Girls' Digital Literacy in the East Asia and Pacific Region

Spotlight on Cambodia, Viet Nam, Indonesia, Lao PDR and Timor-Leste

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Contents.

Introduction.

Outlines the purpose of the study, and includes key definitions, research approach and limitations.

Background to the study.

- The ability to use digital technology safely and effectively is increasingly important to participation in today's world.
- By the year 2030, up to 80 per cent of jobs in Southeast Asia will require basic digital literacy and applied ICT skills (The Sasakawa Peace Foundation & Dalberg Global Development Advisors, 2017).
- Yet globally, girls and women are accessing and using digital technology in smaller numbers than boys and men (e.g., Girl Effect and Vodafone Foundation, 2018).
- Lack of knowledge around how to use technology is frequently cited as a key barrier (e.g., GSMA, 2022).
- However, significant data gaps exist globally, and in East Asia and the Pacific specifically, around the digital literacy of girls and boys.

Girls and mobile study (across 25 countries)

Boys were **1.5 times** more likely than girls to own a mobile phone and **1.8 times** more likely to own a smartphone.

Roughly **46 per cent** of boys used the internet on their phones, compared to **27 per cent** of girls.

Boys used **more digital platforms and services** for **a wider range of activities** than girls.

(Girl Effect and Vodafone Foundation, 2018)

Study objectives.

Overarching objective

To provide an initial snapshot of adolescent girls' digital literacy across the East Asia and Pacific region

Sub-objectives

1. Explore girls' digital access, use and competences
2. Investigate how girls develop digital literacy, including enablers and barriers
3. Assess how girls' digital literacy needs are addressed within education

Defining ‘digital literacy’ for the purpose of this study.

“*Digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital devices and networked technologies for participation in economic and social life. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy, and media literacy” (UNESCO 2018)*

‘Digital literacy’ is a separate concept from ‘digital learning’.

‘Digital learning’ encompasses any learning that is facilitated, enabled or mediated using technology.

In education, it can involve use of technology in the classroom (e.g., projectors, tablets), or outside the classroom (e.g., mobile phones).

A by-product of engaging with digital learning solutions can be an increase in digital literacy. However, these solutions are generally intended to aid the learning of other subject matter (e.g., mathematics, science etc.) rather than digital literacy.

The focus of this study is on **digital literacy,** rather than **digital learning**.

Research approach.

Desk research

- Review of data, studies, literature and online articles pertaining to adolescent girls' digital literacy across the region.
- Purposive sampling: 70 sources selected in total.
- Most findings came from analysis of existing literature and studies, with only one secondary data source identified as relevant and accessible to authors.

Country office consultations and key informant interviews

- Five 'focus countries': **Cambodia, Viet Nam, Indonesia, Lao PDR and Timor-Leste.**
- Six UNICEF consultation sessions and 15 semi-structured key informant interviews in total.
- Purposive sampling: key informants selected from NGOs, multilateral organisations and government departments, who had expertise relevant to the study.

Online survey with teachers

- Three 'focus countries': **Cambodia, Viet Nam and Timor-Leste.**
- 21 question survey explored how digital literacy was taught in schools and how teachers perceived girls' digital literacy compared to boys.
- Convenience sampling: survey disseminated by UNICEF country offices through their local networks.
- Survey uptake varied: Cambodia (745 responses), Viet Nam (57 responses) and Timor-Leste (95 responses).

Research limitations.

Due to the methodology used, this study cannot be considered representative of the region or of girls' own perspectives. Instead it provides an initial snapshot, which can be used to identify areas for future focus.

Methodology	Limitations
Desk research	• The review aimed to be comprehensive but not exhaustive. Only English language documents were reviewed, and local curricula and policy documents were not examined first-hand. • There are extensive data gaps, particularly for population groups that are typically more marginalised, including adolescents who are out-of-school and those who have disabilities. The study is therefore skewed towards adolescents in education and there was limited scope to make comparisons between age groups, genders, population groups or countries.
Key informant interviews	• Given the purposive sampling approach and small sample size, these interviews cannot be considered representative.
Online teacher survey	• Given the convenience sampling approach used, and the small sample size in Viet Nam and Timor-Leste, the survey results cannot be viewed as representative.
Girls' voices	• Due to funding and logistic limitations, it was not possible to include girls themselves in the study and therefore this research cannot be considered representative of girls' own perspectives or their digital literacy.

Key findings.

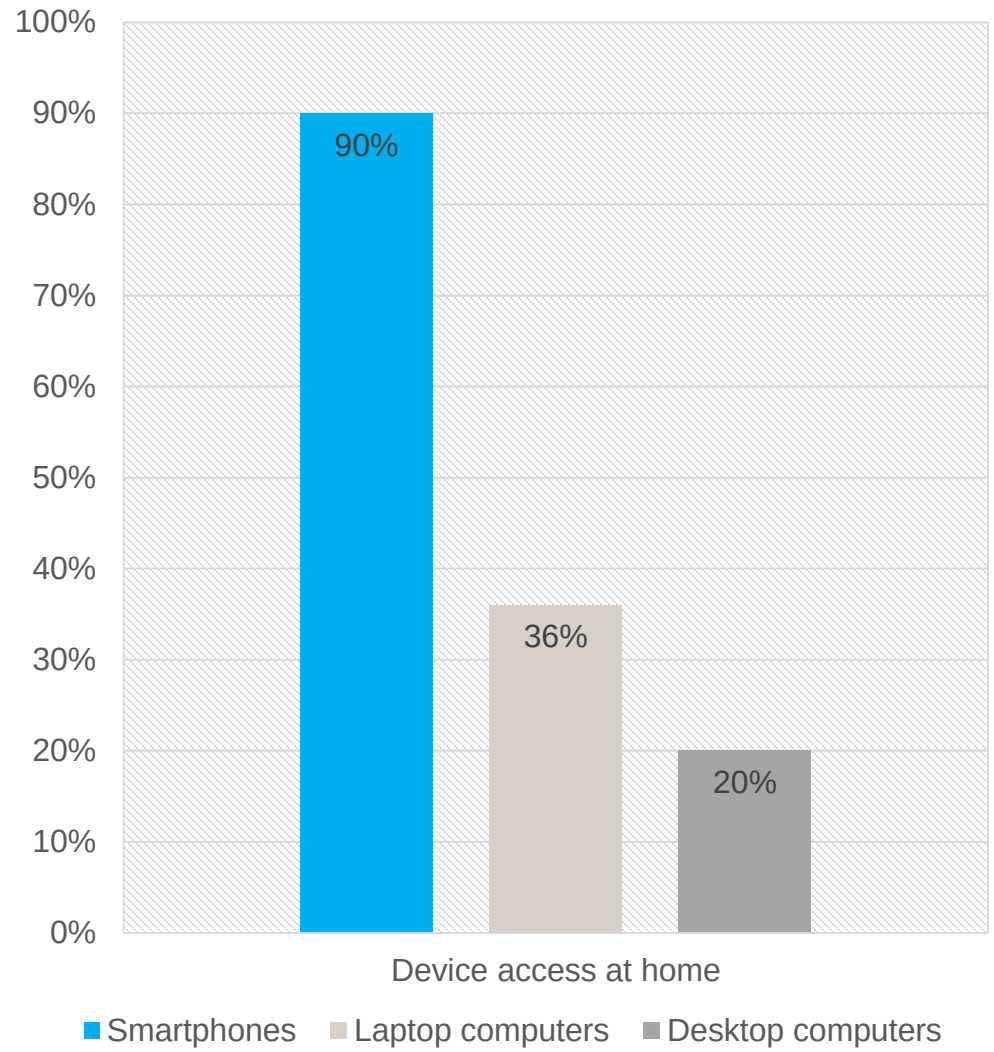
Highlights key findings from the three chapters included within the study.

01.
The current state of affairs: Girls' digital access, use and competences.

Mobile phones provide the main source of digital access for girls and boys.

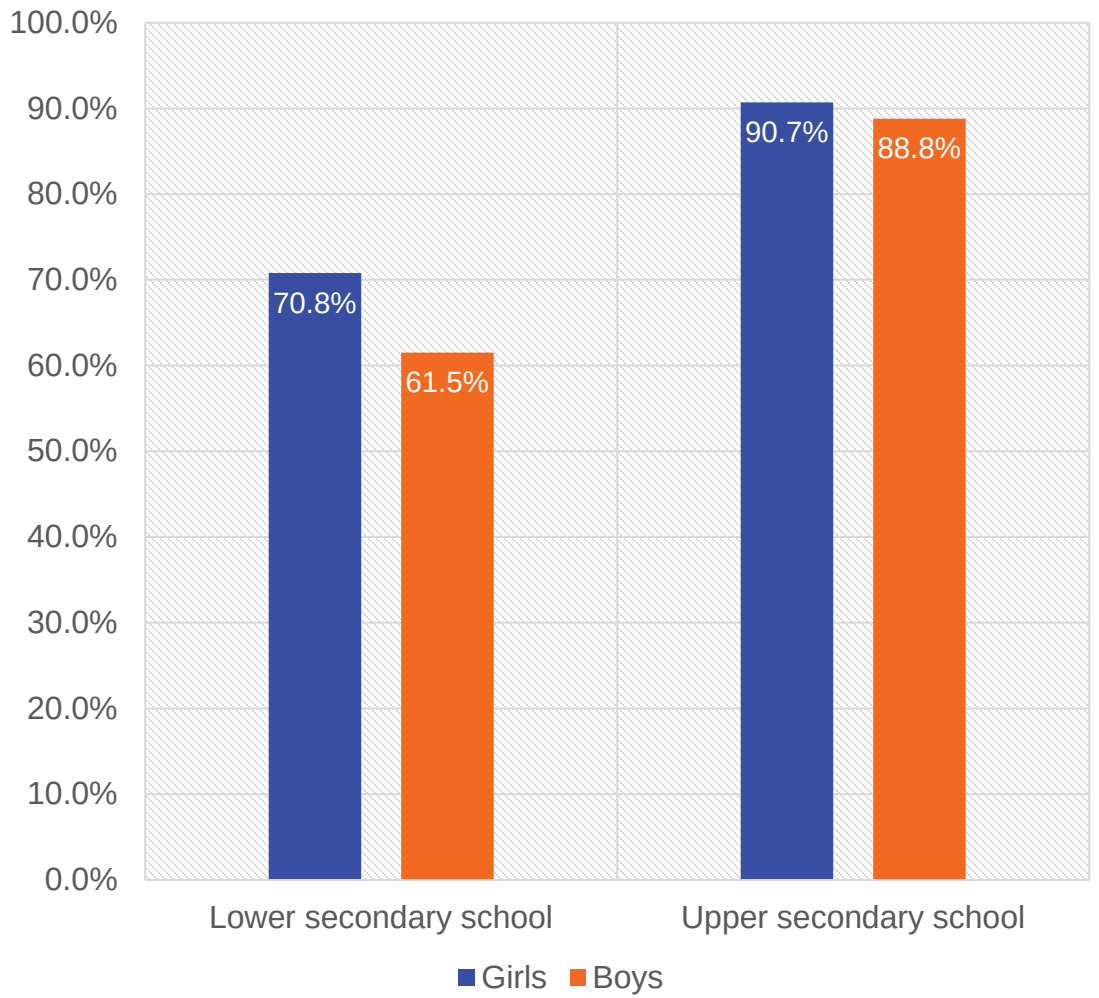
- Mobile phones act as the main gateway to the internet for young people and are primarily being accessed in the home environment (see Figure 1, for an example).
- Girls and boys appear to have similar levels of digital access in instances where factors associated with marginalisation are limited or absent (e.g., poverty, lack of access to education, having a disability).

Figure 1: Access at home, by device type (Indonesia, Malaysia, the Philippines, Thailand)



Source: UNICEF. (2021). *Adolescent Engagement and Skills Acquisition in Digital Spaces: Understanding Opportunities, Empowerment, and Inclusion Online.*

Figure 2: Social media use by education level and gender (Viet Nam)



Source: ChildFund Vietnam. (2021). *Swipe Safe phase II: Gender Analysis Report*. [Unpublished].

Adolescents are often only engaging in a few basic digital activities.

- These are focused around entertainment and communication, and for some also information-seeking (UNICEF, 2021; UNICEF, 2020; ChildFund Vietnam, 2021).
- Activities include making calls, sending and receiving messages, watching and sharing videos, and playing games.
- Social media is key to their online experience and older adolescents tend to engage more online than those younger than them (see Figure 2 for example from Viet Nam).

*"**Young people dream big**, so they want to set up businesses, learn new skills… **but they actually use small**, **particularly girls but even boys**, are mostly watching videos on YouTube, or sharing it with someone to watch, and sending some messages"*

- Girl Effect employee, Key informant interview, December 2022

Adolescents feel digital literacy is important, but often only possess basic digital competences.

- A survey with 8,000 young people aged 10-24 years old across the ASEAN region (61 per cent female), found adolescents across the region view **digital literacy as important to their future, yet often feel they possess only basic digital competence** (UNICEF, 2020).
- Research with adolescents in the Philippines, Indonesia, Malaysia, and Thailand, highlighted how **participants were confident navigating social media and performing basic search functions on Google** (UNICEF, 2021).
- However **they struggled with other platforms, such as Microsoft Office, Zoom, Google Meet and Google Drive**, as these required additional skills that they lacked.
- Additionally**, they struggled to use online tools for work or study-related activities and reported feeling overwhelmed by the amount of information online**, as they didn't know how to navigate or evaluate this information.

"I've found that while many young girls are on social media, not many know how to use the internet or devices in a purposeful way, such as for education or empowerment"

(Southeast Asia University Partnership Programme employee, Timor-Leste, Key informant interview, December 2022)

Lack of progression to more advanced competences seems to be particularly acute among girls.

"At the user level, girls and boys appear to have the same level of proficiency and excel similarly, if they are in the same kind of school setting… But at the tech creation level (I'm speaking also as someone who runs a tech company), I just wish I could have more female programmers, testers etc."

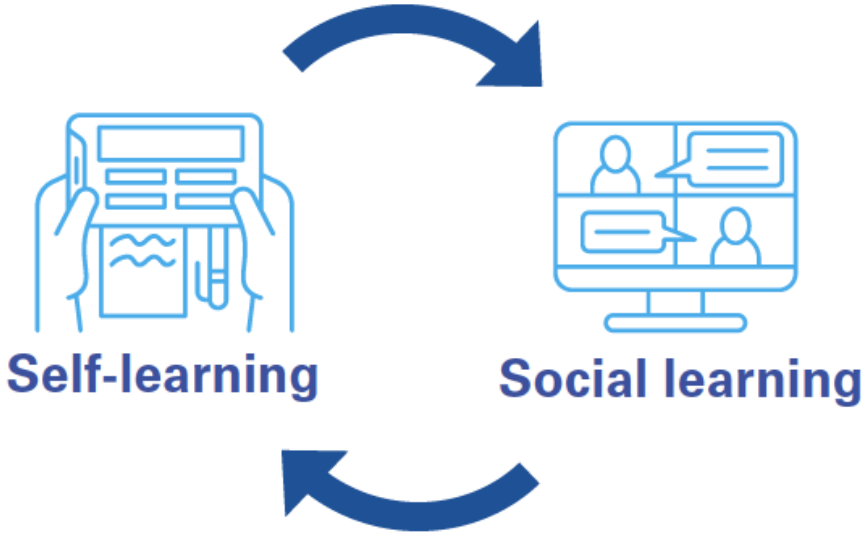
(CFC Vietnam employee, Viet Nam, Key informant interview, December 2022)

- A **gender gap in favour of boys appears to develop as young people progress through education**, and it is evident in relation to more advanced digital competences.
- For example, a study conducted with 15-year-old students in Lao PDR found that **girls had significantly lower scores that boys in more advanced digital domains** of Digital Emotional Intelligence and Digital Creativity and Innovation (SEAMEO CED, 2021).
- Key informants also highlighted these differences, observing **that as young people progress through education, girls tend to feel STEM courses are less relevant to them, and so participate less over time**.

02.
Digital literacy development: Learning modalities, barriers and enablers.

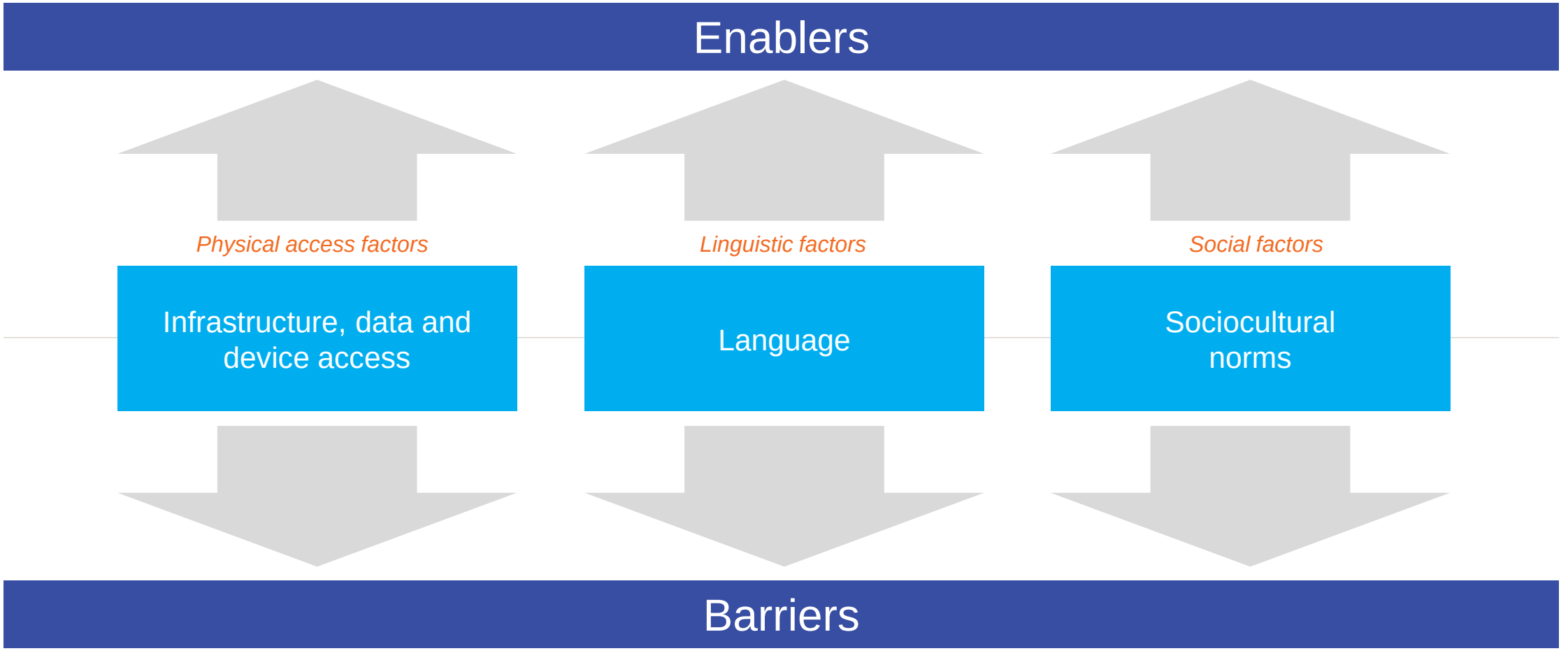
Adolescents tend to develop their digital literacy through self and social learning.

- Self-learning drives interest in technology and supports growth in digital competence.
- Self-learning often involves watching videos online and experimenting through trial and error.
- Research with 15-year-old students found those who reported learning how to use the internet by themselves formed the highest proportion of respondents in the Republic of Korea (at 68.3 per cent), Viet Nam (67.9 per cent) and Fiji (39.8 per cent) (UNESCO, 2019).



- Social learning provides practical support and expands awareness of digital relevance and opportunities.
- A survey with 8,000 young people aged 10-24 years old across the ASEAN region (61 per cent female), found that support from others, particularly friends and siblings, played a key role in helping young people to develop their digital literacy
- Parents tend to play a smaller role in providing this support and teachers even less so.

Various factors can act as enablers or barriers to the learning process.



Physical access is a key enabler when present and a significant barrier when absent.

- Studies show **a positive relationship between adolescents' exposure to digital devices and their digital literacy** (UNESCO, 2019; ICILS, 2013).
- However, **lack of infrastructure, device access and data costs can pose significant barriers,** particularly in low-income households and rural areas.
- For example, in a survey with 8,000 young people aged 10-24 years old across the ASEAN region (61 per cent female**), limited availability of technical resources and infrastructure were perceived as major barriers** to digital literacy development (UNICEF, 2020).
- Similarly, research with adolescents in the Philippines, Indonesia, Malaysia and Thailand showed many participants, especially in low-income households, **did not have adequate access to appropriate devices for learning, or sufficient data**, which limited the quality and time spent online (UNICEF, 2021).

Adolescents in rural areas are impacted by multi-layered physical access barriers.

Infrastructure issues	Lack of infrastructure present a major barrier, as key informants observed that in Lao PDR, Cambodia, Viet Nam and Timor-Leste, electricity supply and internet connectivity continued to be a challenge in rural areas.
Affordability issues	Data and device costs can pose a significant challenge, particularly for rural populations and especially in Lao PDR and Timor-Leste.
Lack of school facilities	Key informants observed that schools in rural areas were often poorly equipped for teaching ICT. In Cambodia, Lao PDR and Timor-Leste, they noted this was a challenge for the public school system more broadly, but particularly in rural areas. In Viet Nam, they observed that public schools in urban areas often had the facilities to teach ICT, however, schools in rural areas were often lacking.

Language issues can present a challenge, particularly for those unfamiliar with English.

72%

Of high school students in a study conducted in Cambodia reported insufficient English language literacy as the top challenge to ICT learning, because most instructional materials were in English (UNDP, 2020).

- **The language used in digital content, and the language of instruction, can act as a barrier** in instances where adolescents are not sufficiently familiar with it.
- **In locations where English is more widely spoken, language barriers tend to play less of a role.** This is because there is a wide selection of English language content available and instructional materials, such as ICT textbooks, written in English.
- **This issue is amplified in countries such as Lao PDR**, where there are a wide range of local dialects, and in remote areas even the national language may not be familiar to some adolescents.

Sociocultural norms can act as a barrier to girls' pursuit of more advanced digital competences.

- Sociocultural norms can reinforce stereotypical gender roles that limit the scope of girls' aspirations and imply 'technology is a male domain'.

Female stereotypes

Women's primary role is within the home. They are better suited to low-skilled, caring job roles (e.g., cook, cleaner) (UNDP & UNICEF, 2021).

Technology stereotypes

Technology is male domain. STEM subjects are inherently more masculine, and thus boys and men are innately better suited to them (UNESCO, 2020).

These perceptions can **negatively impact girls' confidence, interest and motivation** to learn more advanced digital competences, select ICT subjects in school, and pursue future careers in the technology space, due to perceived lack of personal relevance or ability (ICILS, 2013; Mastercard 2017; UNESCO, 2020).

"When girls join us, we do a survey to understand the barriers they are facing, their assumptions - many think boys are naturally better with technology than them, so there are biases around what girls can and can't do"

(Sisters of Code employee, Cambodia, Key informant interview, December 2022)

Concerns about online safety can negatively impact girls access, use and skills development.

- **Girls' access and use, particularly of mobile phones, tends to be monitored and restricted more than boys**, due to safety concerns (UNICEF, 2021; Girl Effect, 2018).
- **Parents' own lack of digital literacy can play a role**, preventing them from being able guide their children's digital use and thus leading them to restrict it instead (Global Kids Online, 2019; Girl Effect, forthcoming).
- **Girls are aware of safety as an issue and can internalise these concerns**, self-limiting their own use (UNICEF, 2021; Girl Effect, forthcoming).
- **Parental restrictions and self-limitation can prevent the development of girls' digital literacy** (Global Kids Online, 2019). Girls who experience restrictions may therefore have weaker online safety knowledge and skills overall, which puts them at greater risk when they do use digital devices.

"Fears around online safety prevent girls from creating their own content, or participating more meaningfully online, compared to boys. Boys don't seem to have as many fears about putting a video out there or showing their face online or being more present"

(Girl Effect employee, Key informant interview, December 2022)

03.
Digital literacy education: Pedagogies, policies and curricula.

As digital learning has risen in prominence, so has the importance of digital literacy.

- **Rapid introduction of digital learning solutions during the COVID-19 pandemic highlighted gaps in students' and teachers' digital literacy.**
  - Particularly in contexts where the focus on ICT in education is nascent, and there is limited access to ICT facilities, such as in Cambodia, Lao PDR and Timor-Leste.
  - In contexts such as Viet Nam, where ICT curricula have been implemented for a number of years and access to ICT facilities within the public school system is more widespread, digital literacy was found to be less of a barrier to engagement with digital learning solutions.

Teachers’ lack of digital literacy can prevent them from teaching the relevant skills to students.

“We really struggle with the digital literacy level of teachers in Laos… with teachers, digital literacy is a challenge, but so is general awareness and media literacy as they are new to the online world (especially if they are above 40 years old), so they don't know the difference between real and fake news”

(UNICEF Lao PDR employee, Lao PDR, Consultation session, November 2022)

- Findings from key informants and survey data indicated that **teachers often lack digital literacy themselve**s, which prevents them from teaching students about digital literacy.
- Only 5 per cent of teachers surveyed in Cambodia rated their digital literacy as "highly capable" and only 12 per cent of teachers surveyed in Timor-Leste felt confident about using digital devices in their lessons.
- While teachers in **Viet Nam** appeared to be more confident using digital technology, key informants noted that teachers **often do not know how to teach online safety**.
- Age appeared to coincide with lower digital literacy, with **younger teachers often being more comfortable with the internet and digital devices**.
- Teachers’ low level of digital literacy can stymie the integration of digital learning solutions.

A theory-based, didactic approach to teaching digital literacy pervades.

- **Pedagogical approaches to digital literacy are reflective of wider education trends** in the region that often use didactic, teacher-centred approaches.
- **Teachers often lack opportunities to learn how to teach digital literacy**.
  - 64 and 63 per cent of teachers surveyed in Cambodia and Timor-Leste, respectively, reported they didn't receive training on digital devices or the internet.
  - Key informants in Viet Nam observed that while teachers' in cities often receive relevant training, it is quite rare in rural areas.
- **Theory-based approaches are often the only option in low-resource settings** as they lack the equipment for a hands-on approach.

Spotlight on Cambodia: Worksheets

ICT is taught primarily through the use of worksheets (i.e. theoretically). The Ministry of Education, Youth and Sport aims for these worksheets to be shared with students ahead of class, either on paper or via digital channels for those with access.

The goal is for students to bring the completed worksheets to class, enabling teachers to identify student challenges and address them in the classroom.

Digital literacy teaching appears to be largely gender-blind.

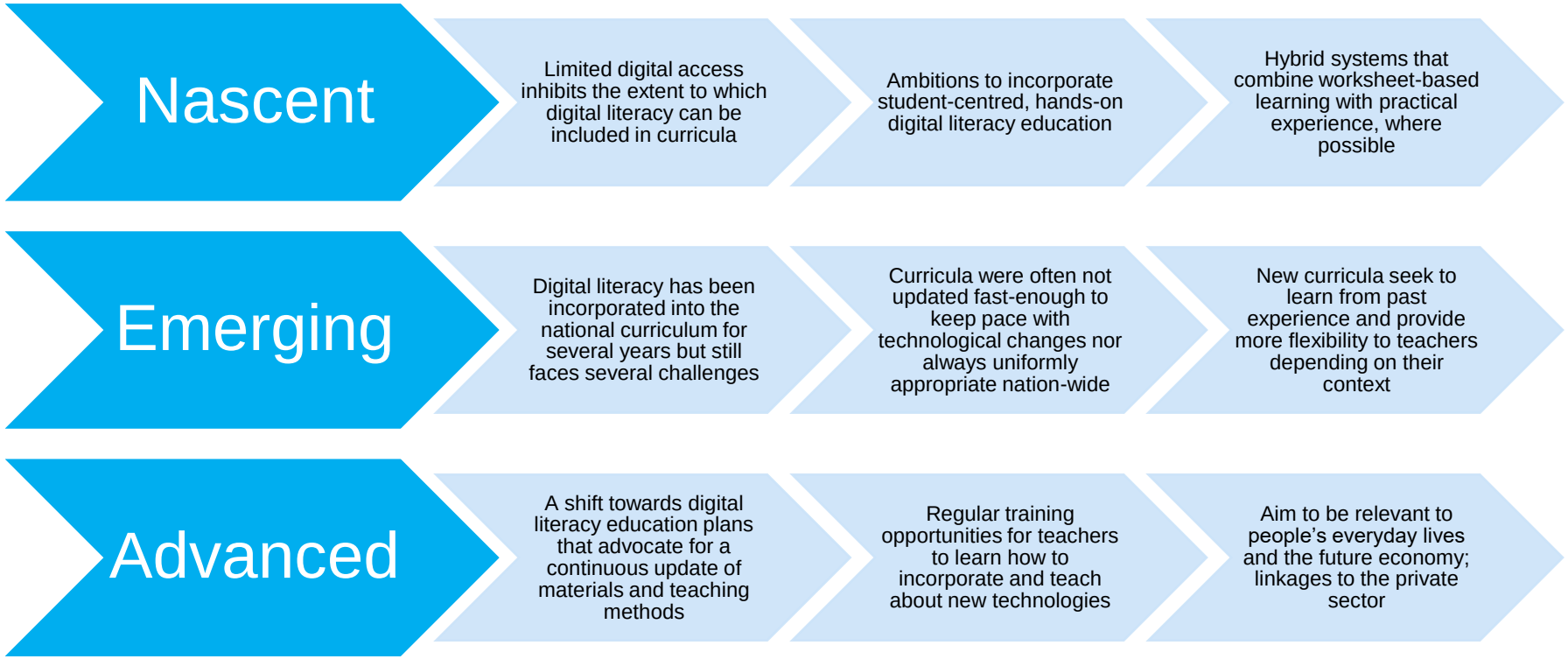
- **Gender is often not taken into consideration when teaching digital literacy.**
- The majority of teachers surveyed **did not perceive any differences in how girls were taught compared to boys, nor saw a need for consideration of differences.**
- Answers to free response questions in the survey indicated mixed attitudes about gender bias in Timor-Leste and Cambodia but stronger **implicit gender bias in Viet Nam**.
- Research indicates that some teachers in Viet Nam do not believe STEM careers are suitable for girls (UNESCO, 2020).
- Key informants in Indonesia also felt **girls were discouraged from pursuing careers in technology**.

Survey Question	Cambodia	Timor-Leste	Viet Nam
Do you see any differences in the ways that girls and boys are taught to use digital devices and the internet at your school? (%, "no")	79%	73%	70%
Do you feel that skills for using digital devices and the internet needs to be taught in a way that considers differences between girls and boys? (%, "no")	84%	57%	72%
How well do you feel girls perform in using digital devices and the internet, compared to boys? (%, girls perform worse than boys)	6%	1%	26%

Countries across the region are engaging in large-scale digital transformation efforts.

- This process includes updating digital policies at national and sectoral levels. Digital literacy education strategies are a key component of these policies.
- In the wake of the COVID-19 pandemic, governments have been galvanised to improve the digital literacy of local populations, through provision of equitable and inclusive education for all. This is illustrated by the adoption in 2022 of the *Declaration on the Digital Transformation of Education Systems in ASEAN.*
- In some countries, such as Indonesia, digital education policy is managed by multiple ministries (SMERU Research Institute, UN ESCAP & University of Oxford, 2022)
- In other countries, such as Cambodia, separate digital education policies and frameworks are being developed within the relevant ministries (UNICEF Cambodia, 2022).

The inclusion of digital literacy in national education frameworks varies based on context.



"For all public education, we want a curriculum that tries to help students in their daily life and that of the next generation. Before no one tried to use ICT in teaching, but now they need to do that. And the ICT that we want to see is not just using computers, but ICT that can be used at the office for administration, for business, for private companies etc."

(Ministry of Education, Youth and Sport employee, Cambodia, Key informant interview, November 2022)

Currently there appear to be few cases of formal gender considerations.

"The biggest challenge is inclusivity. The vast majority don't have access to digital learning, so in fact the majority are excluded. There are levels of disadvantage though and the strategy needs to focus on these key challenges. Inclusion of [non Lao-Thai language groups] is a priority . Also, low-income, people with disabilities, girls - the traditionally disadvantaged"

(UNICEF Lao PDR employee, Lao PDR, Consultation session, November 2022)

- Few explicit mentions of gender considerations in digital literacy education policies, strategies, frameworks or curricula in the focus countries.
- This may be partly because several of these countries are still in the **early stages of formulating their approach to digital literacy education**.
- **Strong ambitions to be more inclusive of all disadvantaged groups**, including girls, people with disabilities, ethnic minorities and rural residents.

Conclusion & recommendations.

Summarizes key findings from the study and highlights recommended actions.

Key take aways.

Mobile phones provide the **main source of digital access** for girls and boys, and they are accessing these devices primarily in the home environment.

Adolescents across the region are online in huge numbers, but they are often **engaging in only a few basic digital activities**.

Additional support is needed to ensure adolescents, particularly girls, are able to develop more **advanced digital competences** and can apply these in labor-market settings.

Girls and boys **primarily develop digital literacy** through a combination of **self-learning and social learning**.

Key barriers include physical access, language and sociocultural norms.

Sociocultural norms can present a barrier specifically to girls.

Governments across the region are engaging in large-scale digital transformation efforts.

Digital literacy teaching appears to be largely gender-blind

Recommendations.

Build an evidence base to address data gaps around girls' digital literacy.

- Digital literacy gender gaps among children and adolescents.
- The impact of interventions designed to bridge digital gender gaps.
- The impact of tablets in the classroom.
- The nature of cognitive bias among teachers in the classroom.
- The extent that gender is considered in national ICT curricula.

Increase access to affordable internet and digital devices, particularly in rural areas.

Develop instructional materials and digital content in local languages.

Address sociocultural norms that limit girls' STEM aspirations and learning opportunities.

- Policies that promote teacher training.
- Policies that promote girls' participation in digital literacy education.
- Public and private sector collaboration.
- Parent and community outreach programmes.
- Parent and community training on how to guide rather than restrict girls' digital activity.
- Extracurricular and non-formal digital literacy education opportunities.
- Media campaigns that address gender stereotypes in technology and concerns around online safety.

Thank you.

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