UNESCO

United Nations
Educational, Scientific and
Cultural Organization

EDUCATION POLICY REVIEW REPORT

Brunei Darussalam · Indonesia

Malaysia · Philippines · Timor-Leste

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LIST OF ABBREVIATIONS

CBA	Competency Based Assessment
CfBT	Centre for British Teachers
CPD	Continuous Professional Development
DACUM	Developing a curriculum
DSSE	Directorate of Special School Education
EAHCA	Education for All Handicapped Children Act
ECCE	Early Childhood Care and Education
EDT	Education Development Trust
EFA	Education for All
ERIC	Education Resources Information Center
ESD	Education for Sustainable Development
ICT	Information and Communication Technology
IDEA	Individuals with Disabilities Education Act Amendments
KOICA	Korean International Cooperation Agency
KSAP	Knowledge, Skills, Abilities, And Personalities
KSSM	Secondary School Standard Curriculum
KSSR	Primary School Standard Curriculum
KWS	Key Word Signing
LNCP	Literacy and Numeracy coaching Programme
m-DPBL	Multimedia in the Direct Problem-Based Learning
MEd	Master of Education degree
MIB	Melayu Islam Beraja
MOEC	Ministry of Education and Culture
MOHE	Ministry of Higher education
MTeach	Master of Teaching degree
NED	National Education Department
NESP	National Education Strategic Plan
NQF	National Qualification Framework
NTESDP	National Technical Education and Skills Development Plan
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private-Partnerships
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses Approach
PROELT	Professional upskilling for English language Teachers Course
PSG	Pendidikan Sistem Ganda
PQF	Philippine Qualifications Framework
SBT	School-Based Team
SDG 4	Sustainable Development Goal 4
SEN	Special Educational Needs
SEIP	Special Education Integrated Program
SENA	Special Educational Needs Assistance
SEU	Special Education Unit
SI	Social Inclusion
SLR	Systematic Literature Review
SPM	Malaysian Education Certificate
SPN21	National Education System for the 21st Century
TFM	Teach for Malaysia
TIARA	Integrated Approach to Reading Acquisition

TPP	Teacher Policy and Plan
TVET	Technical and Vocational Education and Training
UBD	University of Brunei Darussalam
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPE	Universal Primary Education
WOS	Web of Science

ACKNOWLEDGEMENTS

Executive Summary

EXECUTIVE SUMMARY

Previous studies have indicated the importance of analysis and reviews of education policy for better education reform as well as systemic educational interventions. Many researchers and educational analysts have demonstrated that educational policy review will provide pivotal information for policy makers and implementers and hence significantly contribute towards the effectiveness of formulated educational policies. In addition to that, educational policy review provides stakeholders with information on weaknesses, improvements plan and new potential policies and subsequent planning of educational interventions. Besides reorienting educational practices as well as designing appropriate intervention strategies, educational policy review will provide a systematic guide for policymakers to design, analyse and execute their educational policy implementation processes to increase its cost effectiveness.   The aim of this review is to develop Sub Education Policy Review Report covering Brunei Darussalam, Indonesia, Malaysia, Philippines, and Timor-Leste on each following thematic area with an overall question on how SDG 4 can be accelerated by education interventions including an education response to Post Covid-19 Pandemic. The thematic areas include: i) Sector-wide Policies and Plan; ii) Technical and Vocational Education and Training (TVET); iii) Teachers Policy and Plan; iv) Education for Sustainable Development (ESD); and v) Inclusive Education.

Policy review related studies were retrieved from ERIC, Scopus and WOS databases and systematically analysed**.** The Systematic Literature Review (SLR) used in this study is a systematic, deliberate and explicit method to identify, select, critically evaluate, collect and analyse data from relevant past research. This approach has been selected because it aims to synthesize in detail all applicable scholarly literature. The systematic review was conducted in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) using keywords which have been carefully selected as indicators which represent each SDG 4 target area. In addition to SLR which were undertaken by using sixth evaluation framework and SDG 4 indicators, online Interview were also conducted with Education Director Generals, National Consultants and Technical Directors from all five countries and Online Questionnaire which will be disseminated via online platform to further validate reviews that have been undertaken.

Review of TVET related policies revealed an interesting trend in TVET implementation in the areas of its impacts, implementation status and constraints to the successful implementation. TVET, in the Ministry of Higher education (MOHE), could advocate a broad range of industry participation opportunities to encourage a range of manufacturers to be involved in preparing highly skilled workers for their industry. These will involve joint projects with training institutions designed to prepare colleges and students with the most up-to-date knowledge and skills needed for global economy work. Given that there are gaps in current technical skills with the technical skills needed for IR4.0, it is recommended that TVET institutions restructure the learning process of the software, getting to know network structures to master big data technologies. It was also found that TVET policies and interventions are put in place by all five countries, and it meets to some extent, the targets of SDG4. However, empirical studies have highlighted aspects of the policies and its initiatives that could be continuously improved. Another gap, namely, the inclusivity component of SDG4, embracing the marginalised communities for TVET, needs more attention either through more studies on the issue or developing TVET policies and initiatives addressing the equity issue.

Review of Education for Sustainable Development (ESD) related policies showed a diversity of educational approaches and initiatives to demonstrating progress towards achieving the objectives of ESD implementation. The frameworks guiding the implementation of ESD in each country focus on distinctive themes and topics, have different coordination mechanisms, and use a diversity of learning approaches. Some frameworks focus on formal education, whilst other frameworks have broadened

opportunities through integrating ESD into non-formal and informal education. All Cluster Countries has integrated the ESD in their existing education policy, emphasizing on various ESD components that are of priority to respective countries. The curriculum content of ESD in basic education and teacher education in respective cluster countries is credible for educating environmental concepts and environmental problems of the nation and the world. The concept of ESD needs a fuller understanding for educators to have an effective implementation of the ESD-related project. Government action in supporting and promoting ESD is one of the significant success factors that include developing policies and legislations which lead to improving ESD-related education programmes.

Review of Teachers Policy and Plan (TPP) revealed an interesting trend in TPP implementation in the areas of its impacts, implementation status and constraints to the successful implementation. Teacher policies are put in place by all five countries, and it meets to some extent, the targets of SDG 4. However, academic studies have highlighted aspects of the policies and its initiatives that could be continuously improved. There is a lack of adequately trained teacher educators who are aware of the importance of Education for Sustainable Development (ESD) to encourage transformative initiatives to reorient education through technology to address sustainability. Though what works to enhance the standard of teaching varies according to context, there are creative methods that can be integrated into national teacher development policies. In summary, more attention needed neither through more studies on the issue nor developing policies and initiatives addressing the international cooperation issue.

Review of policies related to inclusive education emphasised the needs of collaborative effort among the policy makers, middle management and the teachers, not to mention the parents of the students should also disseminate the same concept of inclusion. As inclusive practices occupy a greater part of teachers' work in regular schools, a more comprehensive body of research is needed to monitor, inform and improve current inclusive education efforts in the school system. Perhaps the greatest challenge would be the introduction of a comprehensive evaluation and feedback system that would continuously monitor the efficacy of the training programmes and respond appropriately and adequately to the emergent and unmet needs of all teachers.

Finally, analysis of sector wide policies and plan concluded that the five cluster countries are making considerable measures to attain education for all in terms of accessibility, quality, equality, relevance, free and effectiveness. Challenges encountered along the way in enforcing such policies and strategies need to be addressed to ensure that no one is left behind, including marginalized children. Enrolment of children in both boys and girls has seen a substantial rise in all nations. Today, there is a rise in the number of out-of-school children, and free education should be expanded to higher levels of education. While literacy rates are growing in number, more effort should be made to tackle illiteracy problems. Since the performance of all nations in the international assessment is still below average, the resolution on the standard of teaching in terms of pupils and the number of teachers, qualifications and competencies must be considered. Given the amount of high budget allocated to the education sector, monitoring and management should be improved to ensure the return on investment, particularly in terms of learning infrastructure, resources and teachers' professional development. In conclusion, the five cluster countries are on the right track in achieving the objectives of the SDG4, and collaborations between the public and private sectors are vital in achieving this noble aim. Undoubted in the process, external reviewers, such as UNESCO, the OECD, the World Bank and NGOs, have played their roles not merely as regulatory or monitoring bodies, but provide full support as well as assistance together with benchmarking standards and mechanisms to measure the progress of education policies and plans.

Background
and Purposes

BACKGROUND AND PURPOSES

Increasing demand for high-quality education necessitates the needs for effective educational policies for educational improvement. It is almost axiomatic that quality of education is the result of innovative education systems, policies, and modes of education (Xue and Li 2019). Based on the framework for action of Sustainable Development Goal 4 (SDG 4), which strives for quality education, there are five strategic approaches to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Among the five strategic approaches outlined in the framework, improving educational policies is one of the critical strategies to be implemented globally as well as regionally and nationally (UNESCO 2016). In fact, as argued by Boeren (2019), the SDGs in general is related to the current discourse on education policy, which is strongly oriented towards various benchmarks, indicators, and targets.

According to Angelle (2017), social and political landscapes of a country affect educational policies. Therefore, educational policy reviews will continuously navigate, improve the quality, and effectiveness of formulated educational policies. Educational policy reviews provide stakeholders with information on weaknesses, improvements plan and new potential policies and subsequent planning of educational interventions. In the early stages of policy implementation, educational policy reviews were deemed useful and crucially important to gain earlier feedback and hence provide platform for further discussion on the effectiveness of policies that have been implemented (Harvey & Kosman 2014).

Previous studies have indicated the importance of analysis and reviews of education policy for better education reform. Smolarek and Scrivener (2019) have proved that through thorough and critical analysis of education policy documents, private sectors and workforce development institutions can play pivotal role in fostering education policy development movement through holistic and critical analysis of education policy documents. Similarly, Vaccari, Gardinier, and Wayne (2019) conducted a comparative analysis of global education policy between the OECD and UNESCO to provide new educational perspectives to education main stakeholders. Earlier, Davies (2000) has emphasized that the study of systematic reviews of other education policy research can greatly benefit educational policies and practices.

Besides reorienting educational practices as well as designing appropriate intervention strategies, policy review provides a systematic guide for policymakers to design, analyse and execute their educational policy implementation processes (Viennet & Pont 2017) to increase its cost effectiveness. Kempton (2019) reminds that a valuable policy took a long-term interpretation and an advance understanding on internal and external complex interactions that affect the development of the education innovation ecosystem. Another essential thought is that analysis of basic education needs to be done critically (Ball 2015) as it provides basic educational experiences to the children. Additionally, Cheeseman et al. 2019 emphasized the importance of future research to focus on various aspects of policy processes including policy development, implementation, and policy implications of practice (Cheeseman et al. 2019). Thus, SDG 4 education policy review would provide a meaningful information to governing bodies such as UNESCO Jakarta, as the Cluster Office to Brunei Darussalam, Indonesia, Malaysia, the Philippines and Timor-Leste to facilitate the Cluster Countries in achieving targets for Sector-wide policies and plans, Technical Vocational and Education Training (TVET), Teachers in Education, Education for Sustainable Development (ESD) and Inclusive Education.

The aim of this review is to develop Sub Education Policy Review Report covering Brunei Darussalam, Indonesia, Malaysia, Philippines, and Timor-Leste on each following thematic area with an overall question on how SDG 4 can be accelerated by education interventions including an education response during and post COVID-19 pandemic:

- Sector-wide Policies and Plan;
- Technical Vocational and Education Training (TVET);

- Teachers Policy and Plan;
- Education for Sustainable Development (ESD); and
- Inclusive Education.

Introduction:
Methodology

INTRODUCTION: METHODOLOGY

1.1   Evaluation Framework

The review process undertaken in this study was based on framework as suggested by Cheng and Cheung (1995). The framework that has been used consists of six main components.

1.1.1   Education Policy Cycle (UNESCO 2013)

- The cycle consists of four steps: Analysis, Planning, Implementation and Evaluation (Figure 1)
- It starts with a **vision.**
- Once the vision is defined, the cycle begins with the **analysis** of current situation and agreement on the policy directions.
- Once the policy directions and priorities identified the **planning** starts by defining outputs, targets, actions and timelines also monitoring and evaluation framework also be clearly defined.
- The **implementation** step involves activities which have been planned and budgeted.
- Activities that have been implemented or on going are regularly monitored and reviewed in the **evaluation** step.
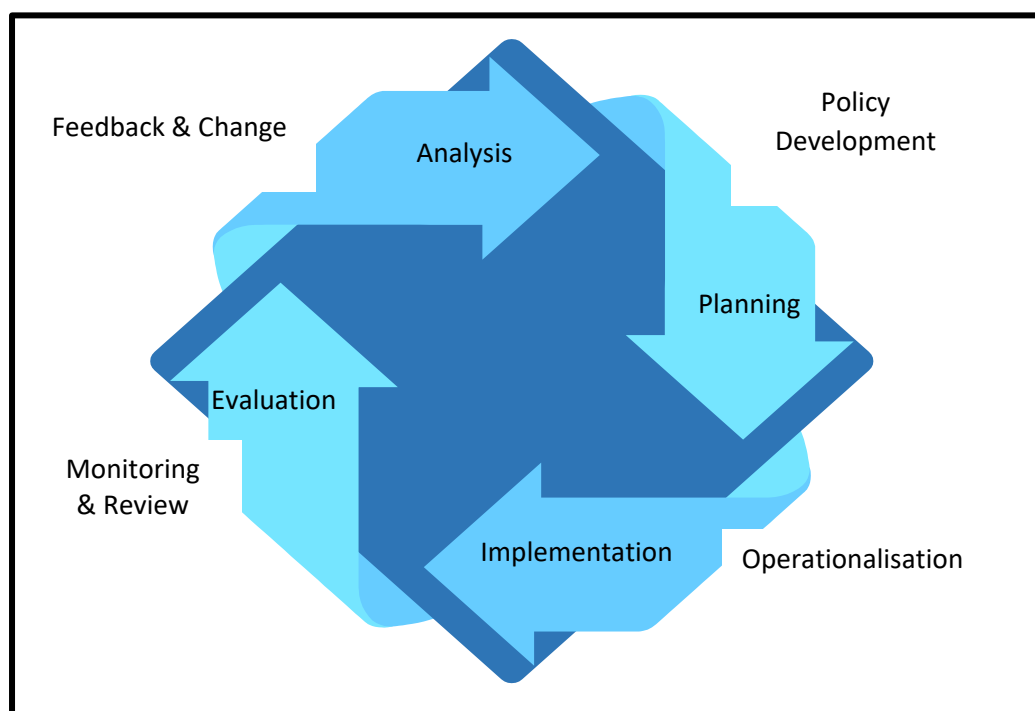
Figure 1: Education Policy Cycle

1.1.2 Overview of The Four Frames (Aspects to be Assessed) (See also Figure 2)

Aspect that needs to be assessed between gaps of education policy cycle. This phase will be focussing on:

- **Analysis – Planning**
  (Problems, Limitations, Political involvement, Economy, Social, Cultural, External competition, Challenges. Short term /Intermediate / Long Term)
- **Planning – Implementation**
  (Planning process, Action plan. Scarcity of resources, limitation of technology and information, time, political and environmental boundaries)
- **Implementation – Evaluation**
  (Monitoring on policy outcomes, educational outcomes, hypothetical, relevance, effectiveness, efficiency and real relevance)
- **Evaluation – Analysis**
  (Evaluation on policy outcomes, educational outcomes, hypothetical, relevance, effectiveness, efficiency and real relevance)
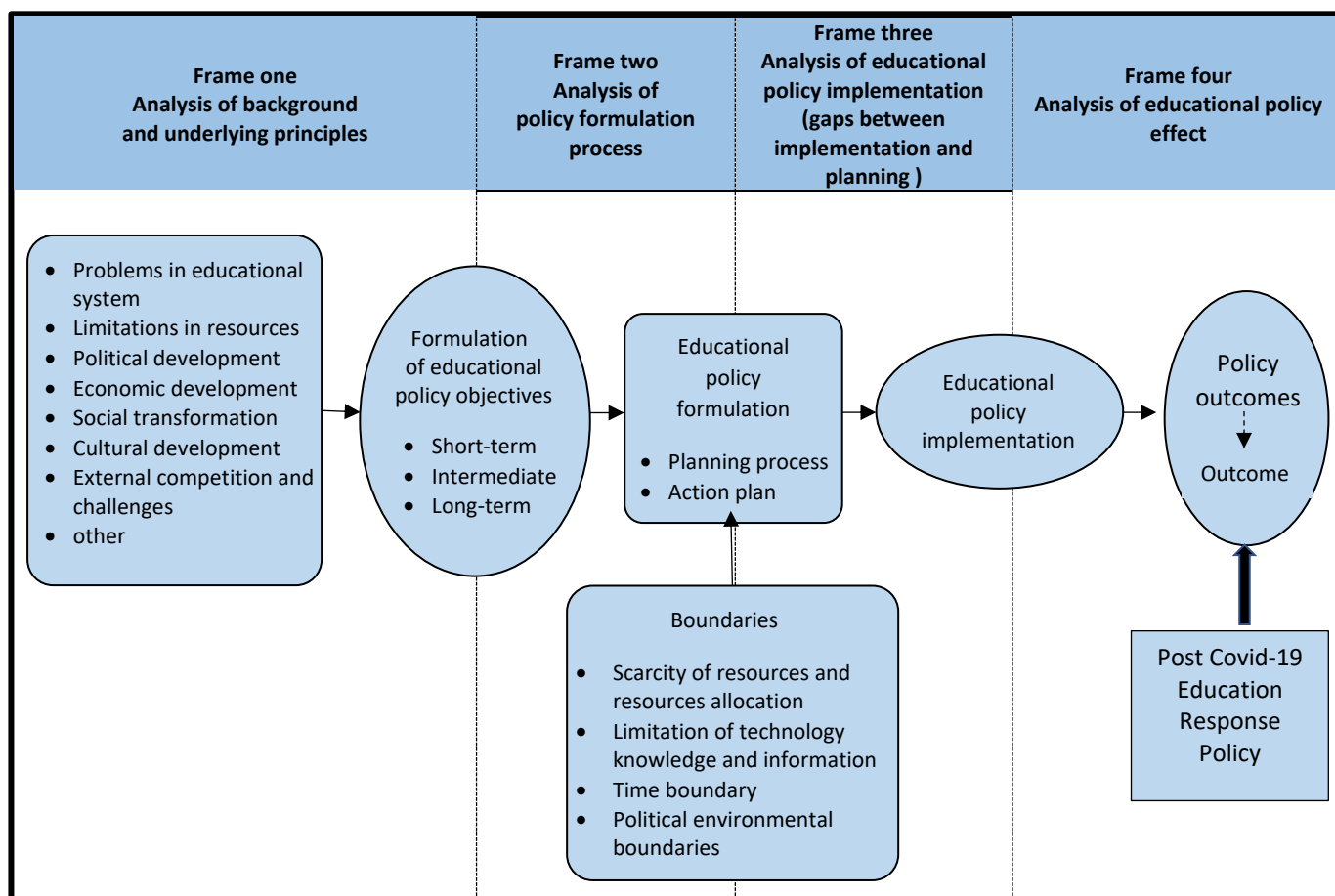
Figure 2: Illustration of the Four Themes

1.1.3 Input-Process-Output-Outcome (Context to be Assessed)

In setting the context to be assessed, two main considerations are underpinning the analysis that will be conducted:

- Education sector does not function in isolation but regularly interact with other sectors; and
- Context refers to the input, process, product and outcome as illustrated in Figure 3.

1.1.4 Areas of Intervention

As previously underlined, the intervention will be specifically focussed on:
- **Sector-wide Policies and Plan**
- **Technical Vocational and Education Training (TVET);**
- **Teachers Policy and Plan;**
- **Education for Sustainable Development (ESD); and**
- **Inclusive Education**.

1.1.5 Respective Countries

Respective countries refers to five cluster countries, namely, **Brunei Darussalam, Indonesia, Malaysia, Philippines,** and **Timor-Leste**

1.1.6 Articulation of SDG 4: Quality Education

- SDG 4 advocates that learning is a basic human right for every person beyond economic development, but education has also a critical role for sustainable development.
- SDG4, and its corresponding targets and means of implementation, aim to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."

PROCESS
- Curriculum
- Pedagogy
- Language & Instruction
- Class Size
- Technology Teaching Hours

OUTCOME
- Cognitive Skills
- (Learning Achievement)
- Non-Cognitive
- Skills (Soft Skills)
- Occupational Skills

INPUT
- Learners
- Teachers
- Infrastructure
- Teaching & Learning Materials

OUTPUT
- Graduates
- Dropouts
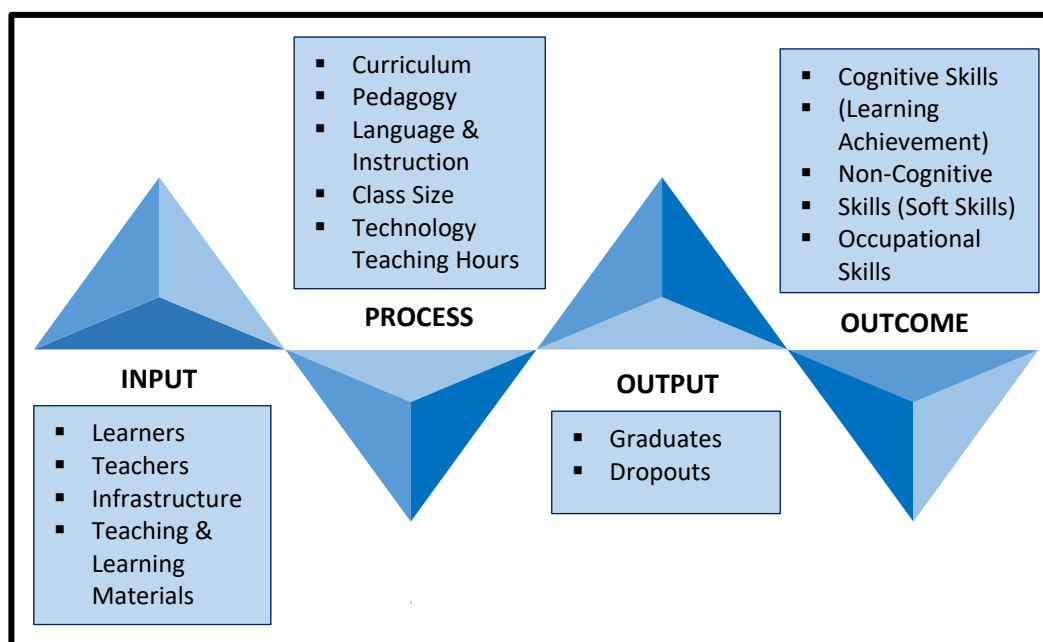
Figure 3: Education Result Chain

1.2   Methods of Data Collection

The research methodology will be governed by both qualitative and quantitative approaches. Each of data collection mechanisms representing the former and latter approaches below will be further described as well as justified.

- **Systematic Literature Review**

Policy review related studies were retrieved from ERIC, Scopus and WOS databases and systematically analysed**.** The Systematic Literature Review (SLR) used in this study is a systematic, deliberate and explicit method to identify, select, critically evaluate, collect and analyze data from relevant past research (Gillath & Karantzas 2019; Moher et al., 2009). This approach has been selected, because it aims to synthesize in detail all applicable scholarly literature. The systematic review was conducted in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; see Figure 4). The method, which includes resources (Scopus, ERIC & Web of Science) to run the systematic review, eligibility and exclusion criteria, steps of the review process (identification, screening, eligibility) and data abstraction and analysis. Electronic databases were used to conduct literature searches with a variety of keywords to identify articles (see Figure 4).
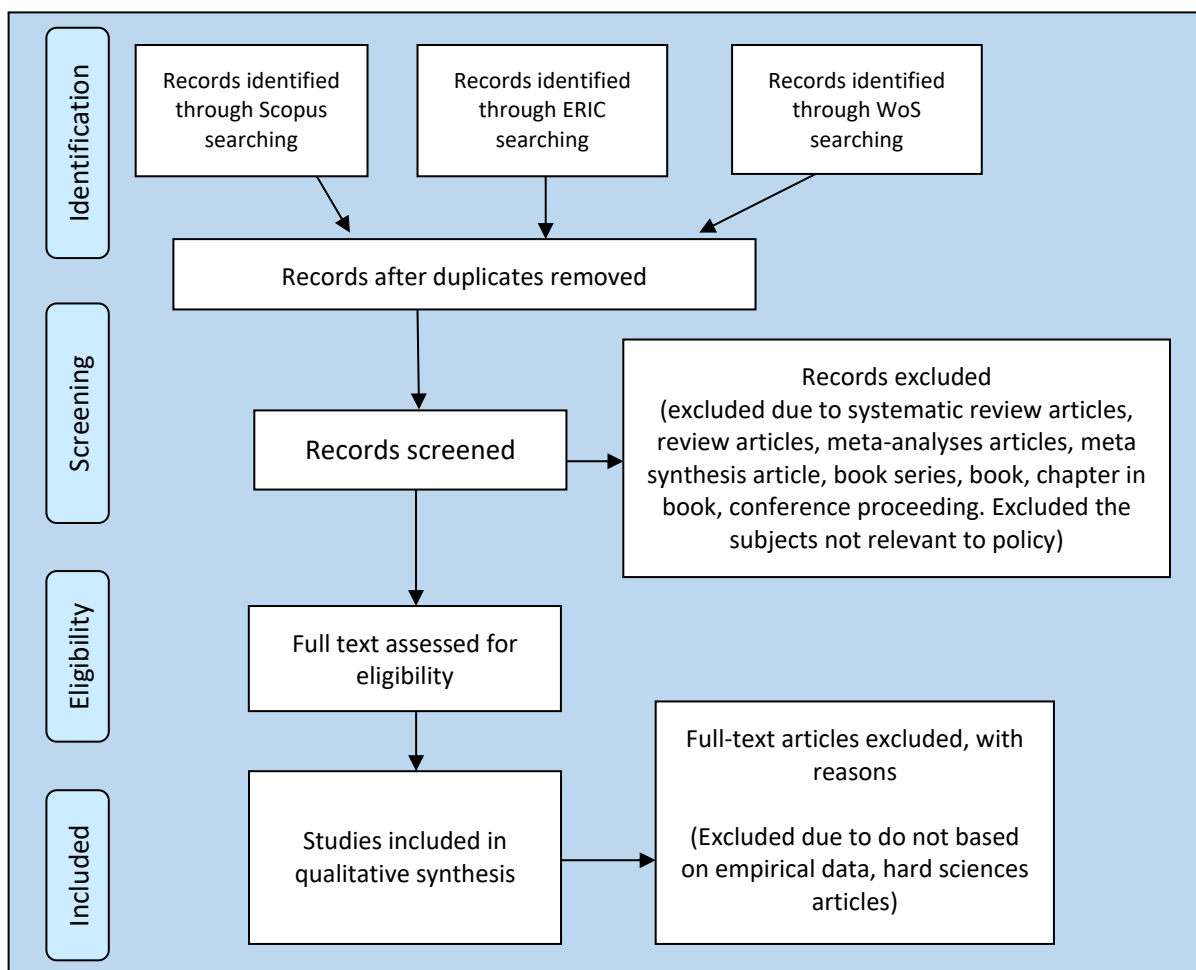
Figure 4: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Approach

It should be noted that the review does not give particular attention to articles in Google scholar as its validity cannot be verified. It should be noted that reservations must be taken for possible errors and shortcomings caused by the nature of the approach. In analysing national educational policies on how education can accelerate Sustainable Development Goal 4 (SDG 4): Quality Education related to all thematic areas; indicators as succinctly described in Table 1 were used as main keywords in the SLR. Analysis has also included all five countries: Brunei Darussalam, Indonesia, Malaysia, Philippines and Timur-Leste.

Table 1: Matrix of Alignment of Five Thematic Areas with SDG4: Quality Education

TARGET	Area	INDICATORS
TARGET 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.	Sector Wide Policy and Plan	Primary and Secondary Education that is; i. Free (boys and girls) ii. Equitable iii. Quality iv. Relevant v. Effective vi. Uniqueness
TARGET 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.	Sector Wide Policy and Plan	Early childhood education that has; i. Equal access (boys and girls) ii. Quality (care) iii. Quality (pre-primary education) iv. Ready for primary education Uniqueness
TARGET 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.	Technical Vocational and Education Training	Technical, Vocational and Tertiary Education including university that is; i. Accessible to all women and men ii. Affordable iii. Quality Uniqueness
TARGET 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.	Technical Vocational and Education Training	Increase the number of youth and adults that have; i. Relevant skills ii. Technical and vocational skills iii. Employability iv. Decent jobs v. Entrepreneurship Uniqueness
TARGET 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous people, and children in vulnerable situations	Technical Vocational and Education Training TVET / Inclusive Education	All level of education and vocational training that: i. Eliminate disparities ii. Equal access to • Persons with disabilities • Indigenous peoples • Children in vulnerable situations Uniqueness

TARGET	Area	INDICATORS
TARGET 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	Sector Wide Policy and Plan	Achieve literacy ad numeracy; i. All youth ii. Substantial proportion of adults iii. Men and women Uniqueness
TARGET 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Education for Sustainable Development	All learner acquires the knowledge and skills needed through education for sustainable development and sustainable lifestyles to: i. Promote sustainable development. ii. Promote Human rights iii. Promote Gender equality iv. Promote culture of peace and non-violence v. Promote global citizenship vi. Promote appreciation of cultural diversity and culture's contribution Uniqueness

TARGET 4a
Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
	Inclusive Education	Education facilities to all that are:
		i. Sensitive to
		   • Child
		   • Disabilities
		   • Gender
		ii. Safe
		iii. Non-violent
		iv. Inclusive
		v. Effective
		Uniqueness

TARGET 4b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.	Technical Vocational and Education Training	Expand scholarships for higher education, vocational training and information technology, technical, engineering, and scientific program to: i. Develop and developing countries ii. Small Island States and Africa Uniqueness

TARGET	Area	INDICATORS

TARGET 4c
By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.
	Teacher Policy and Plan	Increase the supply of:
		i. Qualified teachers
		    • Through international cooperation
		    • Teacher training
		    • To developing countries (small island and developing states)
		Uniqueness

- **Online Questionnaire**

In addition to comprehensive literature review, online questionnaire was also used as means to collect empirical evidence in supporting findings that have been synthesized from systematic literature review in all five thematic areas. The questionnaire is subdivided into three main sections: i) demographic profile of the respondents, ii) items which specifically seek opinion on all five thematic areas, and iii) three open ended questions. In the second section, respondents are required to respond to all items, ranging from strongly agree, agree, disagree, strongly disagree and undecided. In the third section, the open-ended questions seek respondents' opinions on: i) Challenges that they need to overcome in an effort to provide quality SWPP/TVET/ESD/TPP/IE in their countries, ii) recommendations and suggestions towards the betterment of SWPP/TVET/ESD/TPP/IE, and iii). How their country responds to the impact of COVID-19 pandemic in terms of enrolment, curriculum delivery, modification of curriculum, online resources, educator competencies in online platform, assessment, and accreditation. The online questionnaires were distributed to samples in all five countries coordinated by UNESCO Jakarta Office.

- Online Interview

Online interview was also conducted which involved higher educational officers (Directors, Deputy Directors), who are the main key players in developing and implementing educational policies in all five countries. The main questions are like the open-ended questions given to the educational stakeholders as earlier mentioned. There are few probing questions included to encourage sharing of information among the key educational officers and hence enrich information garnered from the systematic literature review, online survey, and open-ended questions. As in the dissemination of the online questionnaire, the online interviews were also implemented and coordinated by UNESCO Jakarta Office.

Technical Vocational and Education Training

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

2.0   Introduction

According to the United Nations Organisation for Education, Science and Culture (UNESCO), TVET is considered a value-added portion of a general education that integrates technology, sciences, practical skills, attitudes, understanding, and information relating to employment in different economic and social sectors. Industrialized nations regard Technical and Vocational Education and Training (TVET) as a catalyst in their national development plans because of its major effect on a country's economic growth, industrial development, and competitiveness. Rapid developments in the economy and manufacturing processes demonstrate the need for highly skilled professionals with appropriate employability skills to meet the demands of the dynamic labour market of today. Furthermore, it provides a person with essential thinking skills, plus practical skills required to reach the job market. Employers around the world are searching for highly qualified workers who can adapt to rising workplace diverse needs. This suggests that prospective workers need to go beyond obtaining specialized knowledge for any work and acquire generic or employability skills instead (Gibb, 2004). They must continuously develop knowledge, skills and learning capabilities to respond to changing business activities and conditions on the labour market.

2.1   Focus of the Review

This review begins with a narrative description of the policies and initiatives of each member state regarding TVET based on TVET profile (UNESCO 2018; UNESCO 2019b; UNESCO, 2019c; UNESCOa 2020; UNESCOb 2020). A systematic review of empirical studies related to TVET and its implications were identified. Empirical data from the survey was analyzed and reported. Drawing upon both types of literature and empirical data -this report discusses the extent each member state TVET policies have addressed the targets of SDG 4 related to TVET. The targets to be attained by 2030 focus on themes that aligns the objectives on TVET towards a) enhancing the participation rates of youth and adolescents in formal and non-formal training, b) providing quality programs for skills development that meet the industrial needs now and in the future – where to some extend are able to create own jobs and c) enhancing the participation of ALL regardless of sex, age, persons with disabilities, indigenous peoples and children in vulnerable situations. In addition, examining the responses to COVID-19 and beyond, based on the empirical data and e-forum with the member states, will inform the acceleration or the deacceleration meeting the SDG4 targets for TVET.

2.2   Policy in TVET

Following a decline in interest from the mid-1990s to the mid-2000s, technical and vocational education and training (TVET) has returned to the agenda of governments and donor agencies internationally, particularly in sub-Saharan Africa and South Asia (King & Palmer, 2010). The United Nations Educational, Scientific and Cultural Organization (UNESCO) is one of those that highlights the political significance now attached to higher-order skills and their central position in the global information economy, especially in terms of poverty reduction, economic growth, and social stability (UNESCO, 2010a). This change in priorities is evident in the 2012 Global Monitoring Report on Education for All (EFA), which reinforces the emphasis on TVET and skills development which could provide opportunities for marginalized groups (UNESCO, 2012).

2.2.1 Brunei Darussalam

Reforms in Brunei Darussalam focus on a few areas including aligning TVET programs and curricula with industry needs to increase their relevance. Industry stakeholders are invited to develop the National Occupational Skills Standards (NOSS) and support the formulation of the TVET curriculum through the process of DACUM (Developing a curriculum). Brunei also focuses on increasing apprenticeship courses by working closely with industries and promoting a dual education system. In addition, a new system for the recruitment of TVET teachers that emphasizes the importance of industry experience is also in progress. Two main policies, namely, Brunei Vision 2035 and *Sistem Pendidikan Negara Abad ke 21*, contribute to the development of TVET policies in Brunei Darussalam.

2.2.2 Indonesia

Current trends, policies, and practices with regard to TVET in Indonesia emphasis on various aspects: a) Revitalizing TVET (SMK), b) Shifting the vocational education paradigm, increasing more practical skills than theoretical knowledge, c) Prioritizing skills development in economically vibrant occupations , d) Shifting the enrolment share of general education to vocational education, e) Strengthening digital literacy, f) Improving the TVET quality through Public-Private-Partnership by fostering cooperation between TVET institutions and industrial partners, g) Improving teachers' quality through training and certification and h) finally promoting entrepreneurial skills. Policies introduced to promote TVET education which includes Manpower Act No. 13/2003, Decree No 38/2013, National Industry Development Plan 2015-2035, and Presidential Instruction Number 9/2016- The Presidential Instruction on 'Revitalizing TVET'.

2.2.3 Malaysia

TVET in Malaysia is geared towards increasing skilled human capital by providing quality education and training that is responsive to labor market needs and provides resources for further education or entrepreneurial pursuits. The key impetus of the Malaysian TVET strategy as outlined in the 11th Malaysian Development Plan 2016-2020 (11MP), includes improving the efficiency of the labor market to accelerate economic growth, transforming TVET to meet industry demand; strengthening lifelong learning for skills enhancement; and improving the quality of the education system for better student outcomes and institutional excellence. The related policies are 11th Malaysian Development Plan, Malaysia Education Blueprint 2015-2025 (Higher Education) particularly Shift 4, and Vocational Education Transformation Plan (2011-2020).

2.2.4 Philippines

The overarching short-term and long-term objective of Technical and Vocational Education and Training (TVET) in the Philippines is to ensure national development through accelerated human capital development by providing lifelong learning opportunities for all. The following key documents help guide the development of TVET in the Philippines. Four interrelated policies make up the basis of the TVET policy of the country namely: The Ladderized Education Act/2014, The Universal Access to Quality Tertiary Education Act, The Philippine Qualifications Framework (PQF) Act/2017 and National Technical Education and Skills Development Plan (NTESDP) 2018-2022.

2.2.5 Timor-Leste

Various strategies and policy documents guide the TVET and skills development which are Timor-Leste Strategic Development Plan 2011-30, The National Technical and Vocational Education and Training

Plan 2011-2030, National Education Strategic Plan (NESP) 2017-2030, and National Employment Strategy 2011-2030. TVET programs in Timor-Leste provide flexible pathways for various types of learners. Those who follow the TVET courses in the formal system can enter the labor market after completing at any level of the program structure. Students have the choice to join employment after successful completing a particular level.   The levels offered are at certificate and diploma. In ensuring equity in learning and enabling students to secure a decent job, TVET programs provide Foundation courses for lower-secondary dropouts. In addition, workers with experienced but lacked qualification can enter the formal TVET program at the appropriate level of certificate after passing the admission examination.

2.3   Findings of the study

2.3.1   Systematic literature review

The overarching finding is that the TVET policies are related to each country's national development goals. In addition, the initiatives are strategically planned to meet the needs of the industry. A particular intervention, as adopted, throughout all the countries is the enhancement of Public-Private- Partnership. The following findings relate to the targets of SDG 4 that draws upon TVET's plan of the country and the review of empirical studies identified from major educational database (18 articles on studies related to TVET and with policy implications).

a.   Accessibility

Referring to SDG 4 the key point of Target 4.3 is to ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university by 2030. Thus, quality and affordance aspects in TVET education are the primary concern.

i.   Quality

Competency Based Assessment (CBA) is commonly used in TVET as a method for determining the competency of individuals to fit the national qualification framework (NQF). CBA varies from country to country in Asia, but the observation process and portfolios are commonly used (UNESCO, 2017). Yet some Asian countries find it difficult to use facts to eventually agree on the evaluation. The other key concern is the core emphasis of quality assurance evaluation. In Asia, these problems can arise from the lack of use of external assessors, which is why the consistency of the assessment method is poor (UNESCO, 2017). The consistency of the evaluation has been ensured in some Asian countries such as Indonesia; however, there is an insufficient arrangement to ensure that the outcomes (judgment) and qualifications comply with those defined in NQF.

      Certain member state countries such as Indonesia places a special focus on the development of Public-Private-Partnerships (PPP) on the national, regional, and international level to enhance the quality of TVET. One of the implementation strategies of link and match is the adoption of a dual education system (Pendidikan Sistem Ganda, PSG) that systematically integrates and synchronizes educational programmes in schools and skills acquisition programmes gained through direct work in the workplace. The competencies of the instructors are concerns of many countries. Empirical studies showed that TVET's competencies is still low, thus the theoretical and empirical competency profiles of TVET lecturers are still unsatisfactory in most of the state member countries situation.

ii.   Affordance

TVET is a mixture of formal, non-formal and lifelong learning education. Thus, government, private sectors, and non-governmental agencies play an important role. Across the member state countries, government agencies are the common platform for TVET. Interestingly, non-governmental agencies play a larger role in TVET provision when the society of member states is more SMI oriented. The offering is also determined by the funds available. In most countries, TVET financing is a joint responsibility between the government and other education stakeholders, such as local governments and communities. Private TVET institutions are independently financed; funding depends on the type of ownership (individual, faith-based, non-governmental organization, and partnership) and requires operational authorization from the ministry. Funding for private TVET initiatives are derived from the following sources: Fees paid by trainees for their TVET course; Companies which fund apprenticeships, training programmes and offer allowances to trainees; and NGOs which run training courses and provide funding for training institutions. In general, TVET policies and implementation are moving towards providing free TVET programmes for ALL.

b.   Skill Development

The target 4.4 in SDG 4 emphasizes on increasing the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship. These are subthemes identified for the aforementioned category.

i.   Employability skill

Employability has become an alarming problem on a global scale particularly as the world moves into the Fourth Industrial Revolution. In TVET (Ismail & Mohammed, 2015), which was discussed by Bhurtel (2015) on the value skills that any TVET-based program students should possess, there is a similar issue of employability. The employability skill can be defined as the ability of an individual to be employed who have the required expertise, knowledge and understanding in the related field (Lorraine & Sewell, 2007). It was found that the standard requirements were not underlined enough in the papers reviewed. Therefore, the mind-set, motivation and awareness of Indonesian students, and problem-solving skills such as innovative thinking and collaboration skills of students, strengthened by Multimedia in the Direct Problem-Based Learning (m-DPBL) approach to computer networks for teaching and learning (Winarmo et al., 2018). Malaysia places more focus on the transformation of employability skills model where the skills proposed can be identified as follows: communication skills, teamwork skills, problem-solving skills, self-management skills, planning and organizational skills , technical skills, learning skills and entrepreneurial skills (Cassidy, 2006; Raybould & Wilkins, 2005;). The emphasis on skill acquisition is due to the high unemployment rate among graduates, high crime rate due to untrained young people in advanced technology and a challenging economy (Kamaliah et al., 2018). The graduate attributes examined were knowledge, skills, abilities, and personalities (KSAP).

ii.   Decent Jobs

According to Mahazir (2019), there is a large gap due to people's negative view of the industry, such as long working hours, low wages, low profile employment and so on. This distance can be closed by positively enhancing the understanding of the people. That dimension, however, was not much debated. In addition, the results on job interest and knowledge reflect the value of strategy, operational, and managerial implications for fostering youth jobs interest and knowledge (Ashari et al., 2019).

iii.   Entrepreneurship

The entrepreneurship sector provides a great opportunity to embark on a career. Entrepreneurial profession is rising and contributing to economic growth in the region. This field has become a career choice for the younger generation, particularly in developed countries, and is seen as an alternative career in overcoming unemployment problems, particularly among graduates (Fristia & Navastara, 2014; Othman & Ishak, 2011). The TVET policy in Malaysia explicitly highlights the aspect of Entrepreneurship thus the discussion in this section is based on empirical studies that support the policy on entrepreneurship in TVET. A caveat is in order here. TVET policies for Timor-Leste also explicitly highlights the need for entrepreneurship in a TVET program. However, the earlier search on empirical studies on TVET and Timor-Leste fails to identify any related studies thus no discussion on it.

c.   Equality

Referring to SDG 4, the main concern of Target 4.5 is to eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations by 2030.

i.   Gender Disparities

It was noteworthy that gender differences among the member states were beginning to put emphasis on TVET. When planning skills learning courses, gender gaps must be placed into context so that specific needs are specifically addressed (Mahazir et al., 2019). Corrective steps in this regard should be taken to build a balance in the distribution of gender-skills. The equilibrium systems in the acquisition of skills should move towards stability and open in the employment market to fair competition between genders.

ii.   Equal Access

This sub theme was not discussed by the studies identified of the related countries and thus necessarily a gap to be discussed by the researchers in future. Therefore, it was considered that further studies should be conducted to examine the factors mentioned above in TVET.

2.3.2   Empirical study

A questionnaire was distributed to each of the member state of UNESCO-Jakarta with a total of 37 Likert scale-based items. Respondents provided their opinion on the themes related to SDG4 targets for TVET – a) accessibility, b) skill development and c) equality.

For Brunei Darussalam, 72% of the respondents views positively that monitoring agencies play an effective role in ensuring the quality of TVET programs. However, only 32% agree that the TVET program in Brunei Darussalam is recognised internationally. About 50% of the respondents perceived that the TVET facilities are not user friendly to people with disabilities. More than 50% of the respondents reported that facilities need to be upgraded, as the facilities are obsolete, and should meet the current needs. While 80% of the participants agree that TVET courses are affordable, but about 50% perceive that TVET courses are unaffordable for some. In terms of employability 88% agree that TVET graduates can be employed locally but less agreement in terms of TVET gradates employed regionally and globally.   It was also found that respondents were less in agreement about the employability rate of TVET graduates. About 84% of the respondents agree and strongly agree that

the courses offered are equal to women, and do not slant to men or women exclusively (about 84%). However, it appears that 48% of the respondents strongly disagree that the TVET program in Brunei Darussalam is offered to persons with disabilities. According to the view of the respondents, opportunities for lifelong learning and access to higher education for TVET is positively supported (about 80%) by the government in Brunei Darussalam.

In terms of quality, more than 80% of the Malaysian respondents agree that the TVET program is internationally recognized and courses offered are relevant in the 21st century. About 60% the respondents perceived that the TVET facilities are friendly towards people with disabilities. The excellent provision of facilities that is inclusive and safe can promote effective learning. Nevertheless, more than 50% of the respondents reported that facilities need to be upgraded, as the facilities are obsolete. More than 80% of the respondents agree that TVET programs are affordable through providing sufficient number of institutions, and scholarships for TVET programs. More than 80% agree that graduates are employed locally, and employability is favourable with decent salary. In terms of equality, courses are appealing to both gender but the number of men and women participating is seen unequal. It appears that 80% of the respondents agree that the TVET program in Malaysia is inclusive – for people with disabilities, the indigenous people, dropouts, and to both youth and adult. Opportunities for lifelong learning namely access to higher education is positively supported (about 80% and beyond) by TVET program in Malaysia.

About 66.6% of the respondents from Philippines agree that the monitoring agencies are able to ensure the standards of TVET program. However, the respondents vary in their view whether the program is of international standing. The survey found that the respondents are less in agreement regarding whether the facilities inclusive in nature. In addition, 66.6% of the respondents, totally disagree that the funds for TVET are sufficient. In terms of employability, all the respondents agree that TVET graduates are able to be employed locally but not at regional or global level. About 66.6% of the Philippines respondents of the opinion that TVET graduates can secure a job easily after completing the program. In terms of gender disparities, it appears the courses offered are equally appealing to both gender (66.6%). However, 66.6% which 66.6 % of the Philippines respondents find the TVET courses are suitable for men. It appears that 66.6 % of the respondents (strongly agree and agree) that the TVET program in Philippines is offered to persons with disabilities and to other marginalized community such as the indigenous people, dropouts including to both youth and adult.

2.4   Challenges in Implementing TVET policies

All five cluster countries, experienced challenges in implementing the policies that might hinder the acceleration in meeting SDG4 in relation to TVET. Common challenges revolve around mainly on lack of infrastructure, equipment and quality programs and instructors. TVET education as a whole and TVET career has been shown to be the last career choice for students. Skills identified for industry 4.0 have not been addressed by the TVET programs to ensure capacity growth of youths joining the industry.

2.4.1   Unique Challenges

Brunei Darussalam focusses on the need to realign TVET with the demand of industries that support national economic development to achieve Brunei Vision 2020. Thus, the challenges revolve around that critical success factor to achieve the vision- namely enhancing the Public- Private- Partnerships. Indonesia focusses on improving the quality of the TVET program by addressing the quality of teachers and activities leading to competent workers that achieve a qualification that is not only for Brunei but has also achieved a recognition at the regional and international levels.

Malaysia's challenge is lessening the duplication of TVET programs from various ministries. The image associated to TVET and TVET career have been a stigma for the society thus the challenge for Malaysia is to overcome the ingrained perception among the public and students of TVET being the last choice among the students. A particular area of concern is to provide salary levels that commensurate with the qualifications. In terms of facilities, apparently there is insufficient number of TVET and Vocational schools. Tools equipment and machineries are still basic to prepare good technologies for the 4IR era. Continuous professional development needs to be provided so as to understand the latest technology such as 3D printer.

The Philippines espoused the need to equip workers with skills for industry 4.0. Thus, the Philippines faced challenges in enhancing the Public-Private- Partnership so as skills development would meet the priorities of the industries. The Philippines in their review of the policy implementation realized the need to be inclusive in accommodating workers who are left behind in terms of qualifications but with endowed industrial experiences. The challenges faced by TVET program also revolve around lack of support from the government in terms of funding and dissemination campaign.

Lastly, Timor-Leste concern begins with policy coordination and implementation. Financing is an issue with Timor-Leste that will also determine the ability of TVET system providing free access to ALL- which is the mandate of Target 4.3 of SDG 4. Like Malaysia, Timor-Leste also faced the challenge to encourage TVET as the choice of the students. Capacity growth in terms of skill development among the students could be stunted with the lack of qualification and training of the instructors in offering quality TVET.

2.5   Recommendations

All member states of UNESCO Jakarta view the role of TVET as a platform for developing skilled workers towards economic development, unemployment, and crime reduction. All five countries, from the policy review, aim to ensure high quality TVET programs leading to developing skills not only relevant for industries needs but also skills, attitudes and knowledge that would enable one to be entrepreneurial as well as towards being able to secure a decent job that is beyond the technical and vocational fields.

Nevertheless, in order aspirations as stipulated in the policies are materialize, the review comprised of desk evaluation and empirical data- found common issues that need to be addressed including 1) ensuring quality TVET programs, 2) raising the image of TVET education and TVET career as THE choice among students, 3) ensuring skills identified for industry 4.0 for TVET programs and 4) embracing the marginalized communities in TVET programs. These recommendations are suggested prior to COVID-19, during and beyond COVID-19.

2.5.1   Recommendation 1: Ensuring Quality TVET programs

i.   Enhance the intake of teachers and instructors who have industrial training as well as providing ongoing professional development with industrial attachment as a focus.
ii.   A return-to-industry plan could be developed for lecturers, teachers and trainers.
iii. Enhance the competencies of teachers and instructors towards student, problem solving and practical oriented of teaching and learning.
iv.   Further collaboration with industry partners. More collaboration and partnership with industries in running TVET courses. Create programmes that aligns and can cater for the future direction of the country.

v. Budget allocation should commensurate with the curriculum reform as well as for maintenance of equipment.

vi. In light of the pandemic COVID-19 situation, competencies of teachers of alternative delivery namely remote and digital based teaching and learning are crucial (*UNESCO issue note no 5.2 and Webinar on TVET* U*NESCO Caribbean region*)

    a. Develop country's own distance learning modality for TVET (online and offline).

    b. Enhance and support educators and instructors' competencies to create and adapt to remote distance and virtual TVET mode of learning and teaching.

    c. Provide provision of teaching materials and equipment to enable the continuation of practical aspects of TVET.

vii. Realignment of curriculum and certification during the pandemic COVID-19 situation:

    a. Develop curricula, teacher training, quality assurance, assessment and certification for distance TVET

    b. Plan for remedial classes that would include offering the curriculum term based rather than semester based, enhancing formative assessment versus summative assessment and longer practical time to cover the learning loss and practical time which is badly disrupted by the pandemic COVID-19.

    c. Develop Standard Operating Procedure (SOP) to ensure hands- on practical training are scheduled ongoing while observing the health protocols.

viii. Guidelines from national accreditation bodies need to be put in place to support institutions to realign curricula, delivery, assessment and standards suitable for blended learning modality in order to ensure quality of overall program is maintained especially the skills demonstrated are certified.

ix. Practical assessment is deferred. If practical to be assessed then it will be done periodically, after completing a few sessions of theory and extend the length of the study

x. Conduct a study to develop a program of social and emotional support for affected students and teachers to address - overcoming learning loss; promotion to higher grades/class; admission to higher education (selection) and technical, social and emotional support for school community, which is already embarked by Timor-Leste.

xi. Sharing of best practices of practical implementation and empirical findings among member states, as a reservoir of evidence-based practices that could be emulated within the context of respective countries.

2.5.2 Recommendation 2: Enhance image of TVET as THE educational choice

i. Develop strategies on careers education and careers counselling focusing on the flexibility pathways and prospects of TVET career in the global economy.

ii. Provide career guidance on TVET to cover all students from primary to higher levels.

iii. Provide career guidance and counselling services to marginalized and vulnerable groups in community centers.

iv. Enhance a reliable quality assurance mechanism for TVET graduates so to standard of knowledge, skills (hard and soft skills) acquired that would allow TVET graduates to reach to not only vocational and technical employments but could also to jobs that could provide decent wage and image.

v. Conduct benchmark quality assurance system among member states to allow work force around the sub-regional area possible and for the opportunity for lifelong learning in TVET.

vi. Increase the salary of technical workers would help to boost the image of TVET programs and qualifications.

vii. Intensify information dissemination campaign of TVET programs so that interested participants are well informed of their different programs.

2.5.3 Recommendation 3: Ensuring 4IR skills in TVET programs

i. Enhance participation industries' opportunities involved in TVET curriculum development and implementation in preparing students with the most up-to-date knowledge and skills needed for global economy.
ii. Expanding the current job placement criteria to ensure student needs meet employer 's awareness and ability standards.

2.5.4 Recommendation 4: Embracing marginalized communities in TVET programs

i. Ensure equity in TVET enrolment especially among the most vulnerable students and disadvantaged groups throughout the pandemic and more so after it is over.
ii. Develop a comprehensive data base that captures demographic and social welfare data of marginalized and vulnerable groups that later could advise the policy directions of TVET.
iii. Empower and support the non and informal TVET training and traditional apprenticeship as this form of education is easily accessible to the marginalized and vulnerable groups through their local communities.
iv. Enhance the coordination between and within ministries regarding data management namely enhance synchronization of data that could lead to high quality data.
v. Create a communal learning space or hubs in the community for face-to-face skills training. Learning hubs are expected to observe the health protocols.

2.6 Conclusion

The review based on empirical studies and empirical data collected revealed of an interesting trend in TVET implementation in the areas of its impacts, implementation status and constraints to the successful implementation. TVET, in the Ministry of Higher education (MOHE), could advocate a broad range of industry participation opportunities to encourage a range of manufacturers to be involved in preparing highly skilled workers for their industry. These will involve joint projects with training institutions designed to prepare colleges and students with the most up-to - date knowledge and skills needed for global economy work. Given that there are gaps in current technical skills with the technical skills needed for IR 4.0, it is recommended that TVET institutions restructure the learning process of the software, getting to know network structures so as to master big data technologies. As a conclusion, TVET policies and interventions are put in place by all five countries, and it meets so some extent, the targets of SDG 4. However, empirical studies dan data have highlighted aspects of the policies and its initiatives that could be continuously improved. Another gap, i.e., the inclusivity component of SDG4, namely embracing the marginalized communities for TVET, needs more attention through more studies on the issue, or developing TVET policies and initiatives addressing the equity issue, especially when the equity gap may widen due to COVID-19 that would perhaps deaccelerate the achievement of SDG4 targets for TVET to be quality lifelong learning agenda for ALL.

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Education for Sustainable Development

EDUCATION FOR SUSTAINABLE DEVELOPMENT

3.0   Introduction

Quality education is the fourth sustainable development goal (SDG4), which intended to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UNESCO, 2017b). The quality education goal (SDG4) comprises seven outcome targets, and the Target 4.7 emphasizes on the education for sustainable development (ESD), whereby the ESD is educational process of achieving human development in an inclusive, equitable and secure manner (UNESCO, 2014c). Education for sustainable development (ESD) is an appropriate educational program to educate people from an early age to reduce human dependence on natural and social environments. ESD educates people to participate, be active, and have knowledge of nature, equality, and social justice. Furthermore, ESD aims to improve the capacity and commitment required to build a sustainable society where individual and group decision considered savings and natural ecological processes; therefore, the quality of life is increasing both now and in the future. Suduc et al. (2014) stated that the contents of ESD implementation include various categories, i.e., health education, ecology education, traffic education, sports education, hazard response education, citizenship education, democracy education, and others. Looking at those various categories for ESD implementation, it is apparent that ESD is practically and conceptually complex, which involve a high degree of interdisciplinarity including ecology, economy, culture, politics and so forth, but also extensively the interaction between them.

3.1   Focus of the Review

This review begins with a narrative description of the policies and initiatives of each member state regarding Education for Sustainable Development (ESD) based on UNESCO Education Review (UNESCO 2015, UNESCO 2016, UNESCO 2018a, UNESCO 2018b, UNESCO 2018c, UNESCO 2018d). In addition, empirical studies related to ESD and its implications were identified through Systematic Literature Review (SLR). Drawing upon both types of literature, this report discusses the extent each member state ESD policies have addressed the targets of SDG 4. The results of this review show the main components of ESD that are relevant for policy implementation in ESD, and this is extended into challenges and constraints faced by teachers in implementing ESD policies and programmes.

3.2   Policy in Education for Sustainable Development

When Resolution 57/254 was adopted by The United Nations General Assembly at its 57th session in December 2002, which declared the United Nations Decade of Education for Sustainable Development (DESD), the goal of the DESD is to transform and reorient education and learning processes towards sustainable development. To do so, the DESD encourages governments to embed sustainable development into all education systems, plans and strategies, and supports public awareness to increase participation in ESD initiatives. This has led incorporation of ESD in education framework, and nations and regions across the world have engaged in developing ESD strategies and frameworks or reviewing existing ones. Subsequently, the Bonn Declaration (UNESCO, 2009) called for the development and adjustment of ESD policies and frameworks to guide the implementation of ESD in all educational sectors. The implementation of the ESD at country level in five cluster countries indicates various efforts to align the ESD framework and activities with the country national education policy and planning. This has been shown by the literature that all five cluster countries have given

prominence to the SDG4, particularly the ESD target and priorities in their national strategic plan for education.

3.2.1 Brunei Darussalam

Brunei Darussalam's education system has been reformed through a new education system called Sistem Pendidikan Negara Abad ke-21, or the National Education System for the 21st Century (SPN21). The objective of SPN21 is to promote the students' ability to meet the 21st century social and economic requirements and challenges, which in line with the Wawasan 2035 (Vision Brunei 2035) to achieve a country with high quality of life, sustainable economy, and well-educated citizens. The introduction of ESD in school curriculum provides opportunities to achieve goals of the Vision Brunei 2035 and the SPN21, through establishment of ESD strategy that incorporates the priorities of both the vision and the SPN21. With regards to ESD in school curriculum, topics that are related to ESD had been integrated into Brunei's school curriculum before the announcement of the 2005-2014 Decade of Education for Sustainable Development by the United Nations. The Education Ministry of Brunei has produced various outputs that are related to ESD programmes such as ESD Modules in Teacher Education Programme, and ESD Related Certification (Capacity Building for Teachers). The former, which are modules for pre-service early childhood, primary, secondary teacher education programmes that contain a mandatory sustainability education component, whilst the latter enables teacher-learners to take up environment and sustainable development concerns and issues in the classroom, and engages their students in practical, action-oriented activities and projects. Other outputs are ESD Related Instructional Tools (Handbooks and Case Studies), for delivery of sustainability content in the graduate programmes at the Teachers' Institute of Education (Sultan Hasanah Bolkiah Institute of Education, SHBIE).

3.2.2 Indonesia

The Constitution of 1945 underlines the fundamental right of all Indonesian citizen to access education, whilst the Law on National Education of 2003 upholds a compulsory basic education, based on equity, quality, and relevance; of which the government has an obligation to provide the free of charge basic education. In the context of ESD policy, the policy is directly or indirectly stated in Indonesian national 20-year long-term development plan, which spanning from 2005 to 2025, as well as in the four 5-year medium-term plans (UNESCO, 2018b). The Rencana Pembangunan Jangka Menengah Nasional (Indonesian National Medium Term Development Plan) 2020-2024, (RPJMN 2020-2024) is the final phase of Indonesia's long-term development plan that highlights the development of a strong economic structure based on competitive advantages in various regions supported by quality and competitive human resources. The objectives of RPJMN 2020-2024 are in line with the SDGs, through which the targets of the 17 SDGs and their indicators are accommodated in seven development agendas, including increasing the quality and competitive human resources. The implementation of ESD in Indonesia is guided by the strategies developed by the Ministry of Education and the Ministry of Environment in 2005. The two ministries signed a memorandum of understanding to improve environmental understanding amongst communities and to provide support in addressing environmental and conservation issues. Disaster reduction has been chosen as one of the themes for ESD to strengthen national policies on education for disaster management and preparedness. Among objectives of ESD implementation are to increase access and opportunities for quality basic education, to improve the quality of basic education service, to improve the capacity-building at local and community levels through school-based management and community participation, and to improve professionalism and accountability of education institutions based on knowledge, skills, experience, attitudes and values derived from national and global standards (UNESCO, 2011). The implementation of ESD practices is led by the National Coordinator for ESD

Implementation (NCESDI), which ensures ESD is integrated in education programmes in formal, non-formal, and informal education.

3.2.3 Malaysia

The Malaysia Education Blueprint (MEB) 2013-2025 (Preschool to Post-Secondary Education) provides the vision and goals for the Malaysian education system through to 2025 and the roadmap of policies and initiatives to be undertaken to achieve the goals (UNESCO, 2018c). The MEB outlines an inclusive transformation programme to achieve universal enrolment from preschool to secondary level, increase the quality of the national education system to the top third of the countries globally, to decrease student achievement gaps, to foster national unity, and maximize the government's return on investment. The vision of the MEB is to develop Malaysians with knowledge, critical thinking skills, leadership skills, language proficiency, ethics and spirituality, and national identity to succeed in the 21st century. Malaysia's Green Strategy in National Policy on the Environment also seeks to integrate environment consideration into development activities and in all related decision-making processes, to foster long term economic growth and human development and to protect and enhance the environment. It complements and enhances the environment dimension of other existing national policies, such as those on forestry and industry and takes cognizance of international conventions on global concerns. The first key area of the Malaysia Green Strategies is directed towards education and awareness, with a view to achieve a deeper and better understanding of the concepts of the environmentally sound and sustainable development, and a caring attitude towards nature. Environmental education and awareness are promoted across the board, incorporating information dissemination and training, in line with recommendations of Agenda 21. Amongst of education and awareness strategy is to integrate environment and development into education activities, from school to tertiary institutions, with development of relevant methods and materials are developed for environmental education programmes.

In the context of ESD for Malaysia, the Ministry of Education (MoE) of Malaysia acknowledges the Teacher Education Institute (TEI) to have vital roles in bringing changes within educational systems that will help to shape the knowledge and skills of future generations. This is because the TEIs will not only educate new teachers but also update the knowledge and skills of in-service teachers, develop teacher education curriculum and emphasizing education for sustainable development through collaboration with other regional and national ministries of education. The MoE of Malaysia hopes that the TEIs would have a broad influence in designing and implementing teacher education curriculum that will promote ESD. The priorities of ESD within education parameter includes gender equality, health promotion, peace and human security, environment: water, climate change, biodiversity, disaster prevention and rural development, sustainable urbanization, sustainable consumption, and cultural diversity.

3.2.4 Philippines

Application of human rights principles in all education levels has been mandated by The Philippines 1987 Constitution, which specified that 'the State shall protect and promote the right of all citizens to quality education at all levels and shall take appropriate steps to make such education accessible to all.' Within the Philippines' Education For All (EFA) Plan of Action 2001-2015, ESD has come as an educational vision that seeks to empower individuals to assume the responsibility for creating a sustainable future. It aims to improve people's access to quality basic education; to reorient educational curricula; to train people and to raise public awareness on sustainability; as well as to help people develop the necessary behaviours, skills, and knowledge at present and in the future. In 2008, the National Environmental Awareness and Education Act (NEEAP), was implemented by the Philippine government, whereby this law mandated all relevant agencies to integrate environmental

education into public and private school curricula for all levels, including barangay day-care, preschool, non-formal, technical-vocational, professional, indigenous learning, and out-of-school youth (OSY) courses or programs. Consequently, the NEEAP was updated in line with the goals of the DESD, 2005-2014, which envisions an environmentally literate and a proactive citizenry imbued with a sense of responsibility to care for, to protect, and to enhance environmental quality conducive to their well-being; supportive of the nation's economic development; and united with the country's pursuit of peace, social justice, and equity in the use of natural resources. Specific law has also been issued regarding the inclusion of the human rights concepts in the curricula in all education levels as well as training school in the country, which is the Executive Order No. 27 (Education to Maximize Respect for Human Rights). In Philippines, subjects on human rights are offered to junior and senior students, either as an elective or as a required part of the curriculum. History, civic education, social sciences, sociology, philosophy, religious studies are among the subjects that take human rights education into consideration (Institute of Human Rights and Peace Studies et al., 2013).

3.2.5   Timor-Leste

A long-term Strategic Development Plan 2011-2030 has been established by the Timor-Leste's government to transform the country into a medium-high income country by 2030. The plan highlights a healthy, educated, and safe population that is prosperous and self-sufficient (UNESCO, 2018d). With regard to education, the Timor-Leste National Education Strategic Plan 2011-2030 stated that 'by 2025 the population of Timor-Leste will be educated, knowledgeable, and qualified to live a long and productive live, respectful of peace, family and positive traditional values.' This statement guarantees that every citizen will have the same opportunities to access quality education, and opportunities to participate in the economic, social and political development process. In 2017, the Inclusive Education Policy was launched ensuring equal access to education for all, including persons with special needs, linguistic minorities and teenage mothers. The government of Timor-Leste committed to encourage human rights education, which in line with the National Education Act's objective on human rights education that stated as to *'ensure the cultural, ethical, civic, and professional education of children and youth, enabling them to reflect critically as responsible citizens as well as to use their free time in a fruitful manner'* (Timor-Leste Ministry of Education, 2011). In general, it is apparent that ESD has been recognized by the Ministry of Education and Culture as an opportunity for enhancing overall quality of education in Timor-Leste.

3.3   Findings of the Study

3.3.1   Systematic Literature Review (SLR)

The findings on ESD related policies of cluster countries are related to each country's national development goals. Many initiatives are strategically planned to meet the reformation in education system, enhancing the quality education of each country. The results of this review depict that there are relevant policies to implement ESD in school curriculum. The SDG4 is referred as the basis for defining and identifying the expected attributes to ESD implementation in respective countries. Key findings are as follows:

a.   **Key Finding 1: Quality of ESD Curriculum**

Development of framework for incorporating ESD in national curriculum needs several education components to address sustainability which would contribute to a good quality of the ESD curriculum. The components include knowledge based on traditional disciplines that supports ESD; understanding and addressing local relevant issues which are the significant component of ESD; ESD must provide

practical skills for the students so that will enable them to continue learning after they leave school, to have a sustainable livelihood, and to live sustainable lives; the importance of understanding global issues as well as local issues in a global context which is essential in terms of ESD perspectives; and, understanding values of the society you live in, and the values of others around the world is also important part of educating sustainable future. Teacher education has been recognised as essential to achieve goals in ESD, and to achieve the goals, maintaining the quality of teaching and learning is utmost priority. Teachers need to be trained in each area of ESD subjects, thus there is a need to develop interdisciplinary training programmes with systematic structures for teachers, who will be able to teach in various conditions of ESD scopes.

b.   Key Finding 2: ESD Implementation

Implementation of ESD in the Five Cluster Countries apparently varied depends on the priority of each country that is also related to the ESD related policies of the respective country. Regarding ESD framework and policies, most cluster countries have various ESD framework, except Brunei Darussalam that has no specific framework, of which ESD implementation in other countries is in line with the related framework. Among ESD implementation strategies of the Five Cluster Countries include incorporating ESD into existing programmes and activities and strengthening the programmes; influencing the direction of educational reforms; encouraging donors to support ESD; integrating ESD into existing UN initiatives such as the MDGs, EFA and UNLD; sharing information, opportunities, and resources. With the framework and strategies, among ESD achievements in the cluster countries include establishment of ESD-based school environment; high percentage of literacy rate for teaching staff at all levels on ESD components; and many more. The importance of effective ESD implementation and strategies should be of concern of the cluster countries because the concept of sustainable development is broad and it does not focus only on the relationship between people and nature, but it must also incorporate the relationship between people, so that the goals of sustainable development could be achieved.

3.3.2   Empirical Findings

The questionnaire survey results indicate that majority of teachers (49.4%) in Brunei Darussalam are unsure whether there is aspect of communities' interaction being integrated in the curriculum; however, 32% agreed that such aspect is emphasized, whereby the issues affecting interaction of communities at local, national, and global levels, are integrated in the school curriculum. Aspect of demonstration of respects in the school curriculum also received high agreement (more than 60%) from the respondents of Brunei Darussalam. Demonstrations of respect that are agreed being inculcated in the curriculum include:

- Respect for difference in diversity towards other individuals and social groups.
- Respect for difference in cultivating empathy towards other individuals and social groups.
- Respect for difference in solidarity towards other individuals and social groups.
- Respecting all human and living things.
- Respecting the environments

Subsequently, as for aspect of values in the curriculum, majority of the teachers (more than 70%) agree that the school curriculum in Brunei emphasizes on this aspect. Values such as respect, tolerance and understanding, solidarity, empathy, caring, equality, inclusion, and human dignity are portrayed in the existing curriculum. The final aspect on whether sustainable consumption habits are adopted in the school curriculum, it is apparent that more than 70% of the respondents agreed that this aspect is adopted.

All respondents from Indonesia (100%) agreed that the aspect of communities' interaction at local, national and global levels, are discussed in the curriculum; so as the aspect of demonstration of respects in the school curriculum also received high agreement of more than 80%, from the respondents of Indonesia. Regarding the aspect of values (respect, tolerance and understanding, solidarity, empathy, caring, equality, inclusion, and human dignity) in the curriculum, all the respondents (100%) agree that the school curriculum in Indonesia emphasizes on this aspect, and the values are shown in the existing curriculum. On the aspect of sustainable consumption habits, all respondents are also agreed that this aspect is adopted in the school curriculum.

The survey result from the respondents of the Philippines indicates more than 80% of the respondents agreed on the aspect of integration of communities' interaction in the curriculum, whereby the respondents agree that issues affecting interaction of communities at local, national, and global levels, have been integrated in the school curriculum. Moreover, demonstration of respects is acknowledged being portrayed in the school curriculum, which received high agreement of more than 80% from the respondents. As for the aspect of values in the curriculum, more than 80% of the respondents agreed that the school curriculum in Philippines contains such values of respect, tolerance and understanding, solidarity, empathy, caring, equality, inclusion, and human dignity in the existing curriculum. Sustainable consumption habits also received high agreement with more than 80% of the respondents agreed this aspect has been adopted in the school curriculum.

3.4   Challenges in ESD Implementation

Implementation of ESD in the Five Cluster Countries faced various challenges that requires comprehensive, systematic, and holistic planning. The challenges that have been compiled from the literature and responses from the open-ended survey given to the teachers and senior education officials are summarized as below:

i.   Current economic, social, cultural, and political backgrounds of the respective countries can be major constraints to the success of ESD implementation. It is apparent that there are different levels of development and economic status among the five countries, whereby Brunei Darussalam and Malaysia had achieved higher levels of development, whilst poverty remains a persistent challenge for Indonesia, Philippines, and Timor-Leste.

ii.   Implementation of ESD at country's level depends on the education priority of the respective countries. For instance, in Indonesia, most ESD programmes are implemented in formal education settings, nevertheless, there is little government engagement and funding for ESD-awareness raising programmes and initiatives for non-formal and informal education. The little government engagement illustrates some weaknesses of the government ownership on Sustainable Development Goals, especially the SDG4, thus government commitments should be enhanced for enabling ESD implementation into "a whole approach" concept. Related to this, responses from teachers in the survey indicated that the challenge in ESD implementation is to ensure that the ESD programmes and initiatives are fit with the local context.

iii. Narrowing the challenge of ESD implementation at school level, it is always a challenge to gain schools' supports for implementing ESD programmes in curriculum and co-curriculum activities. The challenge to have a spirit in schools that openly and enthusiastically supports the implementation of ESD is vital, which could be displayed through the interests and efforts shown by the educators in promoting integration and whole school engagement on the ESD programmes, with teacher training is a critical element. This challenge is also echoed by the

respondents in Brunei Darussalam whereby they mentioned that not all schools encourage or introduce ESD programmes in their school campuses.

iv. Building a sustainability curriculum is also down to the expectations that are put upon schools by education authorities. With trained and motivated teachers, it is far easier to inspire and motivate students. Teachers can often use the environment as a vehicle for teaching certain concepts in their own specific subject and once teachers have decided that this is worthwhile, they will increasingly find ways to use ESD ideas in their work. From the open-ended survey, some teachers highlighted about the challenge to build the sustainability curriculum. They mentioned about the school curriculum that is lacking on application of sustainability concepts, with rigid syllabus that too focus on summative and public exams. This results less emphasis to inculcate values, enhancing positive attitudes, discipline, ethics, etc. Response from the senior official indicates the challenge to change children's mindset towards a sustainable future is very important, thus it is the Ministry's challenge to roll out a new preschool and primary level curriculum which, amongst other objectives, sought to empower children to begin changing the way they think and to work towards a sustainable future.

v. Actual curriculum in certain cluster countries is positive towards sustainable development, nevertheless the actual practice is a continuing challenge. Response from senior education official in a cluster country highlighted that although prescriptive lesson plans accompany the curriculum, which mandate active and participatory learning and a child-centred pedagogy, often these are ignored, or at best not implemented correctly and effectively. Better and more concentrated teacher support and training, along with provision of books and other necessary materials is crucial and has been a major challenge for the Education Ministry. Part of this goes back to the monumental task of trying to change teacher and school leader attitudes. All educators were raised in a culture of teacher-centred pedagogy, where 'talk and chalk' was the dominant methodology.

vi. The challenge faced in implementing ESD is being able to bridge the gap between what happens at home and what is taught in schools. For example, if a child is learning about recycling at school, but parents are not supporting their learning by adopting recycling practices at home, then the child especially at a young age, receives very conflicting messages. Moreover, schools are busy places and there are increasing pressures on teachers within the workplace. These can create additional challenges such as gaps between awareness and understanding, motivation to and knowledge of how to become more sustainable. The process requires a movement from individual to collective empowerment, finding time, overcoming budget restraints, linking infrastructure change to mindset change and whole community engagement. Related to this challenge, respondents from the open-ended survey stated that lack of exposure to the sustainability activity for small children would contribute a challenge for adopting sustainability practices at home and at school.

vii. Most five cluster countries are adopting ESD in their curriculum in various ways, of which efforts are focused in creating and translating awareness into positive actions that learned from the ESD programmes and subjects. Nevertheless, limited involvement of stakeholders from relevant government agencies, private sectors, and industries, always become crucial issues to the success of ESD implementation. Understanding the narratives of various subjects that are related to ESD by the educators are of importance, however, incorporating ESD subjects in an overstretched curriculum could affect the teaching quality because of the increase of teaching loads for the teachers. Responses from teachers in the open-ended survey in agreement with what have been stated from the review.

viii. Financial resources and expertise are among significant limiting factors towards achieving the goals of ESD implementation in the school curriculum. Limited financial resources lead to lack of infrastructure to support ESD skills in teaching and learning. In one cluster country, the open-ended survey mentioned that the lack of budget and human expertise resulting a current curriculum revision and reform processes at the pre-secondary and secondary levels are being stalled.

ix. It is also a challenge for the education ministries to provide conducive learning environments so that ESD teaching and learning processes can effectively be implemented. Schools need to become more environmentally friendly in line with the ESD concepts.

x. With recent global issue on pandemic COVID-19, there are several impacts on education that have given the Ministry of Education the opportunity to address issues pertaining to the climate and environment. For example, although schools are closed due to the pandemic, nevertheless the remote classroom had been in place so that the teaching and learning processes were not interrupted; as the syllabus contents that are related to climate change and environment are already incorporated in the curriculum and remote classrooms had taken place, thus no impact on the CCE teaching and learning process occurred during this pandemic situation. Furthermore, one may ask whether the COVID-19 has created more awareness on issues related to the environment, climate, and sustainability. It is apparent that the pandemic situation had brought many positive collaborations and interactions among communities where a lot of bonding occurred when people work together and help each other in facing the current crisis. The interactions among communities could be used as a platform to enhance community awareness on climate change and environmental related issues, thus strengthening the implementation of CCE in ESD.

3.5   Recommendations

In promoting and implementing ESD teaching and learning process effectively, there are recommendations as follows:

i. There is a need to re-align existing educational programmes with ESD purpose. This includes promoting public awareness and develop public understanding about sustainability and provide practical trainings that are related to ESD components. The re-aligning of the existing educational programmes need supports from government, because these supports are important for sustaining the ESD activities and programmes. Hence, commitments from respective governments are needed to improve ESD through formal, informal, and non-formal education.

ii. The education policy makers within the Education Ministries need to understand the substance and the importance of ESD as well as its implementation, so that the development and implementation of ESD is in accordance with the national character and local community to address various national issues, resulting ESD programmes and initiatives fit with the local context.

iii. At school levels, schools that are selected for the green school programs are encouraged to build networking with other green schools both within and between countries, to share experiences and practices in ESD with different cultural background. It should be noted that climate change, global warming, disaster response, and maintenance of our environment are all key issues to not just be learned, but practiced, in this curriculum. There is a need to create more platforms/avenues for more discourse and engagements on issues related to sustainability so

that teachers' understandings on ESD related concepts could be enhanced, which leads to improvement in ESD teaching and learning.

iv.   As for conducive learning environments that are eco-friendly, it is recommended that an eco-friendlier school design and construction needs to be adopted, that allows school buildings to be pleasant, secure, and comfortable spaces in their respective climates, with minimum energy spent. This includes eco-friendlier construction materials and designs, the provision of alternative energy sources such as solar and wind power, and better and more sustainable ways of ensuring water, depending on each school's situation.

v.   With regard to public-private partnership in developing ESD, there is also a need to initiate the public-private partnership in education, because this partnership can increase program efficiency and transparency, improve the quality and relevance of education services, especially to underserved populations, permit quicker responses and overcome public sector restrictions. To achieve this, several practical instruments need to establish, such as tax incentives, that attracts the private sectors to engage in ESD programmes. In addition, the Education Ministries, or Education Departments, should collaborate with Higher Learning Institutes so that research to improve ESD in school curriculum can be carried out based on interdisciplinary approach.

vi.   Effectiveness of the ESD implementation is recommended to be monitored and evaluated, because monitoring and evaluation are important steps in promoting teaching, learning, and reflection in ESD. Establishment of National ESD monitoring system is perhaps essential so that the monitoring of the ESD implementation can be done in a systematic manner. There are several issues that are of monitoring and evaluation concern, which include i) to what extend the ESD programs meet its goals; ii) what are the learning outcomes; iii) are the results worth the project's costs; iv) what components of the program are reproducible in other locations; v) in what ways do participants benefit from the programs; vi) to what extent is the product viable; vii) to what extent has the process improved productivity. It is important that the monitoring and evaluation frameworks should be able to examine ESD-related realities in both formal and non-formal educational frameworks.

3.6   Conclusion

Education for sustainable development (ESD) is being implemented to different levels in each cluster country, depending on how well the country's education system is being established, and also depending on economic and development status of respective countries. It is apparent that strong efforts have been made in Indonesia and Malaysia to incorporate ESD into the national curriculums. In other countries, i.e., Brunei Darussalam, Philippines and Timor-Leste, priority is given to reform or improve educational policy framework, and ESD is recognized as an opportunity for enhancing overall quality education of the countries' framework. It is hoped that by incorporating ESD in the curriculum of basic education, this would enable to achieve a convincing and reliable standard of ESD in the cluster countries for educating environmental and humanity concepts and problems of the nations of the world. The government action in supporting and promoting ESD is one of the important factors that lead to improving ESD-related education programmes.

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Teachers Policy and Plan

TEACHERS POLICY AND PLAN

4.0   Introduction

Education for All (EFA) improved access and universal primary education (UPE) enrolment rates in many developed countries. Nevertheless, it has given rise to the subsequent challenge of ensuring that qualified teachers are available as well as equipped with necessary knowledge and skills to meet this increased demand. Although education remains a global priority, the attention of the international community is increasingly focusing on improving quality of education. This change is reflected in the context of the 2030 Agenda for Sustainable Development Goal (SDG) 4, which seeks to 'ensure equitable and quality education for all and encourage lifelong learning.' With teachers as key players in any curriculum implementation and intervention, SDG 4 emphasizes the common understanding that quality of education has to do with the availability of trained teachers in classrooms, first and foremost.

4.1   Focus of the Review

This review begins with a narrative description of the policies and initiatives of each member state regarding Teacher Policy and Plan (TPP) based on UNESCO Education Review (UNESCO 2015, UNESCO 2016a, UNESCO 2016b, UNESCO 2018a, UNESCO 2018b, UNESCO 2018c, UNESCO 2018d, UNESCO 2018e). In addition, empirical studies related to TPP and its implications were identified through Systematic Literature Review (SLR). Drawing upon both types of literature, this report discusses the extent each member state Teacher Education and Training policies have addressed the targets of SDG 4. The results of this review depict the main themes that are relevant for policy implementation in teacher education is quality and the subthemes are teacher training and qualifications then extended into constraints factors faced by teachers in implementing such policies.

4.2   Policy in Teacher Policy and Plan

The Teacher Education Program is one of the focus areas listed by UNESCO to respond to the current global environmental and economic crisis conditions facing the world now. UNESCO Technical Paper No. 2, 2005 emphasized the need to begin developing guidelines and recommendations for reorienting teacher training to address sustainability. In the next section, TPP in each member country will be presented and discussed.

4.2.1   Brunei

Brunei's long-term growth vision, set out in Brunei Vision 2035, makes education and the development of human resources the main priorities. The education system has been reformed steadily in recent years in line with the National Education System for the 21st Century (SPN21), which aims to foster the ability of students to meet the social and economic needs and challenges of the 21st century. The scheme also enhances the use of Information and Communication Technology (ICT) in schools, new monitoring systems and teaching methods, literacy and numeracy programmes, teacher training and education infrastructure development programmes (UNESCO Brunei, 2018-2021). The Eight Policy Directions outlined in the Education Strategy of the Brunei Vision 2035, which emphasizing on teachers including:

- Strengthening competency in information and communications technology (ICT) for students, teachers and educational administrators, including the integration of ICT in teaching and learning, and
- Promoting research, development and innovation both in government-funded institutions and through public-private and international partnerships.

4.2.2 Indonesia

The Teacher Law (No. 14/2005) made major improvements to the conditions of jobs and teacher certification standards, with the goal of improving the standard of education. It is a revision of the previous curriculum due to the lack of graduate expertise, the overly broad and irrelevant content, and the fact that it was teacher-cantered, textbook-oriented, and cognitively based evaluation used. Besides that, the Act of No. 14/2005, on Teachers and Lecturers stated that competency is a set of knowledge, skill, and behaviour which teachers and lecturers must recognize and master as regards serving their careers as a professional educator. To implement the regulation, this is issued by the Indonesian Republic Decree of No. 17/2007 on Academic Qualification and Teacher Competency Standard issued by the Minister of National Education. It stated that the Teacher Competency Standard is developed through four competencies: i). Pedagogical, ii) Personality, iii) Social and iv) Professional.

Despite this, as the school-based curriculum was being implemented, the Indonesian Ministry of Education and Culture (MOEC) introduced the 2013-Character Education Policy. This policy has been declared a crucial element of the national curriculum, as it promotes the building of national character. According to this policy, all school employees, including supervisors, administrators, and teachers, share responsibility for establishing school environments that promote the good character of the students (Nuh 2011). Teachers of all subjects must adopt the 18 values stated in their teaching syllabi and implement these values in their lessons. The specified values include areas such as religiosity, honesty, discipline, tolerance, creativity, democratic, curiosity, nationalism, appreciation, independence, cooperativeness, and social awareness.

Subsequently, Indonesian Ministry of Education and Culture (MOEC) published Regulation No.75/2016 on School Council. The Law prohibits teachers from membership of the school board by specifically declaring that school board members cannot be teachers (Article 4, No.3) and even advisory position to the school councils are placed in the hands of government bureaucrats with reference to the district government head (Bupati/Wali Kota), sub-district government head (Camat), and village government head (Kepala Desa/Lurah).

4.2.3 Malaysia

Malaysia established the 2013-2025 Blueprint on Education for Malaysians. This Blueprint is the product of comprehensive public interaction and analysis carried out by the Ministry of Education. Based on an understanding of Malaysia's current position and its challenges, the Blueprint aims to develop the vision and ambition for the Malaysian education system by 2025, as well as a road map of policies and initiatives that will be undertaken to obtain these goals. Malaysia has also invested in technology and teacher training and recruitment to boost the learning environment. To achieve these goals, the Malaysia Education Blueprint 2013-2025 proposes 11 shifts, of which the 4th shift focuses on teachers to turn teaching into a career of choice.

4.2.4 Philippines

The Alliance for the Education Sector has done especially well in fulfilling the Quality Education Development Tasks, namely: institutionalizing school-based management and national competency-based teaching standards; institutionalizing kindergarten education; and introducing K to 12 curriculum and education structure. All these interventions have a potential impact that will improve the education system in the country in the years to come. The plan on education must follow the SDG4 indicators of Quality Education 2030 which include Early Childhood Care and Education (ECCE), Primary and Basic Education, Learning life skills for youth and adults, adult literacy, gender parity and equality, and quality education. Nonetheless, teachers are the key concern in SDG4 where the Philippine government expects ICT-Enhanced Teaching and Learning: The Teachers' Experience as an Expected Result (Philippine, UNESCO,2018-2021).

4.2.5 Timur-Leste

A detailed theoretical and practical training programs are being developed for pre-school teachers on pedagogical methodologies appropriate for pre-school education. Yet there is limited access to pre-school and secondary education, with the majority concentrated in urban areas. There are insufficient school facilities, a shortage of trained teachers, distance to school and a lack of basic facilities such as water, sanitation, and school hygiene. Curriculum reform for grades 1-6 started in 2013 and culminated in the adoption of a curriculum Law 61 which calls for child-centred education and participatory teaching methodologies. The vision of Timor-Leste's National Education Strategic Plan 2011 – 2030 stated that: "by 2025 the population of Timor-Leste will be educated, knowledgeable and qualified to live a long and productive life, respectful of peace, family and positive traditional values.

4.3   Key Findings

4.3.1   Systematic Literature Review

The overarching finding is that the TPP policies are related to each country's national development goals. In addition, the initiatives are strategically planned to meet the reformation in education system. The results of this review depict the main themes that are relevant for policy implementation in teacher education is quality and the subthemes are teacher training and qualifications then extended into constraints factors faced by teachers in implementing such policies. The author referring to SDG 4 target as the basis for defining and identifying the expected attributes. The following findings relate to the targets of SDG 4 that draws upon TPP's plan of the country and the review of empirical studies identified from major educational database (11 articles on studies related to TPP and with policy implications).

a.   Key Finding 1: Quality

The primary concern is the quality of teachers through international cooperation and teacher preparation while enhancing all aspects of educational quality and ensuring excellence by all in order to achieve accepted and observable learning results for all. As the link between teacher quality and student success becomes increasingly apparent, the attention of educational leaders on upgrading teacher quality. Importantly, while ensuring representation from all communities is important when addressing teacher supply, institutionalizing gender-sensitive recruitment and retention policies needs urgent consideration, not least because evidence indicates that female teachers' involvement can dramatically boost the enrolment and attendance of girls. While what works to improve the quality of teaching varies according to context, there are innovative approaches that can be integrated

into national teacher development policies. Given the plenty of teacher training programmes, however, there is thin evaluative proof on which technologies work on a scale in developed countries and research into what context specific changes are required. This is an area, which requires substantial ongoing investment.

i.   Teacher training

There are number of programmes/trainings being implemented in Brunei Darussalam, Indonesia, and Malaysia in improving the quality if teachers. The programmes are listed as below:
- Integrated Approach to Reading Acquisition (TIARA)(Brunei)
- Preschool Interim Programme (Brunei)
- Literacy and Numeracy coaching Programme (LNCP)(Brunei)
- Teacher Competency Improvement Programme (Indonesia)
- Continuous Professional Development Programme (Indonesia)
- Community based teacher training (Indonesia)
- School improvement Programme (Malaysia)
- Cambridge Proficiency test (Malaysia)
- Professional upskilling for English language Teachers Course (PROELT) (Malaysia)

ii.   Qualification

Since 2009, Brunei has had two main teacher preparation programs, the Master of Teaching degree (MTeach) and Master of Education degree (MEd). The MTeach is an initial or preservice teacher training program. Trainee teachers on the MTeach program will have a bachelor's degree with in-depth content in a subject teachable in Brunei government schools (e.g., English, mathematics, geography, history, biology, chemistry, and physics) to meet the admission criteria. On the other hand, the MEd is an in-service teacher education program.

Meanwhile, in Indonesia, one of the teacher empowerment programs implemented is community-based teacher training. Community-based teacher training is structured in three modes: a) face-to-face, b) full online learning, and c) blended learning. The modes are selected by Provincial/Regency/City Service Office or the Technical Execution Unit to organize classes according to the participants profiles. Community-based teacher training has been successful in increasing the professionalism of teachers in Indonesia, particularly about improving educational and professional skills. In 2019, the Indonesian government is preparing continuing teacher training programs as a follow-up to previous training, with the goal of achieving an average teacher level of 80. These programs are expected to help realize the availability of quality teachers who have professional skills that can help them successfully carry out their profession.

On the other hand, in Malaysia, the MoE has encouraged teachers to pursue graduate degrees at local universities through special graduate programs. Teachers are given the opportunity to participate in part-time graduate programs, enabling them to continue teaching in schools while attending lectures or pursuing online learning. Raise the entry bar for teachers from 2013 to be amongst top 30% of graduates. This is followed by revamping the IPG to world class standards by 2020 and upgrade the quality of continuous professional development (CPD) from 2013 yet focus teachers on their core function of teaching from 2013. Under goal 5 which is eliminating gender disparities, MoE, encouraging male students to opt for a teaching career to avoid feminisation of the teaching profession as this has been brought up as one reason why boys are not performing as well as girls in schools.

b.   Key Finding 2: International Cooperation

In Brunei, in the second half of 2016, the Literacy and Numeracy Coaching Programme (LNCP), a 3-year collaborative project between the Ministry, the Centre for British Teachers (CfBT) and its parent company, Education Development Trust (EDT), was initiated through the deployment of 5 international coaches to 24 primary schools who conducted literacy and numeracy assessments on the teachers and pupils.

Meanwhile, as for Timur-Leste with the support of the Korean International Cooperation Agency (KOICA), UNESCO is supporting the Government of Timur-Leste to strengthen its mathematics and science education. Under the terms of the three-year cooperation from 2014 to 2017, UNESCO provide technical and financial assistance to the Government of Timur-Leste to strengthen new curriculum components to support grade 7 – 9 mathematics and integrated science instruction, including teacher guides, syllabi, and student workbooks (Timur-Leste, UNESCO,2018-2021)

c.   Key Finding 3: Incentives

In Malaysia, New Deals were launched in 2011 to acknowledge the value of teacher growth and student success instructional leadership at schools. A band for school results means that the school is identified and graded using the SKPM, based on the average grade of the school in public exams and school self-rating ratings. Performing schools with Bai'ah will be rewarded (performance-based contracts). Secondly, the 'Teach for Malaysia' Program (TFM) is one of MoE's efforts to recruit outstanding graduates and young professionals as teachers from both local and international universities.

4.3.2   Empirical Findings

a.   Brunei

Challenges faced by the teachers in Brunei can be divided into five categories: teachers' perspectives, policy makers, resources, leaders or school administrators and lastly parents or guardian and family members. Deep analysis in teacher's perspectives shows that, heavy workload such as administrator works and unlimited time for non-teaching work are the most predominant challenges faced by the teachers in Brunei. Besides that, finding revealed that, lack of professional development in teachers especially in ICT lead the teachers into trouble. Despite this, in Brunei the outdated policy, absence of policy for preschool and Teacher Policy and Plan is not widely distributed to all teachers which cause the changes made in policy and plan are not shared immediately with teachers had been one of the important challenges. Lastly, the teachers in classrooms who are the frontliners of education are not brought along to discuss policies and changes. Figure 8 illustrates main challenges faced by teachers in Brunei.

b.   Indonesia

In Indonesia, lack of enthusiasm among younger generation to become teachers warrant government attention, especially with regards to promotion, difficult competency tests, teacher certification and requirement to improve teaching skills. Lack of motivation among teachers to adapt and adopt the changes in current education systems have been one of the main challenges of teacher education in Indonesia. Teachers low salary indicates that no attention was given to the teachers' welfare. Insufficient infrastructure especially in conducting laboratory work and insufficient skilled teacher to

conduct the technical and laboratory work had been addressed as major challenges of teacher education in Indonesia.

c.   Malaysia

In Malaysia, empirical data reveal highest number of teachers echoed lack of financial support for the teachers to implement teaching and learning especially during the COVID-19 outbreak. Besides that, lack of ICT facilities and other learning infrastructure were regarded as factors which lead to failure of teaching and learning among teachers during the pandemic period. Extra workload such as paperwork and pressure from the Head of Department to complete the tasks in given time frame has given high pressure for the teachers. Furthermore, high number of students in one classroom is also associated as challenges that need to be faced by many teachers. Political influences and multilanguage approaches have also been encountered in the finding. Frequent changes in curriculum policies is one of the challenges faced by the teachers. Lack of time given for teachers to adapt and adopt to the curriculum based on the current needs especially for the veteran teachers should be taken into consideration.

d.   Philippines

Most of the challenges faces by teachers in Philippines are issues related to teacher policy and plan. For them, policy and plan should be updated according to the current situation. It will be very useful to help authorities to enhance teachers' competency and skills. Seminar and training should be conducted and widely available to the teachers. Teachers need to be assigned based on their qualification and preference. Besides that, issues related to low salary and overloaded work had been stated. It was also highlighted that there are unrelated teaching assignments and works given to teachers such as feeding, disaster risk reduction management etc., which significantly affect the efficiency and successful implementation of teaching-learning process.

e.   Timor-Leste

The Ministry has a clear need to diversify and improve its professional development offerings for its teachers – through more effective methods such as school-based trainings, mentoring, teacher working groups and co-teaching, as well as through an increasing use of ITC for teacher training. It has been highlighted that allowing teachers to be trained on topics that are most relevant to them will keep their interest up and allowing them to use methods that do not take them away from their classrooms during schooltime would reduce student abandonment. Apart from the issue of quality and relevance, the Ministry needs to develop a clear system of ensuring professional development's role and importance in teacher performance evaluation and subsequent salary raises. Another major problem related to teachers is the fact that teachers are unevenly distributed in schools. This needs to be rectified as a first step in responding to staffing profiles of each school and must be done for teacher recruitment to proceed. Although this problem has been raised for several years, a decision on re-allocation of teachers has yet to be taken.

4.4   Challenges in Implementing TPP policies

There are numerous challenges that might affect the acceleration of meeting SDG4 targets. Among the challenges are:
  i. The quality of teaching and learning is impecunious due to untrained teachers who are using inappropriate teaching practices. Teachers tend to use the same teaching methods and approaches for all students by ignoring the diversity among the learners (especially for adults

learners for almost all subjects). Less variety in teaching approaches would decrease the motivation towards learning among students.

ii. Quality of teaching and learning is always associated with quality of teachers or the educator. Lack of professional development opportunities for teachers will prompt to the evolution of ineligible teachers. Percentages of permanently employed primary teachers hold a recognized bachelor level qualification are remain low, especially in Timor-Leste. Moreover, there are large group of contract teachers who just completed secondary school. Besides that, teachers also should be occupied with ICT knowledge, consequently, it is critical that all classroom teachers are prepared to provide their students with these opportunities. ICT skills are among the important necessities during the COVID-19 outbreak.

iii. The quality of the teacher relies directly on the shoulder of the leader so that poor supervision from the leader would contribute to production of poorly trained teachers. Most education leaders put their focus on management and administration matters, and little initiatives are taken to identify the needs of teachers to deliver lessons in the classroom. Ineffective roles among the education leaders would also lead to the failure in ensuring the implementation of newly reformed curriculum especially matters that are related to learning in the classroom.

iv. Lack of teaching materials or limited resources were provided for the teachers in order to implement the newly crafted curriculum will always lead to failure of the curriculum implementation. The current economic status of the certain countries such as Timor-Leste revealed that the country needs resources to develop infrastructure in school, train the teachers and develop curriculum and textbooks for the growing population of students. Therefore, lack of materials will contribute to the improper implementation of curriculum in the classroom.

v. Despite widespread recognition of the importance of teachers in shaping the success of future generations, teaching, in far too many contexts, is always not regarded as a valued profession. Many countries face challenges in recruiting and retaining teachers. This is because wages for teachers in many countries are not comparable to professionals with similar education and training levels, workloads have increased, working conditions are deteriorating, and in certain countries, teachers are increasingly employed under precarious contracts.

vi. The COVID-19 outbreak leads to a delay in school data collection and delaying in providing the education indicators to decision makers and planners. Besides that, children from rural areas that do not have electricity supply at home, cannot get a proper supervision from the teachers, which eventually lead to poor understanding and achievement.

4.5   Recommendations

4.5.1   Establish quality of teachers

- Proper guidance and importance information should be provided for teachers to align between the learning outcomes, teaching and learning approaches and assessment mechanisms.
- Teachers should also find other resources to replace the materials stated in the curriculum. Teacher should be creative to use localised learning materials within the context of everyday living experiences.
- Teachers are responsible for establishing classroom environment and preparing learning opportunities that facilitate students in using technologies to learn and communicate.
- Ample opportunity for teachers to improve their knowledge and skills through lifelong learning pathways and continuous professional development.

4.5.2 Availability of localised and low-cost teaching materials

- Materials that have been developed by the panel of curriculum developer should be in delivering mode and easily accessible.
- Distribute the funded learning materials such as reading materials, to the remote areas to cater the underprivileged children.
- Teaching and learning materials that are cheap and can be found in the surrounding environments should be used to replace the expensive materials.
- Lesson plans should be prepared in multi languages, so that it can be used easily by all trained and untrained teachers.
- Efforts to promote the enjoyment of other rights must not be undermined, and should be reinforced, by the values imparted in the educational process. This includes not only the content of the curriculum but also the educational processes, the pedagogical methods and the environment within which education takes place

4.5.3 Ensure the school leaders' role in implementing new curriculum

- School leaders should identify the problems among teachers in implementing the curriculum especially the shortage of materials and provide the necessary needs.
- School leaders should also monitor the achievement of the new curriculum implementation and provide supports for teachers to overcome any difficulties.
- School leaders should focus not only on administration matters, but they should look at all levels of the school organizations for the success of curriculum implementation in the classrooms.
- Roles of supports are critical in helping those that are left behind, which include district and state roles that are important to drive strategic investment and system change.

4.5.4 Cooperate with national and international agencies

- Some cluster countries need financial support and expertise from external agencies, to fulfil the needs in education system, especially in teacher training workshops, school infrastructure, producing textbooks and reading materials.
- Engage in consultation and negotiation with teachers' organizations to ensure effective teacher policies are designed and implemented.
- Seek for large scale financial assistance for learning digitalization and connectivity especially in navigating learning challenges during and post pandemic COVID-19.

4.6 Conclusion

The review based on empirical studies also revealed of an interesting trend in TPP implementation in the areas of its impacts, implementation status and constraints to the successful implementation. Teacher policies are put in place by all five countries, and it meets to some extent, the targets of SDG4. However, academic studies have highlighted aspects of the policies and its initiatives that could be continuously improved. Localized training offered in regional and/or district-based training centers and distance learning should be enhanced progressively as practiced in many sub-Saharan Africa and South and West Asia to increase teachers' professionalism especially in rural areas. Approaches that aim to build a collaborative learning culture amongst teachers and schools provide sustainable solutions to lifting teaching quality should be initiated. The creation of school-clusters (small groups of allied schools that allow teachers to share resources, experiences and facilities) is one such example and is gaining popularity as a means of offering ongoing professional development. Indeed, effective

teacher development is a prolong process that requires substantial investment. It also requires a holistic view that balances content knowledge with pedagogical skills, practical experience, and *in-situ* support with attention to creating educational and learning environments that are child friendly and sensitive to the gender. Though what works to enhance the standard of teaching varies according to context, there are creative methods that can be integrated into national teacher development policies. In conclusion, if teachers are not given the ability to motivate themselves, the demands for a better education would be unreciprocated.

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Inclusive Education

INCLUSIVE EDUCATION

5.0   Introduction

The UNESCO (2005) stated that inclusive education is an approach that expresses how to change educational structures and other learning atmospheres to meet the needs of the variety of learners. Inclusion highlights opportunities for an equal involvement of individuals with disabilities (physical, social, and emotional) when possible into typical education, but leaves accessible the probability of individual selections and possibilities for special aid and accommodations for persons who need it and want it (Rasmitadila & Tambunan, 2018). The original focus of inclusive education was on education for "special needs", the needs for learners with disabilities. The conception of special needs has been redefined over time not only to cover disabilities and cognitive functioning *per se*, but has been expanded to include gender, health and nutrition status, language, geographic location, culture, religion, economic status – variables often associated to as barriers to achievement of Education for All (EFA) movement. To date inclusion is conceptualised as "a process of addressing and responding to the diversity in the needs of all children, youth, and adults through increasing participation in learning, cultures, and communities, and reducing and eliminating exclusion within and from education.

5.1   Focus of the Review

This review begins with a narrative description of the Inclusion Education policies and initiatives of each member state (Brunei Darussalam, Indonesia, Malaysia, Philippines, and Timor-Leste) which were influenced by the UNESCO (1994) Salamanca Statement that urges schools to provide 'curricular opportunities to suit children with different abilities and interests' and 'the success of the inclusive school depends considerably on early identification, assessment and stimulation of the very young child with special educational needs'. In addition, empirical studies related to Inclusive Education and its implications were identified. Drawing upon both types of literature, this report discusses the extent each member state inclusive education policies have addressed the targets of SDG 4 related to inclusive education.

5.2   Inclusion Education Policies Across Countries

Commitment to the education of children with special educational needs (SEN) has strengthened globally in the past few years. The inclusive education policy is influenced by the UNESCO (1994) Salamanca Statement that urges schools to provide curricular opportunities to suit children with different abilities and interests, and the success of the inclusive school depends considerably on early identification, assessment and stimulation of the very young child with special educational needs.

5.2.1   Brunei Darussalam

Brunei Darussalam's Special Education Policy Guidelines (Ministry of Education, 1997) stated that (a) all children are able to learn given an appropriate learning environment, (b) appropriate learning environments can be created within the inclusive school, and (c) the inclusive school is one that provides appropriate instruction for all children based on their capability. In the past twelve years (1997-2009), Brunei Darussalam has implemented three major educational policies: (1) inclusive education (1998); (2) the National Education System for the 21st Century known in Malay as Sistem

Pendidikan Negara Abad 21 or SPN21 (2008); and (3) education for the gifted /talented students (2009), which are partly designed to diversify and broaden the provision of education and the development of the country's human resources.

5.2.2 Indonesia

In 2001, the Directorate for Special Education supported the first inclusive pilot school in Yogyakarta. Following this, the Minister of Education's 2003 directed (the Direction Letter of the Directorate General Primary and Secondary Education No 380/C.66/MN/2003) for each region to develop at least four inclusive schools. As the ratification of CRPD in 2011 through law no. 19 of 2011, access to education for people with disabilities sounds to be more obligatory. Inclusive Education for students with disabilities seems facing new light to reduce the discrimination of people with disabilities in education. Access to higher education for students with disabilities is also wide open since their right is guaranteed by the regulation of Ministry of Research, Technology and Higher Education No. 46 of 2017 about Special Needs Education. This regulation impulses Universities in Indonesia to welcome and provide services for students with disabilities by forming Centre for Disability Services.

5.2.3 Malaysia

The evolution of special education programs in Malaysia is based on the government's policy and international declarations such as the United Nations' World Program of Action Concerning Disabled Persons and the World's Declaration on Education for All (Jelas & Mohd Ali, 2012). There are three types of special education programs which include 'Special Schools', 'Special Education Integrated Program' (SEIP) and 'Inclusive Program'. In 2013, the Malaysia Education Blueprint states it is committed to an inclusive education model and moving more students with SEN toward inclusion and that by 2021 to 2025, 75% of students with SEN will be enrolled in inclusive programs, all teachers will be equipped with basic understanding and knowledge of SEN, and high-quality education will be provided to every child with special needs (Adams et al., 2016). In 2019, Zero Reject Policy was further reinforced to guarantee that learners and children with special educational needs have access to education without adequate paperwork.

5.2.4 Philippines

Philippines pledges to promote the objective of the Education for All by considering the fundamental policy shift required to promote the approach of inclusive education particularly by enabling schools to serve all children including those with special needs (UNESCO, 1994). Inclusive education was officially adopted in 1997 by the Department of Education in the Philippines as a viable educational alternative. The 'Silahis Centres' ('school within the school' concept) is presented as a feasible model for implementing and promoting the inclusion of children with disabilities within regular schools throughout the Philippines. Basic Principles of Inclusive Education in Philippines are: i) Responsiveness to rights, ii) sensitivity and Responsiveness to Context; and iii) Inclusion.

5.2.5 Timor-Leste

Inclusive education in Timur-Leste is reflected in its Short-Term Goals (2015) and Long-Term Goals (2030). With respect to the former, Social Inclusion (SI) policy will be implemented once it has been introduced in 2015. The latter, however, boldly emphasized to promote the educational rights of socially marginalized groups (those groups which are systematically denied access to entitlements and services because of their socio-economic condition, ethnicity, language, race, religion, age, gender, disability, HIV status, migrant status, or where they live) ensuring that they gain full access to the same opportunities, rights and services that are accessed by the mainstream of society.

5.3　Key Findings

The results of this review depict the main themes that are relevant for policy implementation with regards to inclusive education, which are child disability, teachers, and parents. The themes are further discussed based on the countries involved.

5.3.1　Systematic Literature Review

a.　Key Finding 1: Child Disability

i.　Indonesia

In Indonesia, regular schools typically do not admit pupils with disabilities or special educational needs. These children might be taught in special schools, which traditionally have been orientated towards specific disability categories such as deafness (Purbani, 2013). This has created a wide variation in school admission practices across special and regular schools (Aprilia, 2017) and have a negative effect on school access rates, particularly in rural areas (Kristiansen, 2006). Indonesia's National Education Department (NED), through Directorate of Special School Education (DSSE) (under Directorate General of Primary and Secondary Education) develops policies and programs of Special Education that involves students with special needs (disabilities) to learn together with their peers in public school, which will lead to them being part of the school society, to create conducive learning atmosphere. Universitas Brawijaya provides affirmation action through an annual selection program designed specifically to grant students with disability access to enrol in higher education apart from the National University Selection, to speed up equality for students with disabilities to get access to higher education.

ii.　Malaysia

The Ministry of Education of Malaysia in view of making such social unity possible, decided to integrate students with SEN into the national schools as part of a reform initiative to educate the community, increase awareness on the educational rights of children and youth with SEN (Ali, Mustapha, & Jelas, 2006; Jelas & Ali, 2012). Many educators, parents and individuals with special needs welcome the fact that regardless of their special needs, pupils can attend school together with their peers (Beacham & Rouse, 2012; Krahé & Altwasser, 2006; Adams et al., 2016).

b.　Key Finding 2: Teachers

i.　Brunei

The Special Education Unit of the Ministry of Education provides special education services such as educational assessment, learning support, induction courses, and workshops. Special educators in Brunei are trained at the University of Brunei Darussalam at the undergraduate and postgraduate levels. Preservice student teachers take courses in educational psychology, special and inclusive education, and guidance and counselling. One of the first steps that Brunei Darussalam took after embracing inclusive education was the establishment of the Special Education Unit (SEU) in 1994. The SEU was directed by the Ministry to organise services for students with SEN with assistance from Special Educational Needs Assistance (SENA) teachers, the school-based team (SBT) and regular classroom teachers. The initial focus of the SEU after its establishment was the training of the SENA teachers. Since 1995, the SEU and the University of Brunei Darussalam (UBD) have jointly conducted a 1-year in-service certificate in special education programme to prepare regular teachers to become SENA teachers.

ii.	Indonesia

A joint project between the State University of Surabaya, Indonesia and The Open University, United Kingdom, explored the development of Key Word Signing (KWS) for inclusive classrooms. The findings suggest that a new model of teacher training is needed, along with revised classroom materials, if the approach is to support inclusive practices within schools rather than developing isolated 'signing teachers. This research highlights, for the first time, that the pedagogy within inclusive Indonesian schools may have a different underpinning conceptualization to that noted in Western research. (Budiyanto et al., 2017). In addition, it was found that the graduates of special-needs teachers are more specialized in special schools, with a more promising career of being a permanent schoolteacher or as a civil servant teacher (Rasmitadila & Tambunan, 2018). This is contradictory if teachers with special education graduates who teach in inclusive schools or regular schools with special needs students have status only as honorary teachers. This condition causes the reluctance of special teachers to teach in inclusive schools.

iii.	Malaysia

The empirical analysis data showed that teachers believed that SEN activities needed to be custom made to meet the objectives determined for each student. This is consistent with Huefner (2000) showing that as IEP is a program for individualized learning, this means it should also be developed based on students' individual needs. Teachers needed to establish measurable goals that allow them to recognize students' performance achievement (Bateman & Herr, 2006). In this study, teachers showed their willingness to learn from parents on the best practices and strategies to guide the SEN students. Besides that, another current research suggests that teacher-training programs should also include the preparation of general education teachers to address the needs of students with disability to promote successful inclusive education with effective collaboration between general and special education teachers (Burstein, Sears, Wilcoxen, et al., 2004).

**c.	Key Finding 3: Parents**

i.	Indonesia

Results illustrate that there are differences of opinion among parents regarding inclusive education. It is considered that parents do not understand the purpose of implementing inclusive education so that some people think that it is dangerous. The implications of this study expected that the relevant stakeholders should be able to socialize in advance about inclusive education before the system is implemented so parents understand the usefulness of inclusive education for the development of their children. It could be argued that if parents have a good perception of inclusive education, it will help the successful implementation of inclusive education at schools. This is because the perception of parents will affect the perception of the child, especially in primary school children.

ii.	Malaysia

The Education for All Handicapped Children Act (EAHCA, 1975); the Education of the Handicapped Act Amendments (EHAA, 1986), and the Individuals with Disabilities Education Act Amendments (IDEA, 1997), recognize teacher-parent collaboration as an essential component in effective special educational practices. The underlying assumption of such partnerships is that teachers and parents should work together to provide the child with the best education possible (Adams et al 2016). Parents in this study expressed that teachers had explained all the necessary information they needed to know on their child. Parents appreciated teachers' efforts and thus would be more considerate in their expectations toward teachers. Parents seemed to be rather contented with the service teachers gave

in SEN implementation. Parents in the study also acknowledged teachers' effort in guiding and educating their children by their confidence in allowing teachers to prepare their child's IEP learning objectives (Adams et al., 2016).

5.3.2 Empirical Findings

Facilities for teachers and special needs students are recommended by Brunei, the Philippines and Malaysia. Faced with the current scenario, teachers find it challenging to teach using an online platform and insufficient teaching materials. In addition, Brunei, the Philippines and Malaysia have also highlighted teaching assistants, as is the high student ratio in these countries. Teachers that are trained in the management of inclusive education is a significant matter that need to be considered. Brunei and the Philippines strongly urged the importance of combating the shortage of teachers and recommended that the Ministry of Education take effective steps to promote the quality of inclusive education.

At the same time, awareness among all stakeholders to promote the advancement of inclusive education has also been suggested. Finally, Brunei proposes to the appropriate authority to establish opportunities for students with special needs to succeed not only at school level, but also at national and international level. This will also be a motivational factor for students, teachers, and the school. The diagram below summarizes the concern and suggestion from the countries. Figure 7 succinctly demonstrates key themes which systematically synthesized and hence emerged from the open-ended questions.

5.4   Challenges in Inclusion Implementation

Based on the analysis, there are many challenges (other than attitudes) to inclusion. Among them are:

- Challenges not only comes from teacher believe on the practices of inclusive education whether it may work or not, it lays on the teachers' perspective, skills, and experience on the technique in teaching and accommodating students with disability in mainstream context of learning institution.

- Inclusive practices of language teaching for blind students not only rely on teacher's performance, but also institution support in terms of policy and infrastructure supports. The institution should be able to cultivate the inclusive culture through their policy and practices.

- Practically, the institution should provide the series of training for all teachers on inclusive education philosophy and practices weather they teach students with disabilities or not. Equipping teachers with the basic philosophy of inclusive education by disseminating the concept of Universal Design Learning and Differentiated Instructional Strategies should begin momentarily regarding to the growing numbers of students' diversity and students with disability.

- In the effort of inclusive education implementation, the role of the ministry of education as the focal point should enforce the implementation of inclusive education by enacting regulations that supports teachers' capacity building in terms of inclusive education in a practical level such as suggesting all teachers to attend inclusive education training as a requirement of their career path.

- Less studies are made to analyze teachers' belief and experience in teaching the special in need children through inclusive education, especially in classroom context, because many implementations are based on western context which might not align with the local environment classroom culture (e.g., Indonesia). It may have a different underpinning conceptualization to that noted in Western research.

- The view and perception of parent on implementing inclusive studies. Some parents who do not support and understand the need of inclusive studies, begin to create bad perceptions towards inclusive education.

5.5 Recommendations

5.5.1 Ensure the promising career for special education graduate

- Teachers are the main asset to deliver the content knowledge for the students, thereby promising career of the teacher should be declared by the ministry of education under inclusive education policy.
- Teachers who are special education graduates that teach inclusive education, or posted in regular school, should be recognized as other normal teachers in regular school.
- More courses need to be offered in teaching profession, and to include special education and early childhood as part of the courses at University level or college level.

5.5.2 Workshop in classroom practices

- Teachers should be providing a practical in nature and allows skill development explicitly relevant to their classroom practice.
- Teachers should be well prepared with module, supporting materials and proper infrastructure to help and guide the teacher to conduct the inclusive classroom.
- Special training is needed for teachers who deal with the autism children. This would help teachers to improve proper methods in communicating and develop skills to deliver knowledge to the special need children.

5.5.3 Facilities upgraded

- Teachers should be provided with adequate facilities which are sensitive for children with disabilities/special needs.
- Teachers should be provided with assistants to overcome the students per teacher's ratio issues.
- It is necessary to provide basic facilities that are needed for children with disabilities/ special needs.
- Free meal and home pack material for those vulnerable students are encouraged.

5.5.4 Change parents' perception of inclusive education

- It is necessary to provide understanding to parents who have normal children, about the goals in inclusive education. Positive parental perception would contribute to the success of programs that are related to inclusive education, which involve parents' role in giving understanding to their children on matters that are related to children with disabilities.

- Parents should be given proper knowledge and information on raising special need children, and the important of inclusive education. This will create awareness to the parents and ensure the children to get continuous learning knowledge especially during the COVID-19 outbreak.

5.5.5 Role of Higher Education Institution

- Higher education institutions should be able to cultivate the inclusive culture through their policy and practices. In practical, the institutions should provide series of training for all lecturers on inclusive education philosophy and practices, no matter whether they teach students with disabilities or not.
- Equipping lecturers with the basic philosophy of inclusive education by disseminating the concept of Universal Design Learning and Differentiated Instructional Strategies should begin momentarily due to the growing numbers of students' diversity, and students with disability in the higher education institutions.
- The role of the ministry of research, technology, and higher education as the vocal point, should enforce the implementation of inclusive education by enacting regulations that supports lecturer's capacity building in relation to inclusive education, such as driving the universities to design training towards inclusive education practices, and oblige the lecturers to attend the training as a requirement of their career pathways.

5.5.6 Encourage extensive research on inclusive education

- The government should assist and encourage research institutes, universities, and NGOs to conduct extensive research that focuses on Inclusive Education, to identify the strengths, weaknesses, and challenges in implementing inclusive education from every specific factor that includes teachers, students, parents, education policy, and other important factors.
- Encourage researchers to investigate attitudes of teachers in teaching students in the classrooms. Behaviors may be affected by past experiences, prior knowledge and newly acquired. Attitudes play an important role in deciding behavior; thus, it is important to determine the factors that form the attitudes of traditional teachers when they seek to include disabled students.

5.5.7 Building opportunities for Special Need Students

- Ministry of education should create and giving for more opportunities to special need students to exhibit their showcase not just at school level, but at national or even international levels which helps in character building.

5.5.8 Systematic approach to meeting the full learning needs of children with disability in the Education Policy

- Adequate budgets and incentives to promote inclusive education, and to fulfil learning needs of children with disabilities.
- Allocation of adequate supporting teaching staffs and budget for more conducive inclusive classrooms.
- Both management and teaching staffs require initial orientation on the principles of inclusive education and opportunities for continuing professional development.
- Emphasis on promoting inclusive values in the school community through a partnership with the peers of children with special needs.

5.6   Conclusion

Inclusion and equity have a central place in SDG 4: the goal formulation calls on countries to ensure 'inclusive and equitable quality education for all'. As a result, it is apparent that countries around the world are making considerable efforts to apply the concept of No *Child Left Behind* in education by monitoring disparity and inequality and using the evidence to develop policies that promote equity and inclusion. Nevertheless, a common understanding of the concept of equity and, especially, inclusion is elusive. To conclude, the inclusion of students with disability in education context is not a one-man work. It needs a collaborative effort among the policy makers, middle management, and the teachers, not to mention the parents of the students should also disseminate the same concept of inclusion. As inclusive practices occupy a greater part of teachers' work in regular schools, a more comprehensive body of research is needed to monitor, inform, and improve current inclusive education efforts in the existing school system. The greatest challenge would be the introduction of a comprehensive evaluation and feedback system that would continuously monitor the efficacy of the training programmes and respond appropriately and adequately to the emergent and unmet needs of all teachers. It would then be obvious that nothing short of a total system approach would suffice in confronting the problems of inclusive education. It would be useful to consider the possible involvement or input of all stakeholders in the process of developing or re-developing the training programmes, viz. teacher educators and Ministry of Education officers, school administrators and teachers, specialists and regular classroom teachers, parents, and the community, as well as children, both with and without SEN.

5.7   References

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Sector-Wide Policies and Plan

SECTOR-WIDE POLICIES AND PLAN

6.0   Introduction

The SDG4-Education 2030 Agenda is primarily the responsibility of governments, UNESCO and partner organisations to assist with organised policy direction, technical assistance, capacity building and monitoring at global, regional and national levels. UNESCO has a vital role to play in providing such support at the national level along with its designation. Consequently, they require not only sufficient technological capacity but also collaborations between governments to carry out their goals. Although there are obstacles for education systems in the time frame of this agenda, there is an opportunity for efforts to achieve quality education globally. It will cover sector-wide policy and plan, technical and vocational education training (TVET), teacher education, inclusive education, and sustainable development education. This chapter focuses on compulsory education starting from early childhood to secondary education and on collaborations with the public and private sectors, and NGOs, literacy and numeracy as well as the issue and challenges to match education policies with the SDG4-Education 2030 agenda.

6.1   Focus of the Review

The discussion will be focused on the alignment of the existing or in plan education policy with SDG4-Education 2030 Agenda and partnerships of Government with public and private sectors, and NGOs. Efforts of countries in localising directly and indirectly of SDG4-Education 2030 Agenda in education policy and the implementation of the proposed policy will be reviewed. There were some concerns reported in APMED 2018 Survey in mapping the SDG4-Education 2030 Agenda. The agendas are not directly apart of education policy, policy implementation is frail or not executed, primary and secondary education is not free, and no emphasis on rights-based education. Consequently, deliberation of this Review will be tackled to answer questions below:

- Does sector-wide policy and plan at early childhood to secondary education provide equal access to boys and girls?
- Does sector-wide policy and plan at early childhood to secondary education provide quality education for all?
- Does sector-wide policy and plan at early childhood to secondary education is free for boys and girls?
- Does sector-wide policy and plan at early childhood to secondary education are equitable?
- Does sector-wide policy and plan at early childhood to secondary education are relevant (current to 21st-century demands)?
- Does sector-wide policy and plan at early childhood to secondary education is effective?
- What is the level of literacy and numeracy of each nation?

6.2   Sector-Wide Policy and Plan

Sector-Wide Policy and Plan in this chapter refers to the core sectors relating to education starting from early childhood to secondary education that is comprehensive, holistic, ambitious, aspirational, universal, transformative, and leaving no one behind. SDG4-Education 2030 Agenda is introduced to ensure that the education sector is equal to boys and girls, possess quality, free, equitable, relevant, and effective. Indicators are established to determine the listed criteria and to facilitate the detection

of whether nations have accomplished the amended agenda. These indicators will be explored within the official documents varies from UNESCO, OECD, World Bank, ministerial and strategic plan reports, and articles related to sector-wide policy and plan. Indicators such as student's enrolment in each education level, the ratio of pupils per teacher, achievement of nations in national and international assessment, ratio between gender in access to education and others will be exhibited. Affirmation of the analysed documents will be triangulated using surveys and interviews with policymakers and enablers.

6.2.1 Brunei Darussalam

The National Education System for the 21st Century (SPN21) was introduced in January 2009 to better equip Bruneians for the 21st Century (Sharbawi & Jaidin 2019). Brunei Darussalam's Ministry of Education (MoE) is committed to delivering an education system that will prepare the young generation for future roles as a capable, creative, reflective, and inventive people who will uphold local social values deeply rooted in the national philosophy of the Malay Islamic Monarchy or the *Melayu Islam Beraja* (MIB) concept. Several improvements have been made along the way in responding to developments both nationally and globally. Students must spend their professional life in a multi-tasking, multi-faceted, technology-driven, complex and dynamic climate and must be prepared to do just that. Today's education system is facing insignificance as we close the gap between how students learn and how they survive, and what is ideal today might not be the same in the future. Formal education begins at the kindergarten level at the age of five years. From the age of six years onwards, students pursue six years of primary education, following which they progress to secondary school. All students will have a similar curriculum and will sit for the Primary School Assessment (PSR) at the end of Year 6. Students who have achieved five A's in their PSR will be appointed to science schools. Students that have been categorised as having special educational needs need a program that is changed and tailored to their abilities and requirements based on the Individualised Education Plan (IEP) and the Remedial Education Plan (REP). The Individualised Education Plan (IEP) is tailored for students diagnosed with unique educational needs, particularly those with high support needs. The Remedial Education Plan (REP) is specifically intended for students with learning disabilities, especially in necessary skills such as reading, writing and mathematics. At the secondary level, students will pursue 4 to 5 years of schooling following the standard curriculum and facing BC GCE' O' Level examination (Ministry of Education Brunei, 2013)

6.2.2 Indonesia

Indonesia has a systematic education system which is accessible by all children, and the Government has spent ample budget in realising the world-class education system by 2025. Indonesia immense obstacle is no longer improving access but enhancing quality. Withal, multiple evaluations of the country's educational outcomes indicate Indonesia has a long way to go before it achieves that goal (Rosser, 2018). The effort to uplift the quality of education and better learning outcomes such *Sekolah Bertaraf Internasional* in terms of the use of ICT, curriculum equivalent to the international standard and the practice of English should be taken into consideration. The participation of Indonesia in the international assessment such as PISA indicates that the nation is deliberate to ensure how well the performance of the education policy and plan and as a benchmarking to determine Indonesia is at par as other nations. The basic education system of Indonesia consists of four levels which start with *Pendidikan Usia Anak Usia Dini* (PAUD) playschool at the age of 3 to 5, and early childhood education *Taman Kanak-Kanak* at the age of 5 to 6, *Sekolah Dasar* or the primary education starts from grade 1 to 6, *Sekolah Menengah Pertama* or junior secondary education starts from grade 7 to 9. *Sekolah Menengah Atas* or senior secondary education starts at grade 10 to 12. State educational institutions are conducted by the Ministry of Education and Culture (Kemdikbud) and Ministry of Religious Affairs (Kemenag). The number of primary students increased from 14.9 million in 1970 to 29.35 million in

2016, and the number of tertiary students increased from 248,000 to about 9 million during the same period. Formal fees have been banned for primary school since 1977 and junior high schools since 1994 (Zuilkowski et al. 2017).

6.2.3 Malaysia

The Government launched the Malaysia Education Blueprint in 2013 to define the course of education reform over the next decade and to respond too many of the challenges faced by the system. The Blueprint sets several ambitious goals including, i) Universal access and full enrolment of all children from pre-school to upper secondary school by 2020; ii) Improvement of student scores on international assessments such as PISA to the top third of participating countries within 15 years and iii) Reduce by half the current urban-rural, socio-economic and gender achievement gaps by 2020. Formal education in Malaysia starts with pre-schools at the age of six and operated by the Government and the private sectors. However, younger children below six years old and below may attend playschool or day-care as non-formal early childhood education. The primary education starts at the age of seven lasts for six years (Year 1 to Year 6). There are three types of primary schools which are National School or *Sekolah Kebangsaan* (SK), National Type Chinese School or *Sekolah Jenis Kebangsaan Cina* (SJKC) and National Type Tamil School or *Sekolah Jenis Kebangsaan Tamil* (SJKT). All primary schools used the standard curriculum only the medium of language is different according to type. At the end of primary education, the children will sit for national examinations called *Ujian Pencapaian Sekolah Rendah* (UPSR). The secondary schools have two levels, lower secondary and upper secondary. The lower secondary starts at the age of 13 last for three years (Form 1 to Form 3) and at the of lower secondary the children will sit for the national examination and operated by the schools and regulated by the centre called Form 3 Assessment or *Pentaksiran Tingkatan 3*. In upper secondary starts at the age of 16 for two years and the children can choose to enter science streams, art streams or vocational colleges. Malaysia has established Malaysia Education Blueprint 2013-2035 (MEB 2013-2025) and will be implemented in three waves; i) Wave 1 (2013-2015); ii) Wave 2 (2016-2020) and Wave 3 (2021-2025) to ensure the continuity of policy and plan and the quality of education for children.

6.2.4 Philippines

Since the establishment of the Kindergarten Education Act in 2012, where pre-primary education is mandatory to all children in the Philippines has boosted the enrolment of children to pre-schools. The kindergarten is a part of primary education, or *Paaralang Elementarya* starts at age 5 to 12 years old from grade K to 6. Then the children will enter the lower secondary school of *Paaralang Sekundarya* start at age 7 to 10 years old from grade 7 to 10. After the completion of lower secondary school, the children will progress to upper secondary school, or *Mataas Na Paaralan* starts at age 11 to 12 from grade 11-12. The deployment of the K to 12 Basic Education Program is one of the country's main educational reforms. The Act plans to launch programmes and initiatives aimed at expanding and enhancing the delivery of basic education in the country. It intends to provide the Filipino learners with the skills and competence they need to train them to meet the challenges of the 21st century. Basic education consists of 7 years of primary education and four years of secondary education.

6.2.5 Timor-Leste

The Timor-Leste Government's overarching vision for the education sector is that all individuals will have access to quality education that will enable them to participate in the process of economic, social and political growth. Timor-Leste has made considerable progress in recent years, especially in terms of the number of schools and the level of enrolment. Within five years, the net enrolment rate rose from 67% to 83%, and the gender gap decreased significantly in basic education. Despite this

development, the education sector in Timor-Leste still faces some challenges. In basic education, drop-out and repeat rates are high, although nearly half of six-year-olds do not start school at the right age. The National Education Strategic Plan (NESP) 2011-2030 aims to achieve universal completion of basic education, eradicate illiteracy, and ensure gender equality through priority initiatives, policies and activities in early childhood, primary, secondary, higher, and recurrent education (Ministry of Education Timor-Leste 2011). Timor-Leste children may start their quality schooling at the age of 3 to 5 years old in pre-school or early childhood education. In pre-school, they will develop the basic skills and knowledge to be prepared for basic education. Families, communities, and local governments will be involved in the decision-making process, and through collaborative efforts, schools will be established that meet all the requirements of early childhood education. Basic education is universal, compulsory, and provided for free. The basic education reform would implement systematic and guiding directives focused on the following four foundations of learning; i) learning to know, ii) learning to do, iii) learning to work together and with others and iv) learning to be. At the age of 6, all children would have access to basic education. After nine years of education, they will succeed in both the official languages of Tetum and Portuguese and learn English as their first foreign language. They will also develop strong literacy and numeracy skills and learn the core competencies and values of national identity, Timorese history and culture. Secondary education starts at the age of 15 years old, and the children get to choose whether to learn the core of scientific-humanistic or technical vocational.

6.3   Findings of the Study

6.3.1   Brunei Darussalam

a.   Accessible and equitable to boys and girls

Majority of the respondents agree that early childhood education is equally accessible to boys and girls, and the number of pre-schools is sufficient to accommodate the needs. Pre-schools are available at every district, and respondents highlighted that there are initiatives executed by the Government to promote girls to participate in early childhood education. Intervention has been executed for children at risk, for example, immigrant, refugee, out-of-school, CLHIV and disabilities for early childhood education to ensure their participation in pre-schools. Moreover, majority of respondents in the survey agreed that primary and secondary education is also accessible to boys and girls, and they agree that primary and secondary schools are reachable and available in each district. Majority of the respondents also agree that the number of primary and secondary schools is sufficient; moreover, intervention is also carried out for those children that are at risk as aforementioned statement, so that these children are able to enrol for their primary and secondary education. The open-ended survey highlighted concern on children with vulnerable situations such as students with family problems, immigrants, and out-of-school children, to ensure them to be able to participate in education away from difficulties.

b.   Quality education for all

The quality of pre-school in this section refers to the quality of care and the quality in preparing pre-schoolers for primary education. The quality of care consists of providing free meals and facilities that are sensitive to children needs, children with disabilities, gender, non-violent and inclusive. Quality in preparing pre-schoolers for primary education refers to the pre-school curriculum that is developed for preparing children for their primary education, in which the pre-school curriculum is aligned with the primary education curriculum. Most pre-schoolers achieved a minimum requirement before entering the primary education. The survey indicates that the pre-school facilities are sensitive to

children's need, with the respondents agree that the facilities are sensitive to children with disabilities, and sensitive to gender. It is a consensus that the environment of pre-school is non-violent, and inclusive; majority agree that pre-school provides free meals for children. Regarding the pre-school curriculum, the survey indicates that the curriculum is aligned with primary education curriculum, thus, this would prepare the pre-schoolers before enrolling in the primary schools. Majority of children achieved minimum requirement to enrol in the primary education.

For primary and secondary education, the survey found that the primary and secondary education curriculums are suitable at all levels and age, with majority of respondents agreed that of children's talents are embraced by specific programs such as sport and arts. The facilities provided are adequate, sensitive to normal and children with disabilities, and sensitive to gender; the facilities are safe, education environment is non-violent, and inclusive. Some children in primary and secondary schools are provided with free meals, and this would help to provide quality education for the children.

c.   Free for all children

The survey indicates that early childhood education in Brunei Darussalam is free, hence, all children can afford early childhood education. There is initiative executed to promote early childhood education by providing scholarship and funding. As for primary and secondary education, all respondents agreed that these are free for all children, and there are scholarships given by the Government to assist the targeted children for the learning process in schools.

d.   Relevant to the current needs

Relevant refers to curriculum and facilities that provide pre-schoolers with relevant skills and emphasis on character building. It has been agreed by the majority of the respondents that the children at pre-schools are equipped with relevant skills, pre-school facilities are relevant to current early childhood education needs, and at pre-school level, emphasis is also given on character building. In primary and secondary education, most respondents are also agreed that the primary and secondary curriculum is relevant in the 21st century, with curriculums are being aligned with I.R 4.0. Schoolchildren are also equipped with relevant skills, and several aspects are being emphasized such as STEM, ICT programs, and character building. Responses from the open-ended survey indicate teachers' opinions on the importance to emphasise STEM education and I.R 4.0 relevant skills, to give exposure to the schoolchildren on the current technologies that are currently demanded by the job markets. Also, heavy emphasis on academic or examination orientation should be balanced with personal development and character building of the children.

e.   Effective compulsory education

Effective refers to the sufficient number of teachers, monitoring authorities and agencies, and government expenditure on early childhood education, facilities that promote effective learning and being improved from time to time. From the survey, low number of respondents agree that the number of pre-schooler teachers is sufficient. Majority agree that monitoring agencies or authorities play an effective role in ensuring the quality of care and curriculum. Facilities of pre-school are agreed suitable for effective learning and the facilities are improved from time to time. Based on the open-ended survey, some respondents stated that the need to recruit more pre-school teachers because the ratio of pupils per teachers in some locality is high, and to improve qualification of the educators via certification programs. Even though the respondents agreed that the monitoring agencies are effective, nevertheless, the office of early childhood education is under staff; furthermore, more funding are needed to improve pre-schools facilities. Awareness should be promoted to parents and

caregivers about the importance of early childhood education and their involvement in their children education for the effectiveness of the implementation of early childhood education.

In primary and secondary education, majority respondents agreed that the numbers of schoolteachers are insufficient in primary and secondary schools. It has been agreed that monitoring agencies or authorities play effective roles in ensuring the quality of primary and secondary education, and the Government has spent ample expenditure for betterment of the primary and secondary education. Facilities of primary and secondary education are up to the standard in promoting effective learning, and the facilities are being upgraded from time to time. The open-ended survey highlighted teachers' workload that include the non-teaching tasks whi that hinder them to effective in the classroom. Some respondent suggests that teachers should be given a better incentive for motivation. Facilities should be upgraded especially in ICT to ensure children provided with a 21st-century learning environment.

f.   Level of literacy and numeracy

Literacy and numeracy refer to the agreement of respondents on the most student can read and count in primary and secondary schools. The majority of respondents agreed that the schoolboys and girls are able to read and count. Initiatives to improve literacy and numeracy of primary and secondary schoolchildren are in place, and most respondents agreed that the programs related to the improvement of literacy and numeracy in primary/secondary education are effective. Some respondents stated that the Year 1 curriculum is too advance for the children at that level. From the open-ended survey, some respondents highlighted the importance to focus on literacy and numeracy due to some students have difficulties when they progress to secondary education. It is crucial to have some interventions before the children progress to the secondary level. The transition from Bahasa Melayu as medium of teaching and learning to bilingual with English language raised concern by some teachers because students are facing difficulties in adapting to such policy.

6.3.2   Indonesia

a.   Accessible and equitable to boys and girls

The survey indicated that the pre-school provided equal access to boys and girls, number of pre-school is adequate, and there are initiatives to promote girls to participate in early childhood education. Moreover, pre-schools are available in all districts, and intervention are in place for children at risk, for example, immigrant, refuge, out-of-school, CLHIV disabilities for early childhood education. Majority of respondents agreed that initiatives are also being carried to give awareness to parents about the importance of early childhood education. The open-ended survey highlighted that the Government should give more attention to early childhood education because parents and communities are not fully aware of the important role of early childhood education, whereby they treat pre-school as a day-care, not an educational institution.

b.   Quality education for all

The survey indicates that the pre-schools provide free meals for the children. Moreover, the pre-schools in Indonesia are sensitive to children's needs, sensitive to gender and sensitive to children with disabilities. Most respondents agreed that the pre-school curriculum is suitable for early childhood education, of which the curriculum is with primary education. Majority of the children achieved a minimum requirement before enrolling in primary education.

c.   Free for all children

All respondents agreed that early childhood education is free for all children, and there are initiatives to promote early childhood education by giving scholarships or funding. Based on the open-ended survey, the respondents stated that more attention should be given to the welfare of teachers and tuition fee for the students to get access to education.

d.   Relevant to current needs.

Children at pre-schools are equipped with relevant skills, as well as emphasis is given on character building. From the open-ended survey, there is a response that highlighted role of private sectors via Corporate Social Responsibility to contribute funding for early childhood education, so that gaps between high and low-income community could be reduced, thus all children of different family background could benefit various programs offered in early childhood education curriculum.

e.   Effective compulsory education

Most respondents think that the number of pre-school teachers is not sufficient. They agree that the monitoring agencies or authorities play effective roles in ensuring the quality of curriculum and care in early childhood education are maintained. It has been agreed my most of the respondents that the Government has spent ample expenditure on early childhood education that includes facilities to promote effective learning. The facilities are made sure relevant to current education needs and being improved from time to time. From the open-ended survey, not many young people aspire to become early childhood teachers, hence, efforts should be taken to promote this career among the young generation. There are responses that stated that some pre-schools are funded by the community, of which the communities that comprise of high-income families contribute bigger funding compared to the low-income communities. This shows disparities in providing better facilities for pre-schools that are funded by the high income and low-income communities.

6.3.3   Malaysia

a.   Accessible and equitable to boys and girls

Most of the of respondents agree that primary and secondary education is accessible to boys and girls, with the number of primary and secondary schools are sufficient and available in most localities. Half of the respondents agreed that interventions executed for children at risk, for example, immigrant, refugee, out-of-school, CLHIV and disabilities in primary and secondary schools.

b.   Quality education for all

For primary and secondary education, majority agreed that the primary and secondary education curriculums are suitable at all levels and age, with children's talents are embraced by specific programs such as sport, arts and gifted. In the aspect of facilities, the respondents agreed that the facilities are adequate, sensitive to children, sensitive to children with disabilities, and sensitive to gender. The facilities are safe, education environment is non-violent, and education environment is inclusive.

c.   Free for all children

In primary and secondary education, the respondents agreed education is free for all children, and children could afford primary and secondary education. Majority also agreed that initiatives executed by the Government to keep children in schools by providing scholarships for them.

d.   Relevant to current needs

In primary and secondary education, majority of the respondents agreed that the curriculums are relevant in the 21st century and aligned with I.R 4.0. They agreed that children would be equipped with relevant skills, emphasis on STEM, ICT programs, and character building. The open-ended survey highlighted that the curriculum is too packed and frequently changed. The curriculum should be more flexible.

e.   Effective education

In primary and secondary education, most of the respondents agreed that the number of teachers is sufficient in primary and secondary schools. Monitoring agencies or authorities play an effective role in ensuring the quality of primary and secondary education. Government has spent substantial expenditure on primary and secondary education. Facilities in the primary and secondary schools are adequate, being considered as appropriate in promoting effective learning, and facilities are upgraded from time to time. The open-ended survey indicated that the ICT facilities should be upgraded, especially in the rural schools. Good facilities not only facilitate learning, but it also motivates teachers to teach and students to learn. Several respondents highlighted that many programs carried out in schools resulting teachers are burdened by non-teaching activities as well as administrative tasks. Due to the immense workload, teachers become ineffective because of the ratio of pupils per teacher is high in several localities, especially in the urban areas. The demand to have more school or to recruit more teachers needs to be taken into consideration.

f.   Literacy and numeracy

Literacy and numeracy refer to the agreement of respondents on competencies of students in reading and counting in primary and secondary schools. Majority of the respondents agreed that the schoolchildren are able to read and count. There are initiatives executed to improve literacy and numeracy in boys and girls of primary and secondary schools via related programs.

6.3.4   Philippines

a.   Accessible and equitable to boys and girls

Most responses received from the survey indicated that early childhood education is equally accessible to boys and girls, and the number of pre-schools is sufficient and available in every district. There are initiatives executed by the Government to promote girls to participate in early childhood education. Intervention executed for children at risk, for example, immigrant, refugee, out-of-school, CLHIV and disabilities, to ensure their participation in pre-schools. is at cumulatively 64.7% agree. The open-ended survey highlighted that in some localities, the pre-schools are located far from the children home, thus, this would hinder enrolment of the affected children in early childhood education. Lack of parents and caregiver awareness and support on the importance of pre-primary education need to be taken into consideration.

b. Quality education for all

The quality of pre-school refers to the quality of care and the quality in preparing pre-schoolers for primary education. The quality of care consists of providing free meals and facilities that is sensitive to children needs, children with disabilities, gender, non-violent and inclusive. Quality in preparing pre-schoolers for primary education refers to the curriculum developed for preparation for primary education, the curriculum is aligned with primary education, and the majority of pre-schoolers achieved a minimum requirement before entering primary education. The survey showed that the pre-school facilities are sensitive to children's need, sensitive to children with disabilities, as well as sensitive to gender. The environment of pre-school is non-violent, inclusive, and caring by providing the pre-schoolers free meals. Most respondents agreed that the pre-school curriculum will prepare pre-schoolers for primary education, and it is aligned with primary education curriculum. The open-ended survey highlighted the need to focus on children nutrition and preparing free meals for all children in the pre-schools.

c. Free for all children

Most respondents agree that early childhood in the Philippines is free, hence all children can afford for early childhood education. There is initiative to promote early childhood education by providing scholarship and funding, especially for the poor households' families that are unable to send their kids to school because of poverty.

d. Relevant to the current needs

Relevant refers to curriculum and facilities that provide pre-schoolers with relevant skills and emphasis on character building. Children at pre-schools are equipped with relevant skills, the facilities are relevant to current early childhood education needs, and it has been agreed that there is an emphasis on character building in early childhood education.

e. Effective compulsory education

Effective refers to the sufficient number of teachers, monitoring authorities and agencies and government expenditure on early childhood education, facilities that promote effective learning and improved from time to time. The survey indicated that majority of respondents agreed that the number of pre-schooler teachers is sufficient; and monitoring agencies or authorities have played effective roles in ensuring the quality of care and curriculum. Facilities of pre-school are effective for learning, and they are improved from time to time. Based on the open-ended survey, it has been highlighted the need to improve kindergarten facilities and allocation of learning materials to facilitate teachers to be more effective. Further, the need to have qualified teachers is also brought into attention, because there are some pre-school teachers who do not have qualification to be a pre-schooler teacher. Department of Education should provide training and certification to recruit more teachers especially in the rural areas, because the number of pupils per teacher in some localities is high.

6.3.5 Timor-Leste

Provision of school infrastructure remains one of the biggest challenges for MEYS to address. There are more than 1,500 existing classrooms that need to be refurbished and school WASH facilities that need to be installed, as well as making sure the schools get access to water. Besides, new classrooms also need to be built to ensure that all children can get access to quality standard learning facilities

that would improve and ensure more participation in education, particularly pre-school education which has a relatively low 25% enrolment rate. However, improving school infrastructure requires relatively significant financial resources as well as an effective multi-year planning cycle. It is therefore recommended that MEYS develop multi-year planning for addressing school infrastructures including school WASH facilities as well as used for mobilising additional resources to address the issue.

Another challenge is strengthening evidence-based planning. Although the Government has made significant investment towards producing evidence-based planning and MEYS has established an EMIS system to support with the production of data and information, the data collected are insufficient, not up to date, unverified and inconsistent, which makes it hard to make precise stories of the education situation. For example, although there are data on enrolment rates (both GER and NER), schools and infrastructure facilities, however, there is less data on measuring the quality of learning in schools, children with special needs etc. Besides, various studies in education that have been commissioned by numerous entities have not been coordinated and shared with MEYS, nor easily accessed through the wider public domain.

Improving school infrastructure requires relatively significant financial resources as well as effective multi-year planning cycle. It is therefore recommended that MEYS develop a multi-year planning cycle for addressing school infrastructure, including school WASH facilities, as well as used for mobilising additional resources to address the issue. The Ministry's recently approved Education Sector Plan (ESP) identifies the evaluation of learning outcomes with appropriate standards and system as one of the strategies to address the issue of low educational quality. At the same time, MEYS should develop an adequate and affordable system that can help to collect information on learning outcomes. Hence, it is recommended that MEYS implement its recently developed ICT Policy strategy to help improve our EMIS system by promoting digitalisation and school-based data collection. Besides, further investment in the MEYS planning department is warranted to implement numerous recommendations from various assessments carried out on EMIS.

6.4 Challenges in Sector Wide Policy and Plan Implementation

The challenges below summarise from assembled of content analysis, survey and open-ended questions:

6.4.1 Accessible and equitable to boys and girls

All the cluster countries provide equal access to education to all boys and girls. There is no discrimination and disparity of gender to get access to education and in all education policy of each country stated that the service of education is eligible to all children. Withal, there is some concern regarding the availability of school in a certain locality and some a bit far from the children's home. This becomes a challenge for the children to go to school and hinder their motivation to get access to education. Furthermore, school far from home is not safe for the children because of the need to travel. There are no issues about promoting girls to go to schools it can be seen from the enrolment that some cluster countries have a higher percentage of girls and survive at least at compulsory education. However, the concern should be looked upon the accessibility of vulnerable children to school. Lack of awareness of the existence of diverse children who needs special care and protection to all kinds of discrimination. Most of the cluster countries stated about special education and inclusivity. Still, it needs to be made clear about the diversity of children's requirement to specific attention in terms of definitions. It must be made clear in the policy what type of children need what type of supervision to be accessible to education. In some education policy is hazy about the treatment that should be given to out-of-school or drop-out children. What initiatives should be implemented to

ensure that these children have access to education? What are the criteria of out-of-school children and at what age that needs to be taken into consideration?

6.4.2   Quality education

Two criteria of quality that require to be highlighted, the quality of care and quality of the implementation curriculum. Children should be provided with adequate facilities for them to feel safe, being able to move freely without any obstacles, do not feel excluded and inclusive. To provide various kinds of facilities to accommodate all children's needs, necessitate immense funding. The major problem about children with special needs is to identify them at an early age. Issues of having them at later grades, complication to handle them in the school, the readiness of teacher and normal student for inclusivity, lack awareness of parents about their special needs and competences of teachers deal with them should be clarified through policy or initiatives. Good facilities do not just have a clean place, electricity and technology but the new obstacles are how to accustom school facilities for diverse learners. Having good nutrition is important for the children to grow but also giving them enough energy to be capable of receiving education. Malnutrition among children from the poor household could lead to drop-out because some children need to get a job to survive and feel ashamed because they are not as fortunate as any other kids. The challenge is to provide free nutritious meals for children in schools.

6.4.3   Free education for all

All sub-regional countries state that compulsory education years is provided free to all children. The question is, how free is free? The definition of free to be made clear whether it is free or partially. It is because to be able to get an education, and a child must have all the schooling necessities. It includes books, uniforms, stationeries, shoes, tuition, transportation, learning materials, examination papers and food. The challenge is how to ensure that all children have at least basic schooling necessities. Fortunately, all sub-regional countries have initiatives to cater to the problem by providing children with fund and scholarships. However, do children or parents aware of these benefits.

6.4.4   Relevant to current needs

Relevant refers to how current is the education and does it significantly with the children's future. From the survey, the respondent made aware that it is crucial to teach the 21st-century skill, I.R 4.0, ICT and STEM. However, do the students realise the importance of it for their future? All sub-regional countries stated in their policy the curriculum include all the requirements to ensure the children have relevant skills to pursue career life. Programs to implement 21st-century skills, I.R 4.0, ICT and STEM require time and budget, and it is a challenge to promote teacher to hold such activities. Teachers argue that they do not have much time to enforce project with the students because they need to ensure the completion of the syllabus. Instead, they need to focus on the preparation of students for the standardised test or examination. Relying heavily on examination-orientation will lead to rote learning and hinder a deeper understanding of knowledge. Yet, a standardized test is also important to assess the achievement of a policy and the effectiveness of education. The challenge is how to balance the need for student-centred approach and national examination.

6.4.5   Effective education for all

Effective teachers bring effective teaching. To ensure that teacher is effective, they need to have some qualification in education to teach the children. From the findings, in some cluster countries, the number of qualified teachers is low, especially in the pre-schools. To deliver quality education, an educator must have pedagogical knowledge and children psychology. It has been a challenge to

provide the teacher with a qualification in some cluster countries because of the funding and also to attract more people to become a teacher. Most people are not interested in being a teacher, especially a pre-school teacher. However, the criteria of teacher qualification state in all policy document 5 cluster countries. The adequacy of teacher has been a long-time issue. Most cluster countries have pupils per teacher ratio below than the world average, and it indicates that the number of teachers is sufficient. Yet, from the findings, most of the countries declared a concern of the insufficient teacher. The urban locality has a higher population and schools become cramp. As for the rural area, the lack of teachers is due to the unwillingness to educate in a remote area. Hindrance to guarantee that the supply of teachers is sufficient should be overcome. Also, the challenge to encourage teachers to educate in the remote area. Most teachers felt that the inadequacy of support from the authorities in terms of facilities and welfare. However, frequent monitoring from the authorities caused the school to be intense. Concern also reflected in the insufficient monitoring agencies and understaffed. Parents and caregivers barely involved in their children education, notably in pre-schools. Most parents treat pre-school as a day-care, not an educational institution.

6.4.6   Literacy and numeracy

Predominantly the 5 cluster countries have a literacy rate higher than the world average, and the number of illiterate populations is low. There are some issues regarding the curriculum in primary education is too advance. Some children still cannot read when they enter primary school. The implementation of bilingual in primary level giving a hard time for the children from the pre-schools to adapt. Also, concern on the student primary schools that progress to the secondary level does not master literacy and numeracy yet. The adaption to the transition of mediation from mother tongue to English or both at the same time allowing confusion among children. Children who have a problem in mastering language would be left behind from the advance students. Withal, the performance in the international assessment, particularly PISA, is below average. Students still score below average in reading, science, and mathematics. Although the literacy rate is high in the five cluster countries, they did not score in reading. The challenge is how to guarantee that the children understand what they read and think critically. What is the root cause that the students did not score in science and mathematics?

6.5   Recommendations

In offering education in pre-primary, primary and secondary education that this accessible, equal, free, relevant, quality, and effective, there are recommendations as follows.

i.   It is important to ensure that children are safe when they are going to school. The location of the school should be near to their homes. Preparing transportation to the children will elevate the motivation to go to school and protected. Parents and caregivers do not have to worry about their safety. They are providing boarding schools for the poor household's children so that they do not have to travel daily and supported with hostels and meals.

ii.   Awareness on the children at risk such as immigrant, refugee, out-of-school, children living with HIV or with disabilities needs to be addressed. These children in special attention and acceptance. Initiatives to support them to be inclusive in school should realise by collaboration with NGOs and association related to them. Efforts to identify special needs students at an early age will expedite the preparation of the school community in accepting them.

iii.   All teachers should be trained in inclusive education. Pre-service teachers should be exposed to a diverse learner in their teacher training, and professional development program for the

in-service teacher on inclusive education should be encouraged. Students also need to be educated in accepting and respecting people with special needs.

iv. There is a need to re-align education initiatives and programs for out-of-school and dropout children. If the school is not suitable for out-of-school and dropouts, alternatives should be implemented to provide them with relevant skills and knowledge in different environments. Night or weekend classes should be made available due to some children may be working during the day.

v. School facilities need to be upgraded in terms of safety, inclusivity, and disability friendly.

vi. Malnutrition among children leads to inadequacy of focus in learning and dropping out due to the children need to work to get money and to help their family. Policy on free nutritious meals should be enforced and to a wider receiver. Having a free meal motivate children to school, to gain energy to learn and embracing equality.

vii. Policy on free education needs to be clear in terms of what is given free. Although stated free in the policy, there are still children who cannot afford to go to school. Free education should be extended to necessities such as books, uniforms, shoes, transportation, etc. Awareness of scholarships and funding to low-income family and to be expanded to less fortunate children.

viii. Empowerment of teacher through training and autonomy to implement more exciting learning activities with the inculcation of 21st-century skills, I.R 4.0, ICT and STEM. Such action needs sufficient funding and understanding from the school administrator the importance of current approach because it requires time and budget.

ix. The workload of the teacher in handling non-teaching task and administrative work cause them to be ineffective. The focus should be given to the teaching task. The use of technology can ease documentation job such as attendance taking and reporting progress to parents online.

x. Heavy emphasis in the standardised testing cause learning experience to be dull, repetitive drilling and rote learning. This can be seen in the performance of the student in PISA, where students were not able to think critically enough. Learning should be student-centred and embracing activities such as problem-solving and project based. Methods in assessing children need to be diversified formative and summative.

xi. Qualification of teacher needs to be upgraded, and as an educator, the necessity to have pedagogical knowledge and children psychology. The expanding effort in promoting youth to be a teacher, especially in pre-school and in remote areas. Competitive salary and incentives might attract more youth to be interested in the education field.

xii. Insufficient teachers in both urban and rural area indicated by the ratio of number of pupils per teacher. Recruiting more teacher is the best solution in high-density school. This would result teachers to have a smaller number of class, thus more emphasis can be given on each student. Emphasis should also be given to the number of pre-school teachers because younger kids need more monitoring.

6.6   Conclusion

The sustainable development goal on Education 2030 SDG4 Agenda focuses heavily on data collection and monitoring for the efficient and successful management of the education sector. The aim is highly comprehensive and supports the lifelong learning approach, which calls for improvement in education for all ages at all levels of education. This needs consistent metrics and measures to create international discourses and advocacy based on facts. Moreover, SDG4-Education 2030, regardless of their level of growth, reflects a common and inclusive pledge by all nations. The collective in this chapter demonstrates the importance of each nation's achievement in implementing a systematic and detailed policy and plan without leaving anyone behind and harmonising their education policy and plans with the objective of the SDG4. Impressively, some of the national policy and plan indicates most of the goal of SDG4 before the Education 2030 Agenda was proposed.

6.7   References

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