# Strengthening foundational learning in the ASEAN region

## A review of promising practices

*Strengthening foundational learning in the ASEAN region: A review of promising practices.*
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# DEFINITIONS

| Terms | Meanings |
| --- | --- |
| **Assessment** | Assessment is a tool that can group students into categories based on their skills and abilities. The findings can support teachers in guiding instruction and providing targeted interventions to facilitate student learning. |
| **ASEAN** | The Association of Southeast Asian Nations, or ASEAN was established in 1967 by Indonesia, Malaysia, the Philippines, Singapore and Thailand. Brunei Darussalam joined ASEAN in 1984, followed by Viet Nam in 1995, Lao PDR and Myanmar in 1997, and Cambodia in 1999, making up what is today the ten Member States of ASEAN. |
| **Concept development** | Understanding concepts before learning procedures is the essence of concept development. For example, students need to comprehend volume before measuring it. Teachers can encourage students to explore, describe, explain, name, and count everyday activities to support concept development. |
| **Early childhood** | The early childhood period encompasses several quite distinct phases: from 'conception to birth' and from 'birth to 3 years', with emphasis on the first 1,000 days (from conception to 24 months), followed by the preschool and pre-primary years (3 years to 5 or 6 years, or the age of school entry). |
| **Early grades** | UNESCO classifies the early grades as Grades 1 to 3 of primary or elementary school. Students' literacy and numeracy skills during this period are considered foundational for all future learning. |
| **Engagement** | Engagement can be classified into three types: behavioural, emotional, and cognitive. Engaged students who participate in school, complete tasks, and are interested in learning are likelier to achieve better academic outcomes. (Fredricks et al., 2004) Conversely, disengaged students are at a higher risk of dropping out. |
| **Evidence-base** | Any practice that relies on scientific and mathematical evidence for guidance and decision-making. |
| **Foundational learning** | Foundational learning is defined as basic literacy, numeracy, and transferable skills such as socio-emotional skills that provide the fundamental building blocks for all other learning, knowledge, and higher-order skills. |
| **Instructional support** | Instructional support has three dimensions: concept development, quality of feedback, and language modelling. Teachers can use discussions and activities to promote higher-order thinking skills for concept development. Quality feedback enhances learning and understanding and encourages continued participation. Language |

| | modelling involves using techniques to improve students' language skills (Pianta et al., 2008). |
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| **In-service professional development** | Education quality can be improved by upgrading the skills and knowledge of teachers already teaching in the profession through short- or long-term training programs, such as workshops or mentorship. |
| **Instructional learning formats** | There are three instructional learning formats - whole-class, group-work, and individual. In the whole-class format, all students learn together. In group-work, students collaborate in small groups of four to five people. In an individual format, students work independently. |
| **Learner-centred education** | Learner-centred education prioritises the learner as the centre of the learning process, rather than passively receiving information from teachers (Bremner et al., 2022). |
| **Learning poverty** | The World Bank classifies learning poverty as the inability to read and understand, age-appropriate text by age 10. This indicator brings together schooling and learning indicators. It begins with the share of children who haven't achieved minimum reading proficiency (as measured in schools) and is adjusted by the proportion of children who are out of school (and are assumed not able to read proficiently). |
| **Learning outcomes** | The learning outcomes of education should be assessed in the context of its agreed objectives, usually expressed in terms of academic performance. For example, a target of SDG 4 is to ensure that by 2030, all girls and boys complete free, equitable and quality primary and secondary education, leading to relevant and effective learning outcomes. |
| **Literacy** | UNICEF defines literacy as reading, writing, and applying this skill to daily tasks. It requires understanding, analysing and questioning a given text, and the ability to communicate thoughts and ideas through various forms. |
| **Low- and middle-income countries (LMICs)** | The World Bank classifies, countries with a gross national income (GNI) per capita ranging from $1,036 to $4,045 as lower-middle-income countries, while those with a GNI per capita between $4,046 and $12,535 are defined as upper-middle-income economies. As of 2021, middle-income countries are home to 75% of the world's population and 62% of the world's poor. |
| **Mother tongue instruction** | Providing classroom instruction in the mother tongue language where the school is located is effective. It is argued that when teachers use the mother tongue as the language of instruction, students can achieve higher a level of subject learning. |
| **Numeracy** | Numeracy is a set of skills to operate with numbers or word sequences to make relational statements in a numerical context. Early numeracy skills, |

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| | especially counting skills, are good predictors of later mathematics performance. |
| **Pedagogy** | Pedagogy encompasses the techniques, approaches, concepts, beliefs, knowledge, and skills that shape the teaching process (Alexander, 2009). |
| **Pedagogical content knowledge** | Pedagogical content knowledge involves an understanding of what makes the learning of specific topics easy or difficult. A teacher needs knowledge of the strategies to support students best in learning a topic. (Shulman, 1986) |
| **Policy** | A policy is more than a text. It involves processes before and after its production, and debate often starts when an issue appears on the policy agenda. A policy is often developed amidst the complexity and reality of policy processes (Taylor et al., 2013). |
| **Positive school climate** | A positive school climate involves teacher sensitivity and regard for the student's perspective. It creates perceptions of safety and is linked to greater academic achievement and lower levels of mental health issues for both staff and students. |
| **Professional learning or development** | The principal tool that countries use to improve the knowledge and skills of their practicing teachers is professional development, which refers to on-the-job training activities ranging from formal, lecture-style training to mentoring and coaching (Popova et al., 2022) |
| **Pre-service professional development** | Pedagogical content knowledge includes an understanding of what makes the learning of specific topics easy or difficult. A teacher needs knowledge of the strategies to best support students to learn the topic. |
| **Program intervention** | A collective term used to describe a program, framework, initiative, service, approach, process, treatment or app used to improve mental-health-related outcomes. This includes all the intervention's tools, resources, support and other inputs. |
| **Pupils or students** | Collectively used to describe children and young people enrolled in primary, elementary, secondary high school or college and other learning environments. |
| **Quality education** | According to UNESCO, good quality education in schools should be a process that aids the acquisition of knowledge, skills, and attitudes that are valuable in themselves and contribute to achieving important human objectives. The achievement of quality education is the fourth goal of the globally accepted sustainable development goals (SDG 4). |
| **SEAMEO** | The Southeast Asian Ministers of Education Organization (SEAMEO) aims to uplift the quality of education, science, and culture and to promote sustainable human resources for a better quality of life in Southeast Asia through enhancing understanding and cooperation, providing a platform for policy dialogues, and promoting programme excellence. |

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| **Social and emotional learning (SEL)** | Social and emotional learning (SEL) is gaining and effectively utilising the knowledge, attitudes, and skills required to comprehend and regulate emotions, set and attain positive goals, experience and express empathy for others, establish and maintain positive relationships, and make informed decisions. |
| **Teacher** | Teachers and staff working in schools and educational learning environments whose role is to educate children and young people. |
| **Teacher feedback** | A teacher's feedback can significantly impact a student's learning and achievement. Positive feedback can help students understand their progress and what to do next (Hattie & Timperley, 2007). |

# 1. OVERVIEW AND AIMS

Southeast Asian nations have united in a union of ten countries with a common goal of accelerating economic growth, social progress, and cultural development, as the Association of Southeast Asian Nations (ASEAN). Emphasising equality and partnership, the union aims to uphold regional peace, justice, and adherence to the UN Charter. Key objectives include fostering economic cooperation, strengthening the rule of law, promoting education and skill development, enhancing infrastructure, encouraging sustainable agriculture and industry, facilitating cultural exchange, and collaborating with international organisations for regional benefit. These countries are Brunei, Cambodia, Indonesia, Lao People's Democratic Republic (Lao PDR), Myanmar, Philippines, Singapore, Thailand, and Viet Nam (ASEAN, n.d.). Timor-Leste and Papua New Guinea hold observer status.

Aligned with ASEAN's commitment to advancing education and skills development, there is a deliberate focus on foundational learning as a key priority. Foundational learning is often described as the essential skills and knowledge that serve as the basis for further learning and development, and includes basic literacy (reading and writing) and numeracy (mathematics), and more recently, a focus on critical thinking, problem-solving, and socioemotional skills.

The emphasis on foundational learning is based on the argument that it plays a critical role for both girls and boys, forming the basis for lifelong learning (UNICEF, 2021). This perspective is supported by evidence indicating that early learning deficits may amplify over time (World Bank Group, 2018). ASEAN and its dialogue partner, the United Kingdom, define foundational learning as basic literacy, numeracy, and transferable skills such as socio-emotional skills that provide the fundamental building blocks for all other learning, knowledge, and higher-order skills (British Council, 2024). ASEAN member states are dedicated to ensuring that primary school students acquire essential reading, writing, and basic mathematics skills. This commitment aligns with a global initiative aimed at improving foundational literacy and numeracy skills worldwide, as demonstrated by the joint Commitment to Action on Foundational Learning.

In collaboration, ASEAN and the United Kingdom have established the Supporting the Advancement of Girls' Education (SAGE) Programme under their ASEAN-UK partnership. This initiative is designed to narrow the development gap between the first six ASEAN members and the four newer member countries (Cambodia, Myanmar, Lao PDR and Viet Nam) and Timor-Leste, by addressing their education priorities within the ASEAN region, specifically focusing on challenges faced by girls and marginalised groups. The SAGE program aims to understand early-grade students' challenges in the ASEAN region, identify effective practices to address these issues and provide practical recommendations to empower students with essential foundational skills for lifelong learning.

This report, part of a three-part series, focuses on supporting foundational learning in primary school settings in ASEAN countries. Its objective is to comprehend the challenges faced by the region in promoting foundational learning. The report is divided into seven chapters.

Chapter 1 provides an overview of the report and its objectives.

Chapter 2 presents the research methodology, including research questions, search strategy, and analysis process.

Chapter 3 summarises the current situation for foundational learning in the ASEAN region.

Chapter 4 presents the main challenges supporting foundational learning in the ASEAN region.

Chapter 5 highlights promising practices in the ASEAN region, and includes effective initiatives in ASEAN and comparable contexts.

Chapter 6 presents key learnings and limitations.

Chapter 7 provides conclusions and key recommendations for policymakers who want to implement programs or practices that better foundational learning in the education sector. The report includes a detailed research methodology and key references in the Annexes.

# 2. METHODOLOGY

This paper draws on the Rapid Evidence Review Approach as recommended by Barends et al. (2017), which for the purposes of this study has been simplified as per Figure 1 below.

**Figure 1: Research approach**



Define the key research questions based on the Conceptual Framework

Develop a search strategy

Search for relevant literature

Screen and identify promising interventions

Extract data and synthesise findings

Translate into key learnings for policy and practice
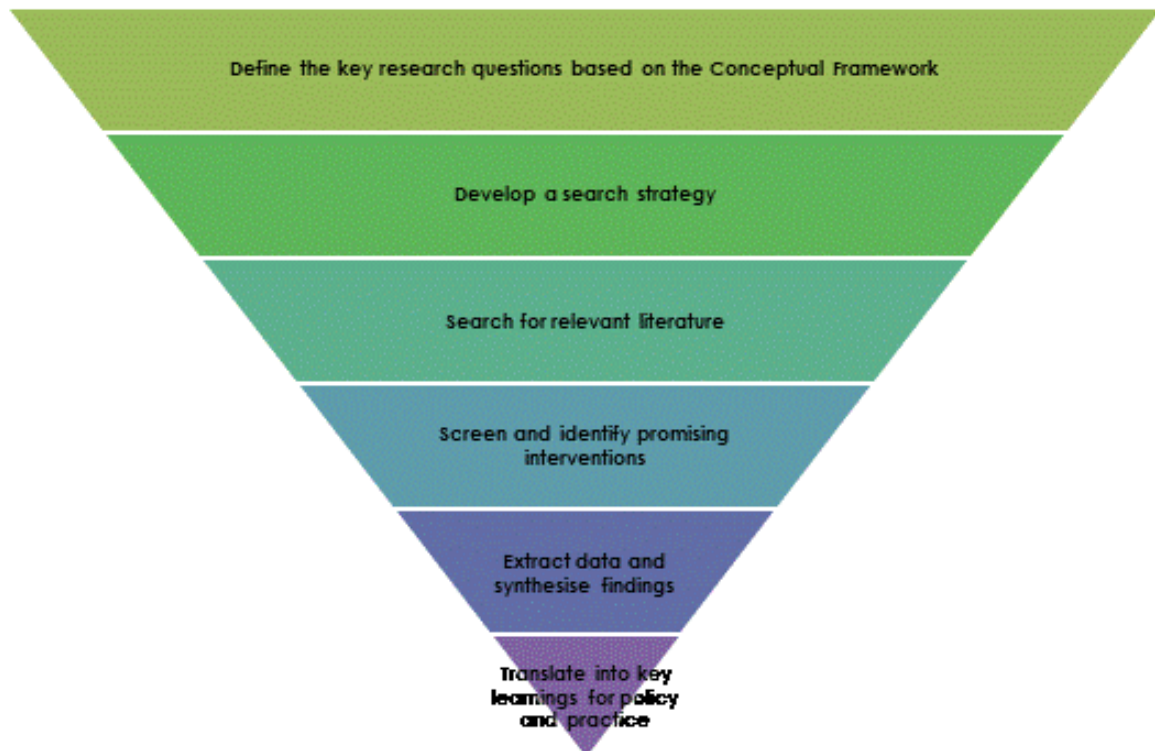
## *2.1 Conceptual framework*

This research is informed by a conceptual framework focused on understanding ways to better support foundational literacy and numeracy skills for students in primary school in the ASEAN region. The framework is informed by academic and grey literature on effective ways to support foundational learning. This framework recognises that supporting quality education for girls and boys in primary school involves ongoing support, monitoring, and investment across an individual's lifespan. By recognising that education participation is a lifelong goal, there are greater chances for all children to be empowered in society, education, and economic contexts. Figure 1 below depicts the different interacting levels of the education system (policy, community, and individual elements) that support equitable access to lifelong learning opportunities.

**Figure 2. Conceptual framework**
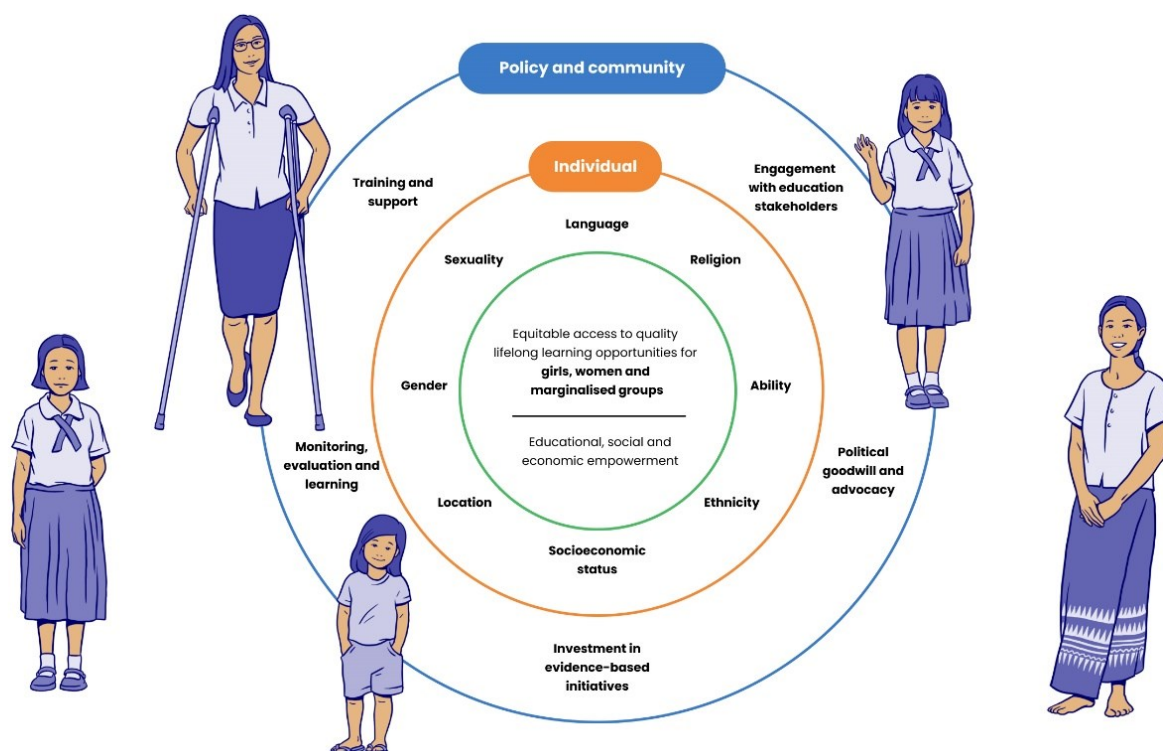


## 2.2 Research questions

The study was guided by three key questions:

1. What challenges do students in primary school (including pre and upper primary) face while studying?

2. What are the most promising initiatives currently being implemented, and is there any evidence of their effectiveness?

3. What are the main takeaways and recommendations for policymakers looking to support foundational learning in literacy and numeracy?

## 2.3 Methods

The review approach and conceptual framework presented above guided the following key activities:

1. A full scan of academic and grey literature to identify the current situation for foundational learning in ASEAN nations.

2. A rapid review of literature to identify the current ways in which girls and boys are supported to develop foundational learning skills in the ASEAN region.

3. Rapid scan of policy and project documents, covering existing research literature, program documentation, impact evaluations, project briefs and monitoring and evaluation (M&E) reports related to interventions supporting foundational learning, for girls, boys, and students from marginalized groups. This activity provides evidence for common characteristics of effective initiatives and ensures a common understanding of successful

elements (e.g., design, learning modality, limitations, and strengths) that could be considered for SAGE and/or policy advocacy with ASEAN member states.

4. A systematic review of academic literature and knowledge repositories to identify evidence of programs designed to support students in primary school in the ASEAN region (including initiatives from other regions which might be relevant for the ASEAN countries).

After conducting a rapid review of academic and grey literature to provide background to the study and identify the challenges of supporting girls and boys (responding to research question 1 as described in Chapter 2), a targeted review of published materials was undertaken to identify characteristics of effective interventions that support children (primary focus, including pre and upper primary school). This process provides an evidence base for the identified promising practices presented in this report, many of which have only recently been implemented in the ASEAN region. This process also establishes meaningful criteria for policy makers seeking to select, develop, or implement similar programs in their own settings.

## *2.4 Inclusion Criteria for Identifying Promising Practices*

Examining the features of effective programs provides a greater understanding of the ways to better support and develop foundational learning skills amongst girls and boys in the ASEAN region.  The following inclusion criteria were used in the identification of eligible studies:

**Context**: Must focus on the ASEAN region. Special focus on – Cambodia, Myanmar, Laos, Viet Nam and Timor-Leste. The remaining ASEAN contexts- Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, and Viet Nam (+ Timor-Leste) were also included.

**Participants**: Children (particularly girls) in formal and non-formal primary school education.

**Interventions**:

- Must focus on foundational learning skills, including literacy, numeracy, social and emotional support, concept development, participation, and/or engagement.
- Can be based in both formal and non-formal education settings. However, programs focused solely on family delivery or in-home support were not considered.
- Teacher professional development focused on upgrading skills and knowledge in foundational learning (i.e., literacy, numeracy and social emotional learning), pedagogy, or pedagogical content knowledge.
- Program facilitators, or community members who supported the target participants can deliver such programs.
- Must describe the intervention sufficiently to identify its basic component elements and intended aims.
- Due to the lack of evidence, the authors chose not to examine remedial and second chance education initiatives.
- Since the focus is on children, interventions must have posed limited risk and not compromised a participant's safety or caused harm to be considered relevant for inclusion.

**Outcomes**: The outcomes for included studies were broadly grouped into four categories:

- Participation and engagement (e.g., belonging, motivation, self-esteem, confidence, self-trust)

- Learning and skill development (e.g., literacy, numeracy, concept development, meta-cognition, critical thinking, problem-solving and higher-order thinking).
- Socio-emotional competencies (e.g. recognising and regulating emotions and behaviours, solving problems, making ethical and responsible decisions, establishing caring and positive relationships with others, while avoiding dysfunctional behaviours (Santos et al., 2023, p. 2)
- Teacher professional development focused on upgrading skills and knowledge in foundational learning.

Student outcomes were measured, where possible, using valid and reliable approaches (e.g., validated scales and screening instruments in the school/ non-formal educational settings.

**Publication**: All studies must be published in English between January 2013 and January 2024.

## *2.5 Search strategy and study selection*

The following sources were systematically searched to identify the academic and grey literature (see Table 1).

**Table 1: Sources used in the search strategy**

| Peer-reviewed databases | International organisations | Evidence and gap map databases | Systematic review databases and grey literature |
|---|---|---|---|
| • Academic Search Complete<br>• ERIC<br>• Education Source<br>• East & South Asia Databases<br>• A + Education<br>• BERITA (Malaysia/Singapore/Brunei/ASEAN Database. | • ADB<br>• DFAT<br>• FCDO<br>• UNESCO<br>• USAID<br>• UNICEF<br>• GPE<br>• World Bank<br>• SEAMEO<br>• ASEAN | • 3ie Evidence and gap map repository<br>• EPPI Centre Evaluation Database of Education Research<br>• Global Evidence Mapping Initiative | • 3ie Systematic Review Database<br>• Campbell Collaborations<br>• Google Search<br>• RISE |

Relevant program websites and publications were also scanned using a "google" search to record relevant information about the programs. The search string for the search can be found in Appendix 1, while Appendix 2 presents the process used for filtering papers, from searching to mapping to in-depth review studies.

The final included interventions were screened by three reviewers. In the first stage, only the title and abstracts were scanned, and a few were rejected as they did not include any intervention details and were mostly policy related documents. In the next stage, only the documents which matched the inclusion criteria were retrieved and the full text was reviewed. If the document provided sufficient information about an intervention, then key detail about the programs were recorded into an excel spreadsheet. The reviewers attempted to supplement this program information by hand-searching program websites, and where possible any additional relevant data were extracted into the spreadsheet. A simplified PRISMA is provided in Annex 2 to explain the screening and selection decisions.

# 3. SITUATIONAL ANALYSIS

## 3.1 Defining Foundational Learning

Foundational learning refers to the fundamental skills and knowledge that serve as the basis for further learning and development. These skills typically include basic literacy (reading and writing) and numeracy (mathematics), as well as critical thinking and problem-solving abilities. Foundational learning is essential for individuals to effectively engage in education, employment, and other aspects of life. Evidence also suggests that foundational learning leads to more productive lives, where skills in literacy and numeracy is estimated to double the likelihood of obtaining decent work (The ASEAN Secretariat, 2022). From this perspective, some commentators argue that foundational learning is critical for realising the objectives of Sustainable Development Goal 4. In a seminal essay that calls for a global focus on foundational literacy and numeracy, Beeharry (2021) warned that failure to master foundational skills by the end of grade 3 may further widen the gap in educational attainment by 'rendering secondary schooling a privilege for the fortunate few'.

Although there are many different definitions for foundational learning, The Commitment to Action for Foundational Learning defines foundational learning as '*basic literacy, numeracy, and transferable skills, such as socioemotional skills'*, that operate as the building blocks for all other learning, knowledge, and higher-order skills (UNICEF, 2022).

## 3.2 A Learning Crisis for Children in ASEAN

In the ASEAN region, there is a learning crisis. Children from the most marginalised groups face insurmountable barriers to accessing a quality education, while many of those who are in school are not learning. As a result, foundational learning has been identified as a key priority area of the ASEAN-UK SAGE programme to help address the learning crisis.

The status of the learning crisis has prompted the international community to call for a prioritisation of foundational literacy and numeracy and the endorsement of the Commitment to Action on Foundational Learning in 2022. Similarly, the ASEAN Secretariat recognises that strategies for addressing the learning crisis in Southeast Asia requires a focus on improving foundational literacy and numeracy skills (The ASEAN Secretariat, 2022). This reflects a growing consensus that while technical skills and socioemotional competencies are vital for personal and professional development, literacy and numeracy form the bedrock upon which these abilities thrive, enhancing educational and life outcomes and bolstering long-term employability (Crawfurd et al., 2021).

Political commitment is critical to addressing the learning crisis and the growing disparity in learning achievement across the ASEAN region. While only Cambodia and the Philippines have endorsed the Commitment to Action on Foundational Learning, a recent survey conducted by UNICEF of low- and middle- income countries shows much broader support for foundational learning across ASEAN member states. Based on the RAPID framework[1], the results were used to track each country's progress on policy areas supporting foundational learning. Nearly all countries included in the survey reported a national or sub-national focus on foundational literacy and numeracy in the curriculum (UNICEF & Hempel Foundation, 2023). See figure 3 below. Other mechanisms that have been

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[1] RAPID framework was developed by UNICEF in partnership with UNESCO and the World Bank, in response to the need to accelerate learning after COVID-10 school disruptions. The framework incorporates five key policy action areas: Reach every child and retain them in school; Assess learning levels; Prioritize teaching the fundamentals; Increase catch-up learning and progress beyond what was lost; and develop psychosocial health and well-being so every child is ready to learn.

adopted by countries in Southeast Asia to support foundational learning include better data collection on student attendance and drop-out, using assessments to track student learning, supporting teacher training in foundational learning strategies, implementing targeted instruction and catch-up programs.

**Figure 3: Progress on the implementation of foundational learning in Southeast Asia**
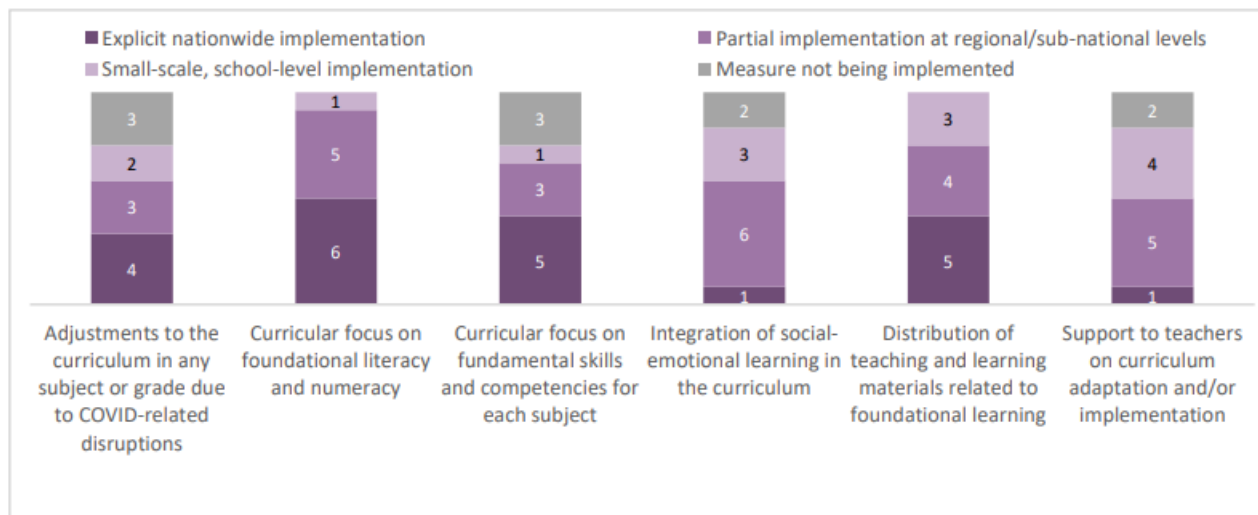


**Source**: UNICEF & Hempel Foundation, 2023. Countries included in the survey were Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand and Timor Leste.

The extent of the learning crisis across the Southeast Asia region has deepened as a result of the COVID-19 pandemic. Efforts by ASEAN member states to improve access to education have seen gaps between ASEAN-6 and Cambodia, Lao PDR, Myanmar and Vietnam (CLMV) narrow from 1.08 in 2000 to 1.03 in 2021 in primary participation rates and 2.08 to 1.19 for the lower secondary level (ADB, 2023). However, the Asian Development Bank estimates that more than 35 percent of students have lost a year of learning due to COVID-19 disruptions, which affected the poorest students and girls disproportionately (ADB, 2021; ADB, 2022). While the gender gaps in learning-adjusted years of schooling (LAYS) are small in ASEAN, the expected losses in girls' future income are 26 percent higher than boys as a result (ADB, 2023). Furthermore, learners from the poorest households are expected to lose 0.92 LAYS on average compared to those from the richest households at 0.70 LAYS.

Recent data from the World Bank's Learning Poverty index shows the high levels of disparity in learning across ASEAN when children who are not in school are also included. In Cambodia, Lao PDR, Myanmar and the Philippines, more than 90 percent of children cannot read and understand a simple text by age ten. Consistent with the global data, learning poverty is higher for boys than girls across ASEAN, with the greatest gender difference observed in Malaysia by 15.4 percentage points. These findings suggest that although more children are in school in ASEAN compared to a decade ago, many are still not learning to read at a proficient level by the time they reach 10 years of age (Table 2).

**Table 2: Learning poverty rates in select ASEAN countries**

| Country | Boys | Girls | All |
|---|---|---|---|
| **Cambodia** | 92.6 | 87.5 | 90 |
| **Indonesia** | 54.8 | 50.7 | 52.8 |
| **Lao PDR** | 98.1 | 97.3 | 97.7 |
| **Malaysia** | 49.8 | 34.4 | 42 |
| **Myanmar** | 90.5 | 87.9 | 89.3 |
| **Philippines** | 92.1 | 89.7 | 90.9 |
| **Singapore** | 3.6 | 1.9 | 2.8 |
| **Thailand** | 26.3 | 20.5 | 23.4 |
| **Viet Nam** | 20.3 | 15.8 | 18.1 |

**Source**: World Bank, 2023. https://www.worldbank.org/en/topic/education/brief/country-learning-poverty-briefs

Data from the 2019 Southeast Asia Primary Learning Metrics (SEA-PLM) also show the depth of the learning crisis in some ASEAN member states. In Cambodia, Lao PDR, Myanmar and Philippines, only 2.5-11 percent of children met the reading proficiency expected at the end of primary school. The highest performing students in these countries were still below the lowest performing students in Malaysia and Viet Nam. Across nearly all participating countries, gender, socio-economic status and ethnic language had a significant impact on literacy. The pattern is similar for proficiency in mathematics, with 90 to 97 percent of children in some of the participating countries not meeting expected proficiency in mathematics by the end of primary school.

Low learning outcomes in primary school impacts students' performance at the secondary school level. Of the eight ASEAN members states that participated in the Program for International Student Assessment (PISA) for 15-year-old students, only Singapore scored above the OEDC average in literacy (543 compared to 476 points) and mathematics (575 compared to 472). The majority of students who participated in PISA in Cambodia, Philippines, Indonesia and Thailand did not meet minimum proficiency levels in reading and mathematics. Across the ASEAN region, girls outperformed boys in both reading and mathematics, except in Singapore and Viet Nam where boys scored higher in mathematics.

Consistent with global trends, there is a decline in reading and mathematics performance between 2018 and 2022, which is likely an effect of COVID-19 school disruptions (OECD, 2023). Philippines and Cambodia came in the bottom five countries globally in 2022. Where trend data exists, performance in reading and mathematics showed a long-term decline that began before the COVID-19 pandemic in Indonesia, Thailand and Viet Nam over the last decade. These results suggest that a focus on foundational literacy and numeracy is needed to close the learning gaps across the ASEAN region, and lessons can be drawn from high performing systems such as Singapore, as well as the experience of low-resourced contexts such as Viet Nam.

# 4. CHALLENGES

## 4.1 Supporting marginalised groups

The most vulnerable children, including those from poor households, with less supportive home environments, ethnic minority groups, children living in conflict zones or experiencing disaster, and out-of-school children have the lowest levels of foundational learning skills. However, some children who come from the wealthiest households are not learning, which could be linked to poor quality education related to pedagogical approaches, teacher training, curriculum and learning materials.

**Gender**

Foundational learning impacts on children's learning across the lifespan. A recent assessment across 51 low- and middle-income countries reveals an alarming literacy deficit among women aged 15–49, with 57 percent unable to read a single sentence (Pritchett and Sandefur, 2020). The results are similar in the ASEAN region, which shows that although there is a higher level of literacy in the region (84 – 99 percent) compared to the rest of the world, women in low-income countries including Lao PDR, Myanmar and Timor Leste, are still falling behind men. This is despite an upward trend in the overall adult literacy rates in the region over the last two decades.

Despite the gender gaps in adult literacy, girls consistently outperform boys from early childhood to upper secondary levels. In the ASEAN region, data from a number of regional and international assessments (Multiple Indicator Cluster Survey (MICS), PIRLS, SEAPLM and PISA) revealed that girls were more proficient at reading than boys, including in low- and middle- income countries. These results suggest that investing in foundational learning in the early years can help build a more literate population, with greater economic and social benefits for girls into adulthood. Global evidence shows that girls and women who are literate have improved health and nutrition outcomes, delayed marriage, lower risk of early pregnancy and more employment opportunities (UNESCO, 2020).

**Out-of-school children**

Boys also face significant barriers in foundational learning and in some countries, are more likely to drop out of school or to participate in the labour market. A lack of learning progress has been found to be a primary cause of school drop-out (World Bank, 2022a). This can be due to social, cultural and financial barriers as well as the lack of perceived value in education. In a longitudinal study conducted in Ethiopia, India, Peru and Viet Nam, it was found that higher test scores in literacy and numeracy lowered the risk of dropping out by 50 percent (Kaffenberger et al., 2023). The dropout rate was lower in the primary years compared to lower secondary levels, with girls less likely to drop out than boys, even when accounting for background factors such as rural/urban location, household income, parental education and participation in pre-primary education (Kaffenberger et al., 2023). This finding is consistent with the out-of-school rates in Southeast Asia which indicate a higher dropout rate in the upper grades compared to primary level, with significant gender differences in the number of out-of-school boys than girls in Indonesia, Lao PDR, Philippines, Thailand and Timor-Leste. For both genders, being out-of-school is also associated with factors relating to poverty such as rural location and low household income.

The reasons for school dropout are multi-dimensional and interacts with low learning attainment in different ways for boys and girls. A longitudinal study of student learning outcomes and dropout rates found that while boys are motivated to leave school for employment opportunities, girls reported future security as a primary influence in their choice to dropout, thereby seeking work or a husband as a result (Kaffenberger et al., 2023). However, attention also needs to address the number

of boys dropping out, particularly in the higher grades. The findings also suggest that the underlying reasons for school dropout is a gendered issue and intervention measures should consider the different motivational factors impacting low attainment and drop out decisions for both boys and girls.

**Economic factors**

Wealth inequality is a key driver of poor foundational learning attainment, between and within countries in ASEAN. Within countries, foundational learning gaps are evident between the poorest and wealthiest households. SEA-PLM data shows that children from higher socioeconomic backgrounds and schools performed better than those from less advantaged backgrounds in Southeast Asia. Between countries in ASEAN, children who are the most socioeconomically advantaged in Cambodia, Lao PDR, Myanmar and the Philippines, are performing below the most socioeconomically disadvantaged in Malaysia and Viet Nam.

**Home environment**

Parental engagement in children's learning and a supportive home learning environment, can help improve learning outcomes. A study in ASEAN found that when students have greater access to reading resources at home, they have more opportunities to engage in reading and writing outside the classroom to consolidate their skills (Cheng & Spink, 2021). Importantly, students who come from a supportive home environment that focuses on core foundational skills of language, vocabulary and communication consistently outperform those who do not.

Studies have also shown that many children come to school not ready to learn because they are taught in a language that they do not use or understand. Where there is a mismatch in the language of instruction and the language spoken at home, children's learning is affected. Students can lack the reading proficiency in their Mother Tongue to support a transition to reading with comprehension in another language (Cheng, et al., 2021). In a longitudinal study of teaching quality and student learning outcomes in Lao PDR, it was found that students who spoke Lao Tai at home performed better than those who spoke an ethnic language at home (Wong et al., 2023).

**Quality instruction**

Appropriate curricula, teaching and learning materials, quality teaching practice and teacher development can support and reinforce foundational learning. In a study conducted by UNICEF (2022), it was found that an absence of these quality teaching and learning components means that children would have to spend 7-11 years in primary school to attain the same level of foundational reading and numeracy required by Grade 2. Evidence from Lao PDR shows that more time is needed in the early grades to strengthen and reinforce fundamental skills (Wong et al., 2023).

Outside of the home, teachers have the greatest single effect on student learning outcomes. When teachers are supported with professional development and autonomy to facilitate children's learning, it has been found to improve their ability to teach reading comprehension (Kim et al., 2020). However, challenges related to teacher shortage and teacher absenteeism in some countries can be detrimental to foundational skill acquisition (Nunoo et al., 2023). In order to address the learning crisis and improve foundational learning, a focus on policies around teacher recruitment and retention is critical. This needs to be considered in tandem with improving the quality of teaching through better teacher professional development and support.

**Crisis and conflict-affected contexts**

Children living in crisis and conflict-affected environments are at greater risk of having their education disrupted which can have long-term effects on learning and development. An assessment of children's learning in the conflicted-affected Bangsamoro Autonomous Regional of Muslim Mindanao (BARMM) found that the extent of the learning crisis disproportionately impacted those in the region compared to the rest of the Philippines. More than half of the students were two to three years behind expected levels in mathematics and literacy, and none met grade level expectations against national standards (ACER, 2022). For these children, foundational learning is even more critical to allow more time in the early years to consolidate literacy and numeracy skills. For children who are out of school due to conflict or natural disasters, practical adaptations to current practices may need to be considered, including the use of para teachers, engaging the community in children's learning, or providing non-formal options.

**Figure 4: Marginalisation effects on foundational learning**

## Marginalised

- Students in urban-poor areas had significantly lower skills in foundational learning.
- The use of multiple languages and dialects in a multicultural and multilingual setting may impede the development of relevant learning materials.
- Found to be proportionally less engaged in education, increasing dropout risk and hindering foundational skill development

## Living in conflict zones, experiencing natural disasters or pandemics

- Estimated that missing 1-year of school associated with reductions in development
- Often low prior to a crisis, exacerbating negative effects on learning.
- Gaps in a country's monitoring and assessment mechanisms are likely to worsen, making it difficult to ensure that children are actually learning foundational learning skills.

## Home environment

- Maternal education can influence children's early reading abilities in Vietnam
- Many children are learning foundational skills in a language different to their home environment
- Students can lack the reading proficiency in their Mother Tongue to support a transition to reading with comprehension in another language

## Curriculum structure

- A significant number of third-grade students were not adequately prepared for the fourth-grade curriculum
- Need to align curriculum content with student learning progressions
- More time is needed in the early grades to strengthen and reinforce fundamental skills.

## Teaching practice

- More experience positively associated with higher student performance.
- Professional support positively impacted teachers' ability to teach reading comprehension.
- There exists inequality in the quality of teachers' teaching practices, which impacts the foundational learning outcomes of students.
- Teachers do not always employ effective teaching practices (Teacher absenteeism

## Economic

- Children from higher socioeconomic backgrounds and schools performed better than those from less advantaged backgrounds in Southeast Asia.
- Losses in foundational skills are the most difficult to recover. They can hinder children's learning and opportunities and damage a country's economic progress.
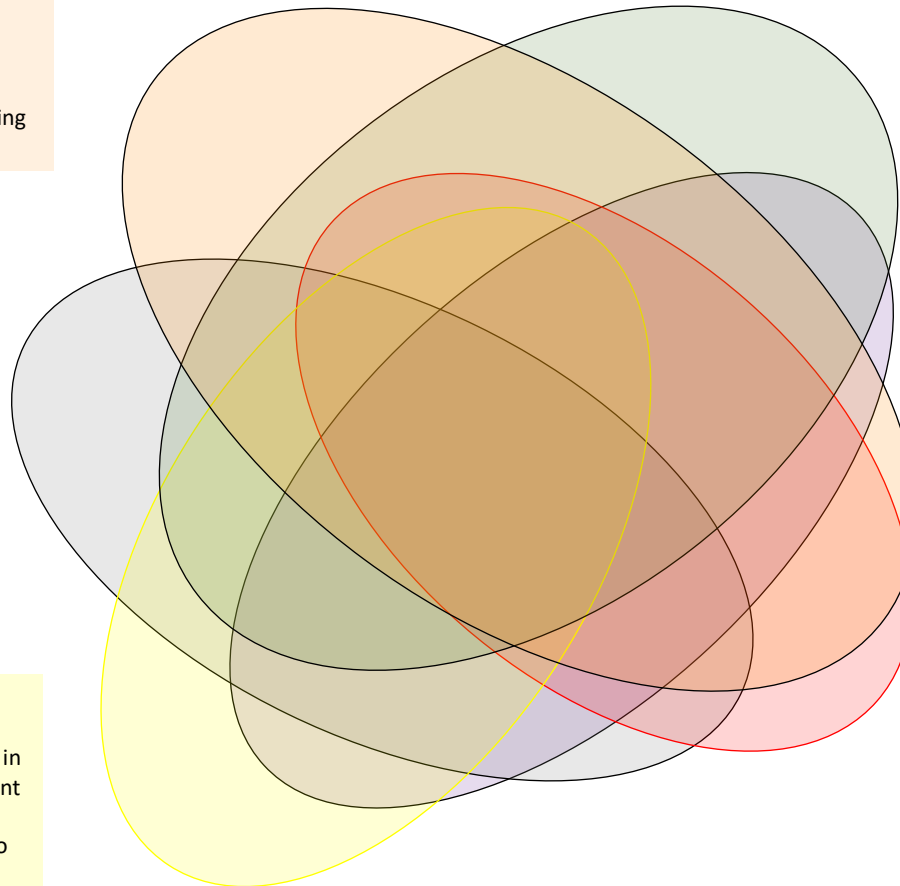
## 4.2 Gaps in Data on Foundational Learning

Measuring learning in LMICs is not an easy task. While nearly all high performing systems have some sort of monitoring of student learning, only one-third of students in low-income countries are regularly assessed (Azevedo, et al., 2019). Where low learning levels are not consistently captured, it creates challenges for tracking progress to inform policies and program interventions. Low learning levels are often not noticed or prioritised as learning levels are often severely underestimated. Most LMICs lack regular, relevant and reliable measures of learning, particularly at the primary level. Policy makers, district officials, school leaders and teachers may not know which children are learning, nor how much. Without this knowledge, systems actors cannot implement the necessary reforms or interventions required to support all children at their current level to the next stage (Bronwin, R et al., 2023). Even when data is collected, there are challenges relating to quality and frequency which makes data comparability a problem.

Globally, 131 countries have not reported on two or more measurement points against SDG 4.1.1 in the last three years. In the ASEAN region, 8 out of 10 countries have some level of SDG 4.1.1 reporting over the last five years, indicating more visibility about student learning attainment in literacy and mathematics across the region. However, more regular cycles of assessments have been conducted in the lower secondary level compared to end of primary. None of the countries in the ASEAN region have reported data points in Grade 2/3.

While there is no consensus on the technical definition of foundational learning, the World Bank in collaboration with the UNESCO Institute of Statistics has introduced the concept of Learning Poverty, defined as "being unable to read and understand a text by age 10". This indicator is a combination of the proportion of children who are meeting minimum reading proficiency and the proportion of children who are out of school. It attempts to fill the data gap on learning, particularly in low- and middle- income countries. The aim is to ensure all countries, particularly low-income countries, have at least one quality measure of foundational learning by 2025 and two by 2030 (Learning Data Compact, (World Bank, 2021).

The Learning Poverty measure will help track a new global learning target to halve the learning poverty rate by 2030 to 27 percent (World Bank, 2019). Simulations conducted by the World Bank shows that through better coordination of global efforts and resources, it is possible to achieve this target by tripling the rate of progress by 2030. The risk of doing nothing, or continuing at the current rate of progress, would only see a 10 percent drop in the proportion of children in learning poverty by 2030 (Azevedo, et al., 2019). This is unacceptable, particularly for the most marginalised children who deserve a better education and the opportunities to develop the necessary skills and competencies to succeed in life.

## 4.3 A Focus on Foundational Literacy

While there are significant gaps in the data on foundational learning including literacy, numeracy and socio-emotional skills development, the focus on foundational literacy provides a basis for capturing fundamental skills that can help monitor student learning at the national and cross-national levels. There is a significant body of evidence in the academic literature supporting early grade reading, which can lead to improved reading in later grades (see for example Butler et al., 1985; Hares et al, 2018), and overall academic performance (see for example, Francis et al., 1996; Snider & Tarver, 1987). In low- and middle- income countries, there is now a growing evidence base on effective practices in early grade reading programs to support investments in foundational literacy (see for example, Kim et al, 2016; Moore et al., 2017). In low- and middle- income countries, better reading

ability has been found to be a stronger predictor of financial behaviours than number of years of schooling (World Bank, 2019).

Children who are proficient readers are also more likely to succeed in other subjects. For example, analysis by the World Bank (2019) showed that reading scores on the Progress in International Reading Literacy Study (PIRLS) is correlated with scores in mathematics and science subjects as measured by the Trends in International Mathematics and Science Study (TIMSS). In Southeast Asia, an analysis for this study used test scores from the 2018 Programme for International Student Assessment (PISA) to explore the relationship between reading and other subjects. The results showed a high correlation between reading and mathematics (0.92) and science (0.92) in the Southeast Asia region. This was consistent with findings from an analysis of data using the 2019 Southeast Asian Primary Learning Metrics (SEA-PLM), which showed a high correlation between reading and mathematics scores across all six participating countries.

In many education systems worldwide, curricula expectations by the fourth grade (at about age 10) assumes that students have mastered basic reading skills and can decode most words to progress as independent readers (Belafi et al., 2020). As children become faster and more fluent readers, they are better able to engage with, and attribute meaning, to text which improves vocabulary and knowledge, further enhancing reading ability (Azevedo, et al., 2019). This finding is supported by neuroscience research which shows that early childhood is the optimal time to develop basic reading skills that lead to reading fluency (Graham, J & Kelly, S, 2018).

However, if children do not acquire early reading skills by around age 10, they tend to fall further behind and for some, fail to catch up to their peers (Belafi et al., 2020). In many countries, curriculum and instruction outpace learning attainment and as a result, children who miss out on foundational skills are unable to engage with the curriculum in higher grades and stop learning or drop out of school altogether (Belafi et al., 2020). Those students who do not become proficient in reading by the end of primary school often cannot catch up later, "because the curriculum of every school system assumes that secondary-school students can learn through reading" (Afkar et al., 2023). The need to focus on foundational literacy as a core component of foundational learning cannot be understated.

## 4.4 Gaps in Current Research

Despite the importance of developing foundational learning skills, foundational learning is not a key priority among policymakers in low- and middle-income countries, who often favour technical and vocational education initiatives, potentially neglecting the cultivation of basic literacy and numeracy skills (Crawfurd et al., 2021). Indeed, surveys of government officials around the world suggest they are not always aware of the magnitude of their countries' foundational learning deficits (Azevedo et al., 2021). Due to the diversity of the region, there is an ongoing need for tailoring policy responses to specific country circumstances (Afkar et al., 2023).

It is important to acknowledge, as Beeharry (2021) noted, that **there is still not a consensus on the technical definition of foundational learning,** including foundational literacy and numeracy. There is also a lack of consensus on which areas of foundational learning should be prioritised by schools and for which students, which makes supporting foundational learning challenging, particularly in terms of program design and intervention.

A lack of clarity on what foundational learning is and isn't, also makes measurement of student progress as part of program intervention problematic. Although the World Bank, FCDO and UNICEF have focused on developing a learning poverty index, it requires the buy-in and efforts of national

governments to make the index realisable as an internationally comparable database for tracking progress in early reading proficiency. It should also be noted that the single focus on literacy in the Learning Poverty index also crowds out other foundational competencies such as numeracy and socio-emotional skills related to foundational learning.

Addressing these barriers and challenges requires a comprehensive understanding of the unique contextual factors within each ASEAN country, coupled with targeted interventions that promote equitable opportunities for boys and girls to acquire and sustain their foundational learning skills, particularly in the areas of literacy and numeracy. The next section focuses on identifying promising practices for supporting foundational learning in the ASEAN education sector.

# 5. PROMISING PRACTICES SUPPORTING FOUNDATIONAL LEARNING IN ASEAN

In the ASEAN region, various policies and strategies are now being implemented to improve children's foundational learning skills. These include curriculum reforms, teacher training initiatives, improved assessment and monitoring mechanisms, inclusive education practices, integration of technology in education, and collaborations with international partners. These policies recognise the importance of providing all children with access to quality education that allows for development of foundational skills. However, to date, there continues to be a lack of evidence on which interventions are available to support foundational learning in the ASEAN region.

Based on a rapid review of academic and grey literature focused on supporting students to develop foundational learning skills in the ASEAN region, **a total of 40 interventions were identified**. These interventions all met the criteria of aiming to improve a range of foundational learning skills.

The programs identified were broadly grouped as relating to five key areas: *Inclusive Practices*, *Literacy, Digital Skills, Teacher Training and Development,* and *Numeracy*, as highlighted in the table below:

**Table 3: Classification of the interventions into key themes**

| Focus | Count of Interventions |
|---|---|
| Inclusive practices | 15 |
| Literacy | 14 |
| Digital Skills | 6 |
| Teacher training | 4 |
| Numeracy | 1 |

The key themes (or focus) across the interventions were as follows:

- **Inclusive practices** – 15 interventions covered this theme, which included content around inclusion and equity, socioemotional learning, classroom culture, student engagement, remedial practices, inclusive teaching strategies, assistive technologies, and creating safe/supportive learning environments.

- **Literacy** – 14 interventions covered this theme, which include content focused on building foundational literacy skills such as reading and phonological awareness, but which also involved integrating literacy components into other subjects across the curriculum, so as to reinforce these skills.

- **Digital skills** – 6 interventions covered this theme, which included content focused on using digital technologies to build a range of foundational learning strategies, including problem solving, critical thinking, literacy, and STEM skills.

- **Teacher training** – 4 interventions covered this theme, which included content around the professional development of teachers to equip them with the knowledge and skills to effectively teach foundational skills, including literacy and numeracy. Identified programs focused on innovative teaching methods, assessment techniques, and strategies for addressing the diverse learning needs of students.

- **Numeracy** – 1 intervention covered this theme, which was focused solely on building numeracy skills.

In terms of the geographical distribution of the interventions in the ASEAN region, Cambodia had the largest number of interventions (13), followed by Indonesia (8), the Philippines (7), Lao PDR (3) and Viet Nam (3). See Table 3 below for more details.

**Table 4: Geo-distribution of the reviewed interventions**

| Countries | Count of interventions |
| --- | --- |
| Cambodia | 13 |
| Indonesia | 8 |
| Philippines | 7 |
| Lao PDR | 3 |
| Viet Nam | 3 |
| Malaysia | 2 |
| Papua New Guinea* | 2 |
| Myanmar | 1 |
| Singapore | 1 |

*included in a secondary scan, and included based on ASEAN observation status.

For more details on the 40 identified interventions in the ASEAN region, see Annex 3: Characteristics of Promising Practices.

## 5.1 Case Studies of Effective Programs in ASEAN

### Literacy Boost in Indonesia and Lao PDR

Literacy Boost is a program developed by Save the Children with the aim of improving the reading skills of children in the early grades. The program includes a number of components including provision of reading materials for schools and communities, teacher training on literacy strategies, engaging parents and the community to support children's literacy beyond the classroom.

The program was implemented in Indonesia between 2012-2013 and in Lao PDR between 2015-2017. Twenty Literacy Boost schools were matched with comparison schools, with 672 students in grade 2 in Indonesia and 501 students in grade 3 in Lao PDR assessed at baseline and endline to measure their literacy skills. These included: letter awareness, single word recognition, decoding, ability to read at least five words correctly in a passage, accuracy and comprehension. The assessment also included measures of the home literacy environment such as availability of print material at home and reading habits of family members.

Results in Lao PDR showed that the Literacy Boost program had a small impact on literacy skills such as letter recognition and decoding, with effect sizes of 0.37 and 0.44 respectively. As a result, students who participated in the program were able to progress from emergent reading levels to basic reading levels. Students in the intervention group also reported greater engagement with family members through reading and help with homework than those in the comparison group, which may have contributed to an increase in reading habits at endline. The strongest predictor of reading scores was gender, with girls outperforming boys in four out of six literacy outcome areas.

Surprisingly, household income was negatively associated with reading outcomes. The effect of language on reading performance was significant at baseline but inconclusive at endline.

The results in Indonesia were also mixed. Students who attended Literacy Boost schools made significant gains in reading comprehension and fluency, but no significant difference was observed on letter recognition, individual word reading or accuracy. Data also showed schools that were more involved in Literacy Boost strategies (such as more community activities and more teacher training) made larger gains in reading comprehension and fluency. The effect of a student's background and home environment also had variable impact on reading outcomes. Girls outperformed boys in five out of eight assessment areas, which could be related to girls having better health statistics and higher levels of pre-school attendance. However, large family size impacted girls' literacy outcomes more than boys, which suggests that where resources are limited boys are prioritised for learning opportunities. Students from lower income households and non-Indonesian speaking families did not score as highly as those who did not. However, those from low - and medium - income households benefited more from having access to reading materials than high income households.

The evaluation of the Literacy Boost program in Indonesia and Lao PDR provides further evidence supporting targeted literacy interventions in the early grades to improve foundational learning outcomes. When coupled with effective teaching strategies and high levels of parent and community engagement, students made more significant gains in reading performance. Findings from the Literacy Boost program are also consistent with trends across the ASEAN region relating to the effect of gender, household income and language on literacy achievement. In particular, the most marginalised groups of students, who may also experience multiple layers of disadvantage, are those to benefit the most from early literacy interventions. This suggest that gender, language and other background factors may interact in a way that has important implications for future program design and implementation.

**Basa Pilipinas Program**

Basa Pili (Read Philippines) was a reading intervention (2013-2018) in the Philippines, implemented as a partnership between the Department of Education and USAID. It is estimated that the program helped to strengthen the reading skills of 1.8 million students from kindergarten to Grade 3 through a system-wide approach targeted at improving the literacy skills of teachers, head teachers and administrators, as well as the development of teaching and learning materials. An evaluation of the program identified several design features that led to the program's promising outcomes. This included an intervention owned and led by the Department of Education, mechanisms for sustainability built during the intervention's design phase, and the collection of real-time data and research to monitor the program's progress so that it could be adapted when needed.

## *5.2 Promising practices outside the ASEAN region*

Although this research was focused on the ASEAN region, during the review process, the reviewers also undertook a secondary search for evidence-based practices in comparable regions/contexts. A particular focus on lessons learned around scaling foundational learning interventions in similar or low resource contexts was applied. During this search, several promising practices were identified, which may have relevance for future consideration in the design and implementation of foundational learning programs in the ASEAN region. These are described in more detail below:

## Political leadership and commitment

International research in low – and middle – income countries shows that when literacy and numeracy is put at the centre of political reform agendas, rapid learning gains are observed in relatively short periods of time (Belafi et al., 2020; RESULTS, 2022). This requires sustained political commitment and investment, which prioritises foundational learning as an end goal with clear objectives for achieving them. These objectives are commonly linked to the curriculum, teacher training, instructional support and other inputs.

Case studies from Ceara Brazil, Mexico and Kenya, examining the common drivers of success in large scale foundational learning programs, found that high-level political buy-in was one of the most important factors in improving literacy and numeracy outcomes (Belafi et al., 2020). In the ASEAN region, Viet Nam has often been upheld as a success story where decades of sustained government investment in foundational skills and policy reforms aimed at minimum quality standards has overturned the performance of the education system (World Bank, 2013). It has achieved near universal access in education at the primary (98%), lower secondary (98%) and upper secondary (95%) levels, high primary completion rates (98%) and has almost eliminated learning poverty (18.1%). The latest PISA results show that investments in foundational learning have seen remarkable gains in reading and mathematics, with Viet Nam outperforming all other ASEAN countries (except Singapore) in all domains and outperforming high-income countries (such as the United States) in mathematics (OECD, 2023). The experience of Viet Nam demonstrates the capacity of low-resourced systems to transform learning outcomes through high-level political support and sustained investments in foundational skills.

## Structured pedagogy

In a systematic review of interventions supporting improved learning outcomes across 52 low – and middle – income countries, structured pedagogy was found to have the largest and most consistent effect on learning (Snilstveit et. al., 2015). This was also supported by a review of USAID's early grade intervention programs over a 10-year period (RESULTS, 2024). Structured pedagogy is a framework that integrates multiple strategies to improve student learning, including new content, learning materials, teaching guides and training support for teachers. UNCEF's framework of structured pedagogy also recognises the importance of formative assessment and parental engagement in foundational literacy and numeracy programs.

Evidence shows that successful early reading interventions adopt a structured pedagogy that includes the introduction of new reading materials with step-by-step teacher guides on what to teach and how to teach (Belafi et. al., 2020). Experience in Cambodia and the Philippines shows that providing teacher guides and training created at least half a year of learning gains in literacy and numeracy (Snilstveit et. al., 2015). This approach has also been successfully adopted in Viet Nam, which have historically provided textbooks with clear scope and sequence of tasks and guidelines for teachers on how to scaffold learning (Belafi et al., 2020). This has helped Viet Nam achieve impressive results on PISA for reading and mathematics that is comparable to high performing systems.

## Integrated assessment

Studies have shown that students who are assessed on a regular basis, against established standards and benchmarks, have better learning outcomes (Evans et al., 2018). When teachers are able to use that information to guide further instruction or remediation, learning outcomes improve. Classroom and individual assessments are therefore important for effective instruction. By supporting teachers with appropriate formative assessment tools to understand student learning progress, they are able

to adjust instruction and make necessary intervention decisions based on the student's point of need. As cognitive research shows, literacy development is based on a rigid sequence of skill acquisition, and if this sequence is not followed, children may take much longer to learn to read or not at all (Graham & Kelly, 2018). This makes assessment of learning progress even more critical to the achievement of literacy outcomes. Teaching at the Right Level (TaRL) has been implemented successfully to improve foundational learning in India and sub-Saharan Africa using integrated student assessments. However, interventions using a formative assessment approach has not been widely researched in the ASEAN region and there is a lack of evidence relating to its use in foundational literacy programs.

**Remedial and accelerated programs**

Remedial education is often referred to as programs targeting students who are lagging behind their peers, with the aim of helping them to meet normative standards of achievement for their age group (Snilstveit et. al., 2015). Such programs typically include tutoring, targeted teaching and self-guided learning including computer-assisted programs (ASEAN Secretariat, 2022). Accelerated programs are aimed at students who typically have a learning gap of at least one year and who are usually not in the formal education system (ASEAN Secretariat, 2022). Curriculum content is delivered at a faster pace over a specific timeframe.

There is a paucity of evidence on remedial and accelerated education programs in low – and middle – income contexts due to the limited number of interventions that exist. When schools reopened after the COVID-19 pandemic, remedial and accelerated programs were expected to be a common recovery measure adopted by governments. However, in the East Asia Pacific region, only a quarter of countries reported implementing accelerated programs when schools reopened (Afkar et al., 2023). In a systematic review of studies evaluating the effectiveness of remedial support in low – and middle – income countries in South America and South Asia, only four were identified, with such high variability in the results it was difficult to separate out the impact of other intervention components (Snilstveit et. al., 2015). Evidence from high-income countries such as Canada, Israel, Mexico and the United States have shown more consistent positive impacts of remedial interventions, such as tutoring, on learning outcomes (Afkar et al., 2023).

A growing area of interest in remedial education is the use of computer assisted learning (CAL). These interventions use software to support self-directed learning in a targeted subject area through drills and exercises that could adjust delivery of content and sequence based on learners' performance. Evidence on the effectiveness of CAL is still limited and inconsistent (Akfar et al., 2023). However, where CAL has been used effectively as a remedial strategy, it is linked to the curriculum and is supported by targeted instruction from the teacher (Akfar et al., 2023).

## 5.3 Characteristics of Promising Practices to Support Foundational Learning

Although there is difficulty in defining foundational learning, our review of academic and grey literature suggests that there are many promising interventions that can support the various areas that make up foundational learning, and that these interventions share several key characteristics. These characteristics are valuable for intervention planning and design and allow policy makers and practitioners to screen future programs before implementation. These characteristics are presented in more detail below.

## Clearly defined program outcomes

In many foundational learning initiatives, there is no clear definition for foundational learning, or a clear description of intervention aims, specifically in relation to literacy and numeracy activities. Many programs attempt to cover all areas of foundational learning, potentially reducing their ability to target specific skill development. For programs to be most effective, a clear agreement is needed on which component of foundational learning is to be the focus.

## Targeted focus on literacy

Targeted interventions that focus on one or two elements of foundational learning are most impactful. Based on the review of interventions, the most effective, based on evidence of impact, were interventions focused specifically on developing literacy skills. This is important, as evidence suggests that foundational literacy can promote numeracy, as well as other foundational learning skills. The identified interventions often focused on different domains of literacy, i.e. reading, to respond to specific student needs.

## Evidence based

Many interventions being implemented in the ASEAN region are small scale, or pilot programs, but there are many more that have not been evaluated to demonstrate effectiveness in improving foundational learning outcomes more broadly. It is important to acknowledge that there may be effective programs in the ASEAN region that weren't included due to a lack of available effectiveness data. Ongoing or long-term impact evaluations remain an issue with the identified interventions. More programs must be implemented at scale and use designs that will allow for ongoing measurement of impact.

## Focused on early intervention

Studies have shown that low foundational literacy needs to be addressed early so that children have time to gain additional competencies for further schooling and work. This is especially true for the most marginalised students. To illustrate this point, a study in the US found that without intensive early intervention, the majority of at-risk young readers rarely catch up and 70 percent of those who cannot read by age nine risk a lifetime of illiteracy (Lyon & Chhabra, 2004 cited in Azevedo, et al., 2019). A different study in Cambodia reveals similar findings, where grade 4 students from the poorest households were given scholarships to support access to additional schooling and learning opportunities. The results showed that these students were too far behind the level of instruction to produce any increase in their long-term learning outcomes (Barrera-Osorio et al., 2019).

## Includes training and professional development for teachers

Educators need to be well supported to apply pedagogical techniques in the classroom, and to adapt the curricula for different types of students. Our review suggests that the most effective programs have inbuilt support and training for teachers. Effective programs also may promote teacher capacity development by offering training, emphasising modelling, and integrating practical exercises instead of theoretical or discussion-based approaches.

## Builds in support for parents

Parental support is crucial for the success of any interventions, but is particularly challenging for children who require additional support and investment, especially girls and children from marginalised groups. The most effective programs build in support and training for parents, including educating parents on the value of girls' education, and promoting opportunities for girls to participate equally in access to resources. In addition, effective programs include mechanisms to

promote engagement between schools, teacher and parents, and to support parents to engage in their children's learning.

## Replicable, flexible, and scalable

Although many of the programs featured in this review were small scale or pilot initiatives, the ability for a program to be replicated, adapted, and scaled up in different contexts is important, particularly in a diverse region like ASEAN. For a program to be replicable, adequate information on program outcomes needs to be built into the program design, and the intervention must be clearly described. Further, given the likelihood of disruptions to learning in some parts of the region, programs should be able to be adapted during periods of crisis. Technological interventions, for example, could also have low or no tech adaptations, maximising reach and relevance. Context is also very important, and program designs must be flexible enough to consider the accessibility needs of different target populations based on available data, particularly given the broad aims of foundational learning investments.

# 6. KEY LEARNINGS AND LIMITATIONS

Understanding how to support the foundational learning needs of ASEAN students has received significant attention at the policy level, with a large range of government and school level initiatives being rolled out in the region. This report has identified numerous programs that could support learning in ASEAN, and comparable contexts.

It is important to acknowledge that there was a wide diversity of program aims and intended outcomes represented in the review, perhaps owing to the lack of agreed definitions of foundational learning. However, the review of available programs has also identified a number of important areas for reflection and consideration:

1. The academic and grey literature reviewed in this report demonstrates that the **definition of foundational learning itself is complex and often poorly articulated in program design and delivery**, resulting in a lack of evidence around implementation and evaluation of effective interventions in the ASEAN region.

2. In the reviewed foundational learning initiatives, there isn't a clear description of intervention aims, specifically in relation to literacy activities. **Many interventions focus on a very broad range of aims**.

3. **Very few interventions focus on numeracy**, and those that do, provide unclear aims around the mathematical skills the programs specifically aim to develop.

4. **Evidence of ongoing or long-term impact** remains an issue with the identified interventions. More programs must be implemented at scale and use designs that will allow for measuring impact.

5. Many studies suggest positive learning results and outcomes, and offer country examples of implementation, but are **based on context specific, small-scale interventions, making replicability challenging and duplication of effort more likely**.

6. **There is a lack of evidence about scalability** of early grade reading programs, and a need to understand what reading programs work best and for who, in terms of equity as well as quality.

7. **Technology** is often identified as a mechanism to support the foundational learning needs of children, but nothing appears to have been done at scale that is proven to be effective in ASEAN. While technology could be helpful in fostering foundational learning skills, particularly for targeted populations such as children with disabilities, technological interventions that promise learning outcomes should be implemented with caution.

8. Although some of the identified interventions highlighted the importance of teacher and family support for children's foundational learning skills, **there is little information on what works to support parents to engage with their children**, or how teachers can better facilitate learning in different environments.

9. The task of improving foundational literacy and numeracy outcomes often ''hinges on raising the quality of teaching and supporting the instructional decision-making of individual teachers- tens of thousands of them in many countries.'' (Piper, 2021), **there is little data on the extent to which teachers are prepared to support literacy and numeracy skills**, or other foundational learning skills.

# 7. CONCLUSION AND RECOMMENDATIONS: GETTING BACK TO BASICS

Across the ASEAN region, there is ongoing investment for supporting foundational learning. It is important to acknowledge that the state of foundational learning can vary within each country and that governments and educational institutions are continuously working to address challenges and enhance educational outcomes. Furthermore, the COVID-19 pandemic has posed unprecedented challenges to the education systems of these countries, causing disruptions to learning and exacerbating pre-existing inequalities.

While a focus on foundational literacy does not aim to negate the importance of all other foundational skills, it provides an opportunity for the global education community to converge on a single commitment at the highest level to address the learning crisis. Indeed, many commentators have argued that the focus on foundational literacy risks crowding out other competencies that facilitate successful learning and life outcomes (see for example Schweisfurth, 2023; Feldmarova & Gress-Wright, 2024; Evans & Hares, 2021). However, the endorsement of the Commitment to Action on Foundational Learning signals an important step towards meeting a shared ambition towards the achievement of SDG 4 targets, by halving the number of children worldwide who cannot read and understand a simple text at age 10, by 2030.

Policy makers, donors, program designers, and researchers have a unique opportunity to support the development of foundational learning skills amongst ASEAN children. Reflecting on the literature presented in this report, and a review of effective interventions as well as gaps in current program design and implementation, the following recommendations are provided:

1. **Prioritise Education System Reforms with Quality Measures and Indicators:**
   ASEAN education systems are committed to reforms in the education sector with a focus on quality measures and indicators. Signal political commitment towards reforming the education system by establishing and adhering to these quality measures and indicators.

2. **Provide Comprehensive Support for Teachers**
   Target resources towards initiatives that build the capacity of teachers to deliver high-quality instruction. Research suggests that if teachers at both pre and in-service levels are supported to engage students in the classroom, it is more likely that student literacy and numeracy skills will improve.

3. **Implement Targeted Interventions for Literacy and Numeracy**
   Develop targeted interventions aimed at improving literacy and numeracy skills among students. Utilise data to measure progress and identify areas for improvement, ensuring that interventions are evidence-based and effective. Align financial resources and policy initiatives with the goals of improving literacy skills among ASEAN students.

4. **Intervene early, and focus on the most marginalised**
   Focus on addressing pre – upper primary school children's learning, as well as the needs of out-of-school children to ensure that all students have access to quality education. Prioritise support for marginalised groups to prevent further disparities in learning outcomes. Even though girls are outperforming boys in some contexts, attention should continue to be focused on the underlying social and gender norms which threaten to reverse some of the gains made in girls education attainment. When students fall behind, they usually don't catch up.

5. **Do one thing, and do it well.**

   Donors, program designers, and implementing agencies should focus on achieving quality in specific areas rather than attempting to address all learning challenges simultaneously. Emphasise the importance of focusing on what matters most in education improvement agendas, which is quality as well as equity.

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# ANNEX 1: DATA TABLES - LITERACY AND NUMERACY RATES IN ASEAN COUNTRIES

**Table 2: Percentage of grade 5 students at reading proficiency band 6 or above (SDG 4.1.1b), 2019**

|  | *Cambodia* | *Lao PDR* | *Myanmar* | *Malaysia* | *Philippines* | *Viet Nam* |
|---|---|---|---|---|---|---|
| *Overall average* | 11.0 | 2.5 | 10.7 | 58.3 | 9.6 | 81.9 |
| *Female* | 13.8 | 3.0 | 12.1 | 65.9 | 10.8 | 84.2 |
| *Male* | 8.18 | 2.0* | 9.5* | 50.4* | 8.3 | 79.7* |
|  |  |  |  |  |  |  |
| *Quintile 1* | 4.8 | 0.4 | 5.2 | 38.2 | 0.4 | 63.0 |
| *Quintile 5* | 28.5* | 8.9* | 28.4* | 76.4* | 32.5* | 95.3* |
| *Language in home* | 11.1 | 3.5 | 13.3 | 62.3 | 18.1 | 85.5 |
| *Other language* | 9.9 | 1.1* | 2.5* | 41.9* | 8.9* | 49.4* |

**Data source**: SEA-PLM (2019)

**Notes**: Reading proficiency levels are measured with 5 bands (Level 2 or below, Level 3, Level 4, Level 5 and Level 6 or above) based on five plausible values. Asterisk (*) used to denote significant differences (p<=0.05) between categories, including: female versus male (male row), quintile 1 versus quintile 5 (quintile 5 row), Language in home same as test language versus non language households (Non-language row).

**Table 3: Percentage of grade 5 students at mathematics proficiency band 6 or above (SDG 4.1.1b), 2019**

|  | *Cambodia* | *Lao PDR* | *Myanmar* | *Malaysia* | *Philippines* | *Viet Nam* |
|---|---|---|---|---|---|---|
| *Overall average* | 18.6 | 8.2 | 12.2 | 64.3 | 16.9 | 91.5 |
| *Female* | 20.2 | 8.6 | 12.3 | 67.8 | 17.6 | 91.7 |
| *Male* | 17.0* | 7.9 | 12.0 | 60.8* | 16.2 | 91.4 |
|  |  |  |  |  |  |  |
| *Quintile 1* | 8.3 | 2.4 | 5.9 | 41.2 | 2.4 | 80.7 |
| *Quintile 5* | 41.8* | 25.4* | 31.4* | 86.2* | 43.7* | 98.1* |
| *Language in home* | 18.9 | 11.2 | 14.3 | 66.9 | 20.2 | 93.8 |
| *Other language* | 13.4* | 3.8* | 5.2* | 54.1* | 16.7 | 71.1* |

**Data source**: SEA-PLM (2019)

**Notes**: Mathematics proficiency levels are measured with 8 bands (Level 2 or below, Level 3, Level 4, Level 5, Level 6, Level 7, Level 8 and Level 9 or above) based on five plausible values. Asterisk (*) used to denote significant differences (p<=0.05) between categories, including: female versus male (male row), quintile 1 versus quintile 5 (quintile 5 row), Language in home same as test language versus non language households (Non-language row).

**Table 4: 15 year olds mathematic and reading scale scores, PISA 2012-2022**

| | Brunei | | Cambodia | Indonesia | | | | Malaysia | | | Philippines | |
| | **2022** | **2018** | **2022** | **2022** | **2018** | **2015** | **2012** | **2022** | **2018** | **2012** | **2022** | **2018** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mathematics:** | | | | | | | | | | | | |
| Overall average | 355 | 353 | 336 | 366 | 379 | 386 | 375 | 409 | 440 | 421 | 442 | 430 |
| Female | 362 | 358 | 338 | 369 | 383 | 387 | 373 | 414 | 443 | 424 | 448 | 434 |
| Male | 348 | 346 | 334 | 362 | 374 | 385 | 377 | 403 | 437 | 416 | 437 | 426 |
| **Reading:** | | | | | | | | | | | | |
| Overall average | 429 | 408 | 329 | 359 | 371 | 397 | 396 | 415 | 415 | 398 | 347 | 340 |
| Female | 447 | 423 | 338 | 370 | 383 | 409 | 410 | 428 | 428 | 418 | 364 | 352 |
| Male | 413 | 393 | 318 | 347 | 358 | 386 | 382 | 402 | 402 | 377 | 329 | 325 |

**Data source**: PISA (2012-2022)

Data obtained from International Data Explorer (IDE) portal (https://nces.ed.gov/surveys/international/ide/), and do not include statistical comparisons of averages.

**Table 5: 15 year olds mathematic and reading scale scores, PISA 2012-2022**

| | Singapore | | | | Thailand | | | | Viet Nam | | |
| | **2022** | **2018** | **2015** | **2012** | **2022** | **2018** | **2015** | **2012** | **2022** | **2015** | **2012** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mathematics:** | | | | | | | | | | | |
| Overall average | 575 | 569 | 564 | 573 | 394 | 419 | 415 | 427 | 469 | 495 | 511 |
| Female | 568 | 567 | 564 | 575 | 397 | 426 | 417 | 433 | 464 | 496 | 507 |
| Male | 581 | 571 | 564 | 572 | 391 | 410 | 414 | 419 | 475 | 493 | 517 |
| **Reading:** | | | | | | | | | | | |
| Overall average | 543 | 549 | 535 | 542 | 379 | 393 | 409 | 441 | 462 | 487 | 508 |
| Female | 553 | 561 | 546 | 559 | 391 | 411 | 423 | 465 | 471 | 499 | 523 |
| Male | 533 | 538 | 525 | 527 | 365 | 372 | 392 | 410 | 453 | 474 | 492 |

**Data source**: PISA (2012-2022)

Data obtained from International Data Explorer (IDE) portal (https://nces.ed.gov/surveys/international/ide/), and do not include statistical comparisons of averages.

# ANNEX 2: SEARCH STRATEGY

## *Search strands*

**Focus area**: ("Early literacy" OR "Literacy programs" OR reading OR "reading comprehension" OR writing OR "Mathematics education" OR "Mathematics education (Elementary)" OR "ALGEBRA education in elementary schools" OR "GEOMETRY education (Elementary)" OR "STATISTICS education (Elementary)" OR "Teacher student relationship*" OR "Socio emotional skill*" OR "Emotional support" OR "Classroom environment" OR "Classroom emotional environment*" OR "Teacher student interaction*" OR "Emotional intelligence" OR "Social emotional competence" OR Empathy OR "Social emotional learning" OR "School climate" OR "CONCEPT learning" OR "Concept development" OR "Conceptual development" OR "Concept acquisition" OR "Conceptual understanding" OR "Scaffolded instruction" OR scaffold* OR "cognitive development" OR augmentation OR "logical mathematical knowledge" OR "zone of proximal development" OR "COGNITVIE Strategy Instruction" OR "COGNITIVELY Guided Instruction" OR "PROBLEM based learning" OR "critical thinking" OR "problem solving" OR "problem based learning" OR "blooms taxonomy")

**AND**

**Level of education**: ("Elementary schools" OR "Elementary school teachers" OR "Elementary school teaching" OR "Primary education" OR "Primary schools" OR "First grade (Education)" OR "Second grade (Education)" OR "Third grade (Education)" OR "Fourth grade (Education)" OR "Fifth grade (Education)" OR "Sixth grade (Education)")

**OR**

**Level of education**: ("STUDENTS (Elementary)" OR student* OR students OR "Elementary school students" OR "STUDENTS (primary)" OR "First grade (Education)" OR "Second grade (Education)" OR "Third grade (Education)" OR "Fourth grade (Education)" OR "Fifth grade (Education)" OR "Sixth grade (Education)")

**AND**

**ASEAN countries of focus** (Cambodia* OR Indonesia OR Brunei OR Myanmar OR Burma OR Nepal OR Philippines OR Lao* OR Laos OR "Singapore" OR Thailand OR "Timor Leste" OR Viet Nam OR Papua New Guinea)

**AND**

**Methodology**: ("Evidence-based education" OR "Educational innovations" OR "Alternative education" OR "blended learning" OR "experimental methods in education" OR "Systematic review" OR "Meta-analysis")

**Simplified PRISMA**

Identification

Records identified through database searching
(*n* = 763)

Screening

Records after duplicates removed
(*n* = 716)

Duplicates
(*n* = 47)

Records screened
First screening (*n* = 716)
Second screening (*n* = 133)

Records excluded
First screening (*n* = 583)
Second screening (*n* = 52)
• Publication before 2013
• Did not focus on foundational learning
• Did not focus on ASEAN countries

Eligibility

Full-text articles assessed for eligibility
(*n* = 81)

*n* = 138

Additional records identified through other sources
(*n* = 57)

Included

Full-text articles included for data extraction
(*n* = 70)

Total interventions included in the review (*n* = 40)

Full-text articles excluded
(*n* = 68)
• Did not meet the definition of foundational learning by SAGE
• No reported outcomes

## ANNEX 3: CHARACTERISTICS OF PROMISING PRACTICES

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| Westrope & Mahmud 2018 | Lao PDR | Mainstream-primary | Medium term – 18 months | Improving children's emergent literacy skills through teacher training and coaching-mentoring visits (focused on five core reading skill areas), community reading activities to promote reading outside of the classroom (e.g., book banks, reading clubs and reading buddies), and age-appropriate local language material creation/learning material provision through the provision of book banks. | Impact on reading outcomes: <br> - All students benefited from the intervention. <br> - Girls improved by one percentage point, and outperformed boys in four of the six measured outcomes. <br> - Mixed results for ethnic minority groups. | Literacy Boost | Save the Children | Literacy, Inclusive education |
| Dalberg Global Development Advisors; Sasakawa Peace Foundation 2017 | Singapore | Mainstream-primary | Medium term – under 6 months | A pilot programme that provided 3G enabled phones to 650 students, including girls, in a primary school in Singapore to acquire 21st century competencies and knowledge. | Results from an independent study of the programme concluded: Students reported better scores on English classes. Students reported better scores on science classes, especially on open-ended questions. Students showed greater ability to collaborate and ask questions. | WE Learn initiative | Qualcomm® Wireless Reach™ | Digital skills |
| Papua New Guinea and Australia Government. 2022 | PNG | Mainstream-primary | Long term-ongoing | CARE provided 502 teachers with essential training and professional support to improve their knowledge and understanding in topics such as teaching phonics, benchmarking and the Standards - Based Curriculum (SBC). <br><br> Community events celebrating support for girls' education were held in all three target communities, drawing over 800 | N/A | Better Governance for Education (BG4E) project | DFAT, CARE International | Literacy and Numeracy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| | | | | attendees. Events were used to disseminate key messages in health, education and equality, and increase the confidence of girls to attend schools. | | | | |
| Papua New Guinea and Australia Government - 2022 | PNG | Mainstream-primary | Long term - 2018-2020 | Improved literacy and numeracy outcomes for elementary school children. Increased enrolment and retention of girls in elementary schools. Strengthened sub-national gender-inclusive management and coordination in the education sector. | Results from the project indicate that the percentage of children who were able to read with meaning (read the text and answer the comprehension questions) increased from 26% to 41% by the end of the project, whilst the percentage of children who were able to complete simple operations problems (additional and subtraction) and word problems increased from 37.01% to 65.31% (Papua New Guinea and Australian Government, 2022). | Pikinini Kisim Save (PKS) project | DFAT, CARE International | Inclusive education; Literacy; Numeracy |
| Syafmen et al., 2022 | Indonesia | Mainstream-primary | 2022 | Playing traditional game of marbles to improve students' process skills in mathematics subjects. | The results of the study suggest that some of the students have superior interest and process skills in playing traditional games, which is used as a technique to teach the mathematics subject. The use of traditional games has a positive impact on students' mathematics learning outcomes (Kwarikunda et al., 2020; Walan & Gericke, 2021). | N/A | N/A | Numeracy |
| KAPE (2015) | Cambodia | Mainstream schools | Long term-2014-2020 | Books for Cambodia sought to promote English reading at the primary, secondary, and tertiary education levels. | By the end of 2015, the program had distributed 3,401 books for children. 2,571 Primary Text Books. 708 Books for Higher Education. | Books for Cambodia (BFC) | The Asia Foundation | Inclusive education; Literacy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| | | | | The project also strived to help universities, government institutions and NGOs to create a culture of reading in Cambodia and enable access to books of the highest quality. | 1,154 Professional Books. 98 Multimedia Materials for Primary. 112 Other Educational Materials. 76 Teacher Manuals. 18 Educational Folder Toolkits. | | | |
| KAPE (n.d.) | Cambodia | Mainstream-primary | Long term- 2013- 2015 | Increasing access and quality of primary education as well as building capacity to improve school management. Key elements include Intensive support for early grade reading, rights-based Implementation, stakeholder empowerment, local ownership, institutionally sustainable implementation frameworks. | Since the baseline year in 2012, school efficiency has improved as follows: The dropout rate has declined by 8% The promotion rate has improved by 5% Gender Parity has improved by 7% Pupil Teacher Ratio (PTR) has improved dramatically by 42% | Schools for Excellence (SfE) | Classroom of Hope (CoH) & Global Development Group (GDG) & Australian Aid. | Inclusive education |
| KAPE (n.d.) | Cambodia | Mainstream-primary | Long term - 2012-2018 | Promoting educational innovation, particularly in early grade reading, and numeracy. Also introduced technology for literacy to selected schools with high governance levels in order to help Cambodia adjust to imminent ASEAN integration, which will increase demands for a 21st century workforce. The project will also include rigorous testing (e.g., EGRA) to generate empirical evidence of impact as well cost benefit analyses. | Improvements in access to education and a decrease in the dropout rates. | Reinforcing Education Access with Community Help (REACH) 1 & 2 | We World | Inclusive education; Literacy; Numeracy |
| KAPE (n.d) | Cambodia | Mainstream-primary | Long term- 2015-2019 | Activities and outputs in the Easy2Learn Project have been clustered into 4 groupings including (i) improved educational access; (ii) improved educational quality and relevance; (iii) early grade literacy with strong links to M- | N/A | Easy2Learn | Child Fund Cambodia | Inclusive education; Literacy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| | | | | Learning; and (iv) improved school management. | | | | |
| Westbrook et al. (2013) | Lao PDR; Cambodia; Myanmar | Other | N/A | Lao PDR: IE project - supported the participation of all children in school, with a particular focus on disabled students. Scale nationwide.                TUP- A mix of short/long residential courses, school clusters, inschool/class experience and self-study modules to upgrade the skills and knowledge of the very large cohort of untrained and unqualified teachers.  Across 25 schools, 4000 teachers in 48 districts were trained. Cambodia: Increasing access to primary schooling for marginalised students and girls and improvement of quality of management and teaching and learning. Myanmar: Child-centred pedagogy in monastic schools benefitting - 10 monastic schools, 68 teachers, 19 teacher trainers. | Lao PDR: The IE project schools were outperforming non-project schools by significant margins in key areas: net enrolment, survival in grade, grade passing and inclusion of children with disabilities; lower drop-out rates and grade repetition rates; most of the 26 teachers used some child-centred inclusive practices. TUP increased teachers' pedagogical skills and improved student performance, attendance and increased completion rates. Cambodia: Greater enrolment (marginalised and girls), greater use of child-centred and cooperative methods, use of alternative approaches to rigid grade separation, happy and active students, use of pair/group work with wholeclass/individual presentations, teachers sharing practices. | Lao PDR: Lao PDR Inclusive Education Project 1993-2009; Teacher Upgrading Programme (TUP); Cambodia: Public Education for Disadvantaged Children project; Myanmar: Child-centred pedagogy | Department for International Development (DfID), UK | Inclusive education |
| Oakeley et al. 2018 | Cambodia | Mainstream - Primary | N/A | It focused on the value of Aan Khmer ("Read Khmer"), a game-based app developed with funding from All Children Reading: A Grand Challenge for Development to teach Khmer alphabetical | Quantitative findings indicate that Grades 2 and 3 children in schools categorized as making higher use of the Aan Khmer app scored significantly higher in some subtasks of the EGRA tests than children in schools with lower use | Total Approach for Children Plus (TRAC+) | World Vision | Literacy skills/ Digital skills |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| | | | | principles, vocabulary, and fluency in low resource environments. | of the app. Qualitative findings revealed positive views of TRAC+, including its m-learning component, among many teachers and students. | | | |
| Abeberse et al. 2014 | Philippines | Mainstream-primary | Short- term (31 days) | The program comprises three components — providing schools with a set of age-appropriate books, training teachers to incorporate reading in the  curriculum, and through a 31-day "read-a-thon," encouraging children to read and  supporting teachers as they incorporate reading into their classes. | A short-term reading program that provides age appropriate reading material and trains teachers to use it can have a significant effect on the reading ability of primary school.  Improved students ' reading skills by 0.13 standard deviations. The effect was still present three months after the program but diminished to 0.06 standard deviations, probably due to a reduced emphasis on reading after the program. | Sa Aklat Sisikat (SAS) reading program | N/A | Literacy |
| Badiable et al. 2013 | Philippines | Mainstream-primary | Long term - Multi- year | The Literacy Boost program includes teacher training, community reading activities, and age-appropriate local language material creation to support emergent literacy skills among early-grade children. | There were no significant relationships between reported participation and reading skill gains over time. However, frequency of Reading Camp attendance was positively associated with gains in letter knowledge and Filipino fluency. | Literacy Boost Metro Manila | Save the Children | Literacy |
| Brown, C. 2013 | Indonesia | Mainstream-primary | Long term - Multi- year | The LB program entails a number of components to ensure students receive literacy support inside and outside of the classroom. These include: 1. a 9-module teacher training on literacy strategies, conducted in three phases | Students in LB schools made significant additional gains over peers in comparison schools in reading comprehension and oral comprehension. LB students also made larger gains in reading | Literacy Boost Indonesia | Save the Children | Literacy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| | | | | 2. provision of Book Banks for schools and communities for students to borrow from 3. establishing a Reading Buddy system in which older children read with younger children 4. conducting regular community reading awareness sessions with parents 5. overseeing weekly Reading Camps run by trained Reading Camp Leaders | fluency though the impact was statistically significant at a lower threshold. However, there was not a statistically significant effect of the program on letter identification, concepts about print material, individual word reading or reading accuracy. | | | |
| Courtney, J., & Gravelle, M. 2014 | Cambodia | Other | N/A | The intervention was designed to help teachers change their practice in ways that would support children's reading. In order to introduce a multiple-strategy approach it was necessary to develop a wider range of classroom materials and to train teachers to use them. | The participating teachers were able to change their practice by using a wider range of reading strategies than prior to the intervention. The use of this range of strategies had a positive effect on pupils' reading. Teachers' perceptions of how literacy should be taught also changed as their experiences developed. | The BTC intervention | N/A | Literacy |
| Education Development Center. 2016 | Philippines | Mainstream-primary | Multi-year-2013- 2018 | To support the Philippines' goal of improving the reading skills of one million early grade students by training teachers and school heads on effective reading instruction, producing curriculum-based teaching and learning materials (TLMs) for use in early grade classrooms and strengthening the capacity of the Department of Education (DepEd) to effectively implement the language and literacy component of its K–12 curriculum reforms. | After five years of Basa implementation, reading assessments have shown notable improvements in students' reading skills, particularly in Filipino, the national language and one of the official languages of instruction throughout the K–12 cycle. In 2018, 53% of Grade 2 learners met the reading fluency benchmark in Filipino compared to only 45% in 2014. Almost one-third of Grade 2 learners (31.6%) now meet both the fluency and comprehension | Basa Pilipinas (Read Philippines) | USAID | Literacy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
|---|---|---|---|---|---|---|---|---|
| | | | | | benchmarks, compared to only 19.9% before Basa. Seventy-five percent (75%) of Grade 3 learners met the Filipino fluency benchmark in 2018 and 89% met the comprehension benchmark (untimed passage reading). Seventy-four percent (74%) of Grade 3 learners met both the fluency and comprehension benchmarks. | | | |
| Management Systems Internationa.2017 | Indonesia | Mainstream-primary | Long term – 2012-2017 | The project involved three components: 1. Strengthened pre- and in-service teacher development programs to increase quality of instruction in classrooms. 2. Improved education management and governance of schools and districts for improved support to classroom delivery of education. 3. Improved coordination of communication, information-based planning and policymaking, feedback and use of financial and human resources at all system levels to improve delivery to the lower levels. The project included a specific focus on improving the early grades reading achievement of children in Indonesian schools. | From the project's secondary data, it can be concluded that the active learning methodologies promoted by PRIORITAS have enhanced student performance in mathematics, Indonesian language and science. Test results for Grades 4, 5 and 8 showed student performance improvements in those subjects from 2013–2016. There was a statistically meaningful – albeit small – association between teaching practices and students' learning outcomes | Prioritizing Reform, Innovation, and Opportunities for Reaching Indonesia's Teachers, Administrators, and Students (PRIORITAS) | USAID | Inclusive education; Literacy; Numeracy; Science |
| UNICEF East Asia and Pacific Regional Office. 2021 | Cambodia | Mainstream-primary | Long term- 2015-ongoing | This intervention involved the development of Cambodia's first-ever teacher training programme on positive discipline, aimed to foster secure, child-friendly and non-violent relationships between teachers and their students. It | Overall, the intervention improved teacher's knowledge on children's rights, child protection in and around schools, positive discipline and effective classroom management.  Teachers and other | Positive Discipline training | UNICEF | Student engagement |

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| | | | | was designed with the understanding that if teachers are to stop using physical punishment in schools, they need to be given alternative tools to manage children's behaviour. The teacher training package focuses on effective ways to manage classrooms, resolve conflicts non-violently and create positive student-teacher relationships. It includes a revised Child-Friendly Schools manual on Preventing Violence Against Children and three accompanying tool books on positive discipline: 1) A Guide for Facilitators, 2) A Tool Book for Senior School Leaders, and 3) A Tool Book for Primary School Teachers. | school staff also had their capacity enhanced to provide mental health and psychosocial support (MHPSS) to students in need of support. Teachers also were equipped with strategies to promote their own self-care, while school-based child protection procedures and reporting and referral mechanisms were also strengthened. | | | |
| Wong et al. 2023 | Lao PDR | Mainstream-primary | Long term - 2015 - 2020 (Phase 1) | Teaching quality: Teacher knowledge and attitudes; Teaching practice -preparation; Teaching practice -strategies; Teaching practice -assessment and Inclusive education.  Student outcomes: Student literacy, attitudes and dispositions. Teachers were provided with teacher guides and other teaching and learning resources. Specific teaching practices, including active learning, student-centred learning approaches, formative and summative assessment of student learning progress, and a phonics approach to teaching reading, were introduced. These practices were complemented by an in-service teacher professional development program to support Provincial Education and Sports Services (PESS) to deliver face- | MEL framework established but too early for impact measurement; Reached 740,000 children in 32 educationally disadvantaged districts. | BEQUAL | DFAT, EU | Inclusive education; Literacy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
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| | | | | to-face orientation training. Additional in-service support was provided to teachers, principals and schools in most of the original 32 BEQUAL-targeted districts – some of the country's most disadvantaged districts – through strengthening communities of practice (COP), self-access learning (SAL), monitoring visits, teacher cluster meetings and district level education support grants. | | | | |
| BAPPENAS. 2020 | Indonesia | Mainstream-primary | Long term- 2018- ongoing | Focus on levelling the linguistic playing field: build teachers' capacity to lay the foundations of literacy for students using their mother tongue and to facilitate the transfer of their literacy and cognitive skills to Bahasa Indonesian. The pilot includes sessions on the basic principles of bridging between the students' home language and school language (Bahasa Indonesian) emphasising language bridging, oral language, phonics as well as social and emotional connections. These sessions will be delivered within the framework of the literacy short course. | | INOVASI Gender Equality and Social Inclusion (GESI) Strategy | DFAT, BAPPENAS | Inclusive education; Literacy |
| Kate Sims and Sarah Thuo; Education Development Trust. 2020 | Cambodia | Mainstream-primary | Long term - 2013-2018 | The programme empowers community members, parents, students, and teachers to routinely assess their environment using the QLE assessment and to plan interventions that enhance the safety, WASH, child participation, child rights, learning aids, and teaching methodologies within the schools. Partnership with local and national governments throughout the | Small improvement in enrolment for girls and boys, especially in disadvantaged schools. Enrolment in areas associated with high migration dropped by 18%. Drop out significantly decreased, however repetition rate stayed high (especially in grade 1). In 2013/14, retention rates for girls at | I'm Learning! Pilot | Save the Children | Positive learning environment |

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| | | | | life of the pilot, coupled with strong evidence of programme effectiveness, has ensured nationwide governmental uptake and support of the programme, the first step for sustained commitment to I'm Learning's approach for children's learning and development. | two of the schools was below 70%. By end of the project, retention rate across the three schools averaged above 90%, with two of the school's achieving 100% retention. This is a significant achievement for low resourced schools. | | | |
| Afkar, et al. 2023 | Cambodia | Mainstream-primary | Medium term- 2017 | Improved mathematics content knowledge | No updated data on teachers' subject content knowledge was available. | Teacher Upgrading Program | N/A | Numeracy |
| Afkar, et al. 2023 | Malaysia | Mainstream schools | Long term - 2012 - 2015 | To reach and support teachers who were spread across the country and busy teaching, ProELT combined face-to-face and virtual learning modules, which could be flexibly scheduled over a 12-month period, although teachers had to complete 240 hours of face-to-face interaction and another 240 hours of self-paced digital learning (online and/or offline). Moreover, the resources and training materials were designed to match the teachers' language proficiency levels. | Teachers' proficiency improved: They used more extensive vocabulary, lengthier sentences, and clearer language instructions, and had improved pronunciation and fluency. They also had greater confidence while giving classroom instructions and speaking in front of others, and they reduced the use of languages other than English in the classroom. Teachers' pedagogy improved: More student-focused lessons allowed for student autonomy, varied strategies and approaches, and more self-reflection as teachers became more aware of their teaching routines. Students' English-language use increased: Students reduced their classroom use of their first | Professional Upskilling for English Language Teachers (ProELT) | N/A | Literacy |

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| | | | | | language and were more willing to participate in classroom activities. Their students—tested before and after the teachers had taken ProELT—showed a 4 percent improvement in achievement on tests that contained cloze passagesa and essay writing administered over a three-month period. | | | |
| Snilstveit, B, et al. 2015 | Philippines | Mainstream-primary | Medium term - 31 days; follow up at 4 and 7 month | The programme provided age-appropriate reading material, trained teachers to incorporate reading into their curriculum, and supported these changes through a 31 day reading marathon to encourage students to read. Teachers attended a two-day training session in advance. SAS monitored schools to ensure programme fidelity and support teachers' use of new books. SAS provided 60 age-appropriate storybooks in English and Filipino to each class. Teachers/classes kept all of the material at the end of the intervention. | N/A | Sa Aklat Sisikat (SAS) programme | N/A | Literacy |
| Snilstveit, B, et al. 2015 | Cambodia | Mainstream-primary | Medium term- Follow up: Approximately 2 and 10 month | The programme modified curricular content to compensate for the lack of pre-schooling that is thought to cause high grade repetition. Components included: (1) development of special curriculum documentation (2) 14 day teacher training programme (3) a regular monitoring regimen to support teachers in their implementation (4) physical upgrading of | N/A | School Readiness Programme (SRP) | N/A | Remedial |

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| | | | | classrooms (5) formalised student assessment for monitoring  purposes. | | | | |
| Fitriani, S., & Qodariah, L. 2021 | Indonesia | Mainstream-primary | Long term-Multi-year | In Indonesia, the implementation of childfriendly schools refers to six essential components, including: 1) Written commitment as a policy; 2) Implementation of a child-friendly learning process; 3) Well-trained teachers and personnel on children's rights; 4) Child-friendly facilities and infrastructure; 5) Children's participation; and 6) Parent participation, community institutions, business world, other stakeholders, and alumni. Additionally, at this school CFS focused on building a healthy lifestyle and health promotion through the presence of the school health clinic, "Little Doctor," and Healthy Canteen. As the main stakeholders, students are the first individuals who feel the big differences with the learning process and school environment as to be able to express their creativity and innovation and develop their cognitive, affective and psychomotor learning domains. They also must feel comfortable, safe and enjoyable during the learning process. | The results showed that thirteen characteristics of the CFS had been implemented well with a percentage value above 95%. It indicates that this school has been able to realize the CFS model following its principles. Besides, the school has met the requirement of the six essential components of CFS adapted according to Indonesian educational contexts. It indicates that the implementation of CFS is in accordance with the concept of UNICEF but with some differences. | Child-friendly school (CFS) model | UNICEF | Student engagement |
| IDA. 2020 | Myanmar | Other | Long term - 2020-2023 | Project is expected to improve results related to the availability of services adapted to the needs of children at risk of being excluded, the quality of teaching and learning conditions, and the quality of public management processes in | N/A | Inclusive Access and Quality Education project | Department of Basic Education (DBE), Myanmar and | Inclusive education; Literacy and Numeracy |

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| | | | | education.  Services adapted to needs of children at risk of being excluded, such as:<br><br>a. Students having received an MOE-approved certificate for completing an alternative education program (number, in targeted townships, disaggregated by gender).<br><br>b. Migrant and displaced children having enrolled in a formal school benefiting from the Education for Children on the Move Program (number, in targeted townships, disaggregated by gender).<br><br>c. Students having enrolled in education services delivered by ethnic basic education providers that have signed a partnership agreement with MOE (number, nationwide, disaggregated by gender). | | | the World Bank | |
| Fajari, L. E. W. 2020 | Indonesia | Mainstream-primary | Short- term | The project focuses on the use of picture media and multimedia based on PBL in learning and the moderating variables are the student's learning motivation and learning style, while the dependent variable is critical-thinking skills. | (1) the PBL multimedia and picture media has no effect; (2) the learning motivation has an effect; (3) learning styles have an effect; and (4) there is no interaction between learning media, motivation learning, and learning styles on critical-thinking skills. | Problem based learning media (PBL) | N/A | Student engagement |
| KAPE 2016 | Cambodia | Mainstream-primary | Long term - 2015- 2017 | (i) The development of basal readers (in electronic form), (ii) the development of digitized testing and quizzes to be integrated into the readers, (iii) the | N/A | E-Books for Khmer Project (E4K) | All Children Reading: · World Vision | Literacy |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
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| | | | | creation of instructional protocols that promote differentiated classroom literacy structures (DCLS) (e.g., leveled reading groups) in which children can gain confidence by reading at the proper level and (iv) the commercial distribution of the e-reader apps through the participation of a private sector partner called Thunthean Seksa. The availability of basal e-readers will be the key ingredient that animates DCLS protocols. | | | · USAID · DFAT | |
| UNICEF.2023 | Cambodia | Other | Long term - 2015 - ongoing | New Generation Schools act as incubators for innovation in education, aiming to move public schools towards achieving 'maximal' standards of education, especially in STEM subjects. Digital access is an important aspect and includes internet connections, classroom projectors, printers and copiers, and teachers' laptops. | N/A | The New Generation School (NGS) | | Digital Skills |
| UNICEF.2023 | Lao PDR | Mainstream schools | N/A | Its approach uses the national curriculum as the basis for digital content, which it formats in a way that encourages interactivity and collaboration. AEAI supports the setup of one e-classroom per school, which includes an LCD screen, connector cable and tablets (four students per tablet on average). The content is made accessible via an app on Google Play Store so that it can also be used outside the classroom on Android devices. The app and content are preloaded onto tablets to circumvent connectivity issues. This | N/A | N/A | Aide et Action International (AEAI) | Digital Skills |

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| | | | | solution does not target digital literacy development, but it provides children with exposure to and use of digital devices and content. | | | | |
| UNICEF.2023 | Viet Nam | Mainstream schools | N/A | A fun and interactive digital learning solution that encouraged students, and particularly girls, to engage with STEM, using augmented virtual reality (AVR) technology, including tablets and phone-mounted glasses, so that children could collaborate in small groups (five to six children) on STEM-related subjects. This solution has the potential to provide schools with a cost-effective alternative to physical labs, while building teachers' and students' capacity to use technology and engage with STEM. | N/A | N/A | Center for Consultancy on Family Health and Community Development (CFC) Vietnam and UNICEF | Digital Skills |
| Samat & Aziz. 2020 | Malaysia | Other | N/A | Implementing elements of multimedia for supporting reading. | The result shows that the implementation of multimedia learning in teaching reading comprehension is useful as the combination of multiple elements of media scaffolded the process of understanding. On the other hand, audio is the least effective in helping pupils comprehend the information. | Multimedia learning | N/A | Digital Skills |
| Maureen, I. Y., et al. 2018 | Indonesia | Mainstream-primary | Short term - 3 weeks | Boosting children's literacy skills. | Before, and after, the 3-week storytelling intervention, measures of literacy and digital literacy skills were administered to all groups. In the digital storytelling condition, | Digital story-telling | N/A | Literacy; Digital skills |

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| | | | | | children's literacy skills increased significantly compared to children in the control condition. Other exploratory data analyses suggested that both types of storytelling activities enhanced digital literacy skills. | | | |
| Maureen, I. Y., et al. 2020 | Indonesia | Mainstream-primary | Short term - 6 weeks | Applied a structured storytelling approach. | The study found stronger digital literacy development in the experimental conditions than in the control condition. As for literacy development, the diference was statistically signifcant. Both storytelling conditions signifcantly enhanced children's literacy and digital literacy skills. Structured storytelling activities provide a viable and valuable way to enhance literacy and digital literacy in early childhood education. | Digital story-telling (extensive) | N/A | Literacy; Digital skills |
| Arabiana, E. F. S., et al. 2020 | Philippines | Mainstream-primary | N/A | The intervention used close-captioned cartoons ( audio-visual input through close-captioned Aesop's Fables cartoons from PinkFong and Task-Induced Involvement), and measured their effects on four literacy skills: vocabulary, oral vocabulary and pronunciation, orthographic skill, and comprehension. | The pre- and post-test showed that multiple exposures of the cartoon resulted in incidental literacy learning, with all four areas linked; that is, as students learned vocabulary and orthographic skills, this facilitated their comprehension. Since there was no comparison group, and considering the very small sample size and lack of other data in this area, no generalisations about the | Video Cartoons and Task-Induced Involvement | N/A | Literacy; Digital skills |

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| | | | | | overall effectiveness of cartoons can be made. Wilcoxon Signed Rank Test reveals that there is a significant difference in the pretest, immediate posttest and delayed posttests scores after the intervention as shown in the 90%-95% confidence level. | | | |
| DeJaeghere et al. 2021 | Viet Nam | Mainstream-primary | Long term - Multi-year | Teacher use multiple instructional practices to successfully deliver the content knowledge and teach students how to learn by helping them think for themselves and apply various learning strategies. | N/A | RISE Programme | N/A | Literacy; Numeracy; Student engagement |
| Quality Education Design – Aptissimi Development Innovations Inc. (QED-ADII) Partnership on behalf of the Australian Government | Philippines | Mainstream-primary | Long term – 2014-2019 | To assist the Philippine government in enhancing the quality, access and delivery of basic education, while supporting the implementation of the K to 12 school system. | The results revealed that the overall effect of the BEST Program interventions was not statistically significant in increasing average grades of students across all year levels. The program made significant contributions to development of teaching materials, namely the 12 curriculum guides and the classroom assessment tools. However, some of the teaching and learning materials were not widely used simply because of the high cost it exacted on teachers (to access these from DepEd's online Learning Resources Portal) and the relative ease of accessing alternatives (from other social | Basic Education Sector Transformation (BEST) Program | DPEd and Ausaid | Inclusive education |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
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| | | | | | media platforms). On the other hand, the K to 12 curriculum guides and the classroom assessment tools, which did not have substitutes, were widely utilised. DepEd's ability to deliver inclusive and responsive basic education services with greater decentralisation of management and accountability to the field offices and schools significantly increased with the support of the BEST Program, although levels of capacity increases varied by Operating Units (OUs) and by Region and Division Offices. | | | |
| Azevedo et al. 2019 | Viet Nam | Mainstream-primary | Long term - Multi-year | Strong literacy skills. | A 2013 Young Lives report found that 97% of students in Viet Nam own a Vietnamese textbook. Even among the poorest subset of students in the poorest province of Viet Nam, 97% reported owning a Vietnamese textbook, and 95% reported owning a math textbook. | Young Lives initiative | N/A | Literacy skills |
| Azevedo et al. 2019 | Cambodia | Mainstream-primary | Long term - Multi-year | Improve their book supply chain to ensure all children have access to textbooks on time. Aim for one book per child and improve institutional capacity, and additionally supplying classrooms and schools with large numbers of texts for students to develop reading skills in and out of classrooms. | N/A | "Track and Trace" system | World Bank | Literacy skills |

| Document ID | Country | Setting | Length | Intended outcomes | Effectiveness data | Name (if specified) | Funding/ Implementing agency | Focus |
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| World Bank | Philippines | Mainstream-primary | Long term - Multi-year | Supporting teachers and school leaders in improving teaching practices. Providing adequate materials for effective teaching and learning. The Project supports DepEd's institutional reform efforts in teacher professional development and competency standards. It is focused on coaching, collaborative peer-to-peer teacher professional development (i.e., Learning Action Cells) and instructional leadership. | N/A | Teacher Effectiveness and Competencies Enhancement Project | World Bank | Inclusive education |

**Notes**:

N/A = Information not available
Short term = Less than a month
Medium term = More than a month but less than a year
Long term = More than a year (could even be multi-year in length)

Type of schools =
- Primary
- Other – non-formal schools
- All – primary, special, and non-formal schools.

Focus = Key themes across the interventions
- Inclusive education
- Literacy
- Numeracy
- Positive Learning Environment