from mild medical issues. Any patient who requires first consultation or is suffering from chronic illness or any complicated medical issue has to be under a doctor or hospital's direct supervision. In those cases only reference checks and optional consultation can be done using electronic media. E-pharmacy also has its limitations including misuse of drugs by any person. Lack of standardization of tele-education system can be considered as a critical issue to implement region wide uniform tele-education cooperation between India and ASEAN especially if that requires provision of degrees and certificates at the end of the programme. Therefore, short-term and country-specific cooperation in telemedicine and tele-education would be feasible and practical.

10.2 Specific Challenges to Tele-medicine

Diagnostic precision

While the concern of an increasing ageing population and the lack of physicians per capita has given impetus to tele-medicine consultations, it has also seen aversion from the elderly the most. Tele-medicine in contrast to in-person and face-to-face consultation is not readily accepted by the elderly population. The precision of the diagnosis is also given a skeptical eye by the elderly. Moreover, the time to observe patients through electronic media is less than in-person consultations. Patient satisfaction is less in the case of tele-medicine as against face-to-face consultations. In many instances, patients have faced erroneous diagnosis leading to long-term health effects.

Service Awareness

In order to reach to the patients with need of telemedicine services, proper planning needs to be done to generate awareness on the services available. Branding and marketing of telemedicine services within the bilateral and multilateral negotiations and agreements need to be given attention and space.

10.3 Specific Challenges to Tele-education

Digital Literacy

While digital penetration is to be attributed to the success rate of tele-medicine and tele-education services in various parts of the developed world, less receptive population to digital technologies is recognized as a major impediment. The elderly population is unable to grasp the proliferating digital technologies and health related applications. While mobile availability has risen, it does not boil down to increased digital literacy. Digital competence and computer competence is as important in tele-education as is in tele-medicine. For example, in ASEAN, majority of the young people have a modest level of digital literacy, differing across the member states[49]. However, it is the rural people, ethnic minority and youth aged 15-24 age that fall behind their peers in digital competence and literacy.

Lack of Content in Native Languages

If India wants to reach to the students in the ASEAN region through tele-education services or Edtech, efforts should be extended to develop content in local languages. Currently, the dearth of e-content in local and regional languages acts as a barrier for many students to access the tele-education facilities. For more details in barriers, refer to Annexure 2

11. Policy Recommendations

- **Short-term Policy Recommendations**

  - Setting up a web portal for dissemination of information on tele-medicine and tele-education.
  - E-networks between IT training centers in CLMV region with the private sector enterprises in education and health care sector in India and ASEAN to provide short-term internship and virtual training opportunities to the students. Work-based training programmes in Science & Technology, Engineering, Math, Accounting, Tourism to address skills gaps can be taken up as identified in the ASEAN Work Plan on Education 2016-2020.
  - Creating a mentoring programme at the sub-national level linking states from India and ASEAN region to connect the young entrepreneurs with established start up ventures to explore opportunities and understand the risks-benefits in entrepreneurship.
  - Assisting the CLMV countries in establishing model schools with the capability to use ICT, much in line with the ASEAN Work Plan on Education, 2016-2020.
  - Assisting ASEAN in preparing teaching materials on ICT for the school teachers and educators.
  - Promoting Doctor-to-Doctor consultations through institutionalized cooperation.
  - Establishing an e-network to involve Patient to RMP (Registered medical Practitioner), Caregiver to RMP, RMP to RMP and Health worker to RMP to encourage direct consultations based on real-time emergency and purpose of the consultations.

- **Medium to Long Term Policy Recommendations**

  - Establishing a platform for vocational training institutes to offer mutually recognised online certificate and diploma courses on subjects like curriculum development, cyber laws and

regulations, mental health, community level disaster preparedness, safe use of digital media and others based on demand.

- Undertaking projects to create Health Care Services MIS and mobile application to provide easy access to healthcare related information to the people in India and ASEAN.
- Assisting the CLMV region in exploring opportunities to further investments in R&D in use of ICT in education and health care.
- Additional researches need to be conducted on market estimation and forecasting in demands, applicability of top-down and bottom-up approaches in telemedicine and tele-education and third party perspectives to understand stakeholder interests. This will help India to explore the future of e-VBAB projects in Southeast Asia.
- Establishing an Information Center on E-VBAB and linking that with Indian Mission to ASEAN, Jakarta, to create awareness on India's endeavors in E-VBAB.

Table 5: Proposed Action Plan

Nature of the Programme	Stakeholders	Duration	Sponsor/Command
Short-term training and internship opportunities to students	B2B - private sectors from both the region	6 months (approx.)	Indian Mission to ASEAN
Young Entrepreneurs Mentoring Programme- Young and tech-savvy entrepreneurs from tele-health and tele-education from India can be selected as mentors of like-minded youths from the ASEAN Region	Selected entrepreneurs from India and youths from ASEAN region	Mentoring Workshops and Regular Mentoring Interactions	Ministry of MSME, Ministry of Education, MEA, Indian Mission to ASEAN in Jakarta
Preparation of Information and Communication materials for teachers and educators on subjects based on demand	Selected institutes from India	One time project of 6 months	MEA, Government of India and Ministry of Education, Government of India
Virtual Networks between RMPs, patients and health workers	Hospitals and health research institutes from India and ASEAN Region	Regular Interactions on digital platforms	Ministry of Health, Government of India, Indian Mission to ASEAN
E-Information Center of e-VBAB in IMA	IMA, Jakarta Public-Private	Regular Regular	MEA, Government of India MEA, Government of India
Digital Literacy program for Rural areas in CLMV Region	Ministry of Education, GOI and ASEAN partners	12 Months	MoE, GOI

12. Conclusions

India and ASEAN are well poised to accentuate their partnership in multiple domains. Tele-education and Tele-medicine present scope for a vibrant relationship in the sphere of health and education. With the Covid-19 pandemic spreading its tentacles in the form of new variants, cooperation in digital solutions in the health and education sector has become all the more relevant. A significant population in the ASEAN region, particularly the CLMV countries and the hinterland, remain behind in terms of internet penetration and connectivity. This makes the provision of tele-medicine and tele-education a challenge in these areas. Therefore, an energized partnership in the area of tele-medicine and tele-education under the e-VBAB programme may

fructify into a resilient health and education sector in the region. The functioning of the programme is, however, fraught with challenges, particularly of digital literacy and access. However, those could be mitigated through consistent education, capacity building and training exercises, networking, and mentoring of young population as well as professionals.

The cost advantage of tele-medicine and tele-education provides it relevance in the current scenario. Being economical and competitive to the end-user, both tele-medicine and tele-education could see extension in many remote regions and the remote parts of the ASEAN stands to benefit considerably from this benefit provided by tele-medicine and tele-education initiative. With adequate wherewithal and concerted efforts, the initiative could expand the synergies between India and ASEAN. Though the initiative appears promising in the current scenario of the changing landscape due to the pandemic, it is still fraught with multiple challenges. At the individual level countries face numerous bottlenecks in seemingly embracing digital technologies. Even when digital technologies have improved considerably, issues related to data privacy and breach, precision of health outcomes, and country-wise guidelines thwart the full embracement of initiatives such as tele-medicine and tele-education. The study thus presses upon the need to address these challenges. The developmental divide between the countries of the ASEAN region furthers the issue of reaching to remote areas, particularly of CLMV countries. It is in this light that the study recommends short term and medium-term solutions, for instance, of providing adequate support to these countries in garnering investment in R&D for the use of digital technology in both education and health services. The restriction of information has been a major impediment in the way of tele-medicine and tele-education. The satisfaction that comes with in-person medical consultation and educator-educatee relationship long established traditionally is hard to do away with. Due to lack of information, the users have been wary of the efficacy of digital platforms in providing education and health services. Raising awareness requires seamless flow of information. It is in this direction that the recommendation of creating a web portal for the dissemination of information on tele-medicine and tele-education is made. It will be an important step in extending India's e-VBAB initiative in the ASEAN region with less hassle.

To conclude, the e-Vidhya Bharati and e-Arogya Bharati Network (e-VBAB) initiative has the potential to promote education and health cooperation provided India and ASEAN countries agree to undertake subsidiary projects as identified in this study. Nonetheless, implementation of the e-VBAB will scale up the ASEAN-India relations at a time when both of them are looking for new landscape of collaborations.

Annexure 1

ASEAN tourist arrivals to India according to purpose, 2019

Country	Total arrivals (in numbers)		Business and Professional (%)		Leisure Holiday and Recreation (%)		Medical (%)		Indian Diaspora (%)	
	2011	2019	2011	2019	2011	2019	2011	2019	2011	2019
Indonesia	32530	50177	32.1	19.80	27.5	59.20	1.1	0.45	-	3.91
Malaysia	208196	334579	12.4	7.06	41.4	63.62	0.7	0.09	-	10.84
Philippines	31151	56393	39.8	19.76	17.0	30.74	0.4	0.55	-	3.08
Singapore	119022	190089	25.7	14.40	23.8	30.17	0.5	0.03	-	17.25
Thailand	92404	169956	21.9	10.17	47.9	71.90	0.1	0.02	-	2.12
Myanmar	25043	86842	12.1	5.45	46.9	82.28	3.9	4.47	-	1.11
Vietnam	9809	31427	36.1	12.92	34.3	77.33	0.1	0.01	-	1.03

Source: India Tourism Statistics, 2020 and 2011

Foreign Students in India at Various Categories (based on actual student response)

Country	Ph.D.	M.Phil.	Post Graduate	Under Graduate	PG Diploma	Diploma	Certificate	Integrated	Grand Total
Malaysia	4		11	1336		1		1	1353
Myanmar	95	10	95	125		40	2		367
Thailand	37	3	65	223		11	3		342
Indonesia	5		61	165	1		5	1	238
Singapore			15	126					141
Vietnam	34		46	47	1	1	2		131

Source: All India Survey in Higher Education (AISHE) 2019-20, Ministry of Education

Outbound ASEAN and Indian Students for Higher Studies

Destination Country	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	India
Brunei		n	58	n	116	n	26	29	52	n	32
Indonesia	12	25		8	1745	20	56	57	996	55	947
Lao PDR	n	48	n		n	9	n	n	n	235	n
Malaysia	162	145	8440	10		457	328	772	881	64	2810
Myanmar	n	n	5	n	n		n	n	10	n	5
Singapore	...	...	...	...	...	...	...		...	...	...
Thailand	8	1550	410	944	245	2690	296	31		863	374
Vietnam	n	683	n	6895	7	48	43	n	25		18
India	n	28		31	1353	367	25	141	342	131	
Australia	390	1741	13880	327	16100	1338	9341	7760	7659	17389	93324
Canada	21	48	1101	15	1050	27	1629	462	468	7161	74340
China	...	...	...	...	...	...	...	...	...	...	...
Japan	39	631	4722	214	2681	3336	1079	344	3140	40633	1145
Korea	8	286	1087	84	767	597	455	76	327	13176	980
UK	947	1550	3087	94	14094	592	793	6795	6314	3465	27300
USA	56	683	7984	94	7712	1891	3376	4133	6039	25951	133321

Notes: ... =missing data; n = nil or negligible
Source: UNESCO Institute of Statistics (UIS), 2020

Annexure 2
What the Leaders Say?

Issue: Available Platforms in Remote Learning

"I am happy that the Indian Government has taken several initiatives such as Scheme for Promotion of Academic and Research Collaboration (SPARC), Indian Technical and Economic Cooperation (ITEC), Global Initiative of Academic Networks (GIAN) and EVidyaBharti, among many others, to facilitate the growth of higher education institutions within the country and promote collaborations. Teaching Learning Resource Centres set up at universities and colleges are spearheading the upgrading and upskilling of new edtech that is much needed today. Collaborative training and learning programmes for new pedagogies and assessment tools is on the rise. These initiatives have helped institutions go beyond just the letter of the collaboration to imbibing the spirit of working together…"
(Dr. Vidya Yeravdekar, Chair- OBREAL Global Indian Chapter, Chair-FICCI Higher Education Committee and Pro Chancellor, Symbiosis International (Deemed University). Source: FICCI EDUWRAP

Issue: Need for Laws and Regulations in EdTech and Online Learning

"Jain of Nishith Desai Associates, who co-authored the article titled Decoding the UGC and AICTE's Notices on Franchising and Mis-advertising for Online Degree Programmes, explains that amid the exponential growth in ed-tech, every platform cannot be expected to have the same level or quality and compliance. Hence, she says, the advisory by the government has been issued in public interest, for public awareness, and greater good."
(Nishith Desai Associate, a firm involved in research on laws and regulations)

Issue: Handling Patients on Digital Platform/Online Consultation

"A patient may display suicidal tendencies or even outrightly express that they intend to hurt either themselves or another person. In such situation, as with regular consultations, the doctor must promptly inform the authorities. Similarly, if the patient confides in the doctor that he/she is the victim of abuse or has been assaulted, the doctor should consider whether the authorities ought to be notified. Note that, to the extent that it is practical, guidelines for medicolegal cases should be adhered to for cases that are of a medicolegal nature."
(Anay Shukla and Eshika Phadke, Arogya Legal – Health Laws Specialist Law Firm). Source: Telemedicine Society of India, Lucknow

Issue: Internet of Things and Smart Devices

"The Internet of Things—connected devices—is my third insight, and actually it's a no-brainer. Smart devices have become more prominent as people have invited them into their lives to help fight COVID-19 and to share data with their doctors. However, a study said while people are benefiting from this technology, their concerns about how data are used is rising exponentially. Of healthcare consumers surveyed, 70 percent said that they were concerned about data privacy and businesses tracking their online activities, behaviors, locations, and interests. Digital health of the future has to address how we're going to protect data privacy."

(Shobana Kamineni, Executive Vice-Chairperson, Apollo Hospitals, India). Source: McKinsey & Co.

Issue: Language Barrier

"Communication barriers have been shown to impact patients adversely. Moreover, this population (from different ethnic/linguistic background) also consists of uninsured migrants or refugees who have limited knowledge of healthcare services and diseases that could be risk-managed."….. This " could potentially exacerbate the structural disparities, and therefore, telemedicine approaches should consider resources or technologies that could provide appropriate language support to the vulnerable communities."
(Sonu Bhaskar and others, associated with Telemedicine Sub-committee, Sydney, Australia). Source: Frontiers, a platform on health care services

Annexure 3
Key Informant Discussions

Enhancing ASEAN-India Partnership in e-VBAB: Challenges, Opportunities and the Way Forward was visualized and planned as a background analysis of India's scope and opportunities in expanding e-VBAB in the ASEAN region. In the course of the study the authors have explored the bilateral ways between India and individual ASEAN countries in the fields of telemedicine and tele-education as well as the existing ASEAN multilateral ways to transform the region as a digital space has also been discussed. In order to understand the problems and issues in a better and practical way, we also spoke to a few individuals who have benefitted from any existing and related programmes in India.

One of our key informant discussant is Fatima (name provided by the key informant) who is an Afghan national now residing in Spain. Fatima was a Masters Degree student in a prestigious private university in Pune, India and availed financial assistance given by USAID. The rest of her story is narrated by herself in the form of an email:

> "My story began when I thought of doing my masters abroad. I heard about USAID scholarship for Afghan women abroad especially in India where I used to travel with my family for vacations every year. I had to pass aptis English language test in British council. Soon I received a message from USAID that I was chosen as a successful candidate for pursuing my masters in India. Only problem we had was the occupation of my husband and two little kids. As my husband was a dentist and couldn't abandon his clinic so he was just coming to India every few months and I had to stay alone in India studying and taking care of kids. It was a very challenging journey but as India provides good educational opportunities and services I felt less stressed. As USAID was paying for my fees I had to focus more on our lectures. As in our faculty we have had to study with the latest resources and materials I didn't had any kind of problem because I had somehow knowledge of international relations as we were born in a conflict based country and everyone are expert in foreign affairs. Studying in India meant a progress to me as I had to relearn a foreign language which was Spanish which is now helping me a lot as I'm living in Spain right now and I was graduated from Spanish department faculty of language and literature from Kabul university in 2010. But I hadn't spoken this language for almost 8 years. The thing which I wanted to remind was the security and power of women in India. I never felt insecure there while living alone with kids. Only problem which foreign students have is the Indian English. Sometimes some professors were expecting more from us but due to the educational gap it was getting really difficult to handle them. Other things were normal. We had similar culture and I had never felt a foreigner in there. Overall we spent a quality time in there. Kids had Indian friends, they used to go to the karate classes apart their school and even I'm still in touch with some of our classmates. Hope to see them soon." … Fatima, miembro de la asociación ARIA-E

We had another discussion with someone who benefitted from a Government of India scholarship for foreign students. Suppawit, a Thai national who was a former student at a prestigious government institute in New Delhi, responded with skepticism as we asked him about the scope of using digital platforms instead of face-to-face interactions between a teacher and students. In his own words,

> "Yes, I agree with that statement, but digital still has many limitations in its implementation in education. During the past COVID-19, many universities around the world have adopted digital systems to facilitate education and prevent the epidemic. Several studies have found that educational achievement is worse, even though access to education through digital makes it easier to access the classroom. I think the adoption of digital can actually increase access to education by not having real room seating restrictions, but the problem is getting the essence from such classrooms. Importantly, the digital system only assists in lecture-oriented disciplines. Moreover, our higher education focuses on debate, analysis, and criticism. Therefore, education in the classroom facilitates these things more. We, therefore, found that there were more attempts to return to traditional teaching methods than online learning. In addition, digital has deprived us of the atmosphere outside the classroom, which is vital for higher education, especially abroad. Many international students choose to study in India not only because they want to further their studies but also want to immerse themselves in and learn about Indian society and culture. Of course, digital platforms cannot create these. So I think digital platforms can only partially bridge the gap between higher education institutions and students, but they cannot fulfill the ideology of studying abroad." … Suppawit, Thailand.

We had the opportunity to speak to someone in the field of services in higher education and to quote him, .. "in the last two years number of outbound students is on rising side despite there are many cases where students were uncertain to take the opportunity outside due to financial reasons". As the entrepreneur does not want to be identified, we decided to keep this informal and anonymous.

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About AIC

Considering the work of the ASEAN-India Eminent Persons Group (AIEPG), and its Report with recommendations for forging a closer partnership for peace, progress and shared prosperity, the Heads of the State/Government of ASEAN and India at the ASEAN-India Commemorative Summit 2012, held at New Delhi on 19-20 December 2012, recommended the establishment of ASEAN-India Centre (AIC), which was formally inaugurated by the External Affairs Minister of India on 21 June 2013 at RIS. AIC serves as a resource centre for ASEAN Member States and India to fill the knowledge gaps that currently limit the opportunities for cooperation. AIC is working with the Indo-Pacific Division of the Ministry of External Affairs (MEA), Government of India to undertake and disseminate evidence-based policy research and provide policy recommendations.

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