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Cambodian Youth Perspectives

Edited by

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Chapter 9 | Promoting Global Education Equity: Bottlenecks and Policy Options

KHOUN Theara¹

Future Scenario

Today, on a morning of 2031, Khoeun, an ethnic Kuoy, is attending mathematics class at his high school in a remote district of Ratanakiri, a northeastern province of Cambodia. But unlike traditional classrooms where teachers deliver the lesson as a lecture, his teacher asks him and his classmates to turn on their digital learning devices, and then sign into KhmerEdx, the Ministry of Education’s flagship digital learning platform, using facial recognition technology to resume their routine classes. Some students watch the learning videos, some do more advanced readings using links to external resources on the platform, and some others practice with exercises and track their learning progress in the dashboard. The teacher walks around to see if any students are having difficulty in grasping key concepts so that she can provide individualized support. Khoeun is not very skilled at this subject so his teacher spends more time with him to make sure he can catch up with his peers. Although his classmate Neary has been unwell and could not attend class in person for the last few days, she has kept up with her classmates, thanks to the distance learning infrastructure. His teacher spends the last 15 minutes of the class wrapping up key concepts from that day’s lesson. This is called ‘blended learning’, a combination of the physical classroom and digital learning modules, which has been applied across public schools in Cambodia and most parts of the world in recent years.

Despite being raised in a low-income family, Khoeun can still access these digital learning resources including a tablet, after he applied for a grant through the Digital Equity Fund—a funding pool created by the Ministry of Education three years ago. This fund was designed to support the vision that no student is left behind in the digital age and access to learning resources is ensured for all students regardless of their socio-economic status. Approximately 10 percent of Cambodian students nationwide, mostly from families with IDpoor cards², currently receive this grant. Most of Khoeun’s classmates can afford their learning resources and bring in their own devices during classes.

As one-third of the classes are now offered in English, Khoeun is quite competent in English on top of his mother tongue Kuoy and Khmer language, and therefore can access a wide range of free online courses and electronic books from his 5G-enabled tablet during his free time. The

¹ The opinions expressed in this article are the author’s own and do not reflect the view of his employer, the United Nations Development Programmes.

² IDPpoor card is the official poverty targeting mechanism managed by the Ministry of Planning and is given to poor households based on a proxy means testing questionnaire to access free healthcare and other social assistance benefits.

next day, in his social science class, his teacher arranges a village field observation and asks students to observe a problem facing their local community. The students are asked to collaboratively develop a feasible solution to solve that real-world problem. This collaborative project is the main assessment for his social science class. Through informal chats with older people and field observation, Khoeun and his teammates identify the low uptake of basic digital literacy skills among older citizens of ethnic minority groups as the group project. Thereafter, they come up with four main solutions. Upon consultation with their teacher, they decide to pitch and pilot one of them—an intensive digital literacy training program for older community members, using a training manual available on the internet. Following the one-month training, they administer a quick survey, which shows that the training has improved the aging citizens' digital literacy by at least 50 percent. Toward the end of the semester, they present their project and key results to their classmates, submit their reflective essay, and upload relevant materials to the ministry's KhmerEdx platform for final assessment. The materials are also shared widely on several open-sourced websites. The project concept has quickly gone viral on the internet and students as far away as India and Tanzania ask Khoeun's team to present the idea. Inspired by this success, they then run a global campaign asking youth in other parts of the world to join them to promote digital literacy among older people from disadvantaged backgrounds.

Introduction

In recent decades, global school drop-out rates have been declining remarkably (World Bank, 2021a). Yet evidence suggests education systems across the globe have continued to face some limitations regarding the provision of quality education for all (Suresh & Kumaravelu, 2017). The disparities in terms of access to education between the haves and the have-nots, the urban and rural population, the mainstream and marginalized groups seem to be getting wider. Furthermore, access to education does not always guarantee real learning due to the different quality of education provision, and availability of learning resources and support systems, among others. This is detrimental not only to individuals losing their opportunity to move up the ladder in terms of social mobility but also to broader society in terms of state burden, social cohesion, and socio-economic development.

Current policy responses in Cambodia and worldwide which aim to promote an equitable educational environment include incentives for individual access to education with financial and non-financial measures, curriculum and pedagogical recalibration, and institutionalization of special service supports (e.g. special education program for visually-impaired students). Nonetheless, education inequality between and within countries seems to persist, disproportionately impacting low income countries and particularly girls, children with disabilities and minority ethnic groups. While educational funding is generally limited globally and at the country level, this paper introduces four practical ideas that states may consider to promote equitable access to education. They are as follows:

- (1) More equitable access to digital education resources** will enable students from low-income families or disadvantaged backgrounds to obtain a quality education. Targeted measures may involve state cross-subsidy and public-private partnerships to ensure equitable access to digital education infrastructure such as high-speed internet access, learning tablets, and online learning materials.
- (2) Blended learning pedagogy** will enable students to individualize their learning experience and allow teachers to create a more efficient, vibrant support system for individual students.
- (3) Improved English proficiency** will be the gateway to the world of knowledge and lifelong learning regardless of students' socio-economic status.
- (4) Practical project-based learning** will provide students the necessary soft and hard skills to engage productively in the labor market in the rapidly changing world.

It is envisioned that the four practical solutions will have the potential to reduce global learning inequality and promote a quality education system for all.

Context Analysis

While the term 'education equity' can be understood differently, in this context, it refers to the policy that "values each individual for who they are and provide the structures, environment, and resources each student needs to reach their greatest potential" (DueEast, 2021). Two main approaches to addressing education equity are present in the literature – one focusing on promoting the "equality of opportunity" and the other one on "equality of outcome" (Levin, 2003). The former posits that access to education is critical. The responsibility of the state, therefore, is to provide equitable opportunities to participate. The latter approach focuses on provision for specific and marginalized groups such as women, ethnic minorities, people with disabilities, migrants, and people from lower socio-economic backgrounds. Public policies under this school of thought include encouraging individual participation through financial and non-financial incentives and changing institutional delivery systems, i.e. new programs, new education pedagogy, counseling, and special need services. The second approach—equality of outcome—concerns more with the equity in the education results, such as graduation and access to employment. From this perspective, providing the same opportunity is not sufficient due to distinct needs and broader socio-economic structures that affect employment opportunities. Policies associated with this school of thought usually aim at addressing broader social phenomena such as income support and legal measures to combat discrimination (Levin, 2003).

Growing evidence suggests that addressing the inequity in access to education between and within countries is essential. Insofar as learning opportunities are not distributed fairly, many talents will be wasted and underutilized (Levin, 2003). This will not only be a cost to individuals but also to the entire society. At the micro-level, better access and a higher level of educational attainment are associated with almost every positive life outcome – improved employment and

earnings, health, longevity, successful parenting, and civic engagement – which are prerequisites for achieving intergenerational social mobility (Dearden et al., 2000). Similarly, at the macro level, societies with a significant number of people without adequate skills will see higher social costs for security, health, income support, and child benefit, and so on, which could undermine human capital and economic development (Levin, 2003). Greater inequality is also correlated with a lower level of social cohesion and trust (Dayton-Johnson, 2001).

In terms of state capacity and will, a key factor that affects education equity is the availability of funding in the education sector. Investment in education as a percentage of GDP for both developing and developed countries has seen a modest increase over the last decades—from 4.1 percent in 1999 to 4.5 percent in 2020 as a global average (World Bank, 2021b). Underinvestment in education will result in larger class sizes, poor-quality teachers, lack of support materials and school infrastructure which could drastically affect student participation and performance. What constitutes critical inputs and the very root causes of educational inequality is not a linear exercise which usually requires rigorous investigation. Many public policies as discussed above have been introduced to reduce the gap of education inequity among the better-off and poor students, rural and urban students, and general and vulnerable groups of students, but inequality does not seem to have been reduced and has even increased in some instances (ADB, 2019). Therefore, alternative approaches may be worth exploring that can be tailored to fit with resource constraints of national governments.

This paper identifies four main bottlenecks that underpin inequity in education. The first is the lack of access to technology which prevents inclusive digital education. Covid-19 has shone a spotlight on the importance of access to digital learning resources to enable distance learning. However, in many parts of the world, this is still an on-going issue. For instance, in Cambodia, although about 90 percent of households owned at least one cell phone, household internet access stood at only 42.6 percent in 2019 (NIS, 2021; ITU, 2020). According to an unpublished study by the Ministry of Education in September 2020, over 80% of students reported having no television at home, no smartphone or tablet, and insufficient internet bandwidth (MoEYS, 2020, p. 34). This was compounded by the fact that nearly three-quarters of students and almost as many teachers had low digital literacy.³ A majority of students cited the high cost of internet connectivity as a key constraint. According to UNDP (2020), the gap in digital learning infrastructure is a key explanatory factor for the different impact of Covid-19 on access to education around the world. For example, the Global Human Development Index (HDI) was expected to decline significantly in 2020, erasing all the progress in human development of the past six years, primarily due to the loss of access to education as a result of the pandemic (UNDP, 2020).

The second bottleneck is the persistence of a traditional teacher-centered pedagogy coupled with limited adoption of education technology. The Covid-19 pandemic reignited the question of equitable access to education, crystallized by unprecedented disruptions to education systems

³ Digital literacy refers to an individual's ability to find, evaluate, and clearly communicate information through typing and other media on various digital platforms. (Source: <https://literacy.ala.org/digital-literacy/>)

around the world (Beresford & Khoun, 2021). In many countries, schools closed throughout much of 2020 as part of the COVID response. Millions of children in the least developed countries were left with little or no educational alternative (UNDP, 2020). During the school closures, we have seen that most schools especially in developing countries were largely unprepared, as classroom-based education was still a mainstream teaching pedagogy (Demetriadi, 2020).

The third bottleneck is the lack of proficiency in global languages especially English which prevents individualized, lifelong learning. Extensive quality learning resources are now available online that can enable students from low income families the opportunity to excel and broaden their knowledge horizon. However, most of these resources are only available in English or other globally prominent languages. Embracing bilingualism such as has been the case in Singapore can be a solution to this issue. Singapore provides a successful model of dual-language education. English is the medium of instruction for most subjects, with students also learning their mother tongue of Malay, Chinese, or Tamil from an early age (TransferWise, 2017). High proficiency in English provides Singaporean students with a competitive advantage in learning as a result of increased exposure to a range of knowledge. In 2019, students in Singapore attained the highest scores in the Program for International Student Assessment (PISA) across all subjects tested, including reading, math, and science (Factmaps, 2019).

Last but not least, the fourth bottleneck relates to the lack of consistency in terms of the quality of education within and between countries. Over the last decades, significant progress has been made concerning education equity around the world with the near universalization of primary schooling as one of the greatest achievements (UNICEF, 2017). In the 1950s, about 50 percent of primary school age children were out of school while the figure stood only at 9 percent in recent years (UNICEF, 2017, p. 4). Despite progresses made, worldwide there are still 264 million primary and secondary age children who are out of school (UNESCO, 2017). Even for those that attend school, learning outcomes are often not satisfactory. Many students cannot read a simple sentence or perform a basic mathematical calculation even after some years of schooling (ADB, 2019). Going to school without learning such fundamental skills as literacy, numeracy, critical thinking, problem-solving and digital skills is a tragedy in the age of globalization and automation (UNICEF, 2020). Furthermore, the gap in learning outcomes of students between the most developed and least developed countries and even within countries such as between rural and urban areas, between the haves and the have-nots, and between boys and girls has not decreased, and in some cases has increased (ADB, 2019). To highlight the global learning crisis, the World Bank has introduced the term "learning poverty" to denote the inability to read and understand a simple text by age 10 (World Bank, 2021c). In a recent survey of 605 employers in Cambodia across industries, one-third of interviewees reported having encountered a skills gap, including a lack of foreign-language skills, technical skills, and communication skills, as well as collaboration and problem-solving skills (NEA, 2018). Addressing the challenges would be instrumental in promoting the educational equity.

Policy Recommendations

Covid-19 has turned a spotlight on several weaknesses of in the global education system that pre-date the pandemic as well as opportunities to instigate reforms. As such, a number of underutilized avenues could be capitalized on to systematically resolve some—if not all—of the bottlenecks that hinder efforts to promote global and national education equity. The following four policy options offer possible ways forward.

Digitalize the notion of inclusive education

The current education disruption caused by Covid-19 has amplified educational inequalities across regions and socio-economic classes. For example, within countries, even in urban settings, the digital gap between the rich and poor is observable—not every student can afford a smartphone, a tablet or a computer device, or even an internet connection which are needed to access distance learning (Beresford & Khoun, 2021). The ability to afford these resources has been made worse by the current economic recession (UNDP, 2020). As illustrated in Figure 1, while less developed countries are catching up with the developed world in mobile phone ownership, a gap is still exists for internet and computer access (UNDP, 2020).

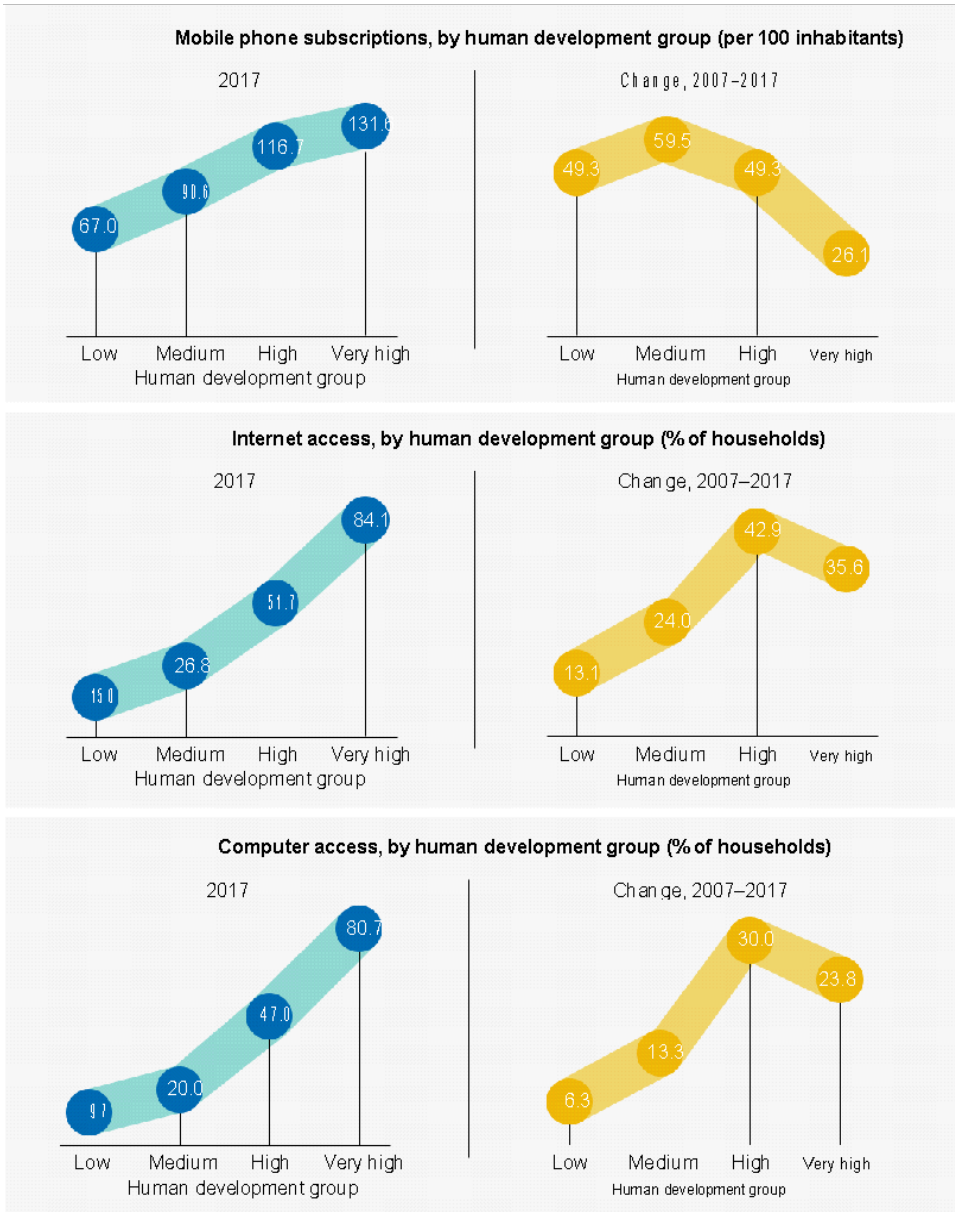


Figure 1: Inequalities in access to technology across human development groups are wide and growing

Source: UNDP, 2020

UNDP (2020) has called the widening global gap in access to education imposed by the pandemic a validation of unresolved tensions between people and technology, and between the haves and the have-nots, which are shaping a “new generation of inequalities”—pertaining to enhanced capabilities in the 21st century (p.3). In light of this challenge, inclusive digital education can

create equitable learning opportunities that include marginalized and vulnerable children, such as those living with disabilities and those from ethnic minority groups. In practical terms, connectivity and accessibility to the internet and digital devices will need to be a defining factor of inclusive education. It was estimated that US\$100 billion would be required to close the gap in internet access in low and middle-income countries (UNDP, 2020, p.22).

To close the digital learning gap, it is recommended that states continue the roll-out of high-speed internet connectivity and improve accessibility and equity, especially in areas where internet connections are low or unavailable. States may also introduce pro-poor public financing policies and mechanisms (including clear action plans and roadmaps) to incentivize state and non-state actors to invest in the infrastructure needed for online education, such as quality digital learning platforms and to make digital tools such as tablets, smartphones, and computers more accessible and affordable. One possibility would be for the government to match funds from the private sector for these purposes. In India, for example, the government has collaborated with a private company in the form of public-private partnership (PPP) in designing and equipping low-cost educational devices across 17,000 public schools in the country (ADB, 2015). Extra resources may also need to be channeled into a digital learning subsidy or voucher program through schools to make access to digital learning resources more equitable for poor and vulnerable students. These targeted measures should be made in consultation with relevant stakeholders including teachers, parents, students, and education administrators. Providing equitable access to all students irrespective of socio-economic status and proximity to urban settings will provide an equal playing field for them to thrive, and thus have the potential to move up the intergenerational ladder of social mobility.

Capitalizing on ‘blended learning’

Recent school closures forced educators, from kindergarten to the tertiary level, to fast-track distance learning with little to no lead in time. This real-world experiment offers us two lessons. First, the pandemic has exposed the vulnerability of traditional, classroom-based learning that was already losing its relevance in many parts of the world, as its focus on memorization and standardization was incompatible with the modern world (Krishnan, 2020). Second, ‘pure’ distance learning is not yet an effective remedy, at least in many low and middle income countries.

‘Blended learning’ is a mode of education that integrates online educational materials with traditional place-based classroom methods. With the right technology and an integrated online learning platform, this new hybrid model has proved to be more effective than using a single approach as it enables students to learn faster and allows personalization of the learning experience (Shand & Glassett, 2018). Why can it be a solution to promote global education equity? That is because teachers can now streamline their instruction to help all students to reach their full potential. In other words, through individualized learning, struggling students can learn at their

own pace, making sure they comprehend the concepts before moving on and teachers can also use the additional class time better to assist students in need.

In the aftermath of Covid-19, blended learning has been taken up by many educational institutions worldwide (including Cambodia). This trend is expected to continue as online learning resources become more accessible, learning devices become more affordable, and digital literacy among students and teachers improves in the medium term to long term. In Cambodia, the Ministry of Education has recently established a digital learning center and learning application to push for stronger integration of digital resources into the curriculum (Som, 2020). In the short term, with feedback mechanisms that allow teachers to review and assess students' coursework at a distance, high-quality video tutorials can supplement the classroom-based pedagogy for students to improve their learning outcomes.

In the medium to long term, governments, especially in developing countries, may consider investing in developing a sophisticated learning platform that is more engaging and interactive. For example, through an online dashboard, students can watch video lessons, submit assignments, do quizzes, access relevant reading materials, and review their performance. This way, students can learn at their own pace, anytime, anywhere, and through any device and track their own progress. Together with measures to tackle the digital divide such as improving internet connectivity in rural areas, a full-fledged 'blended learning' environment can materialize. Imagine an ideal situation where a teacher, after explaining the key concepts of a math lesson, asks her students to turn on their personal learning devices to navigate through the lessons in greater depth in a designated application and then take online quizzes to assess their learning outcomes. The teacher may then coordinate in person or remotely.

Increasing English competency

Although the Khmer language is still a living language, Khmer and other languages with limited geographic reach do not have significant international impact compared with English or Chinese. A lot of online and offline learning resources are available only in these widely spoken languages, especially English. Bilingual education, where students receive instruction both in the local language and in English, is a solution to address the global educational disparities related to language for two main reasons.

First, mastering a high level of English proficiency will give students access to a vast body of knowledge. As stated earlier, there are a huge amount of learning materials, including electronic books, apps, multimedia content, and digital education platforms, available online across disciplinary subjects, but they are largely in English (Dao, 2018). As of 2020, nearly a quarter of the world's population, or 1.13 billion people, were fluent or competent in English, followed by Chinese with 1.12 billion, and the trend is growing (Gosh, 2020). The global trend of shifting towards English-based digital education means competency will become even more vital in the future as there is little incentive to translate all these resources into local languages when countries have a small population. If students are only competent in their local languages, they will be deprived of the opportunity to immerse themselves fully in the world of knowledge. With

the amount of quality material and content produced in local languages limited, without proficiency in English, the ability to do individualized online learning will be diminished. Second, proficiency in English will prepare students for the future of work, with seamless integration into the global production network, where English will likely remain the *lingua franca* for professional communication, thus opening up greater business opportunities.

A wide array of recent initiatives can make English-language education more affordable and accessible, such as integrating language learning into the compulsory school curriculum and partnering with the private sector. In Cambodia, for example, a local ed-tech startup Edemy has designed English learning software for primary and high school students in rural areas, using a low-cost mini-computer called Raspberry Pi to store the curriculum, and a wireless router to transmit information to tablets without having to connect to the internet. Once connected, students can watch video lessons, practice through exercises and review instant results. Students can engage and practice with their English teachers to reinforce learning and interact with their classmates. According to Edemy's pilot with 200 students, this innovative approach helped students improve their test scores by at least 10 percent after attending classes for three months. Furthermore, the tuition is more affordable than other English language education options (Vinh, 2017). Other disruptive, low-cost English education methods can also be explored and institutionalized into the public school curriculum to reduce the learning gap among students.

Shifting towards practical, low-cost project-based learning

"I hear and I forget. I see and I remember. I do and I understand." Confucius (551-479 BC)

This classic quote has rarely been more relevant than in the post-Covid-19 setting. Why? That is because the high level of disruption and uncertainty caused by the pandemic is calling for a breakthrough in our approach to education (Helena, 2020). Rather than learning by pure retention of facts and memory-based exams, learning by doing through project-based learning is vital. Some may argue project-based learning is expensive and difficult to implement especially in resource-constrained contexts. This is not necessarily the case. Project-based learning can be tailored to local context, needs, and resources, offering a low-cost, practical solution to improve inequalities in the quality of education and addressing gaps in hard and soft skills for learners. Students in a primary school in Svay Rieng, for example, have been undertaking some project-based learning activities in their agriculture class by growing vegetables and raising fish on the school premises instead of just memorizing planting techniques from textbook (Phat & Sao, 2021). With technical assistance from UNDP Cambodia, the pilot is part of the complementary teachers' manual for climate change and environmental education which is designed to improve life skills for primary school students.

In a social science class, a teacher may arrange a visit to a village for fieldwork and ask students to observe a major problem facing the community and then collaboratively develop a feasible solution to solve that real-world problem. Similarly, in a math class, a teacher may ask students to use the exponential function they have just learned with a real dataset to predict housing prices in their province over the next ten years. Through these hands-on experiences, students will be

equipped with fundamental soft and hard skills such as critical thinking, problem-solving and leadership skills which are critically important in the Age of Fourth Industrial Revolution (WEF, 2016).

Creative, project-based learning tools to evaluate student performance can include audio and video recordings, portfolios, podcasts, blogs, experiments, games, role-playing, simulations, and tutorials. Project-based learning will broaden the perspective of the curriculum, allowing students to connect the dots, for example, as to how mathematics is related to the market economy and other disciplines. This will in turn make education more interesting, engaging, and relevant to the real world (Khoun, 2020). These practical tools can equip students with the fundamental skills for the future of work, including language competency, critical thinking, the ability to collaborate, self-awareness, creativity, and other soft and hard skills which are highly sought after by employers.

In addition to institutionalizing project-based learning as part of the public and private curriculums, students and teachers can also collaborate informally across the globe. Presently, numerous global platforms enable students and teachers to connect and co-design distance projects. These platforms include, for example, Empatico, a free online tool enabling students aged 7-11 to connect to classrooms around the world using video conference technology; and Global Nomads Group, a platform equipped with videoconferencing, virtual reality, and other interactive technology tools making possible for people across cultures and regions to examine world issues and collaborate to solving them.

Conclusion

From the discussion above, a wide range of policy measures have been put in place to narrow the gap of global and national educational inequities, including financial and non-financial incentives, support system strengthening, and non-discriminatory labor participation policy, among others. However, disparities in access to quality education seem to persist or even widen, exacerbated by the recent Covid-19-induced school closures. Through systematic analysis of the root causes of this inequity and the available options, this paper has identified four solutions through which access to quality education can be made more equitable for all. This includes, improving access to digital learning resources, promoting blended learning, embracing project-based learning, and improving students' English competency. Most of these recommendations are not purely novel; in fact, they have been introduced and discussed widely in the literature. However, the discussion as to how these concepts are interlinked and, thus, when put together have the potential to systematically addressing the root causes of global education inequity is not yet clear. Meanwhile, some policy recommendations especially the importance of foreign language acquisition fail to obtain sufficient policy attention despite its potential to narrow the gap between the haves and the have-nots in accessing quality education and lifelong learning. Likewise, while project-based learning is assumed to be expensive and thus not applicable for low-resource settings such as Cambodia, this article argues that it can always be made affordable and context-specific to promote equitable access to quality education. These policy recommendations will have the potential to not only minimize the learning gap among students but also to make the education system more efficient and of high quality in the medium to long term.

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