



INNOVATIONS AND CHALLENGES IN CAMBODIAN EDUCATION

YOUTH'S PERSPECTIVES

Edited by

Kimkong Heng

Koemhong Sol

Sopheap Kaing

Sereyrath Em

CAMBODIAN
EDUCATION
FORUM

A forum for education

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Cambodian Education Forum

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September 17, 2023

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Notes on Cambodian Education Forum

The Cambodian Education Forum (CEF) was co-founded in July 2020 by three emerging Cambodian scholars (Dr. Kimkong Heng, Dr. Sopheap Kaing, and Mr. Vutha Ros) who aspire to promote research and publication in the field of education in Cambodia. This small team was later joined by Mr. Koemhong Sol, also an emerging Cambodian scholar. The common vision is to provide a platform for Cambodian researchers, educators, teachers, students, and youth, especially novice and emerging Cambodian researchers, to express their views and share their perspectives, understandings, and research findings on topics relevant to education in Cambodia and beyond.

CEF strongly believes that Cambodian students, teachers, academics, and researchers have a wealth of knowledge and perspectives to share in shaping understandings, beliefs, and attitudes regarding education-related issues confronting Cambodia and other countries in the region and the world. Although the focus is on education in Cambodia, CEF welcomes and considers unsolicited research articles on educational issues of interest to readers in the Asian region and beyond.

CEF has the following aims:

- Provide a publication platform for Cambodian researchers, educators, and students
- Share knowledge, research findings, and informed opinions about various issues concerning the education system in Cambodia and beyond
- Support Cambodian novice writers and researchers to write and publish their work through mentoring support and quality peer review and editorial processes
- Publish essays, review articles, and original research articles about educational issues in Cambodia and beyond
- Offer insights from researchers and/or education experts through seminars, discussion, and publication
- Share education or research-related resources with students, teachers, academics, and researchers
- Promote Cambodia's image in the regional and international arena

CEF is still under development, but the vision behind this initiative is ambitious and inclusive. We seek to promote research and publication in Cambodia, particularly research conducted by Cambodians.

We are currently seeking funding, sponsors, donors, and volunteers to maintain and sustain this platform to offer common benefits to diverse users such as students, teachers, academics, and researchers. We start as a small team, aim high, and aspire to make a positive impact on the education sector and the research and publication culture in Cambodia. We believe each Cambodian has a vital role to play in shaping and improving Cambodian society and raising Cambodia's image on the global stage.

We start small, aim big, and aspire to create a real positive impact.

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Cambodia's Education System: New Developments and Persistent Challenges

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Summary

This introductory chapter provides a brief overview of the recent developments and persistent challenges that have affected the Cambodian education system. The chapter highlights key developments that have recently been discussed in the literature on Cambodia's general and higher education. It also briefly discusses the key challenges facing both sub-sectors. The chapter concludes by describing the organization of this book, introducing each of the 14 chapters included in it.

Introduction

Cambodia's education system has undergone a remarkable transformation thanks to considerable efforts by the Cambodian government and concerned stakeholders. In general education, there has been improvement across the sub-sector. For example, there have been efforts to improve the quality of teachers and school principals as well as educational infrastructure. The Royal Government of Cambodia (RGC), through the Ministry of Education, Youth and Sport (MoEYS), has introduced several projects (e.g., Secondary Education Improvement Project and General Education Improvement Project) to improve the general education sub-sector (see Heng & Sol, 2022; Tao & Kao, 2023). In 2014, a major reform to the Grade 12 national examination was introduced to combat corruption and cheating during exams (Bredenberg, 2022). In 2016, another reform to general education was undertaken; that is, the introduction of a school improvement initiative known as the New Generation Schools. This important initiative aims to create a new model of public schools in Cambodia to improve the quality of general education (Bredenberg, 2022).

For higher education, there are also noticeable developments, particularly in terms of institutional expansion and access. Although the quality of higher education remains a concern, new developments have been observed (see Heng, 2023; Sok & Bunry, 2023). For instance, there have been improvements in terms of access to higher education, student assessment, and curriculum management (Sok & Bunry, 2023). There have also been new projects and initiatives introduced to improve the sub-sector, as well as the establishment of new research conferences and academic journals to promote research in Cambodian higher education (Heng, 2023).

Despite the recent developments, reforms to the education system, particularly higher education, have been called for (Heng, 2021; Heng & Sol, 2023a). For example, Heng (2021) raised the issue of limited research engagement among Cambodian academics as well as limited research output by Cambodian universities. To address these concerns, he proposed a reform to Cambodian higher education by focusing on three key aspects: "research policies, institutional support for research, and university orientation" (p. 70). Likewise, Heng and Sol (2023a) also put forward some ideas for higher education reform, emphasizing various areas, including infrastructure, curriculum, remuneration

systems, continuous professional development (CPD), research, and quality assurance.

A review of the literature on Cambodian education shows that there is a growing amount of research discussing the challenges to the development of the education system in Cambodia. Recent book-length works, such as those of Khieng et al. (2015), Kitamura et al. (2016), Eam et al. (2022), Heng et al. (2022b), McNamara and Hayden (2022), and Symaco and Hayden (2024), have provided invaluable insights into the current state of development as well as the challenges facing Cambodian education. The present book aims to contribute to the existing literature on Cambodian education from the perspectives of Cambodian youth who are university students or recent university graduates.

In this introductory chapter, the aim is to discuss new developments and persistent challenges in the Cambodian education system. The discussion will be limited to major developments and challenges that have been discussed in recent literature. Thus, this chapter, drawing on secondary sources, contributes to the existing and growing body of work on Cambodia's education system. It begins with a brief historical account of Cambodia's education system. It then discusses the developments and remaining challenges facing the system, particularly general and higher education. The chapter concludes with an overview of all 14 chapters included in this edited volume.

Cambodia's education system: A brief historical account

According to McNamara and Hayden (2022), Cambodia has a tragic past. After a brief period of socioeconomic development following its independence from France in 1953, Cambodia plunged into political instability in the early 1970s, after which the country experienced one of the world's worst tragedies in the 20th century, the Khmer Rouge. After the collapse of the Khmer Rouge regime (1975-1979) that killed one-quarter of the Cambodian population, Cambodia had to start from scratch to rebuild itself, including its education system (McNamara & Hayden, 2022). During the genocide of the Khmer Rouge, Cambodia's education system was completely dismantled. Educational infrastructure was destroyed or used for non-educational purposes, while teachers and other educated Cambodians were targeted for execution (Ayres, 2000). It was estimated that 75% of the teaching force died during the Khmer

Rouge regime (Clayton, 1998). It was only in the early 1990s that Cambodia started to witness significant social and national development. This change came largely due to the intervention of the United Nations, which organized Cambodia's first national elections in 1993 in its efforts to bring peace and nation-building to Cambodia after the prolonged civil war in the preceding decades (McNamara & Hayden, 2022).

Throughout the 2000s and 2010s, there have been a lot of improvements, particularly in quantitative aspects, in Cambodia's education system. One of the significant achievements is the surge in student enrollment. As McNamara and Hayden (2022) noted, enrollment in primary education rose to 92.4% in 2018, although enrollment in lower and upper secondary schools in the same year remained relatively low, at 61.1% and 31.2%, respectively. Gross enrollment in higher education has also increased over the decades but remained low (less than 15%) throughout the 2010s, which is significantly lower than that of its counterparts in the Association of Southeast Asian Nations (Lim et al., 2023).

According to MoEYS (2023), over the past decade (2013-2022), there has been significant progress in terms of educational infrastructure development, student enrollment, and education access. For instance, the number of kindergarten and general education schools has increased from 14,852 in the 2013-2014 academic year to 18,830 in the 2022-2023 academic year. The number of HEIs has also increased from 110 in the 2013-2014 academic year to 132 in the 2021-2022 academic year. Likewise, the number of education staff has increased from 112,704 in 2013 to 125,597 in 2022.

Cambodia's education system: Current structure

Cambodia's current education system is divided into four major streams: (a) pre-primary education or early childhood education, (b) general education, (c) technical and vocational education and training (TVET), and (d) higher education (Tao & Kao, 2023). Pre-primary education caters to children aged three to five and is provided at three distinct types of preschools: public, private, and community-based (Om, 2022). Following that, general education follows the 6+3+3 structure, comprising six years of primary education (Grades 1-6), three years of lower secondary education (Grades 7-9), and another three

years of upper secondary education (Grades 10-12). A combination of primary and lower secondary education (Grades 1-9) constitutes the country's compulsory basic education (UNESCO, 2008). After completing lower secondary education, students can either advance to regular upper secondary education or enroll in secondary-level TVET programs to qualify for TVET certificate types C1, C2, and C3 (Tao & Kao, 2023). Holders of TVET certificate type C3 can pursue advanced TVET programs: two years for a TVET diploma and four years for a bachelor's degree in TVET-specific disciplines. Those holding a TVET bachelor's degree may also gain admission to a regular master's program that is aligned with their TVET disciplines (Tao & Kao, 2023). TVET programs at both secondary and higher education levels are predominantly offered by institutions under the purview of the Ministry of Labor and Vocational Training (MoLVT) (Daroelman, 2022). Moreover, those who complete regular upper-secondary education can either progress to TVET programs at the higher education level or pursue mainstream higher education programs for regular qualifications such as associate, bachelor's, master's, and doctoral degrees. In Cambodia, higher education is offered by both public and private universities and institutions, with a significant majority under the supervision of MoEYS (Heng et al., 2023d; MoEYS, 2022).

In addition to the four major streams, RGC also offers non-formal education to school dropouts as well as adults in disadvantaged areas (No & Sok, 2022). This system is officially recognized as part of the country's education framework (RGC, 2002). According to RGC (2002), non-formal education in Cambodia focuses on seven priorities: (a) functional literacy for youth and adults; (b) primary and lower secondary equivalency programs for out-of-school children, youth, and young adults; (c) short-term income generation skills training for youth and adults; (d) post-literacy programs that sustain and expand levels of literacy; (e) family education for early childhood development; (f) an integrated community-based learning approach; and (g) capacity building for effective management. Priorities one to five are program-specific, targeting specific populations, while the last two priorities focus on supporting the programs. The latest education congress report showed that seven non-formal education programs were implemented across the country, including vocational literacy, post-literacy, re-enrollment, primary school equivalency, lower secondary equivalency, and complementary education programs, benefiting 50,255 students (26,677 females) in the academic year 2021-2022 (MoEYS, 2023).

New developments in Cambodian education

Expansion of access to education

Access to education in Cambodia has significantly improved. Over the last few decades, there has been considerable expansion in terms of educational infrastructure and student enrollment. According to Tao and Kao (2023), about 93% of Cambodian school-age children attended primary school in 2021, although only 68.5% of children were enrolled in lower secondary school. Data from the 2022 Education Congress showed that, in the academic year 2021-2022, there were 1,812 public secondary schools and 323 private secondary schools in Cambodia (MoEYS, 2022). Moreover, across the country, only two districts had no high schools, and only 6.7% of the communes (or Sangkat) had no junior high schools. This suggests the availability of schools that can cater to the educational needs of Cambodian students.

In higher education, institutional expansion has also been a major development in the sub-sector. According to Un & Sok (2018), in the 1990s, Cambodia had fewer than 10 HEIs with around 10,000 students. In the early 2010s, the number of HEIs rose to around 100 (Heng et al., 2023c). At present, there are a total of 132 HEIs, 63.63% of which are privately owned institutions (MoEYS, 2023). Thus, over the last three decades, the number of HEIs has increased more than tenfold, from around 10 to 132. Student enrollment has also skyrocketed, from approximately 10,000 in the 1990s (Un & Sok, 2018) to approximately 200,000 in the academic year 2021-2022 (MoEYS, 2022). Despite the drastic increase, student enrollment has stabilized at approximately 200,000 over the last few years (Tao & Kao, 2023).

Improvement in teacher quality

There have been efforts to improve the quality of the teaching force, particularly at the general education level. These efforts include enhanced training curricula, lengthened training durations, improved training facilities and resources, and upgrading programs for in-service teachers and teacher educators (see MoEYS, 2022; No & Sok, 2022; Sot et al., 2019, 2022; UNESCO, 2023). What is worth highlighting is the upgrade of some teacher training centers (TTCs) by transforming them into teacher education colleges (TECs). So

far, two TECs, including one in Phnom Penh and the other in Battambang province, have been established. These modernized TECs offer both primary and lower secondary pre-service teacher education through the enhanced 12+4 credit-based training curriculum – an upgrade from the previous 12+2 program – and also provide some approved in-service/CPD programs. These well-equipped TECs serve as a model of teacher education in the country, spearheaded by dynamic leadership and staffed by teacher educators who have been recruited through a rigorous process (Sot et al., 2022). This similar trend can also be observed in upper secondary pre-service teacher education at the National Institute of Education (NIE), particularly with the launch of the BA + 2 program, improved training facilities and resources, and enhanced teacher educator recruitment processes, among other initiatives. MoEYS, with support from the Japan International Cooperation Agency (JICA) and other international agencies, has also planned to upgrade other TTCs across the country into TECs.

Another commendable effort is the introduction of various upgrading programs for teachers, teacher educators, and school leaders, especially those at the secondary school level (Department of Teacher Training, 2022; Sot et al., 2019). Notable ones to date include the fast-track BA upgrading program at NIE, the teacher educator upgrading program at Khemarak University, the teacher upgrading program funded by the Capacity Development Partnership Fund Phase II, and teacher and leadership upgrading programs (TUP/LUP) at the Royal University of Phnom Penh (RUPP). According to MoEYS (2022), a total of 1,232 teachers from the third batch of the teacher upgrading program were supported to pursue their bachelor's degrees at RUPP, while 432 school principals and education officers could also pursue their bachelor's degrees at the same institution. Moreover, a multiple-year project known as the Strengthening Teacher Education Programmes in Cambodia (STEPCam), which is funded by the Global Partnership for Education (GPE), UNESCO, and MoEYS, has significantly contributed to teacher education reform in Cambodia. As of May 2023, the project has: (a) enabled nearly 94,000 teachers in Cambodia to access CPD opportunities, (b) successfully upgraded 67 teacher educators through the Bachelor of Education program, (c) trained 7,000 teachers and other education staff members on early-grade Khmer literacy and math materials, (d) trained 465 teacher educators on learner-driven and ICT-based pedagogical

approaches, and (e) equipped 11 Provincial Teacher Training Centers (PTTCs) with science facilities and digital technologies (UNESCO, 2023).

Likewise, within the framework of the Higher Education Quality and Capacity Improvement Project (HEQCIP) and Higher Education Improvement Project (HEIP), many higher education staff and lecturers have been given the opportunity to upgrade their qualifications. Many of them were funded by HEQCIP to pursue their master's degrees overseas, particularly in Australia, while HEIP has also sponsored a number of lecturers to pursue their master's and doctoral degrees both in Cambodia and abroad. Data that could be accessed by the first author of this introductory chapter showed that, with the support of HEIP, approximately 50 people have been funded to pursue their master's or PhD degrees.

Developments in higher education

In higher education, a number of noticeable developments can be observed. In addition to the institutional expansion and dramatic increase in student enrollment, a number of policies have been introduced (see Eam et al., 2022). In 2021, for example, MoEYS introduced the Higher Education Strategy 2021-2030, outlining the vision and objectives of the higher education sub-sector. The focus is on producing graduates with the skills that enable them to earn up to five times more than unskilled individuals and promoting action research that is aligned with socioeconomic development needs (MoEYS, 2021).

Despite the challenges posed by the COVID-19 pandemic, Cambodia's higher education sector has experienced a phenomenon of digital transformation. Heng (2021) and Heng et al. (2023c) have argued that COVID-19 has ushered in digital transformation in Cambodian higher education, as evidenced by various developments during the pandemic. For example, there have been more opportunities for blended learning, online continuous professional development, and digital higher education (Heng et al., 2023c). COVID-19 has also offered opportunities for more collaboration and partnerships in higher education as well as better preparation for future crises (Heng & Sol, 2021).

According to MoEYS (2022), numerous achievements in higher education can be observed. They included the formulation and dissemination of a number of

legal frameworks, regulations, and policies for higher education; the implementation of various research projects; and improvements in higher education governance through capacity building for higher education officials, among others. MoEYS (2023) also reported an increase in the number of female students enrolled in higher education, the number of Centers of Excellence, and the number of full-time staff holding PhD degrees, among others.

Persistent challenges to Cambodian education

Challenges to general education

Despite the new developments, there are challenges that have constrained the development of Cambodia's education system. In general education, according to Heng and Sol (2022), key challenges included issues regarding teacher recruitment and supply, inadequacy in funding for school operations, a lack of CPD opportunities for teachers, and weak school management. Other issues that have received considerable scholarly attention are the prevalence of private tutoring in general education (Nhem & Kobakhidze, 2022), high dropout rates (Pov et al., 2022), students' low achievements in major international tests like the Programme for International Student Assessment for Development (PISA-D) survey (MoEYS, 2018), and educational inequality (Marshall & Fukao, 2019), among other issues.

MoEYS (2022) stated that key challenges facing Cambodia's primary education included a shortage of teachers in remote areas and an oversupply of teachers in urban areas, a lack of teacher capacity building, limited quality of teachers, inadequate technological infrastructure, and a lack of materials for sanitation promotion. In secondary education, the challenges were the limited quality of teachers, inadequate opportunities for practical experiences, a lack of science teachers and facilities that support STEM subjects, and a lack of qualified staff or experts in English, ICT, health education, and architecture.

Similarly, in its latest report that outlines the achievements, challenges, and future directions for Cambodia's education system, MoEYS (2023) mentioned four key challenges to general education. They included (a) a lack of science and computer laboratories, libraries, and teaching materials; (b) a lack of qualified educational officials who can lead or live up to the education

revolution; (c) inadequate cooperation and support from the private sector; and (d) limited dissemination of new curricula and teaching methods to teachers.

Challenges to higher education

In higher education, there are also many challenges that continue to shape the sub-sector. Heng et al. (2022a) highlighted some major challenges, including limited research engagement among Cambodian academics, a shortage of academics with PhDs, skills mismatches among university graduates, weak higher education stakeholder involvement, and fragmentation in higher education governance, among other challenges. Likewise, Heng and Sol (2022) mentioned three major challenges. They included skills mismatches as university graduates tended to lack sufficient skills to meet market demands, a lack of research activities among university lecturers, and fragmentation in higher education governance as more than ten ministries oversee HEIs in Cambodia.

Recent research by Heng and colleagues also highlighted these major challenges to higher education in Cambodia. For example, Heng and Sol (2023b) elaborated on the causes of skills mismatches in Cambodian higher education. They were limited higher education investment, insufficient stakeholder engagement in the sub-sector, the prevalent use of outdated curricula and teaching methods, limited English proficiency among high school graduates, a lack of career guidance for university students, and a lack of research engagement among Cambodian university lecturers. Heng et al. (2023a) also pointed out several challenges that prevented the improvement of quality in Cambodian higher education. They were related to the deficiency in educational infrastructure and resources, political influence on the sub-sector, weak institutional and sectoral governance, higher education privatization, low academic salaries, and few CPD opportunities for university teachers.

Un and Sok (2018) and Sok and Bunry (2023) have also discussed some challenges affecting Cambodian higher education. According to Un and Sok (2018), the challenges were related to various issues, including the limited quality and relevance of higher education; fragmented higher education governance; limited institutional autonomy, particularly in terms of personnel and financing; low higher education investment; and a lack of research

involvement among academic staff. Sok and Bunry (2023) also highlighted some challenges concerning higher education quality and relevance, curriculum management and use of traditional teaching methods, limited CPD opportunities for lecturers, inequitable higher education access, institutional governance, and compliance enforcement, among other challenges.

Meanwhile, Rappleye and Un (2018) and Un (2023) considered the dependence on foreign donors as a key challenge. Rappleye and Un (2018), for instance, stated that the implementation of donor-driven policies or projects was not successful due to a few key issues, such as a lack of understanding of the Cambodian context by the donors like the World Bank and a lack of qualified Cambodian personnel to implement the projects. In addition, Vann and Ziguras (2017) underscored the detrimental impacts of political interference in the sub-sector, corruption, and a lack of a well-qualified quality assurance body (Vann & Ziguras, 2017).

MoEYS (2022) also identified a few challenges facing Cambodian higher education, including a lack of qualified human resources in the areas of research, information technology (IT), and data management; low higher education enrollment; limited internet connections on campuses, particularly in the provinces; and a lack of appropriate teaching and learning equipment. Likewise, MoEYS (2023) mentioned six challenges related to a low number of Cambodian academics with PhD degrees, a lack of qualified researchers, a lack of clear guidelines for university research, inadequate modern infrastructure, a lack of qualified personnel to manage the Cambodian cyber university network, and ineffective implementation of the internal quality assurance system.

Conclusion

Overall, Cambodia's education system has been transformed over the years as a result of the concerted efforts by the Cambodian government and relevant stakeholders. New projects and initiatives aimed at improving both general and higher education have been implemented or will be introduced. However, some lingering issues require both scholarly and policy attention for substantial reform. As Sok and Bunry (2023) argued, there is an urgency to concentrate on key issues, such as national funding for higher education, performance

monitoring and compliance enforcement, institutional autonomy and accountability, human resource management, quality assurance and accreditation, higher education access, and international collaboration in research and teaching.

MoEYS (2023) also outlined future directions for improving the quality of Cambodian education. In general education, the focus should be on improving the capacity of teachers and educational officers; expanding school-based management and scholarship programs; increasing school infrastructure (especially school buildings, laboratories, and libraries); enhancing teacher training programs for both primary and secondary schools; promoting public-private partnerships and cooperation; and improving mechanisms to disseminate the new curricula, teaching methods, and relevant teaching principles to teachers across the country. As for higher education, the future directions should center on investment in the capacity building for lecturers, researchers, and higher education managers or technicians; development of university research operational guidelines; infrastructure development; improvement in the internal quality assurance system and post-graduation monitoring system; and construction of dormitories to support disadvantaged and female students.

In light of the new developments, challenges, and future directions discussed above, we suggest that the Cambodian government, particularly MoEYS, and relevant stakeholders should intensify their collaborations to find innovative and practical ways or mechanisms to introduce more positive changes and developments to Cambodia's education system to enhance the sector and ensure that Cambodian students, especially at the general and higher education levels, are equipped with the necessary knowledge, skills, and attitudes required to boost Cambodia's competitiveness in the regional and global arena as well as support Cambodia's vision for 2030 and 2050.

Organization of this book

This edited book contains 14 chapters. Following this introductory chapter that provides insights into key developments and challenges in Cambodia's education system, the remaining 13 chapters are divided into three parts. Part I contains four chapters dealing with new and innovative approaches to teaching

and learning. Part II consists of seven chapters focusing on various important issues in education, particularly in Cambodia. Part III has two chapters on technical and vocational education and training (TVET) and higher education in Cambodia.

Part 1: Innovations in teaching and learning

Part I has four chapters dealing with different approaches to teaching and learning. Chapter 2, contributed by Thearath Lim, discusses the benefits, challenges, and ways forward for problem-based learning. The author argues that this teaching strategy should be promoted in the Cambodian education context.

In Chapter 3, Thannarath Sim and Sereyrath Em examine the issues concerning blended learning in Cambodian higher education. The chapter focuses on the benefits and challenges of blended learning and discusses the challenges and suggestions for implementing blended learning in the Cambodian higher education setting.

Chapter 4 focuses on the challenges and ways forward for flipped classrooms in Cambodian higher education. In this chapter, Koem Hong Chat discusses five key challenges for implementing flipped classrooms and offers recommendations for concerned stakeholders to enhance the use of flipped classrooms in higher education in Cambodia.

In Chapter 5, Sokleang Touch discusses the concept of differentiated instruction. The chapter focuses on the benefits of this teaching strategy and offers ideas on how to use it before concluding with some recommendations for implementing differentiated instruction in English secondary school classrooms in Cambodia.

Part 2: Issues and challenges in education

Part II contains seven chapters. Chapter 6, contributed by Brak Dorn, examines the issues concerning parental involvement in primary education. Specifically, the chapter discusses the benefits, challenges, and suggestions for promoting parental involvement in children's education.

Chapter 7 is about inclusive education, particularly for children with disabilities. In this chapter, Englalin Ek examines the efforts by concerned stakeholders in promoting inclusive education and discusses the key challenges and ways forward to promote inclusive education in the Cambodian context.

Chapter 8 deals with science, technology, engineering, and mathematics (STEM) education. In this chapter, Puthsereymony Vann discusses the recent progress in STEM education in Cambodia before elaborating on the challenges and providing a set of recommendations to enhance STEM education in Cambodia.

In Chapter 9, Muykim Lim explores an important topic concerning media literacy education. This chapter provides the definitions of media literacy education, discusses the importance of media literacy education, and offers suggestions for promoting media literacy education in Cambodia.

In Chapter 10, Kimcheng Ngel examines the issues of shallow education or private tutoring. The chapter focuses on various aspects concerning shadow education, including causes, benefits, problems, and solutions.

Chapter 11 delves into a sensitive topic, that is, corruption in general education in Cambodia. In this chapter, Molina Leng discusses the major causes and impacts of corruption in education. The author then offers a three-point solution to address this critical issue in Cambodia's general education.

Chapter 12, contributed by Phallavattana Thon, concludes the second part of this edited volume. In this chapter, the author discusses an important topic in education: plagiarism. The chapter provides insights into the major causes, consequences, and recommendations for preventing plagiarism among university students.

Part 3: TVET and higher education in Cambodia

In Part III, there are two chapters. Chapter 13 is about TVET in Cambodia. In this chapter, Sovisal Khorn discusses the various roles of TVET before examining the challenges in improving TVET in Cambodia. The chapter

concludes with a set of recommendations to promote a robust TVET system in Cambodia.

In Chapter 14, the final chapter of this edited book, Mern Phatt looks at the issues related to regulations, governance, and financing in Cambodian higher education. The chapter begins by providing a brief background of higher education in Cambodia before exploring the three topical issues concerning regulations, governance, and financing. The chapter offers some insights into the ways forward to enhance Cambodia's higher education sector.

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Part I

Innovations in Teaching and Learning

Problem-Based Learning: Benefits, Challenges, and the Way Forward

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Summary

Problem-based learning (PBL) is one of the student-centered approaches that requires learners to have an in-depth understanding of a case study or a subject matter. PBL is a method that can help teachers have more time to monitor students or lead group discussions to promote learning effectiveness. It can also encourage students to experience their learning and find ways to solve problems for themselves. PBL can promote critical thinking skills, problem-solving skills, creative skills, and analytical skills, which are important and crucial in the 21st century, as they can enhance an individual's life. As these skills are important for students' lives, it is crucial to encourage students to think deeply and critically. This chapter aims to examine key aspects of problem-based learning. It focuses on four main points: definitions, benefits, challenges, and ways forward to integrate PBL in higher education. The chapter concludes with some suggestions in order to promote this method.

Keywords: Problem-based learning; benefits; challenges; suggestions

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Introduction

In the education sector, teachers can use a lot of methods and techniques to teach their students, but what are the best or most proper methods to apply in class effectively? In higher education, there are many successful approaches and methodologies that teachers have used in order to teach basic skills, but critical thinking skills are essential as they are skills that students must possess in both their personal and professional lives (Bezanilla et al., 2019). Popular teaching methodologies include the flipped classroom, problem-based learning, inquiry-based learning, demonstration, discovery method, cooperative learning group, and so on. However, there is no book or reference explaining which one is the best approach or method that best matches what skills or content (Sajjad, 2010). It relies on individuals' observations of students' capacities and classroom environments. The classroom environments concern students' feelings, behavior, needs, age, prior knowledge, and ability to learn the subject matter, and so on. So, teachers can apply various methods depending on the real situation in their classroom.

Students will learn or be taught effectively and fruitfully if the teachers know their individual feelings, approaches, and methods that are appropriate for use in the classroom. Because of this, teachers need to be knowledgeable about a variety of techniques and be able to apply them appropriately. Each method has its effectiveness and usefulness, and the outcome of students' learning is the same. They can learn from the subject matter that the teachers have just presented and taught. Students do not simply have much expertise in knowing if the method selected by their teacher was the best teaching method or simply the method with which the teacher was properly comfortable. However, students are the most qualified sources to indicate that teachers' experience and methods are productive, informative, satisfying, or worthwhile, as it can be estimated by students' understanding (Sajjad, 2010).

Teachers in universities often use their techniques and methods differently to help their students learn effectively and successfully. According to my experience in the classroom as a student at one university, my instructors used various methods and approaches. They usually present and perform their subject matter in the classroom using student-centered approaches in order to motivate their students to think deeply on their own. One of them adopted a

‘flipped classroom’ methodology, frequently requiring their students to read and learn the lesson in advance of the class. Some students found it beneficial as it encouraged their independent learning. Some, however, found it challenging to connect theories to actual practice, and without the teacher's explanation, they were unable to comprehend the theories and their applications. Nevertheless, one of the most engaging teaching strategies in that classroom was case studies in which another lecturer frequently required students to work in groups or pairs to solve a problem, which was constantly about real-world issues that the students as teacher trainees would encounter in their actual classroom.

This chapter provides an introduction to one of the most successful teaching strategies, problem-based learning, which is used extensively in higher education (Dolmans, 2005). The purpose of this chapter is to argue that PBL has the potential to better prepare students for future learning because it fosters their development of analytical, creative, and critical thinking skills, which are crucial in the 21st century. Additionally, it aims to explain PBL's benefits while raising public awareness of its use. The chapter's main themes are definitions, ways to use PBL, advantages of PBL, PBL in Cambodia, and challenges for integrating PBL in higher education. The chapter ends with some recommendations for promoting this approach.

What is problem-based learning?

Problem-based learning (PBL) is a student-centered approach that teachers use to promote students' critical thinking or analytical skills to solve real-life or open-ended problems in a group discussion (Ali, 2019). PBL can promote students' development of critical thinking skills, problem-solving and analytical abilities, and communication skills. It can also allow students to work in groups, find and evaluate research materials, solve problems, and engage in life-long learning (Ali, 2019; Center for Innovation in Teaching & Learning [CITL], n.d.).

PBL can be applied to various situations in the classroom. Teachers can use PBL in any subject area or learning situation with a little creativity. It is likely that the classrooms are serving as an assessment center. The students are generally required to work in groups and solve problems one-on-one with group

members. Thus, they are required to have a deep understanding of the problems, which can come from various sources depending on what they encounter. Generally, we can see the problems from the outside: social media, books, articles, news, TV, in the classroom, in real-life experiences, and so on (CITL, n.d.).

How to use problem-based learning

PBL requires students to think deeply about the problem. While instructors need to challenge their students by providing them with clues to find materials or tools to research reliable and reasonable information, prove their knowledge, and engage them in independent learning, it surely promotes students' critical thinking skills, analytical skills, and independent learning (Cooke & Moyle, 2002). A teacher should use the steps in the problem-solving process to choose, design, and implement the ideal PBL subject. These steps are: choosing the right content, figuring out the resources available, writing a problem statement, selecting a motivating activity or topic, developing a focus question, and figuring out evaluation strategies (Delisle, 1997).

According to Duch et al. (2001), teachers should create the problems in the following ways to effectively implement PBL in the classroom and to make it simple for students to solve the problems:

- It must be motivating for students to seek out a deeper understanding of the concepts.
- It should provide students with some clues to make reasoned decisions and fit into the key of problem-solving.
- It should be relevant content in such a way as to connect it to the students' lives, experiences, or prior knowledge.
- If it is used for a group discussion, the problem needs to be complex enough to ensure that the students can work together to solve it.
- The problem should be explained and introduced in some steps so that it will help students to identify the learning issues. Then they will be able to do research and figure out the key to the targeted concepts to solve the problem.

Students are generally supposed to work in groups. It is beneficial to set them in line and prepare time for them to engage in their PBL project. Rather than teaching and assigning the problems to the classroom, the teacher must present the problems to the students first. PBL assignments can be short and involve real-world problems and students' prior knowledge. As Delisle (1997) noted, "the greater the students' involvement in an issue, the greater their investment in its solution and the harder they will work" (p. 24). This is the reason why it is very important for a teacher to choose the right topic and design a problem properly for the PBL application.

During or before solving the problems in the PBL process, students generally have to:

- Define the problems
- Find out what they have known about the problems related to the assigned PBL project
- Figure out the possible ways or keys to unlock the door of the problems.
- Brainstorm the facts or causes of the problems
- Determine what they need to know and where they can research the information and tools to solve the problems.
- Research knowledge
- Solve the problem right away
- Make notes of the answers to the problem
- Present and support the chosen solution
- Review their performance. (Nilson, 2010, p. 187)

Teachers can define problems for students to solve in various environments or scenes. In PBL courses, there are four to five different types of problems that can be used. These include case studies, simulations, role-plays, and problems that are task-based, project-based, or "ill-structured," that is, problems with multiple solutions (CITL, n.d.; Tick, 2007, p. 368). Case studies are presented in the written form of a problem, and they are in-depth, a detailed examination of particular cases in a real-world context. Role-plays let students perform a story from a given or without a given script, and they have to follow the description of the problem story which is about the problem in the real world. Simulations are offered in conjunction with PBL as a combined learning strategy that includes lectures, discussion in PBL modules, self-directed learning, and real-

life situations. However, simulations now often involve computer-based programs. Regarding each technique being used, the core of the method remains the same: the real-world problem (CITL, n.d.)

Benefits of problem-based learning

PBL is one of the most effective teaching methods because it provides students with learning outcomes through critical thinking to find a solution. It provides benefits to both teachers and students. A teacher can manage his/her classroom effectively, and students can work actively on their own (Center for Teaching Innovation, n.d.).

According to several studies, a teacher who organizes and develops a well-designed PBL topic will provide students with the opportunity to develop their skills related to:

- *Teamwork*: Students will strongly cooperate as a team to solve a problem. An assigned case study has to be solved in one line on their way; thus, they need to work actively to reach the target result. PBL generally encourages students to improve their ability to collaborate and work well in small groups (Ahamad et al., 2017; Azer, 2001).
- *Managing projects and holding leadership roles*: Students will have chances to lead a group. Reading and discussion are the primary ways that students discover leadership (Bridges & Hallinger, 2009). In a group discussion, there should be a leader. He/she is the one who can hold the group together to know the way, to go the way, and to show the way (CTI, n.d.). He/she is like a referee making a reliable, reasonable, and responsible decision. Other members will find out the answers differently to solve the problems, so the group has to have a leader to decide which answers/information are the best to unlock the concepts of the problems.
- *Oral and written communication*: It is their time to make friendly communication with other students through sharing their ideas with each other in the group discussion. As they have more opportunities to practice using the language for real-world communication, students in PBL classrooms can develop their social skills (Azman & Shin, 2012). It is surely a great time for them to improve and develop their thinking by getting others' opinions in their group, and they can evaluate or rethink afterward

(CTI, n.d.). It is always helpful and worthwhile to have more ideas outside of their brainbox. When students present their findings to their peers, effective PBL problems help students develop their communication skills (Ahamad et al., 2017).

- *Self-awareness and evaluation of group processes:* Students will learn more about themselves through their cooperation and sharing of their thoughts. The group process and self-knowledge, in the opinion of the students, are their most valuable learning experiences (Fenwick, 2010). They will learn about their strangeness and weaknesses through solving problems. Moreover, they will know about how their group members are; they can find out who works hard, works smart, and gives hands intensively in the process of group work.
- *Independent working:* On the assignments to look for information, students may work independently (Azer, 2001). They have their own self-leadership in their decision to reach the target to solve problems. In the group discussion, they can also lead their thoughts by sharing their perspectives.
- *Critical thinking and analysis:* PBL definitely promotes critical thinking and analyzing skills. Students will have chances at this stage to unlock their potential and discover their productive skills in solving problems. They will be able to work out more on their brain and practice it in order to master their analytical and thinking capacities since their group discussions help them develop their critical thinking skills (Yuan et al., 2008).
- *Explaining concepts:* Students will be expected to work hard on a deep understanding of the concepts of the problems. The development of students' proficiency through PBL depends equally on conceptual and procedural understanding (Ahamad et al., 2017). They need to find ways and tools to research reliable information to gain a deeper understanding. Then, students can explain what they have just explored.
- *Self-directed learning:* As PBL is a student-centered approach, students are required to study and work on their own to reach the target objective. PBL can help students become more self-directed learners and launch a growth process for lifelong learning (Malan & Ndlovu, 2014). This process can help students get more action in the classroom rather than having to listen to the teacher all the time.
- *Applying course content to real-world examples:* Teachers can engage their students with real-world problems. They can present and teach students what problems can exist in their real lives or someone else's life, and it will

help students experience solving the problems inside the classroom and apply them outside the classroom. PBL is an educational approach that encourages students to work cooperatively in groups to solve real-world issues and acquire skills to become self-directed learners (Akçay, 2009). They will have some sources and techniques for solving problems after learning through the PBL approach.

- *Researching and information literacy:* PBL has also been used successfully in science and medical education and is well suited to assisting students in gaining the critical thinking abilities that lead to information literacy (Carder et al., 2001). It can happen that their new experience is familiar with PBL. Students will gain more information by conducting research and developing their information literacy.
- *Problem-solving across disciplines:* The methodology of solving problems follows the four steps of the PDCA (Plan-Do-Check-Act), which consists of eight procedures, as shown in Table 2.1.

Table 2.1. *The four steps of problem-solving*

PDCA: Plan-Do-Check-Act	
Plan	1. Creating the problem-solving team
	2. Describing the problem
Do	3. Implementing containment action
	4. Identifying and validating the root cause
	5. Identifying and choosing corrective actions
Check	6. Implementing corrective actions and tracking their effectiveness
Act	7. Identifying and implementing preventive actions
	8. Closing and congratulating the team

Source: Satyendra (2019)

Challenges of using problem-based learning

PBL is not just a method but a way of learning (Boud & Feletti, 1997). PBL is also a way of constructing and teaching a lesson using a problem and putting a focus on students' activities. Problem-based courses start with problems rather than a direct explanation of the core of the problems from teachers (Boud & Feletti, 2013). The assigned problems move students towards the acquisition of

knowledge and skills through the stages of solving processes; moreover, students can somehow get support from teachers.

However, there are some consequences that instructors will face. They sometimes have to use stimulus material to help students discuss an important problem, question, or issue. They have to appropriately guide students' critical thinking and provide resources to help them learn from defining and attempting to resolve the given problem. They also have to know the problem well and be able to facilitate their students' learning process. Students are set up by the teachers to work cooperatively as a group to explore information in and out of the classroom. In addition, they have to help students identify their own learning needs and make appropriate use of reliable resources (Boud & Feletti, 1997). In the end, a teacher is supposed to apply this new knowledge to the original problem and evaluate the students' learning process. There are additional challenges for the teachers. They might be the issues that teachers encounter the most frequently, as discussed below.

Finding real problems can be difficult

Teachers can find it difficult to mark and design the problems that work best with PBL (Armitage et al., 2015). Once a teacher chooses a problem-based case, he/she has to make sure that it is a real-world problem that can help students identify its roots and target their goal to solve the given problem (Erdogan & Senemoglu, 2014). PBL courses are also still connected to the school's standards and curriculum. A teacher must ensure that students can spot potential issues because doing so gives them a chance to develop their metacognitive awareness of the course outcomes (Downing et al., 2008). They can identify the source of a problem and then propose solutions. Choosing the right topic helps ensure that students understand that PBL is both personally invented and defined. It is also a deeply educational method, as it is all about real problems, real solutions, and real learning.

Facing our ignorance of the situation

PBL has the potential to remove us from the spotlight and make us uncomfortable when selecting and creating a course (Wheeler et al., 2016). The issues or technical knowledge that our students are facing may not be

something we are familiar with or understand well. This is a particular challenge that we, as teachers, must take into account when planning or creating problems for the lesson. During the classroom activity, the teacher and the students might not be aware of the intended solution.

Getting familiar with PBL

This is a significant issue for an instructor who wants to get deeply educated on PBL. It will become more effective in the classroom if teachers get well-versed in resources and information searching through various sources (Tick, 2007). Teachers are often required to increase or improve their professional development to be more competent in applying PBL. According to Ahamad et al. (2017), given that the students were unfamiliar with PBL, it is also important to take note of this method. As a result, even though the teacher clearly implemented the PBL lessons, it appears that the student required more assistance and facilitation from the teacher.

Recognizing and accepting failure

Failure in applying PBL is not a bad issue (Fatokun & Fatokun, 2013). Instead, it offers a fantastic chance for the teacher and students to consider the implications of their real-world problem-solving decisions as well as the teacher's problem-solving preparation (Akçay, 2009). In order to solve every issue that they come across, students will not always be able to find the right key or hint. Failure is just a piece of the process toward success (Tick, 2007). Students need to understand that failure is not the worst part of accepting and giving up the goal that they would like to achieve; it is often a key to the process of success. They must understand that PBL is a way of learning, not an exam.

Problem-based learning in Cambodia

PBL is used in some schools and training centers in Cambodia to promote critical thinking skills because it is considered one of the compulsory skills in the 21st century (Saputra et al., 2019; Vong & Kaewurai, 2017). It can also lead individuals to an appropriate level of capacity to make reliable decisions based on existing reasons and evidence. According to Vong and Kaewurai (2017), PBL, project-based learning, and adult learning theory have been applied to

promote teacher trainers' critical thinking and teaching ability at the Regional Teacher Training Center (RTTC) in Takeo province, Cambodia. PBL and other methods, such as team-based learning (TBL) and cooperative learning, have become increasingly popular in medical education in Cambodia and Asian countries (Iwata, 2016). The International University (IU) in Cambodia used to conduct a course, called Hybrid Educational Activities Between TBL and PBL Programs. The course included twenty-one medical students and postgraduate trainees who were randomly divided into two teams to discuss a case through alternating short tutor lectures and small group discussions. It has been found that many Asian medical schools and their students appear to be positive about adapting to PBL in their curriculum (Khoo, 2003).

In addition, Teach For Cambodia also uses PBL in its assessment center. It assigned a case study for applicants who applied for its fellowship program to solve an assigned problem that may exist in the workplace. The case study is about a real-life problem that candidates will accidentally face when they are supposed to work in a school or community or when it exists in reality. The case study is not like an exam, but it is the process of learning and solving problems to promote and evaluate candidates' critical thinking skills.

Suggestions to promote problem-based learning

Suggestions for schools

PBL is one of the best ways to encourage students' desire and passion to learn independently. Students will typically feel more inspired, motivated, and encouraged to use their full potential for thinking and analyzing to address problems in the real world. They will be able to use or put into practice what they learned in the classroom to address any issue at hand. Universities in Cambodia should, therefore, include the use of PBL in their curriculum and encourage or suggest their teachers apply PBL in the classroom to help students become more familiar with self-learning and critical thinking skills as well as analytical skills. Lecturers, who are technically teacher trainers, could promote PBL among their students, who may be teachers in other schools. They will then be able to promote problem-based learning beyond their classrooms.

Suggestions for teachers

PBL requires a deep understanding of a case study or problem project and analytical and thinking skills. The adoption of PBL by teachers would greatly benefit Cambodian students by giving them more opportunities to develop their problem-solving abilities, as PBL encourages critical thinking and analytical skills. Students should be taught through any student-centered approach, but PBL is highly recommended in order to promote Cambodian students' capacity to think more profoundly and intellectually. Teaching directly or explaining the subject matter without students' exploration is not as effective as their self-learning because it will not allow them to have chances to practice or produce their ideas. Teaching only reading, writing, or speaking is not the main point of education these days; teaching problem-solving, creative, and thinking skills is more crucial (Birgili, 2015). It is possible to assert that learners are confronted with a wide range of real-life problems, so these skills will be useful for them throughout their lives outside the classroom (Saputra et al., 2019; Birgili, 2015).

Suggestions for students

Learning by solving problems through PBL in the classroom is absolutely effective and beneficial for you as students. When you accidentally encounter problems in your real life, you will become more familiar with and adaptable to them because you practice them in the classroom. These practices allow you to gain expertise in the subject matter and become more confident (Ericsson et al., 1993). Moreover, you will build crucial cognitive and professional skills as you take on challenging, interdisciplinary, and real-world problems. When putting ideas into practice, students should acquire knowledge from both successes and failures. A PBL course or project, which is assigned by your teacher, can help build significant relationships between academic learning and professional practice (Steinemann, 2003).

Conclusion

PBL is a teaching method that consists of problem cases as a project to promote students' critical thinking skills to understand real-world problems. Teachers must thoroughly understand how to apply and select the best PBL project for their classrooms. They have to select suitable content, design a problem case,

write a problem statement, develop a focus question, and build up a motivational activity.

It will be helpful and fruitful in the classroom if teachers design and prepare the right projects or PBL projects that fit and are relevant to students' levels. When teachers organize and develop a well-designed PBL topic, it will provide students with the opportunity to develop skills such as thinking, communication, teamwork, problem-solving, leadership, and analysis. Hence, PBL should be promoted more widely in classrooms in order to strengthen students' skills in those areas because they are advantageous and crucial in the 21st century and have the potential to improve students' lives when they face their real-life problems.

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Blended Learning: The Way Forward for Cambodian Higher Education in the Post-COVID-19 Pandemic

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Summary

Every aspect of society, including the global education system, has been severely impacted by the COVID-19 pandemic. In response, blended learning has emerged as an approach to ensure continuous education throughout the pandemic and is seen as the direction of education going forward. This chapter focuses on blended learning in Cambodian higher education. First, it highlights the definitions of blended learning before discussing its benefits for both instructors and students. The chapter then looks at the challenges facing the implementation of blended learning, particularly in Cambodian higher education. After that, the chapter offers a number of suggestions to enhance the effectiveness of blended learning as an approach in the post-COVID-19 pandemic before ending with a conclusion.

Keywords: Blended learning; higher education; post-COVID-19 pandemic; Cambodia

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Introduction

According to the United Nations (2020), the COVID-19 pandemic has affected approximately 1.6 billion students across the globe. Specifically, 94% of the students in the world have been affected by the closure of schools and other educational institutions, with the percentage being higher (99%) for students in low- and lower-middle-income countries.

In Cambodia, the first case of COVID-19 was identified in late January 2020 (WHO, 2020). The Ministry of Education, Youth, and Sport (MoEYS) ordered the closure of schools and universities until further notice after learning of a second COVID-19 case in early March in Siem Reap province (Kham & Nhem, 2022). During the school closure, MoEYS collaborated with the private sector to establish an e-learning platform to offer educational opportunities to Cambodian students (Heng, 2021). Various channels, including the Facebook page, YouTube channel, and website of MoEYS, were employed to provide pre-recorded video lessons for students in Grades 1-12 (Em, 2021a; Heng, 2021).

As the internet and education have been coupled to give students chances to learn new skills, including technical skills and computer literacy, online learning has experienced a sharp rise during the pandemic (Chiu et al., 2021). Due to the pandemic, education has undergone a significant transformation with the rise of e-learning, allowing for remote and digital education (Oraif & Elyas, 2021). The new standard in education is now online or blended learning. Blended learning, also referred to as hybrid learning, is the blending of classroom-based and online teaching methods (Kaing, 2020).

While Cambodia is beginning to make inroads into adopting blended learning, it has a lot of catching up to do to take advantage of such technology (Heng et al., 2023; Khan et al., 2021). During the pandemic, Cambodian students found it difficult to access online and e-learning platforms (Em, 2021b). In particular, the lack of online learning-related knowledge and skills, especially among those in rural areas, has been a major barrier to the adoption of this new learning mode. These challenges have posed difficulties for all stakeholders, such as administrators, teachers, and students (Heng et al., 2023).

This chapter focuses on key issues concerning blended learning in Cambodian higher education. It begins by defining the term 'blended learning' before discussing its benefits. The chapter then discusses the challenges of implementing blended learning, particularly in the context of Cambodian higher education. Afterward, suggestions to enhance the effectiveness of blended learning in Cambodian higher education are presented. The chapter concludes with some suggestions for future research.

What is blended learning?

Different researchers and academics have given varied definitions of blended learning. The Oxford Dictionary defines blended learning as an educational approach that combines conventional in-person instruction with electronic and internet-based media. Graham (2006) defined blended learning as the integration of "face-to-face instruction with computer-mediated instruction" (p. 5). Similarly, Hrastinski (2019) described blended learning as the deliberate merging of in-person and online learning experiences within the classroom. According to Bryan and Volchenkova (2016), blended learning combines the realms of education and educational technology. Based on the definitions given above, it can be concluded that blended learning comprises two essential components: face-to-face and online teaching or learning.

Benefits of blended learning

Over the past few years, particularly during the COVID-19 epidemic, blended learning has gained significant traction in educational institutions by combining conventional face-to-face instruction with technology (see Kaing, 2020). Faculty members can communicate with students online and use visuals to engage them in this learning method. With a range of flexible options available in higher education, blended learning has emerged as one of the most popular methods. This approach is crucial for the future of higher education, as it offers students a variety of engagement opportunities (Dhawan, 2020).

Benefits for teachers or faculty members

Implementing change can be a challenging task, especially for teachers or faculty members who have been accustomed to traditional teaching methods

for years. Nonetheless, as blended learning becomes increasingly prevalent in educational institutions, its benefits are becoming more apparent. It is beneficial in two important ways (see Alammary et al., 2014).

Blended learning allows for the creation of a clear roadmap for students, outlining the expectations for each student. Through integrated learning, teachers can track and monitor the progress of individual students. Teachers, for instance, can examine data to determine which courses and modules their students are actively engaged with. This knowledge makes it easier to adapt and personalize each student's learning experience based on their interests. This approach facilitates the identification of students' academic weaknesses and strengths, enabling appropriate interventions when needed (Digital Marketing Institute, 2018).

Another valuable aspect of blended learning is improved communication. Communication is a crucial component of education that aids teachers in identifying students' areas of strength and areas that require further development. Technology enables teachers to cater to various learning styles, whether students learn best through lectures, reading, examples, or video. The relationship between instructors and students would be stronger through these channels of communication (Digital Marketing Institute, 2018).

Benefits for students

Blended learning offers numerous advantages, not only for academic staff but also for students. In particular, it provides students with a more thorough education that can increase their retention and engagement (Boyle et al., 2003). The advantages of blended learning for students were also discussed by different authors, as follows:

- *Enhanced flexibility*: Students may access educational content at any time and from any location, so even if they are unable to attend school physically, they can still receive their education. This has proven to be quite helpful throughout the COVID-19 pandemic and is particularly beneficial for students who might face physical or geographic limitations (Digital Marketing Institute, 2018; Simamora, 2020).

- *Improved communication with academics and staff:* Blended learning enables students to communicate with their teachers directly through technology and enables students who may feel less comfortable speaking in front of groups to do so. Moreover, if students are having trouble, they have the space and privacy to seek further help and support (Islam et al., 2022).
- *Individualized learning pace:* Blended learning is more flexible for students, allowing them to take greater control of their education and study at their own pace. The availability of various information delivery methods also promotes deeper understanding and engagement and enriches the learning experience (Azukas, 2019).
- *Improved student retention:* Blended learning improves student retention by providing them with more freedom and confidence to direct their own learning. The flexibility of time and place and the choice to tailor their workload to fit their lifestyles motivate students to continue their education. This self-directed learning approach equips them with transferable skills that may significantly benefit their future employment (Prifti, 2022).

Challenges of blended learning

Despite the benefits and possibilities provided by the adoption of blended learning, it confronts several key challenges. One of the key challenges is technical issues, which are not limited to getting technology to work on networks but rather ensuring the program's success by utilizing and supporting appropriate technologies. One of the technical difficulties is ensuring that users can use the technology effectively and refrain from using it solely because it is there (Hofmann, 2011).

Furthermore, the successful integration of blended learning may be hampered by inadequate infrastructure and access to technology. Tshabalala et al. (2014) identified a list of difficulties that contribute to the limitations of implementing blended learning, including a "lack of policy, lack of faculty support, lack of technological and computer skills, large class sizes, and inadequate technological resources" (p. 108).

When learning technologies are introduced, attention is often paid to the technology implementation, while too little time and budget are dedicated to the design of appropriate content to create a successful program. The challenges of instructional design include considering how to teach (rather than just what to teach), matching the best delivery method to the performance objectives, maintaining interaction in online offerings instead of one-way communication, ensuring participant commitment and follow-through with non-live elements, and ensuring that all components of the blended approach are well coordinated (Hofmann, 2011).

According to Su (2019), universities are also confronted with issues such as a shortage of staff members capable of participating in blended learning, resistance to innovation and change, a lack of models based on research that can assist institutional adoption, and a lack of institutional definition. Additionally, Su (2019) suggested that extra training for the staff should be undertaken before the introduction of blended education. This might be accomplished through effective institutional governance and strategic leadership.

Blended learning in Cambodian higher education

The idea of blended learning, which combines in-person instruction with online learning, was adopted at some higher education institutions (HEIs) in Cambodia before the COVID-19 pandemic, such as the Institute of Technology of Cambodia, but it was not a popular teaching approach (see Kaing, 2020). The arrival and impact of COVID-19 have significantly altered the educational landscape. Traditional physical courses were transformed into online learning environments when schools and colleges were forced to close temporarily to curb the spread of the coronavirus (Em et al., 2022).

Despite the significant disruptions, the COVID-19 pandemic has provided Cambodia with a good opportunity to increase the use and integration of information and communication technology (ICT) in education and support the digital transformation of its educational system. To promote digital learning and teaching in the Kingdom, MoEYS has established the Centre for Digital and Distance Learning. The development of this center serves as a studio for creating instructional videos and a location for digital forums, aiming to

advance virtual education in Cambodia. The creation of hundreds of video courses on social media platforms, such as Facebook and Telegram, as well as on television, has been a part of this effort (see Som, 2020). As a result, the pandemic has sped up the adoption of ICT in Cambodia's higher education sector (see Heng, 2021), aligning with the trend toward blended learning.

Technology-enhanced classrooms are the future of education in the context of Industry 4.0, where technology plays a major role in fostering socioeconomic innovation and development. COVID-19 has provided Cambodia with an opportunity to reassess and enhance its education system as the country aims to increase its relevance and competitiveness (see Heng, 2021). Therefore, as online learning continues to become more popular, more online or blended learning will be adopted in higher education. This will facilitate the digital transformation of higher education, especially in a developing nation like Cambodia, where there had been little ICT integration in the classroom before the pandemic (see Heng & Doeur, 2022).

Challenges in implementing blended learning in Cambodian higher education

The COVID-19 pandemic has caused significant disruptions to educational systems worldwide, and Cambodia is no exception. In response to the pandemic, schools and HEIs in Cambodia were required to close intermittently during the last two years (Soeung & Chim, 2022). On March 16, 2020, the government of Cambodia ordered the closure of all schools nationwide for some time, which was repeated in December 2020. However, most schools, both public and private, were largely unprepared for the closures (UNDP Cambodia, 2021). Heng and Sol (2021a) noted that the unexpected closure presented serious challenges for Cambodian HEIs since they had to continue providing education through online learning. The adoption of online learning requires the requisite digital infrastructure, learning materials, access to a stable internet connection, and digital devices, as well as the pedagogical knowledge and skills needed for navigating effective online teaching.

There are many barriers to online education in Cambodia. According to a government survey published in September 2020, more than 80% of children reported having no television at home, no smartphone or tablet, and a poor

internet network. The fact that nearly three-quarters of students and nearly as many teachers had inadequate levels of digital literacy made this situation worse. Most people acknowledged that the high cost of internet connectivity was a significant deterrent (Beresford & Theara, 2021). Heng and Sol (2021a) argued that having access to sufficient digital tools and a trustworthy internet connection, both necessary for online teaching and learning, has become a significant challenge, particularly for students from low socioeconomic backgrounds. Additionally, Heng and Sol (2021b) pointed out that students from poor socioeconomic households could not afford a broadband connection or necessary devices like laptops or tablets to assist their online learning. As a result, many relied on their cell phones to access courses and study materials, tests, homework, and examinations. Leng et al. (2020) reported that many students did not own a laptop and completed their online coursework and tests using a smartphone. According to a survey of students at the University of Puthisastra, 35.5% of them used smartphones, 40.9% used laptops or computers, and 7% used tablets (Leng et al., 2020). As indicated by the same survey, only 16% of the students owned or utilized multiple devices.

Insufficient digital or technological literacy and a lack of experience with online teaching and learning are also significant issues faced by both instructors and students. From the onset of the pandemic, instructors and students were compelled to participate in online teaching and learning without adequate guidance, training, and resources (United Nations, 2020). As a result of the adoption of online or blended learning, faculty members have experienced an unexpected workload because they have had to learn how to teach online, adapt to new teaching platforms, modify teaching materials and resources, and reorganize assessment processes to fit the new context of online learning (Heng & Sol, 2021b).

In the Cambodian context, online teaching and learning is a relatively new phenomenon that emerged suddenly and without prior preparation during the COVID-19 pandemic, causing psychological effects for all parties involved, particularly faculty members and students (Leng et al., 2020). Students have also gone through certain psychological challenges, including, among others, increased tension, worry, dread, and dissatisfaction. Factors contributing to these challenges included the lack of online learning opportunities, the feeling of isolation due to reduced peer contacts and support networks, increased

reliance on individual study, and technological problems (see Heng & Sol, 2021a).

Suggestions to enhance the effectiveness of blended learning

To enhance the effectiveness of blended learning in Cambodian higher education, the following suggestions should be considered:

Invest in digital education: Policymakers and other relevant stakeholders should prioritize integrating ICT and blended learning into regular classrooms. To ensure that students develop the technological and digital knowledge and skills required in the digital economy, the government must invest in digitalizing the educational system (Heng, 2021).

Improve ICT infrastructure: The Cambodian government should ensure fair and sustainable distribution of ICT infrastructure within the educational system. This also includes providing nationwide support staff, enhancing inter-institutional communication and collaboration, and offering ongoing professional development for educators, administrators, and technology coordinators.

Improve ICT skills: MoEYS should continue to provide relevant ICT training to higher education staff. Additionally, university curricula should be developed or revised to align with blended learning practices and improve students' ability to access and utilize online or blended learning effectively.

Strengthen public-private partnerships: Diverse stakeholders, including MoEYS, the private sector, and development partners, should collaborate to increase ICT use in Cambodian education. Active engagement and partnerships are essential to secure financial assistance and the resources necessary for implementing blended learning.

Encourage independent learning: With the rise of online or blended learning, fostering independent learning skills becomes crucial for students. Students should be encouraged to develop the ability to study independently by leveraging online resources such as video lectures and other learning tools. It is

essential to foster autonomous or independent learning in the Cambodian context, where students rely heavily on their instructors.

Develop a clear blended learning policy: One of the key steps to improving blended learning in Cambodia is to develop a clear policy that outlines the objectives, principles, and strategies for implementing blended learning. The policy should be developed through a consultative process that involves all concerned stakeholders, including students, faculty members, administrators, and IT staff. The policy should also be flexible enough to accommodate the diverse needs of different institutions and programs.

Provide training and support for faculty members and students: Implementing blended learning requires a variety of skills and competencies. Therefore, it is essential to provide training and support for faculty members and students to ensure that they can effectively use technology and implement the pedagogical strategies required for blended learning. This can be done through professional development workshops, online tutorials, and mentoring programs.

Use a variety of instructional strategies: Blended learning provides an opportunity to use a variety of instructional strategies that cater to the diverse needs of students. For example, faculty members can use online discussion forums, interactive simulations, and multimedia presentations to supplement their face-to-face teaching. Additionally, faculty members can use student-centered strategies, such as project-based learning and problem-based learning, to promote active learning engagement.

Ensure access to technology and infrastructure: Blended learning requires reliable and high-quality technology and infrastructure, including computers, internet access, and learning management systems. Therefore, it is essential to ensure that all students have access to the necessary technology and infrastructure to participate in blended learning. If possible, educational institutions should provide laptops or tablets to students who do not have access to them at home and offer free or subsidized internet access.

Monitor and evaluate the effectiveness of blended learning: Regular monitoring and evaluation are crucial to assess the effectiveness of blended learning and identify areas for improvement. This is to make sure that the desired outcomes

are achieved. This process may involve conducting regular surveys of both students and instructors, analyzing learning outcomes, and evaluating teaching methods. The findings of these assessments should be utilized to modify the blended learning policy and guide future training and assistance provided to teachers and students.

Create a supportive environment: Blended learning requires a supportive environment that promotes collaboration, communication, and engagement. Educational institutions should create online communities of practice for faculty members, allowing them to share ideas and strategies for effectively implementing blended learning. Additionally, they should also create online student communities to facilitate collaboration between students and faculty members outside of the classroom.

Promote equitable access to blended learning: Finally, it is essential to promote equitable access to blended learning to ensure that all students have an equal opportunity to succeed. This includes providing support for students with disabilities, ensuring that all instructional materials are accessible, and offering language support for students who may not be proficient in the language of instruction.

Conclusion

Because of the COVID-19 pandemic, blended learning has emerged as the new norm in many educational settings throughout the world. This learning approach combines the finest aspects of both traditional face-to-face and online learning. The COVID-19 pandemic has provided an opportunity for education stakeholders in developing countries like Cambodia to explore the benefits and challenges of implementing blended learning and find ways to accelerate this learning approach.

For faculty members, blended learning offers several advantages, including increased engagement, improved communication, and the possible adoption of various teaching methods. Moreover, students also benefit from blended learning through enriching educational experiences that can increase their retention and engagement, flexible self-paced learning, and efficient online and offline collaboration and communication with faculty members.

However, many developing countries, including Cambodia, lack digital infrastructure and resources for implementing blended learning. The lack of experience, knowledge, and skills in online teaching and learning, especially among faculty members and students, has impeded the transition toward blended learning. Moreover, students from low socioeconomic families cannot afford a broadband connection or the necessary tools they need, such as laptops or tablets, to support their online learning (Heng & Sol, 2021b). As previously stated, the issues have been linked to a lack of policy, faculty support, technology and computer skills, large class sizes, and digital resources (see Tshabalala et al., 2014). Some institutions struggle with a lack of institutional definition, resistance to innovation and change, limited research-informed models to aid institutional adoption, and a shortage of employees capable of participating in blended learning (see Su, 2019). The psychological effects also cause additional problems for all parties, particularly faculty members and students, leading to stress, fear, dread, reluctance, and discontent (Heng & Sol, 2021a; Leng et al., 2020).

Despite that, the COVID-19 pandemic has presented Cambodia with an opportunity to enhance the usage and integration of ICT in education and promote the digital transformation of its educational system. MoEYS has worked with various partners to ensure continuous education for students in Cambodia. However, to foster the widespread adoption of blended learning in post-pandemic developing nations like Cambodia, more government assistance and financing are needed. Several suggestions have been put forward to enhance the effectiveness of blended learning, including, among others, boosting public-private partnerships, investing in digital education, enhancing ICT infrastructure, elevating ICT skills, and promoting autonomous learning.

Finally, additional research should be conducted to investigate how blended learning is experienced and perceived by both educators and learners. Such an understanding will be crucial for policymakers and government officials to ensure that blended learning will be effectively implemented and can be an effective way of learning, especially for Cambodian higher education in the future.

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Flipped Classrooms in Cambodian Higher Education: Key Challenges and the Way Forward

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Summary

The COVID-19 pandemic has put flipped classrooms at their highest potential in education, benefiting both developed and developing countries around the globe. Although online learning and flipped classrooms have begun to gain popularity over the past two decades, this trend has increasingly extended to various developing countries and regions. This chapter first defines the flipped classroom and reviews some research on the topic. It then discusses some significant challenges for teachers implementing this model in higher education institutions in Cambodia. Following that, it provides some suggestions to relevant stakeholders to leverage the use of the flipped classroom within the current scenario of higher education in Cambodia.

Keywords: Flipped classrooms; higher education; blended learning; online learning; Cambodia

Introduction

Education plays a crucial role in people's lives. In other words, without proper education, people will surely wander without a definite destination. In this digital age, without basic knowledge of technology, students will have trouble learning and acquiring knowledge (Em, 2021). To meet the evolving demands for education, innovative approaches such as online and flipped classrooms have been introduced, particularly at higher levels of learning. This shift presents both great opportunities and challenges (Heng et al., 2023). There are many reasons for such an introduction to online learning. As noted by Sadiku et al. (2018), online teaching and learning offer opportunities to expand the learning environment for a variety of student populations. With the rise of online instruction, educators are increasingly being asked to consider teaching their classes online. However, teaching online requires some unique skills and requirements. Meanwhile, a growing number of students are choosing to shift from traditional face-to-face to online learning due to its many benefits. These include the ability to keep up with the latest technologies, the lack of physical infrastructure for the traditional mode of learning, and the lower cost of tuition and fees. Sadiku et al. (2018) also emphasized the challenges posed by online teaching and learning, including concerns over the effective delivery of courses, the need to respond promptly to student inquiries, adaptation to online tools and infrastructure, and questions about its value and quality.

Along with this trend, the COVID-19 pandemic has caused great disruptions to human life. The outbreak of the novel coronavirus, commonly known as COVID-19, has brought about changes in various aspects of people's daily routines, particularly in business, tourism, and education. Due to the pandemic, many educational institutions were closed, and classes were moved online. The shift to online learning was implemented by educational institutions to continue delivering educational content to students, and its effects appear to hold implications for future education (Meng, 2021). In general, the impacts have been multifaceted, ranging from health to economic and educational crises. In education, including higher education, COVID-19 has compelled millions of students to adopt online learning in order to continue their education when physical classes were impossible (Heng & Sol, 2021).

In response to the COVID-19 pandemic, Cambodia has leveraged technological innovations to make it possible for Cambodian university students and teachers to continue teaching and learning through a combination of online learning, blended learning, and/or flipped classrooms. Notably, many higher education institutions in Cambodia have, to some extent, adapted to the circumstances during COVID-19 (Heng et al., 2023). While online learning serves as the overarching approach, consisting of both blended learning and the flipped classroom, there might be instances where some practitioners might not clearly understand the differences between the three terms.

Because of the limited experience of both university teachers and students, there are many challenges posed by online learning (Heng & Sol, 2021). The abrupt transition to online learning during the COVID-19 pandemic has exacerbated digital device and educational inequalities between privileged individuals and those lacking access. This has potentially widened and worsened skills gaps, an issue of great concern since before COVID-19 (Heng, 2021).

This chapter aims to discuss some critical challenges faced by teachers teaching at the university level when applying the flipped classroom model, a type of blended learning, particularly during the COVID-19 pandemic. First, it defines the flipped classroom and then provides a literature review of some previous research in the field. Next, it discusses some critical challenges of implementing flipped classrooms at the higher education level in Cambodia. Following that, the chapter offers some insights into how those challenges can be lifted to some extent and make the flipped classroom ready-to-use for Cambodian higher education, taking into consideration the role of key stakeholders.

What is a flipped classroom?

There are often misunderstandings about the concept of flipped classrooms. As stated by Bergmann et al. (2013), educators often believe the flipped classroom approach is not different from online videos or online courses, which are to substitute an educator's role and in-class responsibilities. In contrast, learners usually study independently from different places, often remotely, using electronic devices. Another misconception regarding the flipped classroom approach is that educators need to stand or sit in front of a camera, record

themselves lecturing, and send it to students for passive viewing (Subramaniam & Muniandy, 2016).

According to Pinnelli and Fiorucci (2015, as cited in Subramaniam & Muniandy, 2016), the flipped classroom approach is not a well-defined epistemology or a teaching model. It draws inspiration from various pedagogical approaches, such as student-centered learning, Bloom's taxonomy, Vygotsky's theories, and collaborative and cooperative learning. The goal is to maximize classroom time by transferring knowledge acquisition to independent study outside of class, allowing students to take charge of their learning. In a more specific definition, the term 'flip' originates from the concepts of hybrid or blended learning and problem-based learning by incorporating active learning approaches and new technological innovations to engage students.

The flipped classroom is often defined as a pedagogical approach that flips the traditional educational model, with lectures moving outside of class, often delivered through electronic media, and practical assignments transitioning into in-class activities (Uzunboylu & Karagozlu, 2015). The flipped classroom environment ensures learners become more active participants with learning autonomy both outside and inside the classroom.

In summary, a flipped classroom is a pedagogical method that blends electronic content delivery with classroom interaction. Students access foundational knowledge through short videos, podcasts, e-books, and online resources independently before participating in collaborative, hands-on activities and discussions during class.

Research on flipped classrooms

The adoption of flipped classrooms has been a compelling alternative for higher education institutions due to the development of technological innovations and the outbreak of COVID-19 in late 2019. According to Deng (2019), the flipped classroom originated from the innovative work of two chemistry educators, Jonathan Berman and Aaron Sams, at an American Woodland Park school. The two educators enhanced the course materials with explanatory content and recorded instructional videos using specialized software. The videos were then made accessible online, facilitating learning for students who could not attend

the class in person for some reason. Deng (2019) further added that there are some possible reasons why the flipped classroom has gained much attention and become popular in education, especially higher education. First, the rapid progress in technology makes it possible for students to access recorded lectures at their convenience, using various devices such as computers or smartphones. Second, the economic circumstances of students and their families have evolved to the point where they can afford these essential electronic devices, paving the way for the successful implementation of the flipped classroom model.

Flipped classrooms can enable teachers to cultivate critical and independent thoughts in their students and build students' capacity for lifelong learning, thereby preparing future graduates for workplace challenges (O'Flaherty & Phillips, 2015). By delivering lectures outside the classroom, educators can devote valuable in-person class time to fostering active engagement, collaborative learning, skill development, presentations, and problem-solving exercises—all designed to deepen students' comprehension of the course material (Mazur et al., 2015).

Key features of the flipped classroom model include a focus on efficient use of class time, catering to diverse learning styles, promoting problem-based learning, increasing student-teacher interaction, and allowing students to take responsibility for their learning. These skills not only benefit students within the classroom but also help them in other contexts, such as the workplace and real-life situations (Arnold-Garza, 2014).

Key challenges for flipped classrooms in Cambodian higher education

It is undeniably true that flipped classrooms have opened up many opportunities for higher education globally, and Cambodia is no exception. As Cambodian higher education institutions have tried to deliver quality education to their students during the COVID-19 pandemic, they too have explored the potential benefits of the flipped classroom—a sort of blended learning. The flipped classroom works best with motivated students who can spend additional time completing online activities at home (Bauer-Ramazani et al., 2016). A flipped approach to learning and teaching has much to offer, but the transition from traditional teaching methods to the flipped classroom

approach presents a number of challenges. In spite of the increasing popularity and opportunities that the flipped classroom model might have brought, particularly to tertiary education, several challenges could be observed. In particular, higher education institutions in Cambodia, especially teachers, have encountered considerable challenges in adapting flipped classrooms during COVID-19. The challenges include technological issues, extra workload, limited students' participation, students' low buy-in, and organizational challenges.

Technological issues

As Heng and Sol (2020) highlighted, some typical technological problems involving online learning include the requirement for knowledge on how to use various applications, unstable or slow internet connections, outdated communication equipment, and incompatible browsers. Teachers involved in teaching and producing learning materials in flipped classrooms are required to have IT skills and knowledge of various digital tools and even hardware that they may not have been previously exposed to.

Some learners who lack access to reliable technology and/or a stable internet connection have difficulty partaking in any e-learning components (Heng et al., 2023). This digital divide is seen on a global scale and between income brackets within individual countries (Li & Lalani, 2020, as cited in Cheam, 2021). According to a quantitative study, Em (2021) found that 40 students (50% of surveyed students) identified limited internet connections and technological issues as their primary hurdles when studying online.

Extra workload

According to Drake et al. (2016), the process of flipping a classroom requires considerable extra time and commitment from teachers, including the demanding tasks of planning, recording, and editing video presentations for good quality. These added responsibilities can be especially time-consuming for those who are unfamiliar with recording and editing technologies, as well as for aging teachers who have spent their careers in traditional classroom settings. It is also time-consuming for those teachers to become good at filming and editing tools. Achieving the right tone and pacing for a video presentation

may require experimentation for the teachers. They might have to take the video twice or thrice to ensure the rightness of the video. Therefore, the level of engagement and commitment required to make those videos is essential. In addition to the video production aspect, teachers must also re-conceptualize how they could utilize classroom time to accommodate more active learning from their students (Drake et al., 2016).

Students' limited participation

As the flipped classroom model suggests, students need much participation to learn independently for some specific time intervals, facilitating collaborative learning experiences with teachers and their peers during allocated time periods in the classroom. Despite the effort and time made by the teachers in conceptualizing the learning and teaching approach and creating video presentations, there may still be instances where the videos go unwatched, just like in traditional homework assignments, with some students failing to complete them. As a result, the teachers need to employ supplementary strategies to eliminate the problem of students' limited participation. For example, teachers can implement measures such as asking those students to take a quick quiz upon arriving in the classroom the next day or encouraging students to take notes and respond to questions in the videos (Drake et al., 2016). Ultimately, teachers have to be well prepared to support and guide students who show up in the classroom unprepared.

Students' low buy-in

Another significant difficulty for teachers in implementing the flipped learning model is achieving student buy-in. While some students are struggling with the traditional teaching methods, others might have become so used to this approach that they have a hard time adjusting to something new and innovative, like the flipped classroom approach. Flipped courses are characterized by active learning tasks that require students to be actively involved in their own learning process. According to the University of Minnesota (2013, as cited in Subramaniam & Muniandy, 2016), there are three successful characteristics of the flipped classroom approach. First, teachers need to plan and organize highly structured activities within the classroom to keep the students involved. Second, problem-solving activities are needed for

students, such as completing quizzes and applying the content or concepts from the flipped videos. Third, students are expected to attend in-person sessions, and in-class grading is often incorporated, promoting active involvement and accountability. These tasks require students to put in more effort during class and to stay close to the learning pace of the subject outside the classroom. Basically, the level of students' commitment depends on how patient, confident, and adaptable they are to the new learning environment. Some students struggled to overcome challenges and constraints to fulfill course requirements successfully (Chet et al., 2022).

Organizational challenges

Some teachers have experience working with management and support staff who may not have the foggiest idea about the so-called technological shift towards a more student-centered pedagogy when adopting the flipped classroom model. This lack of understanding has hindered the implementation process. Another challenge raised by researchers and instructors is the use of the model as an excuse to continue lousy teaching or implementation without critical self-reflection. This issue underscores the importance of ensuring that the model is applied thoughtfully and effectively. The time shift involved in transitioning to the flipped classroom approach also causes problems for some teachers who may value spontaneity during lectures. It can also be argued that a large initial time investment is required for implementing the flipped classroom for teachers teaching at higher education institutions. Online courses, in particular, require teachers to spend more time than classroom teaching. Teachers often need to spend much time communicating with individual students, participating in and grading online discussions, and preparing and maintaining online courses (Wang et al., 2017).

The way forward

Ministry of Education, Youth and Sport

MoEYS should collaborate closely with each university to establish dedicated learning management systems (LMS) to ensure that they are equipped with the necessary learning and teaching systems to facilitate online and flipped learning, particularly in the post-pandemic time (Heng & Sol, 2021). Besides

establishing LMS, MoEYS should provide financial support to the universities facing challenging financial situations, particularly due to the COVID-19 pandemic. MoEYS also needs to focus on capacity building for the administrative and academic staff so that they are well-equipped with the necessary knowledge and skills to enhance the effectiveness of online class delivery (Heng & Doeur, 2022). They added that in order to achieve this, MoEYS needs to increase investment in digital education to transform and internationalize Cambodian higher education.

Higher education institutions

The adoption of online teaching and learning in higher education institutions in Cambodia, whether in part or in full, should start with the political support of the government, particularly MoEYS, to develop all the necessary infrastructure, frameworks, policies, and procedures. At the same time, universities should allocate a portion of their annual budgets to increase the availability of technical and financial resources, thereby establishing a comprehensive online teaching and learning system (Chet et al., 2022).

In addition, leadership within Cambodian higher education institutions should have a comprehensive understanding of the flipped classroom practice, enabling them to provide the necessary guidance to teachers. They should also provide capacity-building opportunities so that higher education staff like teachers can improve their ICT skills. Incorporating ICT into the educational curriculum and allocating both technical and financial support are also crucial considerations for higher education institutions in Cambodia (Heng & Sol, 2021).

Teachers

Teachers are key to creating a digital generation of students; thus, the priority must be placed on their development. Improving their ability to deliver digital education starts with better teacher education (UNESCO, 2020). Heng and Sol (2021) advocated that teachers must strive to improve their technological skills by familiarizing themselves with new learning devices and platforms, such as Edmodo, Google Classroom, Microsoft Teams, Schoology, and Zoom. These online platforms are invaluable for carrying on effective flipped learning.

Furthermore, teachers, especially older or senior teachers who may be less inclined toward self-directed learning, have to seek every opportunity to upskill by joining workshops or online training as much as possible so that they can learn from their peers and tech specialists alike. Teachers also need to align their teaching objectives and learning assessments with the actual goals of flipped classrooms. Lastly, teachers teaching flipped classrooms need to reflect on their teaching and students' learning, ensuring that their approach remains effective and engaging.

Students

Heng and Sol (2021) also suggested that even though such hybrid learning poses challenges to university students, including stress, anxiety, and fatigue, they should perceive it positively. To thrive in this learning environment, university students need to actively cultivate the technological skills needed for online or flipped classrooms. Last but not least, self-esteem is necessary for students learning in flipped classrooms. They need to engage in proactive learning by viewing recorded or posted materials in advance. Thus, they need to maintain their motivation, have high self-esteem, and look for all the support needed. This is essential when working both independently and collaboratively becomes more demanding.

Conclusion

In conclusion, this chapter has identified some key challenges of flipped classrooms for teachers in Cambodian higher education. While the challenges may seem substantial, they are manageable, taking into consideration the suggested ways forward. MoEYS plays a vital role as a supporter and policy implementer for higher education institutions under their supervision. Higher education institutions themselves need to invest more in building their digital infrastructure and resources and be ready to support teachers struggling with the new teaching and learning paradigm. Moreover, both teachers and students should enthusiastically embrace the new teaching and learning approach and strive to maximize its benefits. In this essence, the COVID-19 pandemic has served as a wake-up call for educational institutions in Cambodia and other stakeholders on the need to implement and integrate digital technologies into the pedagogical process. The traditional ways of teaching should not be clung

to, and online and flipped classrooms should not be run without any intervention or support for the prospect of better education in Cambodia.

The flipped classroom approach has grown in popularity at various educational levels, particularly higher education, even in Cambodia, due to the impact of the COVID-19 pandemic. However, it has left many unanswered questions. Therefore, future research should delve into the challenges faced by students, especially freshmen in remote Cambodia, who struggle to access the internet and technological tools as newcomers to the higher education system. Furthermore, comparative studies among various stakeholders, including teachers, students, and higher education institutions, can shed light on common challenges, enabling them to better prepare for such educational transitions. This kind of research will be highly informative and beneficial for all involved parties.

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Differentiated Instruction in English Language Classes: An Approach to Support Cambodian Secondary School Students

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Summary

Students are different, so they cannot be taught using a one-size-fits-all method. Since different students have different knowledge, backgrounds, learning styles, preferences, needs, and readiness levels, the employment of differentiated instruction, a teaching approach focusing on learners' unique differences and involving the use of various strategies, can ensure that all students are able to progress at their own pace and achieve their full potential. This chapter elucidates the concept of differentiated instruction and its benefits in English language classrooms. It also presents some strategies that teachers can use to cater to their students' diverse learning needs. Lastly, it provides recommendations to support Cambodian secondary school teachers in implementing differentiated instruction in their English language classrooms before ending with a conclusion.

Keywords: Differentiated instruction; teaching strategies; English language classes; secondary schools; Cambodia

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Introduction

It is unlikely to dress everyone in one-size-fits-all clothing due to differences in shape and size. Of course, the one-size-fits-all design might allow anyone to wear it, but that would inevitably result in ill-fitting garments that are too tight or too loose for different individuals. Therefore, it is essential to consider a range of sizes and styles that cater to diverse body types to ensure that everyone can find clothing that fits well and feels comfortable. Likewise, in a classroom, students have different learning preferences, understandings, backgrounds, experiences, and needs, so it is significant for teachers to take student differences into account and find effective methods to teach them (Heacox, 2002; Hordienko & Lomakina, 2015; Shareefa et al., 2019).

Hedge (2000) pointed out that students do not have the same cognitive and linguistic knowledge. Students exhibit a wide range of abilities, needs, and experiences in the classroom, with some demonstrating rapid acquisition of knowledge while others require more time to grasp concepts (Adami, 2004). Thus, it must be challenging for teachers to teach classrooms with a wide variety of abilities (Tomlinson, 2001). For example, fast learners may find the material dull and lose motivation if the material is not challenging enough, while slow learners may struggle with the content and require more teacher support (Zakarneh et al., 2020). Hordienko and Lomakina (2015) found that teachers find it challenging to balance the needs of weak, average, and fast learners because weak students often experience low motivation and inferiority complexes, which have a negative impact on their engagement in class. In English language classrooms, where English is taught as a foreign language, it is common for students to have limited language skills and background knowledge. However, schools should strive to be inclusive learning environments where all learners can benefit from education, regardless of their learning pace (Diana, 2004).

Since all learners are unique, teaching must also be differentiated (Adami, 2004). It is, therefore, essential to implement differentiation in the classroom, as it helps teachers create a supportive and inclusive environment while promoting individualized learning (Adami, 2004; Nicolae, 2014; Siyabi & Shekaili, 2021; Zakarneh et al., 2020). According to Moosa and Shareefa (2019), there was a significant connection between teachers' understanding of

differentiated instruction and its successful practices in the classroom. Meanwhile, Nicolae (2014) found that some teachers may not use the right method of differentiation or lack the necessary skills to implement it effectively. Therefore, it is crucial for teachers to be knowledgeable about the differentiated teaching approach and acquire the necessary skills for successful implementation in their classrooms.

In the context of Cambodia, a case study of the English subject in a lower secondary school revealed that English language teachers often faced classrooms with mixed-ability students (Sun, 2019). Those teachers pointed out that relying solely on the textbook was not effective as it failed to cater to the diverse levels of students, and some students even became disinterested in class (Sun, 2019). This issue was further supported by Em's (2022) research, which examined the challenges of English language teaching and learning in a Cambodian high school. Em (2022) found that large class sizes, often consisting of around 40 students, made it difficult for teachers to teach a heterogeneous class effectively. As a result, teachers tended to rely on lecture-based teaching methods for most of their instruction.

There is ongoing research into effective instructional strategies for mixed-ability classrooms, with varying conclusions. One approach is ability grouping which has been found to have a significant influence on students' learning and enable teachers to design tailored strategies and materials (Khazaeenezhad et al., 2012). However, studies by Betts and Shkolnik (2000) and Trinidad and King (2021) suggested that ability grouping may exacerbate educational inequality, with high-ability students doing better and slow learners falling behind. Meanwhile, various studies have proven the positive impact of differentiated instruction on students' learning (Adami, 2004; Nicolae, 2014; Siyabi & Shekaili, 2021; Zakarneh et al., 2020). However, not many teachers are aware of it; some are familiar with the idea but do not practice it in their classrooms (Nicolae, 2014; Onyishi & Sefotho, 2020).

Against this background, this chapter first defines differentiated instruction and highlights its benefits in English language classrooms. The chapter then presents some differentiated strategies that teachers can employ in their classrooms to tailor instruction to meet the diverse learning needs of their students. Finally, the chapter offers some recommendations to support

Cambodian secondary school teachers in implementing differentiated instruction in their English language classrooms.

Defining differentiated instruction

Differentiated instruction is not a new phenomenon. It has been a prevalent practice in education for many years. Furthermore, due to the increasing diversity of students in classrooms, it has become a crucial concern in educational research and policy (Ruys et al., 2013; Sapan & Mede, 2022). According to Tomlinson (2001), differentiated instruction refers to a teaching approach that emphasizes learner differences and is centered around their needs, meaning that teaching must be engaging, interesting, and relevant to students. To differentiate is to provide the class with a variety of teaching and learning methods by offering students tasks that mirror their learning abilities and styles (Bushie, 2015). In contrast to the one-size-fits-all approach, differentiated instruction takes into account all differences among students in the same class (Nicolae, 2014; Sapan & Mede, 2022). As Tomlinson (2001) rightly pointed out, teachers must consider both the needs of advanced and struggling learners since both types of students need support for their own development. Tomlinson (2001) suggested that one effective way of differentiating instruction is through flexible grouping, where teachers can use various group work arrangements to ensure that all students are challenged appropriately. Assessment is also the basis of differentiated instruction and has various forms. It occurs not just during or at the end of the lesson but also before the session. Whole-class, small-group, and individualized instruction are all facets of differentiated instruction (Tomlinson, 2001).

Benefits of differentiated instruction in English language classrooms

Differentiated instruction, as described by Heacox (2002), is an effective approach to addressing and managing the diverse learning of students in the classroom. It motivates students to learn by involving them in activities that are tailored to their needs, strengths, and preferences. For instance, a study by Karadag and Yasar (2010) found that Turkish students had a positive attitude toward differentiated instruction and enjoyed the experience more than traditional, one-method teaching. In addition, differentiated instruction has been shown to have several other benefits. Bushie (2015), Chen and Chen (2018),

and Sapan and Mede (2022) have all noted that employing differentiated instruction in the classroom can help students achieve more, increase their motivation to learn, and promote their learning autonomy. Furthermore, differentiated instruction can create a caring, safe, and welcoming learning atmosphere for students.

Kotob and Abadi (2019) conducted an experimental study to examine the influence of differentiated instruction on the academic achievement of students in mixed-ability classrooms. The study revealed that the scores of low-performing students had improved following the implementation of differentiated instruction. Similarly, a study by Abdullah et al. (2014) investigated the effect of differentiated learning methods on students' writing skills when learning Arabic as a foreign language. The results indicated that the students who were taught with differentiated instruction outperformed their peers who did not receive differentiated instruction. These findings suggested that differentiated instruction could be an effective approach to improving the academic performance of students.

Some strategies to differentiate instruction

According to Tomlinson (2001), teachers must proactively plan and execute diverse strategies to cater to differences in students' readiness, interest, and learning needs regarding "content, process, and product" (p. 17). This means that teachers must consider all three elements, such as content, process, and product, when seeking to differentiate their classroom instruction.

Content refers to knowledge, concepts, and skills that learners must absorb in accordance with the curriculum (Tomlinson, 2001; Tomlinson & Moon, 2013). It encompasses what students need to study and the resources that they use to study. Content can be materials developed in the curriculum and determined by schools or national standards (Heacox, 2002). Bell (2011) pointed out that differentiating the content is not about providing entirely different instruction and varying student outcomes. It is more about identifying a variety of strategies and resources to help students succeed.

Process, on the other hand, refers to the activities that students need to do in order to understand and make sense of the material (Heacox, 2002).

Differentiated tasks can be used to tailor the learning process to individual learners' preferences and strengths. For example, visual learners may benefit from activities that involve drawing pictures, while auditory learners may find it helpful to explain the advantages and disadvantages of a topic (Cárdenas-Sanchez et al., 2019).

Product is a form of assessment used to ensure that students are able to demonstrate their ability or show what they have learned from the content and through the process (Corley, 2005). According to Ferlazzo (2018), products can take various forms, not just essays or multiple-choice questions. Teachers can differentiate the products by using a range of activities, such as writing reports, creating brochures, participating in debates, or engaging in role plays (Cárdenas-Sanchez et al., 2019).

Content differentiation

Basically, content refers to what students will learn in the classroom. To differentiate the content is to teach up. Teaching up requires teachers to keep the curriculum or syllabus on the high end and to offer scaffolding to students who need extra assistance with the more difficult lessons (Breen, 2019). To ensure effective teaching, teachers must have a deep understanding of their students' learning profiles, particularly those who may be struggling. By identifying each student's strengths and weaknesses, teachers can tailor tasks and activities to help struggling students build the skills and knowledge they need to succeed.

- *Know students' learning profiles:* Learning profiles or learning needs refer to learners' individual characteristics, learning environments, and styles that influence their learning (Kamarulzaman et al., 2017). According to Heacox (2002), teachers should consider different aspects. One crucial aspect of learning profiles is the physical environment, which includes the classroom's layout, temperature, lighting, and seating arrangements. Additionally, students have different preferences for working, such as alone, in pairs, or in groups. By understanding their preferences and needs, teachers can choose instructional strategies and approaches that are aligned with their learning styles and interests, resulting in more effective learning experiences (Tomlinson, 2012). In short, it involves thoughtful instructional

planning that caters to each student's learning profile to ensure that all students can achieve their full potential.

- *Know students' learning interests:* Aside from readiness, interest is another essential component of differentiated learning (Tomlinson, 2001; Tomlinson & Moon, 2013). Teachers can increase students' interest by showing them how the material they are studying is connected with their interests. By doing so, teachers can motivate students to stay focused and engaged, so teachers should incorporate fun and enjoyable lessons or activities into the classroom (Kamarulzaman et al., 2017).
- *Use of pre-tests or diagnostic tests:* Before differentiating the content, teachers can use a pre-test or diagnostic test, as recommended by the Department of Education & Communities (2015). A pre-test is a tool used to evaluate students' readiness and abilities, allowing teachers to adjust their instructional materials accordingly (Berry, 2008). Readiness is the level of being ready to study the content, experience the process, and produce the product. To ensure that students are adequately prepared, teachers must identify any knowledge gaps or misconceptions and tailor their instruction accordingly (Heacox, 2002).
- *KWL:* KWL stands for *what I already know*, *what I want to know*, and *what I have learned* about a particular topic (Satria & Syafei, 2019). It is a graphic organizer that helps teachers assess students' understanding and prior knowledge before teaching the content. Instead of starting with the content immediately, teachers can give students three pieces of sticker notes with different colors indicating each KWL. Then students can stick those papers on the flipchart or whiteboard after finishing writing their answers. This will help teachers be aware of their knowledge gap.
- *Hands-on learning:* Teachers can differentiate the content by arranging various subtopics within the main topic and including a variety of texts or materials for students to learn. In addition, planning hands-on exercises or activities for some learners is also suggested, as it is an effective strategy that benefits both quick finishers and high-ability learners (Joseph et al., 2013).

Process differentiation

To differentiate the process, teachers are encouraged to utilize different types

of tasks for students to practice, such as tiered assignments, scaffolding, flexible grouping, work arrangements, adjusted questioning, and cooperative learning.

- *Tiered assignments:* Teachers can implement process differentiation by using tiered assignments, which involve providing varying levels of tasks for students based on their readiness or learning profile. Teachers can use Bloom's Taxonomy to guide them when developing various tasks for students, as it provides a framework of six levels of learning, ranging from remembering to creating (Heacox, 2002). For example, teachers should design activities that focus on knowledge or comprehension for slow learners while asking advanced learners to do higher-level tasks like application, analysis, or evaluation. In order to support struggling students, teachers should provide them with easily accessible materials while offering challenging resources to advanced learners so that they can build their skills and remain engaged (Heacox, 2002; Tomlinson, 2001).
- *Scaffolding:* Providing scaffolding is essential to support all students effectively. As every student has a unique learning style and pace, teachers need to adjust the level of support they offer (Joseph et al., 2013). This means that teachers should provide additional guidance and assistance to struggling students while allowing advanced students the freedom to work independently and seek help when needed. By doing so, teachers can help all students achieve their full potential and feel supported in their learning journey.
- *Flexible grouping:* Flexible grouping is another strategy for process differentiation. According to Corley (2005), flexible grouping involves organizing students into groups based on their interests, readiness, and learning profiles. However, this approach does not necessitate that teachers group students based on all three criteria consistently and simultaneously. Rather, the decision to group students flexibly depends on factors such as the learning content, the level of flexibility desired, and the instructional goals. By utilizing flexible grouping, teachers can better tailor instruction to the diverse learning needs of their students.
- *Work arrangements:* To differentiate the process, teachers may consider the work arrangement method. This method involves assigning tasks to students to work alone, in pairs, or in groups (Department of Education & Communities, 2015; Corley, 2005). Although working alone may not be

suitable for slow learners who require more support, it allows medium and fast learners to be more independent in their learning. Pair work, on the other hand, is a part of the cooperative learning approach that allows two learners to work together to achieve a given task. According to Mulya (2016), pair work helps students advance their understanding more than working alone. It can also create a friendly space for students to work with their peers, divide the responsibilities, and avoid bearing the whole weight of the tasks.

- *Adjusted questioning:* Teachers should ask questions that are appropriate for their students' abilities because questioning is crucial in fostering students' knowledge (Bibi et al., 2020). This means that teachers must know the right question levels for fast learners and slow learners. Bloom's Taxonomy provides a useful framework for determining these levels, with six domains of questions ranging from knowledge to evaluation. Low-level thinking questions are focused on understanding basic concepts, while high-level thinking questions require more complex reasoning and synthesis (Shanmugavelu et al., 2020). To encourage weak students to learn and stimulate their minds, teachers should provide simple questions that are within their grasp. On the other hand, teachers can tailor their challenging questions to high-achieving students.
- *Cooperative learning:* According to Jacobs et al. (2008), cooperative learning is a learning approach involving students working together to enhance both individual and group learning outcomes. Teachers should organize students to work in heterogeneous groups consisting of both slow and fast learners, which can foster more interaction as well as positive interdependence. Peer tutoring, in addition, is a key component of cooperative learning. It is a strategy in which students take on the roles of tutor and tutee. Teachers typically place struggling students in peer groups with more advanced learners who serve as tutors, offering guidance, explanation, and demonstration to their peers (Suranjana et al., 2015). This helps underachieving students feel more comfortable, reinforces their self-esteem, and boosts their confidence. It also benefits advanced learners, as peer tutoring allows them to reinforce their knowledge, build self-confidence, and develop a sense of responsibility and contribution to their classmates (Srivastava & Rashid, 2018). In the meantime, tutees are more motivated to study and better understand the lesson through the grounded support provided by their tutors.

Product or assessment differentiation

Assessment has undergone a significant shift in its purpose and approach over the years. Traditionally, assessment was mainly used to determine student placement, assign grades, and facilitate student progression to the next level. However, in recent times, assessment has evolved into a tool for observing and analyzing student learning, including academic strengths and weaknesses, interests, and learning preferences. The information gathered through assessment is used to make decisions that benefit teachers' teaching practices and students' learning outcomes (Moon, 2010). There are two types of assessments: formative and summative (Dixson & Worrell, 2016; Tomlinson, 2012). Formative assessment comprises pre-assessment, which assesses students' prior knowledge and readiness, and ongoing assessment, which monitors student progress and provides feedback to enhance learning. In contrast, summative assessment is conducted at the end of the learning process in the form of midterm, semester, or final exams. Its purpose is to evaluate students' mastery of the course material.

Differentiating products or assessments is about providing students with choices to showcase their understanding based on their learning profiles and preferences. Therefore, teachers need to use a wide variety of assessments, for example, writing, speaking, listening, role-playing, or creating graphic organizers (Cárdenas-Sanchez et al., 2019; Ferlazzo, 2018; Weselby, 2014).

Conclusion and recommendations

Differentiated instruction is a teaching method that enables teachers to create an inclusive classroom where all students, regardless of their ability level, have an equal opportunity to learn and improve themselves. To effectively differentiate instruction, teachers have to take a number of factors into consideration, including content, process, product, and learner differences such as interest, readiness, and learning profiles. This teaching method requires significant effort and commitment from teachers, as they must carefully plan and implement a variety of activities and strategies to meet the diverse needs of their students. Although challenging, the rewards of differentiated instruction are immeasurable, as it can inspire and motivate students to take ownership of their learning and reach their full potential.

To support the implementation of differentiated instruction in English language classes in Cambodian secondary schools, the following recommendations should be taken into account:

Firstly, a clear understanding of the needs and abilities of each student is important. This requires teachers to have pre-assessments and ongoing assessments to monitor student progress, which enables teachers to identify the readiness level of their students, as well as their strengths and areas that need reinforcement to help them progress. Such information will allow teachers to choose differentiated techniques that are appropriate for their students.

Secondly, flexible classroom management is crucial to meet the needs of diverse students. This includes the ability to adjust instruction and activities to cater to students' needs. It is also crucial for teachers to incorporate a wide range of instructional materials and resources, such as technology, books, manipulatives, and other materials that can be utilized to facilitate learning for students at different levels.

Thirdly, despite the importance of differentiated instruction, it is not easy for teachers to practice it. Therefore, ongoing professional development is needed. They need regular training and support to cultivate the skills and knowledge necessary to implement differentiated instruction effectively.

Fourthly, the success of differentiated instruction does not solely depend on teachers. In fact, it also requires support from the administration and school leadership. Therefore, school leaders should provide adequate resources, support, and opportunities for the ongoing professional development of teachers so that they can succeed in implementing differentiated instruction in their classrooms.

Lastly, because differentiated instruction is not a one-size-fits-all approach, there must be a willingness to change. This means that teachers must be willing to adapt and change their instructional strategies and activities based on the needs of their students. It is also imperative to create a positive classroom culture that values diversity and fosters a sense of belonging for all students.

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Part II

Issues and Challenges in Education

Parental Involvement in Primary Education: Benefits, Challenges, and Suggestions

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Summary

This chapter aims to discuss the benefits and challenges of parental involvement in young learners' education. The chapter also proposes some recommendations for relevant stakeholders to promote parental involvement. Parents need to be involved and keep track of their children's education. Schools need to link parents with some school activities. The Ministry of Education, Youth and Sport should advertise the benefits of parental involvement by designing educational posters or creating short video clips and linking parents to the communities. Finally, the chapter suggests that future research should explore the activities parents of low socioeconomic status can do to help their children's schooling at home.

Keywords: Parental involvement; young learners; academic achievements; challenges; suggestions

Introduction

All children were born at different levels of competency, and they can be supported in various forms of practice for upcoming achievement. For instance, parenting experience is a key factor for students' future success (Bornstein & Lamb, 2002; Bronfenbrenner, 1981; Mayo & Siraj, 2015; Ricker et al., 2021; Singh et al., 2004; Warren, 2010). Parental involvement can be viewed as the engagement of parents in children's learning development at school or home. Parents can be involved in many activities and practices to assist their children in learning. Moreover, parental involvement is an essential ingredient in children's education. The research found that parental involvement positively influences children's academic achievement at school (Marcon, 1999; Peressini, 1998). In language learning, parental involvement in children's schooling is one of the important components of helping young learners acquire the languages (Wati, 2016).

In the context of Cambodia, Nguon (2012), exploring the effects of parental involvement on students' achievement in various contexts, found that parental support really increases the level of students' achievement at school. For example, students got better grades or scores. Hun (2016) conducted research on the understanding and perspectives of parents on parental involvement among parents from various socioeconomic backgrounds and levels. Hun found that parents come up with a broad understanding of parental involvement in supporting children's learning.

This chapter aims to discuss the benefits and challenges of parental involvement and provides possible suggestions to enhance parental involvement in children's education.

Benefits of parental involvement

According to Jeynes (2005), the term 'parental involvement refers' to "parental participation in the educational processes and experiences of their children" (p. 145). Similarly, parental involvement can be defined as "the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities" (Rapp & Duncan, 2012, p. 3).

Many previous research studies focused on how parental involvement impacts students' education, development, and achievement (Fan, 2001; Gonzalez-DeHass et al., 2005; Mutodi & Ngirande, 2014; Taub, 2008; Yulianti et al., 2018). For example, Korosidou et al. (2021) found that parental involvement enhances children's oracy and literacy skills. Moreover, Kim and Barrett (2019), in exploring the association between parental involvement and students' success, showed that students' English proficiency increased after their parents engaged in their learning process. The previous studies also showed a number of benefits of parental engagement in educational settings (Balli, 2016; Porumbu & Necşoi, 2013; Sapungan & Sapungan, 2014; Wong et al., 2018). This shows that parents play an important role in the development of children in education, and it is known as a learning strategy for enhancing the effectiveness of education in which learners spend the rest of their time at home (Epstein, 2011).

Liu et al. (2020) explored the roles of parental involvement in child education by constructing a literature review with a previous study. It was found that parental involvement is the most influential factor and useful resource to increase children's achievement since parents can be considered the earliest teachers who mostly spend time with the learners besides the classroom. The study also recommended that relevant stakeholders, especially educators, should find various approaches to support and motivate parental involvement as a main way to develop children's learning. Parents are such role models for all children since the children's words, behaviors, attitudes, and beliefs are always shaped by their parents' everyday activities; hence, the development of infants counts on their parents as well (Bornstein et al., 2014; Hedenbro & Rydelius, 2019).

In the context of Cambodia, Nguon (2012) examined the relationship between parental involvement and students' achievement in a particular public school in Cambodia. In his study, he employed surveys consisting of questionnaires to obtain the data from 1,551 tenth grade students and 1,445 students' parents. Moreover, his study also employed semi-structured interviews to collect more data from 33 teachers, 10 school support committee members, and six officials from the district education office. The results from the multiple regression analysis indicated that parental involvement positively correlated with students' achievement. It means better parental involvement at home can improve students' learning outcomes at school. For example, students get a

better GPA in their studies. Sara (2021) indicated three areas of benefit from parental involvement in children's education, including improving children's study motivation, enhancing students' educational quality, and fostering students' academic success. His clarification shows that parents need to maintain close relationships with their children as well as the schools.

Furthermore, Sapungan and Sapungan (2014) also strongly believed that:

[...] parent-teacher partnership makes tremendous impact on children's education. Conversely, the strong collaboration of parents with school authorities can create "tsunami of improvements" in both physical and academic performance of the school. Hence, school administrators have to boldly encourage parents to get involved and make "storm surge of contribution" to help achieve the school's missions and goals. (p. 45)

Challenges of parental involvement

Although parental involvement plays a crucial role in young learners' education, a number of challenges obstruct the movement and development of this meaningful approach to helping young learners. While many previous studies focused on the benefits of parental involvement, some research studies found challenges in educational fields (Burke et al., 2014; Kabir & Akter, 2014; Kavanagh & Hickey, 2013; Matshe, 2014; Naong, 2011). Moreover, various barriers have been found regarding parental involvement in their children's education.

Malone (2017) argued that socioeconomic status (SES) is a potential challenge for parental involvement because some parents struggle to be involved in their children's education due to their SES. Malone identified four essential issues regarding SES.

The first issue is a lack of knowledge or education. It means that children whose parents are from higher socioeconomic and more educated status are usually more actively and willing to participate in their children's educational process than those from lower socioeconomic and less educated status (Turney & Kao, 2009). For instance, parents with lower SES and low educational backgrounds have lower visible and active levels of parental involvement.

The second issue is work schedules and transportation issues. This means that most parents with low SES also want to engage in their children's learning. However, they cannot afford it because of the shortage of crucial family resources, such as time, money, and transportation, to assist their children academically (Davis-Kean & Sexton, 2009; Green et al., 2007).

The third challenge is the preference for home-based involvement. It means some parents from a low SES family also positively agree with parental involvement in children's learning, but it is not their responsibility or duty. They believe it is the role of the principals and teachers at school, such as in children's decision-making or working in the community.

The last issue is the visibility of involvement. Although parental involvement has various forms in which students' parents are able to engage themselves, parents of low SES consider themselves only in the academic process. Those parents think they play a small role, and the parents from higher SES have better and broader perspectives regarding parental involvement. For instance, Turney and Kao (2009) found that parents with better SES and higher education usually get more involved in their children's education than those parents who are less educated and have low SES. Parents with low SES and low educational backgrounds usually have less time to spend with their children because they are very busy finding family incomes.

Handayani et al. (2020) found that well-educated parents would spend a greater level of involvement in their children's education than those with a less-educated background since parents with a better educational background provide more educational resources and assistance to their children. However, Hornby and Blackwell (2018) found four important barriers, which were the factors blocking parental involvement, such as parent and family factors (e.g., the negative experience of the parents at school and the low literacy of parents); parent-teacher factors (e.g., the lack of time spent with parents, too much expectation from the parents, and the communication between parents and children); societal factors (e.g., parents' mental health issues, financial issues, and racism); and practical barriers (e.g., too early school opening hours, ways of connection between parents and teachers, time restraints of parents, and internet safety).

In early childhood schooling, two major areas of challenges were found in parental involvement, such as the lack of resources in terms of educational and professional training background (e.g., the limited access to reliable sources of information and language barriers remain key barriers to parental involvement) and school readiness (e.g., the geographical location of the school and the lack of facilities). Yulianti et al. (2019) also stated that parents with low education would spend less time with their children due to inflexible working hours at their workplaces. Similarly, Kalil et al. (2012) found that more educated mothers devote more time to their children's development than less-educated mothers.

In the context of Cambodia, young learners' education is easily impacted by their parents since the young children spend time mostly with their parents at home. Parents can be involved in their children's education at home and school. Cultural beliefs would be the biggest potential barrier to engaging parents with their children's learning in Cambodian education (Eng et al., 2017; Sara, 2021). Historically, Cambodia was influenced by the genocidal war in the mid-1970s, and the human capital, such as educated and skilled people, was destroyed and has not been sustainable (Eng et al., 2014).

Furthermore, some parents are poor, so they do not have time for their children because they have to earn money to support the family. World Bank (2012) showed, in its report, that around 30.1% of Cambodian citizens could earn less than 1 dollar per day in 2007, so it was below the poverty line. UNICEF (2008) also reported that resources like parental educational backgrounds, family economic and working statuses, and family size were the important components that influenced the children's academic success and enrolment.

Suggestions to enhance parental involvement in children's schooling

Since parental involvement plays a great role in improving and developing young learners' education, relevant stakeholders should take action. Liu et al. (2020) suggest two crucial stakeholders to implement a successful parental engagement are parents and teachers, and the two stakeholders have different roles to play as follows.

Parents

According to Cozett and Roman (2022), parents ought to assist their children in setting clear and realistic goals in the educational process, and the parents need to be informed and be experts in their children's learning process at home. Since parents are always close to their children, parents should be allowed to join some special events or meetings at school to discuss their children's learning process, so they can know some issues about their children. Furthermore, the parents should be open-minded and more willing to participate in some activities at school and contact the teachers on a regular basis.

Teachers

Teachers should also invite parents to express their concerns about their children's learning. The teachers should involve the parents in the children's decision-making process in education. Teachers should encourage students' parents to join some school meetings; therefore, the parents can show some concern. In addition, the teachers can motivate all parents to follow up with their children. For example, parents can check their children's homework. The teacher should create the contact details of the students' parents for any issues with learning.

Schools

The schools can promote parental involvement by creating various communities for teachers and students' parents to find out about current issues; furthermore, the parents should be permitted to join some students' occasions or programs.

Moreover, as Herrell (2011) stated:

To ensure effective parental involvement, schools may have partnership programs in place that continually develop, implement, evaluate, and improve plans and practices encouraging family and community involvement. There must be mutual trust and respect between the home, school, and community. Partnership programs within the school could train volunteers on specific ways and strategies to assist in the classroom

or school. With this type of training, all volunteers would know the expectations and have a better understanding of the operations of the school. Schools need to attempt to involve numerous parents and community members in the education of students through effective partnership programs in an effort of expressing the importance of education. (p. 99)

Conclusion

Parental involvement is greatly beneficial to young learners' education, and it impacts students' learning achievement. Some benefits of parental involvement in young learners' education include improving language skills, increasing the level of achievement, mastering the quality of education, improving children's motivation, sustaining the educational system, and fostering children's academic success. However, some challenges have also been discussed regarding parental involvement. One of the biggest challenges is SES since families with low SES tend to spend less time with their children. Additional challenges include parents' backgrounds and beliefs, social issues, cultural barriers, and a shortage of time.

The four important stakeholders need to know their roles and duties to enhance parental involvement. Parents should devote time to following up with their children and joining some school activities. Parents need to maintain a friendly and close relationship with their children's schooling. Especially, all parents should not always depend on the teachers at school. Moreover, teachers should motivate all parents to involve their children's learning by creating special events at schools or communities. School is also an important stakeholder, which can promote parental involvement. Schools should create some meetings to gather all students' parents to discuss students' learning issues. Schools can also provide some benefits, such as gifts or motivation letters, to the parents who do well in parental involvement. '

The Ministry of Education, Youth and Sport should encourage all relevant stakeholders and support them to get involved in their children's learning. Moreover, parents should try to support their children with intrinsic and extrinsic motivation and follow up on their children's studies.

Although most researchers have found that more educated parents participate in parental involvement than less-educated ones, less-educated parents can also involve their children academically at home in some ways. First, less-educated parents can give their children intrinsic and extrinsic motivation because motivation can provide positive reinforcement for the children's schooling. For example, parents can give small gifts if their children get good grades on homework. Second, less-educated parents can play a role as mentors. They need to stay close to their children and provide them with some advice or ideas, and they can follow up on their children's development. Third, less-educated parents can be communicators. They can keep a close relationship with their children's schools in order to follow up on their children's schooling. For example, they can join some meetings that the school invites them to attend. The last thing that less-educated parents can do to help their children learn at home is to set specific rules suitable for their children. For instance, the children must do homework or tasks provided by the teachers at school.

Future research should explore what parents with low SES and education can do to involve their children in the learning process. As most poor families are busy earning money to support their children, it is crucial to consider research that explores how parents under these conditions can be supported to improve their parental involvement in their children's education.

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Inclusive Education for Children with Disabilities in Cambodia: Progress, Challenges, and Ways Forward

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Summary

Education is a basic form of human right and is the noblest means of saving people from poverty in a sustainable manner. Therefore, no one in society shall be excluded from having equal access to education. Drawing on secondary sources, this chapter addresses the development of inclusive education for children with disabilities in Cambodia. It focuses on three aspects: recent progress, challenges, and ways forward. The chapter begins with a brief background of inclusive education. It then discusses the importance and definition of inclusive education. Next, it highlights the recent progress made by the Cambodian government and partnering organizations. The chapter also examines the challenges that hinder the efficient growth of the sector, focusing on attributional, physical, and institutional barriers. The chapter concludes with ways forward that should be taken by all concerned stakeholders, including the government, partnering organizations, and individuals, to enable a smooth delivery and effective implementation of inclusive education for children with disabilities in Cambodia.

Keywords: Inclusive education; children with disabilities; challenges; Cambodia

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Introduction

Children with disabilities are argued to be among the most vulnerable members of society (UNICEF, 2018b). Approximately 10% of the children in Cambodia have some form of disability, with speech-to-cognition impairments being the most apparent (Brizendine, 2020). There is a strong correlation between disability and poverty; hence, if children with disabilities are not provided with high-quality and equitable education from the start, the proportion of impoverished people will remain constant. Education must be made accessible to every child simply because of one basic reason, that is, to transform life toward prosperity (Global Education Monitoring, 2018). However, the education that Cambodia offers nowadays is far from accessible to every child (UNICEF, 2018a). Despite agreements, promises, and noticeable progress, the extent to which targets have been accomplished remains an unfinished task. Basically, Cambodia needs to make sure that education is as inclusive as possible if it wishes to see a reduction in poverty in the long run. Research has shown a correlation between inclusive education for children with disabilities and poverty rate reduction because inclusive education has proven to have economic benefits (Hehir et al., 2016).

Recognizing the world's ambitions to make learning inclusive for students with difficulties, Cambodia has signed various agreements in exchange for equal rights and the participation of disabled members in society (Ministry of Education, Youth and Sport [MoYES], 2019). Partnering with foreign-initiated projects is also progressing at a satisfying pace, yet challenges remain. Unfortunately, children with disabilities in Cambodia are at high risk of not receiving educational services. They are twice as likely to be out of school compared to normal children, making them unable to thrive and reach their full potential (MoEYS, 2021a). At the same time, the proportion of students with disabilities who have access to education remains limited, and many are still isolated or alienated under the guise of inclusive education (Nishio, 2019). According to MoEYS (2021a), 17,300 Cambodian students with disabilities received access to basic education in the 2019-2022 academic year. Although tremendous progress has been made with the establishment of inclusive schools, strategic goals, and policies, issues remain central to the growth and development of disabled inclusion (IKEA Foundation, 2017). Moreover, common issues, such as the lack of conveniently located facilities, inadequate

understanding among parents regarding the rights of children with disabilities to education, and insufficient enforcement of relevant laws, make inclusive education in Cambodia underdeveloped (Sen, 2018).

Drawing on secondary sources, this chapter provides a quick overview of inclusive education for children with disabilities in Cambodia and briefly defines inclusive education and, more specifically, inclusive education for children with disabilities. It then elaborates on the progress made by both the Cambodian government and partnering organizations. Before concluding, the chapter offers ways forward to improve the equality and quality of inclusive education for children with disabilities in Cambodia.

What is inclusive education?

Above all, it is essential to understand what inclusive education means. Often expressed through common statements such as “All means all” or “No child left behind,” these statements indicate that every learner matters equally. Inclusive education refers to the premise that schools serve as a platform for all children or pupils in spite of their learning differences (UNICEF, n.d.). In other words, they participate socially, come together, and learn based on their individual needs. Ideally, it is a process of placing students in mainstream classrooms without requiring structural adjustments to organization, curriculum, and teaching and learning strategies; it should be a system that is effective, efficient, and successful in response to a diversity of students in its locality (Hehir et al., 2016; Kartika, 2017; UNICEF, 2007). Unfortunately, according to UNESCO (2022), learners all over the world are being excluded from getting proper access to high-quality education due to various aspects such as sex, gender orientation, ethnic or social origin, language, religion, nationality, economic condition, or abilities.

Inclusive education for children with disabilities

Inclusive education for children with disabilities is generally perceived as an approach to meeting their needs within general educational settings (UNESCO, 1994). In other words, inclusive education includes everyone without making a distinction between non-disability and disability (Alliance for Inclusive Education, n.d.). However, according to the United Nations Convention on the

Rights of Persons with Disabilities, people with disabilities include those who have long-term physical, mental, intellectual, or sensory impairments (United Nations, 2007). Such impairments, when combined with other societal barriers, can hinder full participation with others on an equal basis (UNRWA, 2017). In fact, if a school is designated primarily for children with disabilities, it is considered a form of 'segregation.' Similarly, if children are placed in a special or separated unit, it is also referred to as 'segregation.' On the other hand, if both children with and without disabilities are included in mainstream settings but lack appropriate support and accommodations, this is known as 'integration' (Alliance for Inclusive Education, n.d.).

The government's efforts to promote inclusive education for children with disabilities

Cambodia went through a historic period of civil war that eventually left many people with disabilities, primarily due to mine explosions. However, disabilities in Cambodia are not limited to war-related incidents. Traffic accidents, work accidents, prenatal and postnatal conditions, as well as the aging population, are no exceptions to the reasons behind disabilities among some Cambodians (MoEYS, 2018). Statistically, according to the National Institute of Statistics (2014), there were 301,629 persons with disabilities, which was equivalent to 2.06% of the total population of 14,676,591 at that time. In 2019, the total number of children with disabilities in Cambodia was roughly 45,000 in primary schools and almost 7,000 in secondary schools (MoEYS, 2021b).

Certainly, the Cambodian government has taken significant steps to ensure that children with disabilities have the same rights to education as their counterparts. To exemplify, in compliance with the Constitution, Education Law, Law on the Protection and Promotion of the Rights of Persons with Disabilities, and other related policies, MoEYS has developed the Policy on Inclusive Education (MoEYS, 2018). The policy establishes a vision, goals, objectives, strategies, and an implementation plan to promote the rights of persons with disabilities in exchange for equitable quality education and lifelong learning opportunities for all (Nishio, 2019). From 2008 to 2018, the government implemented various policies to address educational inequality and ensure equal access to education for children with disabilities, regardless

of their socioeconomic background, gender, geographical state, or ethnicity. As a result, 54,838 children and youth with disabilities, including 22,621 girls, were enrolled in schools in the 2017-2018 school year (MoEYS, 2018).

According to Nishio (2019), there are currently five special education high schools in Cambodia, including in Phnom Penh Thmey, Chbar Ampov, Battambang, Siem Reap, and Kampong Cham provinces (see Tables 7.1 and 7.2). These special education schools cater to students who have visual or hearing impairments or those with intellectual disabilities (Nishio, 2019). Furthermore, MoEYS has recently established a national institute for special education, called the National Institute of Special Education, located in Khan Sen Sok, Phnom Penh, and transformed the Hands of Hope Center in Takhmao town into a public school with the support and funding of the Royal Government of Cambodia. In addition, teachers at the center also received the status of public teachers (Ou, 2021).

Table 7.1. *Number of students in special schools for the visually impaired*

	Number of classes	Male	Female	Total students
Phnom Penh	41	66	19	85
Kampong Cham	12	67	28	95
Battambang	13	28	6	34
Siem Reap	12	21	8	29
Total	78	182	61	243

Table 7.2. *Number of students in special schools for the hearing impaired*

	Number of classes	Male	Female	Total students
Phnom Penh	12	90	37	127
Kampong Cham	12	89	31	120
Battambang	13	66	30	96
Siem Reap	13	100	40	140
Total	50	345	138	483

In brief, in recent years, there has been noticeable progress in strengthening inclusive education in Cambodia, including the establishment of the National Institute of Special Education, the development of clear policies on inclusive education, the adoption of supporting policies and action plans on inclusive education, and the development of roadmaps for further improvement of educational services for children with disabilities. These initiatives are in line with the Education Strategic Plan 2019-2023 (MoEYS, 2021a).

Partnering organizations' contributions to promote inclusive education for children with disabilities in Cambodia

A number of non-governmental organizations (NGOs) are working to promote inclusive education in Cambodia, such as the Rabbit School, Save the Children, and Aide-et-Action. Working alongside the government, the Rabbit School Organization is participating in a working group led by MoEYS and international non-profit organizations, such as Save the Children, to develop the National Manual on Teaching Children with Intellectual Disabilities, Learning Disabilities and Autism Spectrum Disorder. This manual aims to support teachers in creating integrated and inclusive classrooms. Likewise, Aide-et-Action's Schooling for Deaf and Blind Children focuses primarily on integrating kids into the general classroom, equipping teachers with the knowledge and skills to teach children with disabilities, providing needed materials, and helping parents send their kids to school. So far, the project has established 44 integrated classes in 13 provinces, delivered education to 227 deaf students and 34 blind students, and conducted specialized training for 94 public school teachers and directors to effectively meet the needs of children with disabilities (Morris, 2012). In response to the increased number of children with disabilities who continue to experience exclusion and social isolation, Save the Children, with the support of the school support committee, worked on a three-year project to support more than 3,000 students aged 6-14 years to have access to primary education, thrive in school, and remain enrolled (Save the Children, 2012).

It is obvious that the partnering organizations have made significant contributions to inclusive education, outperforming the government's efforts in certain areas. The gap is crystal clear when children with disabilities get the most support from NGOs such as Rabbit School and Aide et Action. For

example, Srey Theav, a girl living in Siem Reap province diagnosed with Down syndrome from birth, was able to enroll in a public school with the support of Rabbit School Organization and Aide et Action after other public schools had rejected her due to the limitations of both funding and specialized human resources exclusively for children with disabilities (Redmond, 2021).

Similarly, a USAID-funded project known as Children Reading-Cambodia has provided opportunities and access to education for children who have hearing problems in the same way as children without disabilities in Steung Sen and Kampong Svay districts, Kampong Thom province. Moreover, the project provided training to volunteer teachers and deaf volunteers on sign language and teaching methodologies, as well as the use of learning and teaching materials (MoEYS, 2021a).

Catholic Relief Services is another organization that has initiated a number of plans to support inclusive education in Cambodia, including the implementation of inclusive education activities for young children and the provision of digital recording materials to the Department of Special Education. Moreover, this organization has promoted and launched inclusive and educational games on MoEYS's website for preschool children in collaboration with other ministries (MoEYS, 2021a).

Despite the fact that numerous accomplishments have been made, many barriers remain to hinder the desirable growth everyone wishes to see. Key challenges to the provision of inclusive education in Cambodia, particularly for children with disabilities, are discussed in the next section.

Challenges to inclusive education and children with disabilities

The most difficult barriers for children with disabilities are arguably those that are attitudinal and financial in nature (Ann-Marit, 2015). Moreover, barriers that hamper equal participation for children with disabilities can be classified into three categories: attitudinal, physical (structural and communication), and institutional (UNRWA, 2017).

Firstly, attitudinal barriers involve negative attitudes and stereotypes toward children with disabilities. They are often perceived as incapable, dependent, or

vulnerable. For instance, children with disabilities frequently face social stigmatization, a common religious misinterpretation that disability is the consequence of one's Karma committed in the previous life (Save the Children, 2012). These incorrect religious thoughts continue to make people look down on children with disabilities. In light of this belief, many children with disabilities do not get the chance to get a proper education, are disincentivized to get the service, and are less expected to go to school (Save the Children, 2012). In addition, children with disabilities often face social discrimination from teachers and peers at school, leading to insults and bullying (MoEYS, 2021b). Parents sometimes also play a role in perpetuating discrimination and exclusion among children with disabilities. According to Boer et al. (2012), on average, parents are uncertain whether or not inclusion is a good option for their children with disabilities. It is claimed that only when parents have more experience with or exposure to inclusive education will they have a positive attitude toward it and thus send their children with disabilities to schools.

Secondly, physical barriers can be categorized as structural barriers or communication barriers. On the one hand, structural barriers are obstacles made by nature or man-made that prevent children with disabilities from moving around independently. According to MoEYS (2021b), children with disabilities mostly have a hard time getting access to most schools in Cambodia due to the lack of infrastructure responding to their basic needs, such as ramps, easy-access toilets, and washing facilities. According to Brizendine (2020), almost all public places and buildings are not disability-friendly, not to mention educational institutions that do not have adequate facilities to properly facilitate children with disabilities. Consequently, these children are less likely to be encouraged to get an education. According to the Phnom Penh Center for Independent Living (n.d.), there is a significant need for improved school facilities to adequately support children with disabilities. Lack of financial resources for necessary school expenses, such as school uniforms, study materials, and assistive devices like wheelchairs, remains largely a problem preventing children with disabilities from getting desirable access to education. On top of this, transportation shortages, bad road conditions, and the geographical distance from home to school are additional problems, further preventing children with disabilities from accessing education. On the other hand, communication barriers are specifically experienced by those who have difficulties seeing, hearing, speaking, reading, writing, and understanding. In

effect, the way they communicate differs from those without disabilities; therefore, without proper assistance, communication and messages cannot be effectively conveyed to them.

Thirdly, institutional barriers occur when there is no legal framework for disability inclusion or when existing laws and regulations are poorly enforced. To illustrate, there is a law mentioning that all business buildings must provide access to persons with disabilities, yet it is not fully obeyed (Phnom Penh Center for Independent Living, n.d.). Moreover, employees of government agencies do not even know how to file a claim against violators (Brizendine, 2020). Despite receiving legislative support, inclusive education remains a sector that faces a shortage of professionals. Currently, most activities in the field of inclusive education are concentrated on primary education and are either implemented by international or local NGOs (USAID, 2018). Worse yet, the government does not act on its own will or priorities; instead, it acts in response to substantial and long-term criticism from the international community (Kalyanpur, 2011).

Overall, there is a lack of commitment from the central authorities to undertake the necessary institutional changes to put inclusive education at the forefront of education strategies in Cambodia. Furthermore, according to Kalyanpur (2011), this educational sector is highly influenced and donated by international donors whose authorities have put the national government under pressure to adopt strategies without proper consideration of necessary administrative and financial burdens. Without the support of the international community, the whole education sector in Cambodia would probably collapse. The political will to encourage the inclusion of children with disabilities into the education system on a legal basis is mainly due to pressure from the international community, and it has not been entirely put into practice by the government's efforts on the ground (Kalyanpur, 2011). This is evident in a statement made by ministry officials in a recent study who argued that MoEYS would prioritize the group of students whose learning needs require only minimal government interventions before shifting its focus to those groups that needed greater investment of resources (Kalyanpur, 2011).

Without a doubt, tremendous efforts, commitment, and participation from all concerned stakeholders must take place if we are to conquer the barriers that

are driving us away from achieving a society in which children with disabilities can freely reap the benefits of education as equally as other students.

Ways forward

To improve the equality and quality of inclusive education for children with disabilities in Cambodia, it is essential that all stakeholders, particularly the government, partnering organizations, and individuals, work collectively toward achieving a common interest, without which Cambodian children with disabilities will neither be able to live up to their rights nor fully become productive citizens (MoEYS, 2021a). Following are some suggestions that all stakeholders should take into consideration in order to succeed in the above-mentioned goals.

The Cambodian government

The government is undeniably the key actor in solving issues related to inclusive education for children with disabilities in Cambodia. Many problems can be resolved if the government seriously considers inclusive education as one of the top priorities in its educational development. First, the government needs to put inclusive education at the heart of development. If inclusive education remains a marginalized item on the agenda, there will be scant progress, if any, in the foreseeable future. As a result, students with disabilities will continue to face ongoing challenges that have persisted for generations. After the priority has been set, the government needs to make sure that there is enough budget allocated for the sub-national level so that they have sufficient financial resources to implement projects in response to the needs of students with disabilities within their communities. In effect, a financial allocation must be granted to schools that lack resources to operate inclusive classrooms, such as spending on building a disability-friendly environment and school materials, among others. Moreover, the government needs to firmly enforce the existing law and actively exercise it so that the results can be seen. By law, all buildings, especially schools, must be built with consideration for children with disabilities. Without this consideration, children with disabilities may continue to face barriers, such as mobility challenges, that discourage their regular school attendance. If possible, there should be initiatives to facilitate the mobility of

children with disabilities in circumstances where infrastructure does not accommodate their needs.

Partnering organizations

Partnering organizations have been performing pretty well in addressing the problems. However, it is vital that the sector work hand in hand with the government toward achieving a common goal. Action plans should, therefore, be effectively shared and made known to avoid repetitive actions. As these organizations mainly operate independently, oftentimes, there is no clear transition after the mandates end. This in turn makes the progress that has been implemented for years tend to regress into stagnation. As a result, this kind of development is proven to be unsustainable in the long run. Moreover, in addition to their predominant focus on primary education, partnering organizations should also extend their support to secondary and higher education. Neglecting the latter stages of the learning process undermines the objective of achieving lifelong learning for all, as outlined in the Sustainable Development Goals.

Individuals

The extent to which inclusive education for children with disabilities can be changed for the better relies largely on individuals' awareness of human rights and the existing inequalities that people with disabilities are now facing. It is essential for everyone to see children with disabilities as equal human beings. The outdated belief that disability is the result of one's Karma committed in the previous life should be discarded and recognized as a misguided notion. Unfortunately, many Cambodians still hold this belief, and thus they continue to see children with disabilities as weak, useless, and pitiful. Stereotyping remains the most difficult problem to fix. Until people see children with disabilities as equal members of society, children with disabilities themselves may not dare enough to go out to conquer the world or live up to their deserving rights.

Conclusion

In conclusion, inclusive education for children with disabilities is pivotal for the growth and development of Cambodian education, without which equitable education would hardly be achieved. This is simply because effective inclusive education allows children with disabilities to have access to education regardless of their learning differences, thereby improving the country's economy as more people are able to receive the education that they deserve. Over the past few decades, the Cambodian government has shown increasing interest in inclusive education for children with disabilities, with significant contributions from important donors and partnering organizations. With these efforts, the sector has seen noticeable improvements. To exemplify, those improvements include access to education for children with disabilities from various provinces, the establishment of a National Institute of Special Education, the growing number of special schools in the city and provinces, and the transformation of Hand of Hope into a public school whereby teachers were given the status of public teachers.

Nevertheless, the government is still being criticized for failing to prioritize inclusive education for children with disabilities. In other words, the government is being questioned over the plan to develop inclusive education for children with disabilities wholeheartedly and for appearing to respond to the pressure and criticism from donors and international stakeholders rather than taking proactive measures. Nowadays, inclusive education for children with disabilities needs more preparation for a commendable result. First, the government needs to put inclusive education for students with disabilities at the heart of educational development. Second, the government needs to ensure that enough resources are allocated to develop the infrastructure and facilities that support children with disabilities across the country. Third, law enforcement should be strengthened to ensure that everyone is fully aware of the rights of people with disabilities and to foster a truly inclusive education in Cambodia.

For partnering organizations, they should work closely with the government to achieve a common goal; otherwise, the development would be short-lived once the mandate of the aid comes to an end. Individuals also need to be informed and realize that children with disabilities are not deemed inferior or unequal to

normal children. Parents, in particular, play an integral role in recognizing their rights and perceiving the normal status of children with disabilities.

All in all, in order to enhance this learning sector and convince the government to prioritize inclusive education for children with disabilities, researchers are suggested to take a closer look at the correlation between the impact of inclusive education and economic growth. Moreover, researchers should examine this issue empirically to gain a deeper understanding of how inclusive education in Cambodia can be further promoted so that Cambodian children of diverse backgrounds and abilities can get access to an equitable and quality education to reach their full potential.

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STEM Education in Cambodia: Progress and Challenges

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Summary

In this industrialized world, science, technology, engineering, and mathematics (STEM) education plays a significant role in enhancing the human resources development needed for the socio-economic development of a country. With a long-term vision to become an upper-middle-income country by 2030 and a high-income country by 2050, Cambodia has shown commitment to strengthening and promoting the participation and quality of STEM education in the country. Despite such efforts, STEM education in Cambodia has still faced various challenges that must be addressed timely and collectively. This chapter first defines STEM education. It then discusses the recent progress in STEM education in Cambodia and highlights some key challenges. The chapter concludes with some recommendations to improve STEM education in the country.

Keywords: STEM; STEM education; progress; challenges; Cambodia

Introduction

Science, technology, engineering, and mathematics (STEM) education refers to the teaching of four different disciplines, including science, technology, engineering, and mathematics. It has been prioritized by most countries worldwide due to its importance in shaping this promising and industrialized world. Generally, STEM education poses a variety of significance to every stakeholder. Students in this field are exposed to more challenging and practical activities that involve intensive critical thinking, creative thinking, finding problems, and seeking solutions that are essential for current popular demand in society. Thus, students or graduates in this field are assured a wide range of opportunities and higher financial incentives compared to other jobs with similar qualifications (Rothwell, 2013).

STEM education is also crucial for the government as it magnifies the economic growth of a country, especially a developing one (Ismail, 2018). The reason for the growth is that STEM education stimulates and prospers innovation and human capital, which further enhances research and development (R&D) and competitiveness, contributing to overall economic growth (Croak, 2018). Private sectors such as financial institutions, technology companies, and more require workers with developed STEM skills to improve their technology and innovation. This is because private firms, especially businesses, compete in technology and innovation to bring about secure, convenient, and unique services to gain more customers (Warren, 1984).

Cambodia, a developing country that strives to become a high-income country, has been putting considerable effort into promoting STEM education throughout the past decades. For instance, the Cambodian government has prioritized STEM education through its national policy, for example, the Rectangular Strategy Phase IV (Royal Government of Cambodia [RGC], 2018). The first strategy of the policy emphasizes human resource development, which aims to improve the quality of education, science, and technology. The goal includes developing a quality and inclusive education system that integrates science and technology into the curriculum to foster national socio-economic growth, creating educational and science centers, and enhancing youth participation in leadership programs. The policy also indicates the initiative of the government to incorporate STEM in the curriculum according

to international standards, improve STEM quality in higher education, increase lecturers with doctorate degrees, and increase funding in higher education (RGC, 2018).

Moreover, the National Strategic Development Plan (NSDP) 2014-2018 and the NSDP 2019-2023 highlight the goal of improving education quality in Cambodia, especially STEM education. With Cambodia's aspiration to transform itself into an industrialized country with increased dependence on highly skilled human resources and value-added products through the Industrialized Development Policy 2015-2025, promoting STEM education to produce efficient graduates is prioritized. Not only through government policies, the Ministry of Education, Youth and Sport (MoEYS) has also contributed impressively to improving STEM education in Cambodia through the development of the national curriculum and the Education Strategic Plan 2019-2023, which highlight the objective of improving the quality of teaching and learning to be aligned with 21st-century skills. The strategies include strengthening and enlarging science subjects by implementing science-based teaching methods using computers, laboratories, and other approaches such as inquiry-based learning, concept-based learning, and problem-based learning (MoEYS, 2019a).

These efforts are put in by diverse stakeholders, both government and non-governmental organizations, with the support of various international donors. With these extensive efforts, Cambodian students' interest in STEM has seen noticeable progress in recent years, mainly in higher education. Students enrolled in STEM-related majors for bachelor's degrees increased from 26.83% in 2016 to 30.69% in 2021 (MoEYS, 2022).

However, despite the various efforts to encourage and enhance STEM education in Cambodia, several challenges have confronted the quality and involvement of Cambodians in STEM. Notably, Cambodia is in the lower ranks in the Association of Southeast Asian Nations (ASEAN) in terms of higher education, innovation capacity, and research (see Heng, 2020, 2021). The country has achieved a lower quality of education, especially in math and science, and lacks innovation capacity and human resources (Leng et al., 2021).

Against this background, the present chapter first defines STEM education. It then discusses the recent progress in STEM education in Cambodia and highlights some key challenges. The chapter concludes with some recommendations to improve STEM education in the country.

What is STEM education?

STEM stands for Science, Technology, Engineering, and Mathematics. STEM education integrates these four fields into the curriculum (Sanders, 2009). It was first referred to as SMET, an acronym for Science, Mathematics, Engineering, and Technology, in the 1990s (Sanders, 2009). Eventually, it was developed into STEM (Sanders, 2009).

Consisting of four significant learning disciplines, the “S” for science mainly covers subjects such as physics, chemistry, biology, astronomy, and more. It equips students with a sense of reality or the natural world, enabling them to question the cause of a phenomenon with actual life experiments and real-life practical applications. On the other hand, the “T” for technology in STEM education can be viewed as the product of engineering, given its historical connection to vocational education, and is an educational or instructional tool to enhance the teaching and learning of science, mathematics, and engineering (National Academy of Engineering & National Research Council, 2014). Apart from integrating technology into the educational process, students can apply essential skills to design, develop, and modify new technologies to meet the needs of society. Additionally, the “E” for engineering connects the other three disciplines by seeking solutions to solve existing problems using scientific knowledge and technology. It is significant as it can be used to solve existing problems and create other means, such as applications, structures, and products, to ease future issues. The “M” for mathematics generally refers to the studies of numbers and quantities, such as algebra, calculus, and more. Mathematics is the science of patterns and relationships that provides the exact language for technology, science, and engineering (National Academy of Engineering & National Research Council, 2014).

Recent progress in STEM education in Cambodia

Recognizing the importance of STEM education, various concerned

stakeholders in Cambodia, such as MoEYS, non-governmental organizations (NGOs), and the private sector, have been contributing significant efforts to promoting and developing the education system. The development includes the increase of new STEM-related training programs, the establishment of new STEM-focused higher education institutions, the improvement of the quality of teaching and learning, the development of digital skills and the application of STEM, and the reformation of the curriculum to put more emphasis on STEM subjects. In addition, they are supporting students in joining STEM-related activities, including short- and long-term projects, educational fairs, and local and international competitions (MoEYS, 2019a; MoEYS, 2022; RGC, 2018).

In terms of curriculum, there has been a division into two different tracks starting in 2010: the science track and the social science track, from which students can choose to start in the 11th grade (Kao & Shimizu, 2020). The difference between the two tracks is that for the science track, students will focus on STEM-related subjects such as math, physics, chemistry, and biology. In contrast, the social science track focuses heavily on literature, morality, geography, and history. Throughout the first few years of implementing this system, the students who chose the science track have always overshadowed those of social science until 2017-2018 (Kao et al., 2022; MoEYS, 2022). However, science track students consistently dropped yearly, from 90% in 2012 to only 34% in 2021. Social science track students proliferated from only 10% in 2012 to 66% in 2021 (Kao et al., 2022; MoEYS, 2019a; MoEYS, 2022). Moreover, it was noted that up to 50% of those enrolling in the science track in Grade 11 switched to the social science track in Grade 12. This is based on the statistics from 2019 to 2021 (Kao et al., 2022; MoEYS, 2022).

Moreover, several institutions have been established to accelerate the development process of STEM education in Cambodia, noticeably at the high school and university levels. The initiation of MoEYS and a prominent NGO called Kampuchea Action to Promote Education (KAPE) in 2014 established the New Generation School (NGS). This initiative aims to establish an 'independent' public school with the ambition of innovating and developing the education system in Cambodia to a 'maximal' standard, particularly in STEM subjects (KAPE, n.d.). Unlike most public schools with problems regarding corruption and a low standard of teaching and learning (see Heng & Sol, 2022; Heng et al., 2022), NGS aims to modernize and regulate the

Cambodian education system through good governance and transparency. Another distinct feature of NGS is the autonomy that the school enjoys despite being a public school. The school itself has the authority to set several rules and regulations concerning the curriculum and conduct internal and external affairs, including organizational structure, staff recruitment, staff development, and more (Bo, 2021). Private tutoring and purchasing teacher's goods, which commonly take place in most public schools, are abolished in NGS, ensuring faster progressive learning (see Nhem & Kobakhidze, 2022).

With this autonomy, NGS has hired professional teachers with proficient knowledge and skills and developed its curriculums with up-to-date instructional practices. The curriculums are restructured to provide students with knowledge, skills, attitudes, and e-learning lessons and increase weekly teaching hours. Technology and developed learning equipment, such as internet connections, projectors, computers, libraries, and laboratories for practical experiments, are also installed to assist students' learning processes (MoEYS, 2019b). The inclusion of technology in daily learning is essential for accelerating STEM education in Cambodia, as students no longer just learn and memorize specific theories but have the chance to experience them through experiments and actual case studies. Equally important, students are equipped with extensive inquiry learning in STEM subjects such as math, physics, chemistry, and biology (MoEYS, 2019b).

NGS students have been demonstrating achievement with this new educational system, with a 91% pass rate for the Grade 12 national examinations in 2019, compared to a national passing rate of 68%. Moreover, all NGS students are enrolled in the science track (MoEYS, 2020). Additionally, NGS students have participated in and won different awards in local and international competitions, especially STEM-related ones. For instance, they had been awarded 200 to 400 medals from 2018 to 2019 for their participation in international competitions (Kuch, 2020).

To foster this impressive progress, MoEYS has been implementing the policy on the NGS by expanding this school model to seven locations across the country, of which three are in Phnom Penh, two in Kampong Cham, one in Svay Rieng, and one in Kandal (MoEYS, 2022). A noticeable example of a NGS school that records considerable achievements is E2STEM at Preah Yukunthor High

School in Phnom Penh (MoEYS, 2022). A group of eight students from Grades 10 to 12, for example, have recently developed Cambodia's first-ever CubeSat satellite called "COSMOS" for space research (Mao, 2021). The satellite can go up to 50 kilometers above the earth and can be used for capturing moisture, air images, and recording temperature and altitude at the second layer of the earth. This innovation was used in the First Global Challenge 2021 and ranked 33rd out of 176 participating countries, which marked a prosperous starting point of development for Cambodia (Mao, 2021).

Not only has MoEYS improved STEM education at the high school level, but it has also prioritized higher education quality in STEM. It is apparent that Cambodia has seen progressive growth in its economy and has had a stable macroeconomic condition throughout the past decades (Heng & Sol, 2022). However, it is still one of the poorest countries in Southeast Asia due to various issues, including the lack of human resources in STEM (World Bank, 2018). Higher education in Cambodia, especially in STEM-related majors, is still a major concern for the government despite seeing progress in increasing institutions throughout the past decade (World Bank, 2018). In this regard, in 2017, Cambodia began to implement the Higher Education Improvement Project (HEIP), funded by the International Development Association of the World Bank (World Bank, 2018). The project's main objectives are to enhance the quality and significance of STEM education in higher education, including in agriculture, which includes improving research, teaching and learning quality, and institutional management (MoEYS, 2017). HEIP has also supported the establishment of new research laboratories, the purchase of research equipment, and the provision of grants to support research projects at the target universities. Another objective is to intensify sectoral governance and project management, which focuses on enhancing legislative and supporting project coordination (MoEYS, 2017).

Apart from the government's efforts, other NGOs have been actively promoting STEM through non-formal education, primarily through festivals, forums, programs, competitions, and more. For instance, the Cambodia STEM Festival, organized by the STEM Education Organization for Cambodia, raises awareness of STEM among students and increases the number of STEM workers in Cambodia (STEM Cambodia, 2023). The festival includes creating STEM projects for competitions, a series of webinars, and exhibitions with

different themes each year to raise awareness and encourage students to pursue STEM education. This annual festival has attracted the attention of Cambodian students with support from MoEYS and the involvement of various schools that encourage their students to participate in the events. In 2019, for example, the 15th Annual STEM Festival attracted more than 13,000 visitors with over 200 STEM projects (Voun, 2021). In 2021, the 16th Annual STEM Festival was conducted virtually due to the COVID-19 pandemic. Despite being conducted online, the estimated audience was around 25,000 students across Cambodia (Buth, 2021).

No doubt, non-formal education to promote STEM is essential to accelerating the development process of STEM education. For example, STEM Sisters Cambodia is a mentoring program that aims to build an encouraging environment for girls and women to emphasize professional development in STEM-related fields. High school students who received mentorship from the program helped promote STEM by creating student clubs in their schools (STEM Cambodia, 2021). With the increased promotion of STEM education, Cambodian students have actively participated in various competitions and won numerous awards nationally and internationally (Roth, 2022). Some of the key competitions include Technovation Girls Cambodia, the Angkor Mathematics Competition, Kids City's STEM Competition, the Singapore and Asian Schools Math Olympiad, the World Mathematics Invitational, and the World Robotics Olympiad.

In addition, international development partners have also played a pivotal role. For instance, the Korea International Cooperation Agency (KOICA) held the first National STEM Education Fair on December 13-15, 2021 to introduce the benefits of STEM and promote the use of ICT in education (Soco, 2021). Moreover, there was an exchange of experiences and perspectives on the implementation of STEM education in Cambodia to develop the skills and professionalism of Cambodian teachers (New Generation Pedagogical Research Center, 2021).

Challenges to promoting STEM education in Cambodia

Despite the various efforts discussed above, the progress of promoting STEM education in Cambodia has still faced numerous challenges. One factor that can

explain the slow progress of STEM education is the lack of funding from the government in the education sector. According to the World Bank's collection of development indicators, the Cambodian government's expenditure on education was only 2.16% of the total Gross Domestic Product in 2018, less than neighboring countries such as Thailand and Vietnam, which recorded 3% and 4%, respectively (World Bank, 2021). The lack of funding is illustrated by the absence of learning resources, particularly in rural areas (Heng & Sol, 2022). Most public schools have limited infrastructure, adversely affecting students' learning outcomes. For instance, it was reported that the infrastructure in Cambodia is still in poor condition; the learning supplies, including the basics (textbooks, whiteboards), computers, and labs, are lacking or non-existent (MoEYS, 2018). It was further reported that about 55% of the 5,162 students from 170 schools surveyed owned one textbook, while the other 45% needed to share one book with two or three other students (MoEYS, 2018).

Furthermore, libraries and laboratories are seen as an issue in both urban and rural areas, as some schools have limited equipment to conduct relevant experiments. In contrast, some schools do not have laboratories at all (Leng et al., 2021). Considerably concerning, even in higher education, poorly equipped laboratories are still an issue. Many students still lack experience in conducting experiments effectively; therefore, they tend to only follow guidelines and step-by-step procedures to get a result known beforehand rather than exploring a new phenomenon (Leng et al., 2021). This constraint in the learning resources such as textbooks poses a critical challenge because it limits the self-learning process of students who want to dig further into the concepts or exercises at home on their own. Due to the lack of resources, learning through scientific experiments is far from common. In other words, learning is mostly discipline- or theory-based, lacking real practice.

Another major issue is the scarcity of human resources or proficient teachers to educate students in STEM. Cambodia's STEM education remained slowly developing due mainly to a lack of well-trained educators, a lack of preparations, and low recruitment requirements (Leng et al., 2021). For instance, most Cambodian teachers were appointed without adequate knowledge after the Khmer Rouge regime. Even after the regime, the teaching profession became devalued as graduates perceived it as one of their last few career options (Prigent, 2016). It was reported that students who scored D and

E in the grade 12 national examination tended to choose teaching as a career. In contrast, those who scored higher grades chose other highly valued or well-paid jobs (Prigent, 2016). Furthermore, there was a significant lack of educators with a PhD degree in higher education. Only 8.83% of education personnel in Cambodian higher education institutions have a PhD degree (MoEYS, 2022). In some universities, none of the academic staff holds a PhD degree, and even many of those holding a master's degree received it from certain local universities with questionable quality, making the issue of quality a major concern in Cambodian higher education (Heng & Sol, 2022; Vann, 2012).

Cambodian teachers' lack of readiness and low level of digital competency are another key issue constraining the development of STEM education in Cambodia. To exemplify, during COVID-19, teachers were forced to teach online, but a recent study showed that 33% of the teachers surveyed had little ICT competency, while 53% had limited access to technological devices (Chea et al., 2022). Moreover, Cambodian education remains teacher-centered, relying on teachers to deliver lessons and impart knowledge to students (Song, 2015). The teacher-centered approach depends highly on teachers' capacity to prepare and plan the lessons and how the contents are taught. It can be seen as a transmission of knowledge that focuses on memorization rather than properly understanding concepts and facts (Ezurike & Ayo-Vaughan, 2020). This approach to teaching contradicts and limits students from the core idea of STEM education, which emphasizes problem-solving and inquiry-based learning, in which students lead themselves to find solutions to problems they encounter.

Another critical challenge concerns cultural and social norms that pose a significant barrier for women to pursue higher education, not to mention majoring in STEM (Ministry of Women's Affairs [MoWA], 2019). Cambodia has always been a patriarchal society with the general stereotype that men are favored to receive an education. Moreover, pursuing education is perceived as a waste of time, especially for those in rural areas with financial difficulties (ADB, 2012). Although the gender gap between men and women and the traditional perception of women have been progressing in recent years, it is undeniable that gender stereotypes of families and societies are still common, limiting specific work to a particular gender (MoWA, 2019). For instance, women are stereotyped as only suitable to work in some roles, limiting their

freedom to choose their own primary major, which in turn significantly hinders the participation and representation of women in STEM fields (MoWA, 2019).

Recommendations

Improving participation in STEM education among Cambodian students requires consistent efforts and revision of strategies from all concerned stakeholders. What follows are some recommendations to enhance STEM education in Cambodia.

Increasing the education budget

Funding is crucial for improving the education system as it allows more budget allocation to various elements, including human and material resources. To ensure a maximum learning experience, students need essential equipment and facilities, such as laboratories and other new technologies, to conduct experiments or research and visualize different concepts and scenarios (Vera et al., 2018). Besides, to ensure qualified teachers for STEM education, they need to be paid adequate salaries, preferably higher than other instructors teaching other subjects (Kisida et al., 2019). As improving STEM education requires certain costs, the government needs to allocate more funding to the education sector, which certainly needs more investment. Once the funding increases, specific issues relating to teachers' corruption and lack of preparation for class due to other competing schedules should be addressed. Moreover, more funding with an appropriate allocation mechanism would improve educational resources and facilities, from essential study materials such as textbooks to decently equipped laboratories. More funding for education would also lead to better student performance (Jackson et al., 2016).

Improving and extending the STEM curriculum

The inclusion of STEM education is apparent only in upper secondary schools, mainly Grades 11 and 12, where students can choose the science or social science track. Moreover, in the science track curriculum, students spend only 14 hours per week learning STEM-related subjects, which is relatively little and challenging for students to absorb essential knowledge and concepts of the issues (Kao & Shimizu, 2020). Additionally, the focus on STEM only during

upper secondary education poses difficulties for students to transition into further education, or they are not adequately equipped with a good foundational understanding of STEM subjects. Hence, to tackle these problems, the educational curriculum needs amendments to increase the learning hours of science and mathematics subjects in Grades 11 and 12. Moreover, an initiative to include foundational STEM-related topics in lower grades starting from lower secondary school is essential, which is successfully done in countries like France, Japan, and the United States (Forsthuber et al., 2012).

Increasing the use of inquiry-based learning methods

To accelerate the progress of STEM education, the traditional learning method, which is very teacher-centered, should be changed to include more discussions, problem-solving, critical thinking, and practices. Moreover, theory-based learning should not be highly emphasized, but inquiry-based learning, in which students learn by questioning phenomena through innovations, critical thinking, creative thinking, and reasoning skills, should be promoted. The student-centered approach would intrigue students' interest in the subjects and their practical competency in STEM (Marginson et al., 2013). To enhance these learning methods, adequate learning resources, such as laboratories to conduct experiments and testing, are needed.

Improving educators' quality

Educators play an essential role in the development of education. However, educators' qualifications in Cambodia are still limited, which needs improvement through intensive training and skills development programs. The government and other concerned stakeholders should contribute to providing professional development programs to enhance teachers' knowledge and skills in STEM-related areas with relevant techniques that can raise students' interest and interaction in STEM during classes. Moreover, higher education institutions should hire highly qualified teachers, preferably with PhD degrees, to instruct in STEM to ensure reliable information sharing and knowledge and skill development in students. To achieve this goal, the government and universities should provide significant incentives for PhD holders to be involved in academia to further enhance the knowledge of the younger generation.

Increasing non-formal activities in STEM

Non-formal activities such as student labs, student clubs, festivals, and competitions must be promoted and encouraged. The creation of these activities would be a platform for already involved students to continuously interact and explore various concepts in STEM while simultaneously attracting other students who find them exciting and want to put their hands on them. Moreover, increasing competitions with rewards and prizes would also increase the motivation and participation of more students. Additionally, increasing science centers is crucial to enhance science literacy and provoke more interest in STEM.

Conclusion

STEM education is undeniably a priority in Cambodia to develop human resources for the industrialized world. The Cambodian government, through MoEYS, along with various concerned stakeholders, has been committed to enhancing the quality of education and participation of Cambodian students in STEM education through different learning pathways, the establishment of STEM-focused institutions from high school to higher education levels, and the provision of training programs to develop the professional knowledge and skills of teachers. Despite the efforts, significant challenges, such as the lack of funding and educational resources (e.g., textbooks, laboratories) and the lack of highly qualified teachers in the field, remain a major concern for the development of STEM education in Cambodia. Thus, it is crucial to increase the budget for STEM education, enhance the STEM curriculum, intensely apply inquiry-based learning methods, improve instructors' quality, and promote non-formal activities focusing on STEM. With consistent efforts and collaboration from all stakeholders, STEM education in Cambodia will be further developed.

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Media Literacy Education in Cambodia: What, Why, How

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Summary

Media has developed in many forms due to advanced technology. With the invention of the internet, people find it even easier to access media for information and entertainment. The pandemic has also heightened online platform usage significantly. As a result, media has become a powerful means to deliver messages to ever-growing media consumers. The effect of this media influence, particularly on youth, is a concern that requires our attention. Given this context, this chapter underscores the importance of media literacy education and strategies to promote it. The chapter first discusses the definition of media literacy and media literacy education. It then delineates four main reasons why media literacy education is crucial for media users, especially youth. The chapter also offers recommendations to relevant stakeholders to step up their involvement in promoting media literacy education in Cambodia.

Keywords: Media literacy; media literacy education; Cambodia

Introduction

Media has been with us for many decades and keeps developing as time passes. Without us realizing it, the media has ingrained itself into our daily lives, becoming an essential without which we cannot seem to live. According to Notre Dame of Maryland University ([NDMU], 2017), media is divided into two distinct categories: traditional media and new media. Traditional media refers to the forms of media that predate the invention of the internet (Rajendran & Thesinghraj, 2014). Traditional media manifests in many forms, such as newspapers, books, magazines, posters, billboards, radios, and televisions, among others. Conversely, “new media” refers to types of media discovered in the information age (NDMU, 2017). Some examples of new media are social media, podcasts, vlogs, e-books, websites, and video streaming services.

In the pre-internet era, one-way communication through traditional media was the primary source of disseminating information. This type of media is called one-way communication, for it flows directly from producers to consumers (Apuke, 2017). However, cutting-edge technology has given birth to new media, fostering two-way communication where consumers can also be creators. Additionally, some forms of traditional media, such as newspapers, magazines, books, and radios, have been made available online through websites or other online platforms. Consequently, consumers tend to get exposed to media more than they think due to the availability of information and the convenience of accessing it (Brussee & Hekman, 2009).

Given the profound influence of media on our lives and the inevitability of its constant presence, scholars and researchers have started to be concerned about the future of young generations in the digital age. The first media education was seen in France in the early 1920s due to the emergence of “the cinema club movement” (Fedorov, 2008, p. 57). For similar reasons, media education in Great Britain was developed around the 1930s (Fedorov, 2008). Fedorov (2008) also stated that the aim of these early media education efforts was to protect children from the potentially harmful influences of the media.

Although media education has existed for a long time, challenges remain. The media literacy education curriculum was not well developed. The outstanding

issue was related to how to integrate media literacy education into the school curriculum (Fedorov, 2008). Later on, with the concerted efforts of scholars and researchers, media literacy education has spread worldwide (Hobbs, 2007). However, due to cultural differences and varying media influences across countries, various approaches to teaching media literacy have been customized and implemented based on the context of each country. In Cambodia, as per my observations, media literacy education seems to be very limited. It currently exists in the form of short courses in some universities, such as the Paññāsāstra University of Cambodia and the University of Puthisastra, and some media literacy training is run by non-governmental organizations (NGOs). The government, however, has yet to take serious action on this kind of education.

In light of this background, this chapter discusses media literacy education in Cambodia, focusing on the definition of media literacy and media literacy education, and the importance of media literacy education. The chapter also offers some suggestions for relevant stakeholders to promote media literacy education in Cambodia.

What is media literacy?

Media literacy remains a concept without an absolute definition, largely due to the unceasing evolution of the media landscape. According to Hobbs (2007, as cited in Chen, 2007, p. 90), media literacy was defined as “the process of accessing, critically analyzing media messages and creating messages using media tools.” Similarly, Livingstone (2004) defined media literacy as “the ability to access, analyze, evaluate and create messages across a variety of contexts” (p. 18). Rubin (1998) stated that “media literacy, then, is about understanding sources and technologies of communication, the codes that are used, the messages that are produced, and the selection, interpretation, and impact of those messages” (p. 3).

Although scholars and researchers have defined media literacy differently, two distinguished points frequently emerge in defining media literacy. They are “the awareness of the multitude of media messages and the critical ability in analyzing and questioning what we see, read, and watch” (Hobbs, 2007, as cited in Chen, 2007, p. 90). In this chapter, the term media literacy refers to the ability to access, analyze, evaluate, and create messages in any form of media. To help

users be critical, some media literacy questions were created to bring awareness to users before they believe in what they see or read in the media. According to Meehan et al. (2015, p. 83), there are seven things that users should consider when they consume media, as shown in Table 9.1.

Table 9.1. *Things to consider when consuming media*

Authorship	Who made this message?
Purpose	Why was this made? Who is the target audience (and how do you know)?
Economics	Who paid for this?
Impact	Who might benefit from this message? Who might be harmed by it? Why might this message matter to me?
Content	What is this about (and what makes you think that)? What ideas, values, information, and/or points of view are overt? Implied? What is left out of this message that might be important to know?
Technique	What techniques are used? Why are those techniques used? How do they communicate the message?
Credibility	Is this fact, opinion, or something else? How credible is this (and what makes you think that)? What are the sources of the information, ideas or assertions?

By addressing these questions, users will transform from passive to active participants in media consumption. Instead of merely absorbing the information, they will use their critical thinking skills to analyze and evaluate the content they encounter, whether it be what they hear, see, or read.

What is media literacy education?

Since we are living in a society where almost everything is driven by the media, it is imperative to understand the nature of the media. One of the most effective ways to learn about media is through media literacy education. In general terms, media education is “the process of teaching and learning about the media” (Buckingham, 2003, p. 4). It aims to boost students’ perceptions toward media production, “how the media work, how they are organized, and how they construct reality” (Zhang et al., 2020, p. 57). Besides raising awareness of the media, Zhang et al. (2020) stated that other purposes of media literacy

education are to help students to evaluate media messages in a critical manner, expand their involvement with media, and improve their creativity in producing media messages.

Achieving media literacy is not an innate skill like learning how to walk. To be media literate, one has to be properly taught. According to the Center for Media Literacy (Chen, 2007), there are five main reasons that media literacy education should be established.

First, there is a significant increase in media utilization. In an information society, media has become an important means of transmitting information to consumers. Given technological advancements, media exposure to people is seen almost everywhere, ranging from internet use to traditional media, such as billboards, posters, and flyers. Whether intentional or not, this exposure inevitably impacts us. Therefore, media literacy education is like a shield that can protect consumers from the harmful aspects of excessive media exposure.

Second, media has had a huge impact on our way of thinking (Chen, 2007). There are many possible ways to create content in the media and make people find it believable, especially when consumers are media illiterates or know very little about the media. For example, producers can use clickbait techniques to get people to click on links by creating compelling or misleading headlines. Also, information or news found in any type of media might not be reliable at all. Writers can express a negative or positive view on a subject to change the opinion of the audience. Consequently, if the readers are not critical enough, they can be convinced by what they read.

Third, as the media industries keep growing, knowing how to absorb information in this media-saturated society is crucial. As mentioned above, media consumers can be perceived using different techniques. At this stage, critical thinking skills—a 21st-century competency—are vital skills that one should possess. Before believing in a particular piece of information, we should properly investigate the sources of information because the contents of the media are published for a purpose. We can be critical by asking ourselves media literacy-related questions to help us learn about the intention of media production.

Fourth, media can help ‘democratic processes.’ Media is like a double-edged sword (Smith, 2016). It can be harmful or beneficial, depending on how it is used. However, if we receive media literacy education, we will be able to reap the most benefits from the media. Not only does media literacy education bring media awareness to us, but it also helps us to learn to express ourselves effectively through media. Moreover, as many rely on the media for information on politics, elections, and public regulations, media literacy education plays a pivotal role in sharing and shaping diverse global perspectives (Wan & Gut, 2008).

Lastly, the demand for online communication has been growing. Nowadays, the surge in the number of people using smartphones or the internet in Cambodia has been remarkable. Based on Chea (2021), from 2020 to 2021, the number of people using social media increased by 24 percent. By January 2021, the number of people using social media had reached 12 million, corresponding to 71 percent of the whole population. Chea (2021) also added that the sudden increase was mainly due to the COVID-19 pandemic, which has turned many platforms online. In addition, the study by Phong et al. (2016) with 2,000 participants reported that people accessed the internet for three main reasons: (1) pleasure (74.4%), (2) Cambodian news (33.2%), and (3) a variety of information (30.2%). Because of the passive consumption of media and the demand for using online platforms, it is crucial to ensure that people are media literate; otherwise, they will be easily influenced by the media.

The importance of media literacy education in Cambodia

Media is everywhere. It has already become part of our lives. Because of the rapid development of technology, media has evolved into many different forms. Therefore, it is quite dangerous to consume media with less knowledge of how it works. As a result, it is imperative for us to focus on media literacy education, which holds importance for four reasons.

Firstly, it safeguards students from falling prey to fraudulent activities. Amidst the initial stages of the pandemic, there was much misinformation on social media regarding the COVID-19 situation. The Federal Bureau of Investigation (FBI) in the United States has reported an uptick in fake news, privacy problems, and computer-related crimes (FBI, 2016). As we increasingly rely on

online platforms, especially Facebook, to get information or learn about the world, it is quite risky to stay online without adequate knowledge about the media. Consequently, media literacy education can raise awareness among students to use media in a cautious manner for their safety on the internet. Additionally, media literacy education helps students to learn to critically evaluate media content. By fostering critical thinking, they can probe the underlying purposes of messages, so they will not easily believe in a person who tries to take advantage of them on the internet. For example, a university student who joined media and information literacy training at the Paññāsāstra University of Cambodia (PUC) in Siem Reap said, “I could understand the flow of information and identify the trustworthy sources and official pages, which are reliable. I also share the tips and knowledge with my friends and family” (Cambodia Center for Independent Media [CCIM], 2021a, para. 3).

Secondly, media literacy education can improve students’ lifestyles. It provides them with media-related knowledge about media operations and the influence of media messages, which often remain unnoticed. By understanding the purpose of media content, students will not be easily influenced by the media. As a result, they can become well-informed citizens. Moreover, based on the definition of media literacy, if one is media literate, he or she can create messages in various media formats, promoting his or her own voice. With this freedom in hand, we can also express ourselves better using media tools. Consequently, we need to learn about the media in order to avoid creating a message that might hurt other people. As a first-year student who joined media literacy training at PUC reported in an interview, “Back then, I used to share many posts on social media without checking or verifying the information, but now, I am more careful about the content I see on social media” (CCIM, 2021a, para. 4).

Thirdly, media literacy education stimulates students’ interest in learning. Unfortunately, Cambodian education has lagged behind technological development, with many schools still clinging to traditional ways of teaching and learning even though we are living in a digital world. Besides being a standalone subject, media literacy education can also be integrated into other subjects like literature, English language, or social studies. By integrating it into other subjects, not only do the students achieve the learning objectives, but they also learn important skills that can be applied to their daily lives. For example,

if we teach present continuous tense in an English class, we can give a picture to the students and ask them to describe it. At the same time, we can ask some media-related questions, such as who might take the photo, what the intention was, what the picture might want to tell us, and how other people would interpret the message of the picture. Personalizing the lesson by using media to help the students learn about media literacy makes the lesson more intriguing because it relates to their daily lives.

Lastly, since media literacy education involves producing content or messages using media tools, it helps students be creative. By creating media, they will be able to understand more about how media works and its purposes, enabling them to produce valuable content for others and improve the overall media environment. For example, CCIM hosted a competition on social media aiming to promote responsible media use among Cambodian youth and encourage their active participation on social media (CCIM, 2021b). There were videos that showed how creative the students were in producing educational content for other users. The videos created by the students who had participated in the media literacy training can provide valuable messages to other users to learn about media, and the participants themselves can also learn how to create their own voice on the media.

How to promote media literacy education in Cambodia

In spite of the influence of the media on Cambodian people, especially among youth, media literacy education does not receive the attention it deserves. Short-term media literacy training programs are seen in some universities, such as the Paññāsāstra University of Cambodia and the University of Puthisastra. As a result, many schools in Phnom Penh and other provinces have not received training on media literacy due to the limited scope of the Media Information Literacy (MIL) project (CCIM, 2020). While NGOs are putting effort into promoting media literacy in Cambodia, there has been no significant action taken on educational levels in public schools. According to Benveniste et al. (2008), teaching in Cambodian public schools overuses instructional activities and recitation, with students spending a significant portion of their time copying lessons and receiving instructions, and less than half of the teachers engage students in questions that promote reasoning skills. This poses a major challenge to the development of media literacy education, requiring concerned

stakeholders to put in more effort to address the remaining issues. The following are some suggestions for relevant stakeholders to promote media literacy education in Cambodia:

The government

The Cambodian government plays a crucial role in promoting media literacy education. The first step toward this goal is to provide funding to support media literacy education. The funding can be divided into three categories. A large proportion of the funding should be allocated toward researching media literacy education, given the absence of a universal curriculum and the need to adapt to regional variances. Therefore, much research is needed to explore students' behaviors toward media consumption to understand how the study curriculum should be designed to fit the Cambodian context and to ensure the quality of teaching and learning. The second segment of the fund should incentivize researchers and scholars to work on designing study curricula and effective assessments so as to evaluate students' knowledge about media literacy. The remaining portion of the fund should be used to advocate for media literacy education. For instance, the government could sponsor competitions that encourage youth to get involved in media in a positive way, such as creating videos that raise awareness of media messages, spotting fake news on social media, or showing techniques of how media convinces the audience to believe in what they see or read. Although the Ministry of Education, Youth and Sport (MoEYS) has acknowledged the significance of "internet technology and web-based learning" and has built up "Information and Communication Technology (ICT)" (CCIM, 2020, p. 153), the lack of media literacy education is still evident. In a report by CCIM (2020, p. 153), one participant who was a university student confessed, "I have used a smartphone to access Facebook for years, but I never knew exactly what media information literacy was until I joined CCIM in late 2014." This response illustrates the lack of media literacy awareness among youth. Therefore, the growth of media in Cambodia should not be neglected.

Educational institutions

Educational institutions can promote media literacy education in three ways. Firstly, they should institutionalize media literacy education as an

extracurricular activity so that students across different disciplines can participate. To reinforce participation, educational institutions should make it a requirement. For instance, each student enrolls in at least one such activity per semester. Currently, only two universities, namely the Paññāsāstra University of Cambodia and the University of Puthisastra, run this program as an extracurricular activity. If more educational institutions incorporate media literacy education as their after-school activity, more students will be able to get access to media literacy training. Secondly, besides establishing extracurricular activities, schools should host educational video contests where students receiving media literacy education can join and learn to express themselves using media. The videos should be uploaded on the school website to enhance awareness and inspire other students. Lastly, student exchange programs, both at the national and international levels, can provide students with invaluable opportunities to learn from media literacy experts and share knowledge or experience with peers, thus facilitating a broader understanding and promotion of media literacy education.

Researchers and curriculum designers

Researchers play an important role in promoting media literacy education as they help unravel the nuances of media influence, especially on youth. Knowing what media is and which media has influenced consumers the most helps determine the definition of media literacy and what knowledge and skills one should have to be considered media literate. By knowing the criteria for being media literate, researchers and curriculum designers can craft a relevant and appropriate curriculum for students and teachers. Equally important is the assessment that we should not overlook. Media literacy skills cannot be measured by the traditional examination methods we usually use with other subjects. That is why researchers are encouraged to explore innovative assessment strategies to effectively measure and enhance media literacy in the classroom.

Academic staff or teachers

To promote media literacy education in Cambodia, teachers need to be well-trained. Otherwise, they might not be able to field unexpected questions from students. If teachers do not receive adequate training, they will just concentrate

on “very basic use of media and basic assessment techniques” (Schilder et al., 2016, p. 40). Schiller et al. (2016) added that when a teacher lacks training, he/she will not be able to “move beyond the assessment of lower-order thinking skills” (p. 40). In other words, a teacher who lacks training will not be able to encourage students to analyze, evaluate, and create media messages effectively, and the assessment will primarily involve memorization. Moreover, due to the rapid development of media and the internet, teachers must stay abreast of current news and media trends to effectively connect students with contemporary societal events. Therefore, teachers have to receive sufficient training and keep themselves up-to-date so that they can teach and help promote media literacy education.

Conclusion

Media literacy skills are imperative for individuals in the 21st century, given the pervasive influence of the media, which profoundly affects consumers’ attitudes, perceptions, and behaviors. It is time to take action and focus on media literacy education. Media literacy education can help students become well-informed citizens and transform themselves from passive to active consumers. Media literacy education can also enhance the lifestyle of students, help them deal with cybercrime, foster creativity, and make them more interested in learning.

To promote media literacy education in Cambodia, each relevant stakeholder has an essential role to play. While the government has to provide financial support, raise awareness of media literacy, and encourage youth involvement in media, educational institutions should establish after-school curricula and exchange programs to bring attention to media literacy education and host educational video competitions to raise awareness of media influence. Meanwhile, researchers and curriculum designers must complete other tasks, such as exploring the nature of media, finding how it influences consumers, and designing effective study curricula and assessments. Additionally, teachers must be adequately trained to teach and help promote media literacy education.

Despite media literacy being a pressing topic in the 21st century, there seems to be a dearth of research on media literacy education in Cambodia. Therefore, to

address this knowledge gap, researchers should pay more attention to this area. Potential research avenues may include determining whether media literacy should be a stand-alone subject or be integrated into other subjects, such as social studies, literature, or the English language. Research may also focus on assessments to measure students' understanding of media literacy and evaluate the effectiveness of media course syllabi.

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Shadow Education in Cambodia: Causes, Benefits, Problems, and Solutions

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Summary

Shadow education, also known as private tutoring, is a widespread phenomenon across the world, particularly in East Asia. In Cambodia, it is commonly referred to as “extra classes” in English and “rean kour” in Khmer. While there are many articles on shadow education in Cambodia, most seem to revolve around the theme of corruption resulting from this form of education. Therefore, this chapter aims to provide a well-rounded view of issues concerning shadow education. It starts with a brief introduction to the current situation of shadow education in Cambodia and then explains what shadow education is before moving on to discuss some of the main causes of this occurrence. Next, potential benefits and problems resulting from shadow education are discussed. The chapter also offers some suggestions for relevant stakeholders such as students, parents, teachers, school leaders, the government, and policymakers to address this critical issue.

Keywords: Shadow education; private tutoring; causes; benefits; problems; solutions; Cambodia

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Introduction

Studying beyond their regular school hours is a part of many students' daily routines. Shadow education or private tutoring is not a new occurrence. It is especially prevalent in East Asia (OECD, 2014) and has also become the norm in Cambodia (Brehm & Silova, 2014). It is common for parents to send their children to private tutoring, commonly referred to by Cambodians as "extra classes" in English and "rean kour" in Khmer. It usually occurs before or after official school hours. According to Brehm (2016), a perception central to the contemporary education system in Cambodia is the perceived necessity of attending extra classes or private tutoring for students to be able to pass their monthly, semester, and national examinations. Brehm (2016) further noted that private tutoring emerged in the late 1980s or early 1990s in Cambodia. In addition, Bray et al. (2019), who collected data from six schools in Cambodia involving 48 interviews with students, 24 interviews with teachers, and questionnaire responses from 1,274 students and 72 teachers, found that the majority (81.9%) of the sampled students received private tutoring in at least one school subject because it is widely considered necessary for the completion of the government school curriculum.

There is plenty of research on shadow education or private tutoring, as this phenomenon occurs all over the world. While there are many articles on shadow education in Cambodia, most seem to revolve around the themes of corruption and unethical practices in shadow education (see Bray et al., 2019; Brehm & Silova, 2014; Soeung, 2021a). It appears that little has been emphasized on other aspects, such as the benefits and negative impacts of shadow education on students beyond the financial aspect. In fact, shadow education has both benefits and drawbacks. Thus, by understanding both sides, we can maximize its advantages while minimizing its disadvantages.

This chapter aims to discuss shadow education in the Cambodian context. Rather than just focusing on one aspect, this chapter intends to discuss the causes, potential benefits, and problems of shadow education. It also offers some suggestions for relevant stakeholders such as students, parents, teachers, school leaders, the government, and policymakers to deal with shadow education.

What is shadow education?

Stevenson and Baker (1992) defined shadow education as “a set of educational activities that occur outside formal schooling and are designed to enhance the student's formal school career” (p. 1639). Similarly, Buchmann et al. (2010) referred to shadow education as "educational activities, such as tutoring and extra classes, occurring outside of the formal channels of an educational system that are designed to improve a student's chance of successfully moving through all the allocation process” (p. 284). Bray and Lykins (2012) explained and defined shadow education as private supplementary tutoring that got its name because it imitates the mainstream school curriculum. It refers to tutoring in academic subjects on the mainstream school curriculum that takes place outside regular school hours and comes with a fee. In this chapter, the terms ‘shadow education’ and ‘private tutoring’ are used interchangeably.

Causes of shadow education

Awareness of the importance of education

World Vision (2021) listed some of the common reasons why education is important. For example, education can help develop communication skills, foster critical thinking skills, build various job qualifications, reduce child mortality, as well as promote gender equality. Because education is so crucial, it is no surprise that people, especially parents, want to invest in it for their children's future.

Bray and Lykins (2012) noted that the main reason for private tutoring is the awareness of the importance of education and how investing in it can potentially bring great returns. The prevalence of this supplementary tutoring also happens as a result of the tight linkage between education outcomes and career opportunities, as well as social status (Stevenson & Baker, 1992). ‘Time is money’ is a well-known Cambodian saying acknowledging the value of time. The fact that people are willing to invest both their literal money and their metaphorical money and time into education means that they undoubtedly recognize the value of education. When people know the significance of education and how it can bring future returns, they are more willing to invest in it. A significant portion of that investment could go to shadow education.

Transition points in education and national examinations

At certain educational levels in many places, grades may determine which schools the students may attend. Bray and Lykins (2012) explained this point by looking at Singapore, whose secondary education is very stratified, with their primary school grades largely the deciding factors on which future school or tracks they can go to; as a result, many parents invest in supplementary tutoring even at the primary school level. However, in other education systems, the senior year is the major push-out stage, as few post-secondary places are available. As long as post-secondary education stays stratified, with some offering much better benefits than others, private tutoring will remain pervasive in secondary schooling (Bray & Lykins, 2012).

In the case of Cambodia, there are two national examinations that serve as important transition points in education. One is in the 9th grade, and the other is in the 12th-grade examination. The national examination used to be rampant with cheating until the educational reform in 2014 (see Chhay, 2014; NBC News, 2014). In a survey by Kem et al. (2012), 77.7% of the candidates in the 2012 national exam reported that they could copy answers from each other, and 65.8% said they brought cheat notes to the exam rooms. The passing rate, approximately 80% in 2012-2013, plummeted to 26% in the reformed 2014 exam (Maeda, 2021). After the no-cheating policy was introduced, the students had little choice but to study hard to pass their exams (Retka, 2017). Notably, online private tutoring took off in Cambodia after the reform, thanks to the availability of affordable technology (Chhun, 2017). The 12th-grade national exam exerts great pressure on students, as it is the deciding factor in whether they can successfully graduate high school. It can also be considered a sort of university entrance exam, as some universities in Cambodia do not have entrance exams and rely on the score from the Grade 12 national exam to admit students. Getting a good grade on the 12th-grade examination also provides some students with opportunities to get scholarships (see Maeda, 2021).

The importance placed upon the high school's exiting national exam is also backed by a study by Bray (2016), who collected information from over 1,200 students and 70 teachers from six schools in Siem Reap province, Cambodia. The student participants were students from Grades 9 and 12. He found that

nearly 82% of the students surveyed took private tutoring. This pattern is not unique to Cambodia. Similarly, a study in Vietnam by Dang (2007) found that the closer the students were to the final grade of their school level, the more they spent on private tutoring. It is concluded that the pattern of the increase in private tutoring near the final grade of each school level is because of the school-leaving examinations (Dang & Rogers, 2008).

Learning loss that happened during the COVID-19 pandemic, combined with the fear of national exams, has also caused private tutoring to rise (Bhatta et al., 2022). According to Ngay (2021), one student and her friends from Bak Touk High School, a prominent public school in the capital city of Cambodia, were studying furiously in extra classes (private tutoring classes) to prepare for the 12th-grade national exam. The same student said she was taking six different classes to help with what she had missed during online classes. Similarly, another student from Kampong Cham province said she spent five hours a day on extra classes, which was typical among her classmates, as private tutoring classes were considered an effective way to improve students' capabilities. She also added that those extra classes had become even more important during the rise of remote learning triggered by the COVID-19 pandemic (Ngay, 2021).

Limited quality of the mainstream schools

Another main reason for private tutoring is the quality or perception of the quality of mainstream schools (Bray & Lykins, 2012). One factor influencing this may be class size. Although existing literature may have some inconsistent conclusions on whether class size has a positive impact on students' learning, it is generally believed that a smaller class size is better (Bray & Lykins, 2012). According to the findings of the Program for International Student Assessment (PISA), in schools where there were smaller classes, students were more likely to report that their teachers were more flexible and provided more support to students (Ministry of Education, Youth and Sport [MoEYS], 2018).

Cambodian public schools' use of double shift is another factor that drives up private tutoring. Teachers often cite not having enough time to cover the government curriculum as a reason to participate in shadow education (Bray, 2016). Brehm and Silova (2014) found that students and parents alike perceived private tutoring as a necessary extension of public school classes that comes

with a financial cost. A common theme that emerged during their focus group discussions, irrespective of whether students were enrolled in private tutoring or not, was that private tutoring helped the students immensely because government schools alone were not enough and that the teachers did not have enough time to teach all the subjects or curriculum (Brehm & Silova, 2014). A double session or double shift system of education allows one group of students to attend school in the morning and another in the afternoon. Other than in Cambodia, this type of school shift is also common in Bangladesh and India (Bray, 2008). However, while this system can improve access to education, especially in places where resources are lacking, it seems that quantity is chosen over quality, as it has been found that this type of system has problems with teaching-learning time (Singadi et al., 2014).

In addition, education has been shifting toward student-centered learning, but this paradigm is not new. In fact, Henson (2003) claimed that learner-centered education has been developing for over five thousand years, crediting Confucius and Socrates as the two of the first educators to emphasize it. Cambodia is no exception to this paradigm shift. MoEYS has endorsed student-centered learning in its policies (MoEYS, 2010). Yet a study by Soeung (2021b) revealed some curious findings. Students, teachers, and administrators alike believed that the learner-based approach they are required to use does not seem to be effective with 12th-grade Cambodian students when it comes to the national examination. This does not necessarily mean that the approach is ineffective, but it might be due to the mismatch between the nature of the learner-centered approach and the national examination (Soeung, 2021b). In a study by Chey and Khieu (2017), it was found that the 2015 national examination's cognitive domain of the question items was relatively low, mostly focusing on remembering and understanding levels. The questions were designed to implicitly measure students' capacity to remember instead of measuring students' ability to apply higher-order thinking, such as to apply, analyze, evaluate, and create new ideas (Chey & Khieu, 2017). For this very reason, a learner-centered approach with its focus on higher-order thinking skills would cause dissonance between the learning approach and the exam. It would then inevitably lead to the rise of private tutoring as teachers could use the more teacher-centered approach that many people, especially students, favor during private tutoring.

Teachers' low salaries

Dawson (2011) conducted a study on supplementary tutoring in elementary schools in Cambodia by administering written surveys to 197 parents and 72 teachers from four schools in Phnom Penh, two in Kampong Cham, and two in Ratanakiri province. The teachers involved in the study reported that approximately half of their students attended their private tutoring lessons. When asked why they were offering private tutoring, four out of five teachers mentioned their low salaries and the need to increase their income. According to a World Bank report by Benveniste et al. (2008), it was found that teachers in Phnom Penh earned around 1.8 times the per capita poverty line, while their counterparts in remote areas earned 3.7 times. This means that teachers who were breadwinners of their families, particularly those with children, were likely to live in poverty if they relied on their teaching salary alone, especially those living in urban areas (Benveniste et al., 2008). Because of this difficult situation, some researchers hesitated to label the practice of private tutoring as corruption and lay the blame on teachers (Dawson, 2011). Teachers' salaries have risen since then. However, according to Ouk Chhhayavy, the president of the Cambodian Independent Teachers' Association, the plan to increase salaries from \$300 to \$318 in 2020 could not offset inflation. Despite that, the government rejected her request to increase teachers' monthly salaries to about \$500 (Khy, 2019). Thus, as long as teachers are still underpaid, shadow education will most likely continue to prosper.

Social pressure

Another factor that is driving up shadow education is social pressure. The value that parents, schools, and even society place on grades plays a major role in the rise of a tuition culture. It is because there is the idea that their grades determine how intelligent a child is and that the way to ensure good grades is through private tutoring (Vora, 2019). Bray and Lykins (2012) explained an interesting phenomenon about how supply is not just a response to demand. In the case of shadow education, supply creates demand instead. With the availability of various private tutoring services and as more and more students participate, other students who have never considered tutoring might have to do so too to avoid being at a competitive disadvantage. Bray and Lykins (2012) also mentioned how tutoring companies in China, South Korea, and Thailand

intentionally used aggressive advertising to evoke anxiety in students and parents. They also mentioned how a similar situation existed when teachers provided extra tutoring for their own students (Bray & Lykins, 2012). In Cambodia, except in the New Generation Schools (NGS), many teachers provide extra tutoring to their own students. This could lead to the unethical conduct of the teachers, discussed later in this chapter.

Another fascinating factor is that high academic performance does not mean that the students do not feel pressured. OECD (2017) highlighted a concerning trend whereby students attending high-performing schools may face a greater risk of developing anxiety related to their academic environment. In the case of Singapore, it has been argued that for students to get ahead, not only do they have to do well, but they also have to do better than their peers (Davie, 2017). Thus, it is not surprising that many Singaporean students are anxious about exams and grades (Davie, 2017). All this pressure and anxiety about grades and learning have arguably led many students and parents to seek private tutoring to ease their uneasiness as well as to keep up with other students.

Benefits of shadow education

Academic achievements for students

One of the most anticipated benefits of private tutoring is academic achievement. Bray and Lykins (2012) stated in their review that, based on the research literature, there were mixed findings in terms of the impact of private tutoring on academic achievement. They stated that private tutoring did not always result in positive impacts on academic achievement; nevertheless, there was enough evidence to support the idea that it could have the potential to significantly benefit students' academic performance.

The mixed findings reported by Bray and Lykins (2012) might be due to the endogeneity of the studies. Dang and Rogers (2008) categorized the research on the impact of private tutoring into two groups: studies that controlled for the endogeneity of private tutoring and those that did not. They found that studies that made efforts to control endogeneity generally found that private tutoring indeed improved students' academic performance (Dang & Rogers, 2008). Based on this finding, supplementary tutoring can be utilized by low-

performing students to catch up with their peers. Having good academic achievement may also improve the students' self-esteem (Bray & Lykins, 2012). This strategy will benefit not only the students themselves but also the teachers, as it will lessen the burden on the teachers when the class does not have a huge gap in terms of ability.

Extra income for teachers

Other than making their job easier by lessening the gap in the ability of the students in class, private tutoring provides an opportunity for teachers to supplement their low salaries and escape poverty. As mentioned earlier, a major driver of private tutoring is the low salaries of public school teachers. Even though Cambodia has been raising teachers' salaries in recent years, they are still low (Khy, 2019).

Teachers can make use of their main skill, teaching, to offer private tutoring to supplement their salary. Teaching by itself is already a mentally and emotionally taxing career (Fan, 2021). This way, they may not have to learn a whole new skill set or start their own business, which may take up too much of their time and require a substantial amount of money.

Benefits for the country

In its Education 2030 Framework for Action, the United Nations Educational, Scientific and Cultural Organization (UNESCO) encourages countries to allocate at least 4% to 6% of their gross domestic product (GDP) to education and/or allocate at least 15% to 20% of their public expenditure to education (UNESCO, 2016). Unfortunately, according to Yesenia and Touch (2017), Cambodia's 2017 education spending only represented 2.7% of the GDP. In comparison, neighboring Vietnam spent 7% of its GDP on education in the same year. Furthermore, Cambodia's education expenditure accounted for only 18.3% of government expenditure, which was noticeably short of the ministry's goal of 23.1% for 2017 (Yesenia & Touch, 2017). It is apparent from these disparities that Cambodia should indeed allocate more funds to education. Private tutoring, in a way, has shifted the financial burden to the people instead of the government. While adding extra pressure on people, it supports underfunded education.

In addition, private tutoring can also help improve human capital. Cambodia's high economic growth in recent years is due to its low-cost labor; however, the phase of this development is coming to a halt soon as the country is transitioning from a low-skilled labor-intensive model to a skill-driven one (Thomas, 2019). How can one transform unskilled labor into skilled labor? The key is, without a doubt, education (Heng & Sol, 2022). As stated earlier, private tutoring can have a significant impact on students' achievement, thereby helping them become better human resources in the future, which will benefit the whole country, especially as Cambodia lacks skilled workers (Soth, 2022).

Problems of shadow education

Financial burden

While public K-12 schools in Cambodia are free, private tutoring generally costs money. While the fees vary from place to place, according to one study conducted with 9th graders and 12th graders in Siem Reap province by interviewing 48 students and collecting 1,274 questionnaire responses from students, 64.9% agreed and 19.3% strongly agreed that the costs were a financial burden to their families. Only 15.8% stated that private tutoring was not a financial burden (Bray et al., 2019). Soeung's (2021b) study, which was based on descriptive data from 93 Grade 12 students and in-depth interviews with informants who were tutees and their parents, tutors, and school administrators, found that households spent a monthly average of about \$10 to \$25 per child for private tutoring, excluding English language tutoring. That amounted to around \$120-\$300 annually per child, disregarding any expenses incurred for English language tutoring. To put this into perspective, according to the Census and Economic Information Center (2020), Cambodia's annual household income per capita was around \$1,539.767 in December 2020. It can be clearly seen that private tutoring is indeed a huge financial burden, consuming a considerable portion of the income of many households.

Social inequalities

As mentioned earlier, a lot of money is needed to fund shadow education. It comes as no surprise that a recurrent theme in Bray and Lykan's (2012) study was that private tutoring perpetuated and intensified social inequalities. It is

obvious that wealthier families are able to acquire greater quantities and better qualities of supplementary tutoring than those with fewer financial resources. Brehm and Silova (2014) also seconded this idea. They stated that access to private tutoring required a fee; thus, it became a mechanism of stratification in society by creating a division between low-income families and the more capable ones. This hinders equal access to quality education for those from lower-income backgrounds, limiting their academic success, social mobility, and future job opportunities (Brehm & Silova, 2014).

On the other hand, Dang and Rogers (2008) argued that household-financed tutoring does not necessarily increase social inequalities. They emphasized that while productive tutoring may provide a slight advantage to children from financially well-off or more educated families, these households are already providing their children with educational benefits in numerous other ways, such as access to more learning resources, equipment, and full-time private schooling, among others. They also contended that if the ban on private tutoring were to be implemented, the well-off householders would simply redirect their expenses to other types of educational investments. In some cases, private tutoring might help lessen the inequalities by enabling children from disadvantaged households to compete with counterparts from private schools. Instead of banning private tutoring, the government could target underperforming students and implement strategies to improve equity (Dang & Rogers, 2008). Therefore, it can be concluded that while private tutoring can increase social inequalities, it is not always the case and can even be used to reduce them.

Impacts on students' well-being

Private tutoring can add extra hours to students' studying time and may take over students' free time to do other unwinding activities. Furthermore, not being able to participate in or afford private tutoring might also result in students being treated differently by their teachers, such as getting low scores or even failing the subject entirely (Brehm & Silova, 2014; Dang & Rogers, 2008). All of these can take a toll on students' well-being. This issue has not received as much attention as it should, as evidenced by the lack of direct studies on the well-being of Cambodian students in relation to private tutoring or shadow

education. To understand this factor, we may look at some studies on a country with very active shadow education, Korea.

Kyung-don (2020) and Woo (2020) reported the findings from the annual survey conducted by the National Statistics Korea and the Ministry of Gender Equality and Family on Korean youths aged 9 to 24. It was found that 74.8% of the participants received private education outside of public schools. On average, they spent 6.5 hours per week on private tutoring. The survey also revealed that about 40% of middle and high school students reported feeling stressed, whereas 28.2% stated experiencing a sense of depression more than once within the past year (Kyung-don, 2020; Woo, 2020). On average, high school students slept for 6 hours, but 46% of them slept less than that. The same survey also showed that many students lacked physical exercise, especially high school students, as only 40.1% engaged in regular exercise more than once per week (Woo, 2020). Other than the lack of sleep and exercise, other problems were also reported. Mundy (2014) recounted that a study conducted in the previous year examined children in a wealthy district in Seoul and found that almost one in seven suffered from the curvature of the spine, which was more than double the rate compared to 10 years ago. Furthermore, at least 75% of Seoul's high school students were myopic, and physicians were spotting more and more youth with turtleneck syndrome (Mundy, 2014). In addition to the implications for physical health, there were also consequences for emotional and mental health. A poll of 5,669 Korean middle and high school pupils conducted by the state-run National Youth Policy Institute found that nearly one in three Korean middle and high school pupils had thought about suicide over the previous year due to academic burden (Yoo, 2021). Moreover, a study by Lee (2014), which used panel data regression to gauge the effect of time spent on private tutoring on the multidimensional well-being of over 6,000 Korean students aged 10-16 from 2003 until 2008, showed that the hours of tutoring had negative impacts on various domains of well-being such as study-related stress, health, and overall life satisfaction. These results underscore the presence of a clear shadow cost of shadow education, manifested as reduced well-being among students.

In comparison, the study by Soeung (2021b) found that Cambodian 12th graders in the social science strand spent about 40 hours on private tutoring per month, whereas their peers in the science strand spent about 100 hours each

month. From this, we can say that, on average, they spent around 70 hours per month, or approximately 16 hours per week, which far exceeded the number of hours spent by the average Korean students. However, it is worth noting that most Cambodian public schools practice a double-shift curriculum; therefore, their official regular study hours are shorter than those of Korean student. This means that while Cambodian students spend less time during regular schooling, they spend much more on private tutoring.

All of these highlight how the race for academic achievement, which heavily involves private tutoring, can bring a huge cost to students beyond the financial aspect. Even worse, while this pressure to take private tutoring often comes from parents and society, not out of their own choices, the students have to bear the cost of their mental health and well-being. Based on the findings of Soeung (2021b), Cambodian students may be at risk of suffering from physical and mental deterioration, considering the huge amount of time spent on receiving private tutoring.

Impacts on public school improvement

Bray and Lykins (2012) brought up an aspect that might be overlooked. That is, while private tutoring and public education might appear complementary, it is only for the short run. They argued that it might pose an obstacle to the improvement of public schools in the long run. The reason is that the availability of tutoring might decrease parents' interest in lobbying for improvement in public education, especially for well-off parents who can afford high-quality private tutoring (Bray & Lykins, 2012). They even added that those urban elites might even fear that the improvement of public schools could take away their children's advantage because when other children are able to receive a quality education through mainstream schooling, it would mean the competition for opportunities would be even stronger. This is why the private tutoring market may alleviate political pressure for reform and quality improvement in public schools (Bray & Lykins, 2012).

Unethical behavior and corruption

One of the most common themes in research related to shadow education is unethical behavior and corruption (see Bray et al., 2019; Brehm & Silova, 2014;

Soeung, 2021a). These issues not only pose problems in themselves, but they can also undermine the potential benefits of shadow education, rendering most of the benefits practically useless despite the hefty financial costs involved.

Jayachandran (2014) claimed that in developing nations, some teachers engage in unethical practices by forcing their public school students to take private tutoring lessons with them or even deliberately leaving out certain parts of the curriculum from regular class hours and only teaching those particular portions during their tutoring sessions. Some teachers also show favoritism toward certain students who pay a fee for their private tutoring (Dang & Rogers, 2008).

A more recent study conducted by Bray et al. (2019) elaborates on this issue in the Cambodian context. During interviews, 16 out of 24 teachers denied omitting important components from government classes on purpose and only teaching them during private tutoring lessons, although some acknowledged having done so at some points in the past. Students who were interviewed also mentioned this issue. It was a typical comment among the students that in the government class, there were many exercises for subjects like biology. Therefore, if they were not to attend private lessons, they would not understand and be unable to solve the problems during the exam. Three students even mentioned that their teacher did not allow them to do exercises during the government class, even if they had enough time. Teachers would let the students leave the class early, implying that if they wanted to practice the exercises, they should come to the private tutoring classes. Furthermore, some teachers would cover the curriculum in their private tutoring classes ahead of the government class as a form of indirect marketing because it appeared that tutored students performed better than others during regular classes. Even worse, sometimes teachers would deliberately inflate the scores of the tutored students, as acknowledged by one teacher in the study (Bray et al., 2019).

Soeung (2021b) also found that the main driver of tutoring demand was uncaring pedagogies. Although the majority (about 84%) of the respondents disagreed with a statement that teachers demanded that their students take tutoring with them, they agreed that teachers often shortened lessons by only presenting some parts, such as theory and formula, while leaving out some other parts of the lesson and reducing the practice time, individual interaction, and question time. These uncaring pedagogies seemed to align with what Bray

et al. (2019) mentioned in their study. This uncaring, unethical, and corrupt way of teaching is detrimental to the students. It hinders students from getting what is rightfully theirs: a complete education.

Solutions

For students and parents

Education is indeed crucial, but one needs to be careful not to overdo it. More time and money spent on education does not necessarily mean the person will learn more. Students' well-being must equally be taken into consideration. Additionally, forcing students to study for long hours might just make them despise learning. This sentiment is also echoed by Magdaline and Begam (2016), who did a study on 300 students from a district in India. They discovered that forcing students to attend various tuition and other coaching classes not only creates hatred toward education but also affects their well-being.

It is not a negative practice for students to seek help with subjects they have trouble with, but they should be selective by only choosing the subjects they struggle with instead of resorting to private tutoring on every subject. Additionally, alternatives to private tutoring, such as self-studying or peer study groups, should be explored. Students should learn to be more independent in their learning by making use of educational resources, especially various online resources. They should also get together in study groups and take turns teaching the subjects they are good at to their less-able peers. This would benefit not only the students getting taught, but the ones doing the teaching would also gain a deeper understanding (see Fiorella & Mayer, 2013).

Parents and students alike must not participate in or enable corruption in education. It renders the very purpose of education pointless if people let the corruption continue. If the reason for abetting corruption is to support teachers' low salaries, there are better ways to help, such as advocating for salary raises.

Parents should care more about their children instead of only focusing on their academic performance. Parents also need to stop the practice of constantly comparing their children with those of others. This practice can be detrimental

to children's self-esteem and perpetuate the cycle of vicious competition (Durga, n.d.; Gürel & Brummelman, 2020). Indeed, educational success is important, but it should not overtake the children's physical, mental, and emotional well-being.

For teachers

Educators have a responsibility to set a positive example for students because their actions and behaviors directly influence their students' views on education. There is nothing wrong with offering honest tutoring as remedial or enrichment for students. Nonetheless, it should provide genuine benefits to students rather than merely serve as a means to make extra income. One should not withhold information and knowledge on purpose during regular school hours as a way to force students to attend private tutoring because coercion and other academic misconduct undermine everything education stands for. It should have no place in education in any form. The various underhand dealings by teachers harm all students, whether or not they are enrolled in private tutoring. Uncaring or half-hearted teaching forces students to waste their time studying the same thing twice, once during official school hours and once more during private tutoring. Thus, it is inefficient and wasteful, as it costs not only money but also time. Students who undeservedly achieve high grades or scores as a result of paying money get only superficial bragging rights but no real academic benefits, while at the same time serving as a demotivating factor for students who do not or cannot take private lessons. When grades and scores are no longer an indicator of student performance but instead just something that can be easily bought with money, a diploma will turn into a meaningless piece of paper. It undermines the integrity of education and makes students lose faith in education and become cynical. Teachers should, therefore, be the first-line defenders of academic integrity, not tear it down. To gain respect, they need to conduct themselves in a manner that shows that they deserve it.

For the government, policymakers, and school leaders

The government and policymakers are the ones who can make changes at the macro level. If the government is willing to address the issue of private tutoring, it must look into the root causes that contribute to its prevalence.

Unquestionably, more funding needs to be allocated to education and educational research to improve the overall quality of the education system in Cambodia.

Moreover, the national examinations also need improvement. As can be seen with the case of the New Generation Schools (NGS), despite being able to eliminate teachers' engagement in shadow education, it has not been able to entirely omit students' participation in it due to the quality of the schools as well as the examination pressure (Nhem, 2022). While commendable educational reforms have been introduced, such as the no-cheating policy and NGS initiatives, the national examinations remain largely unchanged. The exam should go beyond testing lower-thinking skills, as this would perpetuate the outdated teacher-centered approach and prevent students from developing crucial 21st-century skills. Moreover, to curb anxiety and pressure, instead of conducting one single high-stakes exam, formative assessments should be considered in determining final grades. However, this solution may increase the risk of corruption at the class or school levels. If academic integrity can be ensured, formative assessments would not only lessen exam anxiety but also increase students' engagement with their daily classes.

In addition, school leaders, acting as intermediaries between teachers and policymakers, should work closely with both groups to monitor and address teachers' misconduct while at the same time working to improve the curriculum and examinations and to advocate for well-deserved salaries and benefits to attract and retain qualified teachers. The quality of mainstream schooling is a major reason for the rise of private tutoring. To promote quality education, attention should be paid to teachers, who are an indispensable part of education. Choi (2014) compared how vastly different two of the world's best education systems (Korea and Finland) are. Choi (2014) found that they had one thing in common, i.e., a deep respect for teachers and their academic accomplishments. While teachers do not enter the profession with the aim of being wealthy, they should not have to live near or barely above the poverty line, given the importance and skill requirements of their jobs. Providing educators with well-deserved compensation in terms of salaries and other benefits, as well as raising the prestige of the job, will undoubtedly attract more talented individuals into the profession. With more qualified teachers available, the government may get rid of double-shift classes, reduce the teacher-student

ratio to improve the quality of education, and gain the trust of parents and other concerned stakeholders.

Conclusion

The rise of private tutoring implies the value people place on education, but it can also be a sign of distrust in mainstream schooling. It is great that people recognize the importance of education and are willing to invest their time and hard-earned money into it. However, as its other name, “extra class,” suggests, private tutoring should be an extra or an add-on, not a compulsory, part of education. While it is perfectly understandable that some students may need extra academic help, they should be in the minority, not the majority, because that would mean there are serious problems with the educational system.

As previously discussed, shadow education has its benefits. Private tutoring, free from corruption, has the potential to help both low- and high-performing students soar to greater heights. As this phenomenon is deeply rooted in society and with the academic competition growing more and more fierce both domestically and internationally, it is unlikely that private tutoring will be eradicated any time soon. That is why all stakeholders need to work together to reduce potential problems and maximize academic benefits.

No doubt, more research is needed to get the whole picture of the current situation of shadow education in Cambodia in order to implement effective policies. Moreover, research efforts should focus on how to improve the overall quality of education and develop more valid and reliable assessments. The answers to these complex questions will not be found easily and will require a never-ending, ongoing process. Through trial and error as well as rigorous research, hopefully, our education system will get closer and closer to a world-class education. However, there is one thing that is certain: if corrupted shadow education continues to be considered an essential part of public education, that means public education has arguably failed its people.

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Corruption in Cambodia's General Education: Causes, Impacts, and Recommendations

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Summary

Corruption in education is a key issue for many countries because education remains the most important sector and the first priority for every country to develop their human resources. Since the education sector plays an essential role in national development, the risk of its destruction is most likely higher than that of other sectors. For this reason, corruption in education needs to be immediately addressed before it is too late in order to foster the development of human resources in any country. This chapter aims to raise awareness and attention about the corruption issue in the general education system and bring back the positive impact of this sector. This chapter will also discuss the causes and impacts of corruption in Cambodia's general education as well as provide some recommendations to deal with this critical issue.

Keywords: Corruption; general education; impacts; recommendations

Introduction

After an education reform in 1996, Cambodia's general education system was formulated as 6+3+3, which means there are 12 years of completion for general education, with six years for primary school, three years for lower secondary school, and another three years for higher secondary school or high school (Bookbridge Foundation, n.d.). Most Cambodian schools are under state governance, which means general education is free of charge for students entering school. While school is considered the most significant step for developing human resources, the issue of corruption inside the Cambodian school system remains a critical concern. Several reasons for corruption in schools include low salaries of teachers, corrupt culture, poor governance structure, and student cooperation in engaging in corruption (Sara, 2022).

When education is free of charge for students, many teachers in Cambodia, who receive a low salary, decide to commit corruption inside the classroom in many forms in order to earn more income for their living (Sao, n.d.). Besides, there is a lack of strict law enforcement from school management, allowing many teachers to continue to commit corruption. The high return rate from students who willingly engage in corruption is the reason why corruption in Cambodia's general education remains and should be addressed (Sara, 2022).

This chapter aims to discuss the issue of corruption in Cambodia's general education system. It begins by defining the general definition of corruption in education before discussing its main root causes and impacts on the general education system and students. The chapter ends with some recommendations on how to tackle corruption in general education.

What is corruption in general education?

According to UNESCO (n.d.-a), corruption in the education sector is characterized as the systematic use of public office for private gain, with substantial implications for the availability and equity of educational goods and services, as well as access and educational quality. Corruption in the education system is most likely worse than corruption in other sectors since it badly affects the potential growth and human resources of the whole country. In Cambodia, corruption in the general education system is primarily

committed by both teachers and students, who are all committed to engaging in corruption based on their individual interests (Ponniah, 2014).

Main causes of corruption in the general education system

Corruption in the general education sector has threatened the quality of Cambodia's general school system, contributing to many negative impacts (Wilwohl, 2014). This section discusses the major causes of corruption in education in the context of Cambodia's general education. Major causes of corruption in education include low teaching salaries, corrupt cooperation between teachers and students, and a lack of strict law enforcement.

Low teaching salaries

Corruption in general education usually happens in poor or developing countries like Cambodia. Low salaries are one of the main reasons for teachers to commit corruption in school. According to Hammond (2018), Cambodian education has been slowly rebuilding since the Khmer Rouge regime (1975-1979). Cambodian education used to depend primarily on foreign aid because of the lack of resources and the low salaries of Cambodian teachers. As a result, in order to find a way to survive, many teachers conducted extra classes to make more money and forced their students to attend the extra classes (Soeung, 2021). Besides paying for extra classes, students also need to pay for exam papers charged by their teacher. After the new reform introduced in 2014, charging for exam papers or selling exam lesson papers is illegal for teachers (Chea, n.d.). It was also reported that a similar corrupt practice in the education sector was that school administrators forced teachers to pay for the facilitation fees to receive their monthly salary (The ASEAN Post, 2020).

Corrupt cooperation between teachers and students

Teachers alone cannot commit corruption in the classroom. Corruption in Cambodia's general education system is also caused by the involvement or cooperation of students and their parents. When teachers force students to pay for exam papers, attend extra classes, and commit other corrupted activities, students are most willing to do so because they want to get a higher score and fear failing classes. According to Han (2021), the engagement between teachers

and students in committing corruption in the classroom became a very normal thing in Cambodia's general school classrooms, creating a corrupted culture. Students tend to willingly pay a high price for extra classes and exam papers, even though they know it is illegal or unethical. Although the students' involvement is important, their parents are also the main actors in facilitating this corrupt culture. Han (2021) also mentioned that in the Cambodian context, some Cambodian parents normally give extra money to their kids' teachers even though the teachers do not request it. The purpose is to ask for good care of their kids and sometimes to give them an extra score to pass an exam. This practice has become the norm in Cambodian society, perpetuating corruption in Cambodia's general education.

Lack of strict law enforcement

The lack of strict law enforcement is an open door for corruption in Cambodia's general education system. According to Bredenberg (2016), patronage networks in Cambodia are strongly rooted in all aspects of social organization, including schooling. Individuals such as district and school directors typically keep their posts not because of their talent or competency (although some of them may be competent), but because of their ties to a patron in a broad sense. A web of social reliance is widespread, reaching the provincial education offices and much further. It is, therefore, hardly surprising that people who engage in corrupt activities or are inadequately competent tend to keep their jobs in this climate. More importantly, rarely has anyone been fired for committing corruption. These practices remain common due mainly to the lack of strict and effective law enforcement (Bredenberg, 2016; Sara, 2022).

The impacts of corruption on Cambodia's general education system

There are many negative impacts caused by corruption in the general education system. This chapter focuses on three impacts, such as contributing to poor educational outcomes, constraining human capital and socioeconomic development, and perpetuating educational inequality.

Contributing to poor educational outcomes

Due to the corrupt collaboration between teachers and students, some students

could pass an exam or get into the next grade without proper merit or real knowledge. This has led to poor educational outcomes within the education system. Although the new examination reform introduced in 2014 has produced desirable results, as students could not access their phones, calculators, or any electronic devices during the exam, and the examination process was held under the fair and strict surveillance of Cambodia's anti-corruption unit (Ouch, 2015), corruption in education remains a critical issue. For example, in the 2019 Corruption Perceptions Index, Cambodia's education was reportedly ranked 8th among the 10 countries of the Association of Southeast Asian Nations (Heng, 2022). According to Sheith (2020), Cambodia was ranked 162 globally, making it one of the most corrupt and impoverished education systems in the world.

Constraining human capital and socioeconomic development

Human resources are essential for a country's development. As corruption in the general education system has had a negative impact on human resource development, Cambodia suffers from a lack of qualified human resources to drive its development. Due to the limited quality of Cambodian general education, Cambodian students graduating from high school tended to have limited knowledge (Open Development Cambodia, 2014; Sao, n.d.). This is exacerbated by the presence of corruption in education, which allows some students to pass exams without real knowledge. This issue sparks concern for human capital and socioeconomic development in the country, making it difficult for Cambodia to realize its aspirations to become a knowledge-based society (see Heng, 2023).

Perpetuating educational inequality

Another negative impact caused by corruption in education is the perpetuation of educational inequality. According to Sao (n.d.), as teachers commit corruption in the classroom, they tend to give no care to their professionalism and morality. They focus only on earning more money via private tutoring or other forms of income-generating activities such as selling exam and lesson papers. In this situation, education inequality is sustained because students from affluent families can pay for extra classes or utilize their financial

resources to take advantage of the presence of corruption, but those from lower-income families may not be able to do so (Sara, 2022).

Possible solutions to combat corruption in Cambodia's general education

Corruption is a cancer that negatively impacts the whole education system and can threaten the development of other sectors. This issue, therefore, needs to be addressed as soon as possible. This chapter proposes three possible solutions to combat the corruption crisis in Cambodia's general education system. These include introducing salary reform, implementing new education reform, and enhancing strict law enforcement.

Introducing salary reform for teachers

One possible anti-corruption strategy is introducing salary reform for teachers. According to the Anti-Corruption Commission (n.d.), the increase in teacher salaries can be done with a better tax system in order to eliminate corruption in various sectors. As teachers commit corruption because they receive a low salary, introducing salary reform may be a way forward to combat corruption in education. Although the Cambodian government has increased teacher salaries over the years (Kay, 2018), the salary scale is still low, compared to the cost of living, particularly in urban areas. By implementing salary reform, it is likely that teachers will stop committing corruption in the classroom because they already receive reasonable salaries for their work. In this sense, teachers' remuneration scales must be regularly reassessed to account for the rising cost of living.

Implementing new education reform

Since corruption threatens the education system as a whole, introducing new education reforms should be another way forward to address this issue. According to Hangchuon (2018), one of the most effective anti-corruption strategies to fight corruption is changing the corrupted education system and conducting new education reform. The education reform for the grade 12 national examination introduced in 2014 is a good example of strategies to address corruption in education. This reform started at a very critical stage with the main purpose of improving the national examination system for the high

school exit exam and stopping corrupted behaviors during examinations. The reform has helped to improve the examination process, which has in turn helped to improve the quality of graduates. As this education reform has contributed to fighting corruption in the general education system, new education reforms are needed to further combat corruption in education and improve Cambodia's education system.

Enhancing strict law enforcement

Another way forward to deal with this critical issue is to enhance strict law enforcement within the school system and impose severe punishment for those committing corruption. According to Hallak and Poisson (2005), in order to reduce corruption in the education system, the government and schools need to enhance strong regulations, management methods, and strict law enforcement within the school system. In fact, school principals in Cambodia should be working on this matter by setting strict rules for teachers and school administrators in order to ensure that school regulations are effective, and breaking them will lead to punishment. As UNESCO (n.d.-b) noted, corruption could be addressed if strict law enforcement is implemented. Thus, teachers who break the rules or commit corrupt behaviors inside the classroom should receive punishment in terms of administrative sanctions, warnings, salary suspension, work suspension, or other forms of punishment. Strict law enforcement will raise teachers' awareness of the consequences of committing corruption in education, potentially leading to the avoidance or reduction of corrupted practices in Cambodia's general education.

Conclusion

This chapter has discussed the causes of corruption in education, including low teaching salaries, corrupt cooperation between teachers and students, and a lack of strict law enforcement. The impacts of corruption included contributing to poor educational outcomes, constraining human capital and socioeconomic development, and perpetuating educational inequality. The chapter has also discussed possible solutions to combat corruption, including the introduction of salary reform for teachers, the implementation of new education reform, and the enhancement of strict law enforcement.

As teachers are one of the most important actors in the education sector, they play a crucial role in improving the quality of education and developing human resources. However, since the reality in Cambodian society is that teachers carry out many responsibilities but are poorly paid, some of them decide to earn more money by committing corruption or other unethical behaviors. In addition to the strategies to combat corruption discussed above, it is important that the Cambodian government should prioritize the teaching career by providing a salary at an appropriate level compared to other positions.

It is also important to improve school resources. Because most public high schools in Cambodia continue to struggle with a lack of resources and facilities for teachers to carry out their day-to-day duties, the government should increase the national budget and invest more in the education sector to provide sufficient resources, including digital resources and other much-needed materials, so that schools can provide the best learning outcomes to students and teachers can no longer exploit their students. Finally, a true commitment to dealing with corruption in the education sector is needed to allow Cambodia to upgrade its education system and transform itself from a country with a poor education system to one with no or little corruption in its general education system.

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Plagiarism Among University Students: Causes, Consequences, and Recommendations

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Summary

Plagiarism has grown increasingly prevalent and widespread in the academic world as a result of the emergence of the internet and the variety of materials available to students. The act of using or stealing another person's intellectual property and passing it off as one's own is known as plagiarism. It has been noted that higher education institutions are quite concerned about the problem of plagiarism. Many university students, particularly those from rural areas, may not comprehend the idea of plagiarism, with some probably having never heard of it. As some students are not properly exposed to the concept of plagiarism until they enter university, they may have little knowledge of what it is and how to avoid it successfully. Therefore, this chapter aims to discuss plagiarism in higher education. It begins by defining plagiarism before examining the possible causes and consequences of it. The chapter concludes by providing some recommendations for key stakeholders in higher education to prevent plagiarism.

Keywords: Plagiarism; higher education; academic integrity; in-text citation; referencing; paraphrasing; Cambodia

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Introduction

The rapid advancement of technology has altered our world. Today's era is known as the digital age, in which young people use laptops, tablets, and smartphones to engage in new and inventive experiences. Technology, therefore, plays a vital role in easing this change. As a result of technological advancements, the way people learn and acquire skills and competencies is also changing. It provides young people with numerous opportunities for social connections, peer-to-peer communication, job exploration, entertainment, and civic participation (Hasan & Khan, 2018). While digital transformation is usually positive, it introduces new problems that require a shift in the way we think and deal with them. For example, maintaining academic integrity has become crucial to protect educational institutions' reputations and ensure the authenticity of schoolwork and exams. Students are increasingly tempted to copy information from the internet, edit it, and submit it as their original work because of the internet's ever-expanding wealth of knowledge and the ease with which they may access it (Bailey, 2021).

This phenomenon has resulted in an increase in academic misconduct, undermining academic integrity. Nowadays, plagiarism encompasses more than just copying and pasting sections of materials from other sources. As education progresses, plagiarism techniques have evolved as well, demonstrating the need for instructors and educational institutions to be more aware and make appropriate efforts to minimize acts of dishonesty (Janet, 2012). Academic dishonesty can occur for a number of reasons, including indolence, carelessness, and ignorance of the significance of citations. Some people plagiarize because they are unable to come up with their own thoughts or points of view. Others are too lazy to work hard; they think it is much easier to cheat to finish their projects quickly. It has been acknowledged that students usually fail to reference their materials because they do not understand why they must do so (Keith, 2018).

According to Beasley (2004), higher education institutions across the world have made significant efforts to identify plagiarism and penalize plagiarists by enforcing ethical guidelines. The development of plagiarism detection technologies, employed successfully by instructors and their institutions, might have discouraged students from plagiarizing other people's works. In the case

of researchers or professionals, if plagiarism is found in their works, their whole career and integrity might be at risk. For students, their degrees could be canceled and devalued if plagiarism is found in their academic works (Satiya & Martínez-Ávila, 2019).

Therefore, plagiarism is regarded as academic misconduct or a crime since it violates academic codes of conduct and goes against the educational goal of increasing human capital for social and economic growth. Indeed, plagiarism is a rising problem in today's academic contexts, where the internet provides abundant sources of information. In the case of Cambodia, it has been reported that the tolerance of plagiarism and cheating by teachers and students placed strict limitations on students' ability to progress (Cambodian Institute for Cooperation and Peace [CICP], 2016). Students who participated in roundtable discussions conducted for CICP's (2016) study highlighted that although they had access to open-access publications and reliable sources, the regulations for citing were not clear, and the anti-plagiarism policies were not strictly enforced. In addition, it was found that inappropriately citing other works and plagiarizing were two common methods that researchers used (De Maio et al., 2019).

Against this background, this chapter aims to discuss plagiarism in higher education, and where relevant, the Cambodian higher education context is raised as an example. The chapter first defines plagiarism and then discusses the possible causes that lead to plagiarism in higher education before highlighting its consequences. The chapter ends with some recommendations for preventing plagiarism among university students.

Defining plagiarism

The modern notion of plagiarism as morally wrong was first developed in Europe in the 18th century (Masic, 2012). The term 'plagiarism' comes from the Latin verb 'to plagiarium,' which means 'kidnapper' and refers to someone who takes and publishes another person's work under their name (Cook, 2019). Passing off someone else's words, thoughts, or visuals as one's own or depriving the writers or content creators of the credit they deserve is called plagiarism (University of Oxford, n.d.). Plagiarism goes against academic ethics, whether it is intentional or not. Plagiarism can prevent readers from

identifying ideas back to their original sources, disrespect the efforts of original writers by failing to acknowledge their contributions, and unfairly discredit individuals who put in the effort to finish their work. Plagiarized writers risk having their work rejected by publishers and may face disciplinary measures at work (Ouellette, 2008). Typically, if a citation error is minor and can be attributed to an editorial oversight rather than a deliberate attempt to steal someone else's ideas or obscure the source of information, it is not considered plagiarism. However, these mistakes may still lead to a deduction in assignment scores or a request for correction of a paper that has been submitted for publication (American Psychological Association, 2020).

Self-plagiarism is also a type of plagiarism that is immoral and involves presenting one's own previously published work as original. Duplicate publishing and repetitive or overlapping writing are the most prevalent types of self-plagiarism (Scanlon, 2007). Writers sometimes claim that since they are the original writers, they are free to reuse their work as many times as they want. Since they are not using anybody else's words or ideas, they cannot truly be accused of plagiarism (Roig, 2010). However, the same work may result in copyright breaches if it is published by different publishers. If a student uses work from one class to complete assignments in another class without the present teacher's consent, it may also be considered plagiarism by many educational institutions. Basically, using the same assignment for several classes goes against university ethics, honor, and academic integrity rules (American Psychological Association, 2020).

Possible causes of plagiarism

Plagiarism is also academic misconduct since it violates the academic codes of conduct and affects education's ultimate purpose of improving human capital. Three main factors that are associated with students, universities, and society can lead to plagiarism.

Student-related factors

The factors associated with students may include procrastination, workload, ignorance, lack of information, and weak academic writing abilities. It is likely that many students in developing countries such as Cambodia do not fully

comprehend what plagiarism is. It is also probable that many university students, particularly those who come from rural areas, have little understanding of plagiarism. For example, it has been reported that university students in Cambodia had limited awareness of what plagiarism is and how to effectively avoid it because they were not taught about it until after they entered colleges or universities (Cheng et al., 2017). Moreover, it is common that university students in Cambodia tend to put off completing their assignments or research papers until the last minute (Ly, 2020). Therefore, they are less likely to have enough time to complete their projects due to poor time management, potentially causing severe stress and anxiety for them. Students may also choose to plagiarize when their workload becomes too heavy for them to handle efficiently. When they cannot manage their time to complete all of the things that they have to do, they often turn to plagiarism to assist them with handling their difficulties (Cleary, 2020). In addition, there is a significant link between students' poor academic writing skills and plagiarism (Anney & Mosha, 2015). Citing, summarizing, paraphrasing, and conveying authors' ideas are complex skills to master in academic writing. Plagiarism occurs when students take someone else's work without adequately paraphrasing it or without properly citing or acknowledging the original source of the work. A lack of knowledge about the subject matter, grammatical inaccuracies, and a misunderstanding of how to properly reference or cite sources make it difficult for many Cambodian university students to perform well in their courses (Khim et al., 2019).

University-related factors

The factors associated with universities can be linked to a lack of follow-up mechanisms for students and the absence of strict penalties associated with plagiarism. In addition, lecturers who are negligent in preserving academic integrity may enable students to plagiarize easily in their courses. If students see their lecturers' disregard for academic integrity, they will take it for granted and may submit plagiarized work. In many cases, students tend to like such lecturers since they allow them to pass easily. However, there are also lecturers who might view such behavior as harmful to students' careers and would want to prevent it. Even so, lecturers like this may have missed the possibility of reprimanding students due to care and compassion (Bahadori et al., 2012). Moreover, because of a lack of institutional regulations, it is understandable

that plagiarism may be frequently committed by students. If a university does not have a clear plagiarism policy, students may be more likely to plagiarize since there are no penalties for doing so. This phenomenon is common in developing countries where policies on plagiarism tend not to be well-defined (Romanowski, 2021). As Gasparyan et al. (2017) noted, many institutions in industrialized nations, such as the United States, have a firm plagiarism policy, whereas those in developing countries tend to lack it.

Society-related factors

Societal factors such as culture, social norms, and family pressure can also influence plagiarism in schools. According to Wheeler (2009), cultural aspects may have an impact on how individuals view plagiarism. For example, in some countries, plagiarism may be viewed as acceptable, causing students to accept it as a normal thing because they may believe that copying someone else's words or thoughts is a show of respect and commendation (Nash, 2018). As a result, the frequency with which academic dishonesty is perpetrated varies greatly among students from various cultural backgrounds. Relatedly, family and friends may also be a key factor influencing plagiarism, as some parents put pressure on their children to maintain a specific grade point average (Romanowski, 2021). As a consequence, students may be motivated to plagiarize in order to get high scores or good grades that are commonly used to measure their accomplishments against those of their peers (Songsriwittaya et al., 2009).

Consequences of plagiarism

Plagiarism is a serious academic violation and a breach of academic integrity. It can not only ruin students' reputations in school but also harm their career prospects. It can also result in legal consequences, depending on the severity of the violation. In Cambodia, plagiarism is starting to be taken very seriously by many educational institutions, as evidenced by the presence of academic integrity rules and committees in most institutions (Cheng et al., 2017). Plagiarism can affect a student's ability to think. Since good writing requires rational arguments, students who rely on the ideas of others by resorting to plagiarism while completing their work tend to be unable to think through

critical topics (Raihanah et al., 2011); therefore, they are at risk of losing their thinking capability (Carson, 2010).

If found guilty of plagiarism, students may also be punished by failing a course, receiving a lower grade, being suspended, or even being expelled. When students mistakenly plagiarize a piece of work, some teachers might just give a warning to the students, while others might give a zero if the plagiarism is detected. Receiving a zero score on one assignment is consequential as it could significantly lower the final score, making some students fail the course (Gregory & Leeman, 2021). In some cases, universities can dismiss students and withdraw academic certifications issued to them when plagiarism is found to be intentional and severe.

Moreover, plagiarism has the potential to harm a student's reputation and career in the long run. Students' mental health and overall well-being may also be harmed due to the embarrassment they may feel when they are found committing plagiarism (see Pandoi et al., 2019). The ethical breach may also be revealed in the students' academic records, making them face difficulties in finding a job (Shahabuddin, 2009). Berlinck (2011) noted that society generally views the plagiarist as a bad person, even if the plagiarist committed plagiarism in a relatively short period of time, probably unintentionally or even for the first time. Furthermore, when students or lecturers are found to have committed plagiarism, not only does the reputation of the students suffer, but it also affects the reputation of the educational institution (Salleh et al., 2012).

Recommendations

To prevent plagiarism among university students, all concerned stakeholders, including higher education institutions, academic staff, and university students, must collaborate and play their part well. These actors have crucial roles in preventing plagiarism in higher education. The following are some recommendations for consideration:

Higher education institutions

When it comes to supporting students in acquiring academic integrity, higher education institutions play a vital role. They must put in place a professional

anti-plagiarism software program, such as Turnitin, Scribbr Plagiarism Checker, or Grammarly, in addition to a regulatory plagiarism framework to protect their institutional reputation. The issue of academic integrity among students needs to be taken seriously. The implementation of honor or academic integrity codes or policies is meant to serve as a measure to prevent students from engaging in behaviors that could harm their academic records. Such codes or policies should specify what exactly plagiarism is, what university rules, regulations, and practices have to say about it, and what the ramifications are. Higher education institutions should also provide orientational workshops, seminars, and training sessions to raise students' awareness of plagiarism (Malik et al., 2021). In addition, the use of libraries should be promoted within educational institutions to help students learn to avoid plagiarism. Libraries serve a vital role in educational institutions as they provide reading spaces and a collection of various reading resources for students. Libraries can also promote reading among students and help them learn more about any particular topic, allowing them to write their research or assignment papers rather than copying and pasting ideas from the work of others.

Academic staff

Academic staff also play an important role in preventing plagiarism. Even though universities may have a strict plagiarism policy, the policy will not work if there is no one to enforce it. Therefore, academic staff members have a vital role in enforcing the relevant rules and regulations about plagiarism with students. If a student has committed plagiarism, he or she needs to be punished based on the academic integrity policy by the academic staff and offices in charge. Moreover, academic staff should inform their students about plagiarism and its consequences, as well as their course requirements or expectations. In fact, students may plagiarize if they do not know the university regulations that govern their academic behavior. They may also plagiarize if they believe their university will not check and care about their plagiarized work. Thus, academic staff should ensure that their students are fully aware of the negative implications of plagiarizing other people's work. Furthermore, they should teach their students how to properly acknowledge sources and discuss the potential consequences of plagiarism. Students have the right to receive proper guidance from their lecturers to help them realize what types of writing might result in plagiarism. Therefore, if possible, academic staff should

require their students to submit their work to plagiarism checker software to produce a satisfactory report before it can be considered for assessment (Eriksson & Sullivan, 2008).

University students

University students should be well aware of plagiarism and learn to cite, reference, paraphrase, and quote sources properly. This knowledge can prevent them from committing plagiarism. Altering a few words or rephrasing a few sentences will not save them from charges of plagiarism. To paraphrase effectively, they must first read the source material carefully, take it in, put the author's ideas and concepts into their own words, and properly acknowledge the source. If they are unclear whether they have properly paraphrased, they should compare their work to the original to ensure they have kept the original meaning but used their own words to convey the messages. Furthermore, quotation marks must be used when quoting someone's words verbatim. If possible, they can also use plagiarism-checking software to see what else to paraphrase to avoid plagiarism. These approaches can help them identify any plagiarism in their work. If any, they can take the necessary and fast corrective action.

Overall, students have to cite the sources of quoted and paraphrased information carefully. There are a variety of style guidelines that may be employed. If they are unsure about which style to follow, they should consult their lecturers or institutions to make sure that they cite the sources appropriately. A reference list also has a defined structure, so they need to make sure what rules or referencing styles to follow. Due to the complex nature of the references included in the reference list, every entry or item must be carefully checked for accuracy. The reference list usually contains the author's name, publication date, title, and information about the publisher. To ensure accuracy, students can use Microsoft Word to generate automatic in-text citations and the reference list or employ referencing software such as Endnote, Mendeley, and Zotero, among others (McMillan & Weyers, 2013).

Conclusion

Plagiarism—the unacknowledged use of another person's work without due

credit—frequently occurs in academic settings (Anderson & Steneck, 2011). Thus, direct copying, translation without proper attribution, idea theft, and other types of plagiarism are all possible. As some university students only learn about plagiarism when they enter university, they may have limited awareness of what plagiarism is and how to avoid it effectively. As this chapter has discussed, plagiarism in higher education could be caused by three factors related to students, universities, and society. It is a severe problem with serious consequences that can affect both students' academic and professional lives. In addition, penalties and other forms of action may be taken if students are found to be engaging in plagiarism.

Plagiarism in higher education must be prevented by all concerned stakeholders at all levels, including higher education institutions, academic staff, and university students. Educational institutions must set up a regulatory framework and put in place a professional anti-plagiarism software program to protect their reputation. University libraries also play a critical role in promoting reading and providing various resources for students' research activities. Moreover, academic staff members play a pivotal role in enforcing the relevant plagiarism policies on students. They can take immediate action for plagiarized work as per university rules or regulations. They should warn students about plagiarism, make them aware of their expected standards, and teach them how to properly cite, reference, paraphrase, and quote sources. For university students, they must be responsible for their own work and learn about proper citation, paraphrasing, and quoting techniques to avoid plagiarism, either intentionally or unintentionally.

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Part III

TVET and Higher Education in Cambodia

Technical and Vocational Education and Training in Cambodia: Significance, Challenges, and Ways Forward

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Summary

To compete in the global market, Cambodia has created a number of national economic strategies, one of which is technical and vocational education and training (TVET). TVET is critical for improving people's livelihoods and providing Cambodian workforces or human resources with the knowledge, competence, skills, working attitudes, professional ethics, high productivity, and competitiveness needed for lifetime employment. This chapter examines the benefits of TVET for Cambodia using secondary sources and digital media. It is organized into three parts: key roles, challenges, and ways forward. The chapter begins by explaining how TVET contributes to Cambodia's national economic growth, education, private sector, and personal development. Following that, it highlights a few key challenges to increasing TVET in Cambodia, such as a lack of engagement in TVET and the need for corporate and government support. The chapter then highlights the solution and the vital role of the private sector, government, and individuals in resolving the challenges and establishing a more effective TVET in Cambodia.

Keywords: Technical and Vocational Education and Training; TVET; significance; challenges; ways forward; Cambodia

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Introduction

Technical and Vocational Education and Training (TVET) has contributed to socioeconomic advancement by establishing and upgrading labor market demands as well as generating trained employees and technicians (Asian Development Bank [ADB], 2018). In Cambodia, TVET operates under four key objectives, as stated in the 2017-2025 National TVET Policy: (1) to improve TVET quality in order to meet national and international market demands; (2) to increase equitable access to TVET for employment generation; (3) to promote public-private partnerships and aggregate resources from stakeholders to support TVET's sustainable development; and (4) to improve TVET system governance (Ministry of Labor and Vocational Training [MoLVT], 2017). MoLVT has been in charge of TVET tasks since 2005, overseeing non-formal and informal (short course) vocational training through the Directorate General of TVET (UNESCO-UNEVOC, n.d.-a). MoLVT now has 104 TVET-recognized institutions, comprising 37 governmental institutes, 41 private institutes, and 26 nonprofit organizations that provide technical and vocational training in 25 capital city or provinces (MoLVT, 2021). TVET institutes in Cambodia offer short and long-term training at eight levels for trainees, students, youth, and the general public, including four certificate programmes, an associate degree, a bachelor's degree, a master's degree, and a doctoral degree (MoLVT, 2021). Short-course training programmes cover electrical installation, water supply, machine repair, car repair, motorcycle repair, mobile phone repair, computer repair, food and beverage services, tailoring, salon, cosmetics, wedding embellishment, animal raising, vegetable growing, fruit, and other skills. A long-course curriculum is accessible both in the classroom and in the community. Architecture, civil construction, electrical, electronics, mechanical, air-conditioning, automotive, entrepreneurship, accounting, computer science, information technology, telecommunications, business, tourism, and other skills are taught in one-year or more long-term training programmes (MoLVT, 2021).

The aim of this chapter is to discuss the significance of TVET, the challenges facing it, and the ways forward to improve TVET in Cambodia. The chapter starts by providing definitions of TVET. It then examines the roles of TVET in various domains as well as the challenges facing TVET in Cambodia. The

chapter concludes with a discussion of the ways forward and suggests further research on ways to develop TVET in Cambodia.

What is TVET?

TVET is described broadly as education, training, and skills development in various vocational specialties, as well as production, services, and livelihoods (UNESCO-UNEVOC, n.d.-b). TVET is an aspect of lifelong learning that can take place at the secondary, post-secondary, and technical levels (UNESCO-UNEVOC, n.d.-b). It includes work-based learning, continuing training, and professional development, which may lead to qualifications. It serves multiple purposes, such as being an integral part of general education, a means of preparing for occupational fields, and a tool for effective engagement in global work fields (UNESCO-UNEVOC, n.d.-b). According to MoLVT, TVET is an indispensable component of socioeconomic development that assists learners in gaining knowledge, technical skills, and competency to become skilled workers and technicians (MoLVT, 2017).

The role of TVET in boosting the economy

Many educated and professional Cambodians have perished as a result of the genocide, which has affected the Cambodian economy due to the remaining population being low-skilled. In light of that, Cambodia has grappled with economic challenges, including a lack of skilled labor, reduced internal output, and limited exports. This situation, which sharply contrasts with the conditions in its neighboring countries, has contributed to Cambodia's status as a less prosperous nation (Benjamin, 2019). Hence, the role of TVET would significantly contribute to national economic development by increasing employability, raising domestic productivity, reducing poverty, and mobilizing skilled workers. TVET, as stated in Cambodia's National TVET Policy 2017-2025, will increase Cambodian productivity and establish more competitive domestic enterprises by increasing its labor capacity to generate more domestic goods in the production chain (MoLVT, 2017). According to Sim et al. (2019), TVET has helped domestic production by producing skilled workers for industry sectors such as the garment industry, which accounts for approximately 65 percent of national manufacturing, and effectively producing their products, which could help domestic productivity while also reducing

poverty and Cambodian labor migration. For example, Cambodian Prime Minister Hun Sen announced in 2020 that the TVET policy had increased the skills and employability of 200,000 people since 2017, which is a critical aspect of TVET for generating competent people for the country (Sen, 2020).

Furthermore, TVET is able to establish itself as a key player in addressing the national economy's regional and worldwide challenges and boosting exports. High infrastructure costs and shortages; limited access to social services; insufficient access to land, natural resources, and affordable finance; human capital and skill shortages; and poor governance have all contributed to Cambodia's struggle in economic competition with its regional and international competitors (Kim, 2014). One of them is the ASEAN Economic Community, which promotes regional integration to facilitate free trade within its jurisdictions (Kim, 2014). With a skilled TVET workforce, Cambodian firms would be able to compete with their international competitors and may export more of their products.

The role of TVET in supporting the private sector

One of Cambodia's TVET national policy goals is to promote public-private partnerships and aggregate resources from stakeholders to support sustainable development (MoLVT, 2017). In this sense, TVET plays two crucial roles. First, it produces sufficient technicians and experts to serve and support the private sector's productivity. Because TVET can develop both long-term and short-term skilled trainees, which can begin as early as one week, it has the ability to provide its trainees with the necessary skills, language competency, and immediate practice opportunities such as electrical or machine installation and repair, advanced skills in food and beverage services, cosmetics, wedding embellishment, animal raising, vegetable and fruit growing, and more (MoLVT, 2021). Nonetheless, the private sector will receive trained workers, so they will not need to invest time and resources in training those workers when they enter the workforce (MoLVT, 2021). TVET also fosters relationships between TVET students and the private sector, allowing them to contribute to the promotion of national enterprises and skilled workforces. While TVET generates skilled employees for the private sector, it also requires the private sector's involvement to maintain its skilled trainees. By doing so, both parties will profit from each other and contribute to the growth of the national economy.

According to Cambodia's National TVET Policy (MoLVT, 2017), the country is actively striving to bolster public-private partnerships, aiming to support TVET as an integral part of the nation's long-term development strategy.

The role of TVET in supporting the education sector

According to Cambodia's Education Minister, Dr. Hang Chuon Naron, the dropout rate in upper secondary education (grades 10 through 12) was 23.8 percent in 2015 and 19.4 percent in 2016 (Touch, 2017). Following that, the 2019 General Population Census of Cambodia reported that almost 10% of males and roughly 15% of females were illiterate in the country (Sem, 2021). Nonetheless, the poll found that 22% of people aged 20 to 24 did not finish primary school. Because the rural population received less schooling than those in urban areas, the result explains the country's wide literacy gap. COVID-19 also had a negative impact on Cambodia's literacy rates (Sem, 2021). To address such educational challenges, TVET aids these people in achieving a higher learning level and long-term professional skills. With its short and long training courses for trainees, students, youth, and the public, TVET supports these people in reaching a better degree of learning and long-term professional skills. TVET could provide dropped-out students and illiterate people with short and long training courses to ensure equitability and training in all scenarios (MoLVT, 2021). Dropouts, low-income women, ethnic minorities, women, persons with disabilities, those living in rural areas, and vulnerable people are all encouraged to obtain a vocational certificate. A short training course may last one week, and it may provide students with a variety of abilities. One-year training is also available. After graduation, students can enter the employment sector while continuing their education with their Technical and Vocational Certificate Level 1 until they attain the doctoral degree level. TVET institutes provide internship and career opportunities through full and partial scholarships, practice workshops, and business partnerships. Furthermore, the institutes provide free housing for students, especially students from rural areas, needy students, and female students (MoLVT, 2021).

According to the Cambodian Qualifications Framework skill evaluation surveys of TVET graduates from Levels 1 to 4 in engineering, electrical, mechanics, and manufacturing in 2022, 17.48 percent became managers and specialists, 45 percent became technicians, and 13.18 percent became mechanics

(Long, 2022). Another 5.10% of those polled became entrepreneurs or business owners, while 19.22% worked in professions unrelated to their expertise. Responses were provided by 1,275 TVET graduates and 244 industry (firms and companies) respondents, including 63 technicians and professionals (Long, 2022). Less demanding study methods, enrollment conditions, and high graduation rates should make TVET a good alternative for Cambodians, particularly dropout students and illiterates.

The role of TVET in personal and professional development

TVET provides a range of training options, from non-formal vocational certification training (non-formal training) to doctoral degree training (formal training), and has the potential to make a significant difference in the lives of Cambodians who wish to acquire technical skills for their professional lives. Both MoLVT and TVET institutions are fervent advocates of this approach. On August 16, 2022, for example, MoLVT announced its yearly registration of free vocational training (C1 or Certificate Level 1) to the public and young people, mostly labor employees, with courses lasting four months and taking place in 29 vocational training institutes across Cambodia (MoLVT, 2022). Depending on each TVET institution, the courses may include salons, food, computer and graphic design, basic bookkeeping, garage repair, electrical services, construction, tailoring, tourism, and other sectors. The announcement stated that the courses are all relevant and in high demand for the job market both today and in the future (MoLVT, 2022). The training was not only accessible to the public, but it also offered 200,000 riels each month to all participants who held an equity card to support their meals and housing throughout the programme (MoLVT, 2022).

Challenges to improving TVET in Cambodia

According to the National TVET Policy 2017-2025 (MoLVT, 2017), TVET in Cambodia has faced eight major obstacles. First, the quality of TVET is not yet entirely responsive to labor market demands. This is due to a lack of a quality assurance system; outmoded training methodologies; inauthentic experience in the industry of technical trainers; insufficient infrastructure, equipment options, and necessary rules; and a lack of an industry-recognized assessment system for trainers and trainees. Second, there is a lack of value for TVET. Some

Cambodians do not consider TVET training a type of higher education, such as college or university education. They may also see TVET as a form of reserved education if they do not have any chance for university education. Third, the TVET system has limited financial resources. Despite the fact that TVET requires a considerable financial commitment, only the Royal Government of Cambodia has invested in the programme. Fourth, TVET integration is not universally embraced at all educational levels. Despite TVET being approved by the Cambodian Qualifications Framework, several limitations persist. There is an inadequate connection between general education and TVET programmes and a lack of joint effort in training TVET trainers and sharing learning materials among relevant ministries. Furthermore, there is a lack of skill-bridging training programmes, certification across ministries, and relevant non-public training providers. The sharing of labor market information and TVET data among relevant ministries is also insufficient. Fifth, a lack of essential skills such as reading, writing, mathematics, computing, communication, collaboration, and problem-solving abilities is evident. Business enterprises have identified five competencies that require enhancement: communication, teamwork, technical skills, foreign languages, and customer relations. Sixth, there is inadequate stakeholder participation. The absence of active stakeholder participation has an influence on the quality, cost-efficiency, and responsiveness required in TVET. This manifests in trainers with limited real-world industry experience, inadequate training programmes, and failure to meet skill standards, leading to a training approach that falls short of labor market demands. Seventh, there is an insufficiency of training resources and financial support. After graduation, the trainees will need accommodation, food support, and job placement assistance. Eighth, there is a lack of coordination and governance in the TVET system due to ineffective implementation by the concerned ministries and institutions that are yet to fully align with the mission of the Royal Government of Cambodia (MoLVT, 2017).

The ways forward

To conquer all of the challenges associated with establishing a robust TVET system, Cambodia needs to fully implement its national TVET policies. The successful navigation of the challenges hinges on a strategic focus on five execution areas to fortify and sustain the TVET programme.

First, support for lifelong learning and a comprehensive plan for TVET reform are of vital importance. A collaborative approach involving various stakeholders, including multiple ministries, businesses, employees, and civil society groups, will be instrumental in propelling the success of Cambodia's TVET programme. More significantly, society should be involved in the Cambodian Qualifications Framework, which serves as the foundation for a transparent and permeable lifelong learning system and fosters TVET growth that benefits all Cambodians.

Second, sectoral initiatives aimed at enhancing the involvement of the private sector and society in skill development should be promoted. These strategies encourage industry and workers' groups to participate in the development of standards and curricula that align with ASEAN norms and cater to the evolving skill requirements of a modern economy. It is especially effective at addressing cross-cutting concerns such as the need for green skills integration into TVET, addressing gender imbalances, and engaging the private sector in funding the skill system.

Third, supporting apprenticeships is crucial to provide young people with appropriate skills that help them acquire market-ready skills while also allowing them to earn a competitive wage and improve their career prospects. Apprenticeships should be regulated and, to some extent, institutionalized in order to safeguard trainee rights and encourage close collaboration among all parties involved.

Fourth, it is important to introduce targeted programmes that improve access to TVET for migrants and returnees. Migration policies should address skill development issues in both local and Cambodian subregions. In achieving effective policies, it is important to develop rules for cross-national talent recognition and to take into account the unique needs of women and migrant families. Consequently, it is vital to enhance coordination between TVET institutions, migration-related services, and employment agencies to offer more efficient information and connect returnees to local businesses.

Finally, efforts should be directed toward improving the labor market and TVET information systems to respond to future skill demands. Cambodia should identify current and future skills gaps and corresponding training

needs, which will require improved institutional structures, strategies, and capacity building. It should also collaborate with foreign partners to exchange best practices and improve coordination in an increasingly interconnected world (ILO, 2020).

Conclusion

In conclusion, TVET has several benefits for all Cambodians. As a national technical training programme, it has played various critical roles, notably in enhancing the economy, supporting the private sector, assisting the education system, and developing personal and professional qualities. For the TVET programme to maintain its sustainability and continue to benefit the country, Cambodia should address all of the challenges affecting its progress, wisely invest in the programme's continuous development, promote TVET broadly among its people, and encourage contribution and collaboration from the private sector.

The primary goal of this chapter is to underscore the potential of TVET in meeting industry sector and labor force demands in Cambodia, as well as to raise awareness among Cambodians about the opportunities afforded by TVET. In light of that, further research should be geared toward exploring mechanisms for expanding TVET institutions, ways to promote the value of TVET education among all Cambodians in order to increase the number of Cambodians working in technical industries and to acquire the necessary skills, and ways in which TVET can attract more investors to get involved in the long-term, sustainable development of its educational system.

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Regulations, Governance, and Financing in Cambodian Higher Education

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Summary

Higher education has become increasingly vital as a knowledge-based society has emerged, resulting in substantial changes in educational aspects around the world. The goal of the move is to eliminate direct state control while improving system-guiding procedures and providing universities with more autonomy. Cambodia, like other developing countries, is moving toward a knowledge-based society, which means that the government views education as a tool for boosting economic growth and improving social standards and that individuals should be encouraged to be creative, competent, and persistent. Despite some improvements in recent years, Cambodian higher education faces a variety of challenges, including inadequate government oversight, poor teaching quality, a scarcity of academic research, financial constraints, and fragmented management and governance. This chapter examines the current situation of Cambodian higher education in terms of its regulations, governance, and financing. It offers suggestions for improving the higher education sector to enhance the foundation for long-term human capital development.

Keywords: Higher education; regulations; governance; financing; Cambodia

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Introduction

Education, particularly higher education, has been the subject of a global debate about its meaning as well as the relevance of the distinction between public and private goods and how the description offered may affect government intervention (Locatelli, 2018). There has been a reduction in government subsidies for higher education when perceived private goods are aimed at maximizing individual gains, but not when perceived public goods are aimed at improving the country (Ahrens & McNamara, 2013). The public and private benefits of higher education are nearly similar in magnitude (McMahon, 2009). Although neoliberalism has promoted privatization and marketization in education (Macpherson et al., 2014), Goal 4 of the 2030 Agenda for Sustainable Development is to "ensure inclusive and equitable education and promote lifelong learning opportunities for all" (UNESCO, 2015, p. 7), reflecting the continued perception of public goods in education as a collective benefit.

It is frequently stated that education has positive externalities in the sense that highly educated people can benefit others financially and non-financially from their presence (De Gayardon, 2019). According to Sen (2010), people are provided the opportunity to realize valued functions and achieve personal well-being by increasing their talents. Furthermore, Sen (2010) also emphasizes the importance of skills, not just because they lead to functional outcomes but also because they represent spheres of choice and freedom. According to human capital theory, we can perceive transformation at three levels as a result of human capital investment: individual, institutional, and societal (Nafukho et al., 2004). We do, however, perceive some of the spillover effects of higher education, such as increased tax revenues, lower unemployment, a higher-quality workforce, civic participation (Bynner et al., 2003), and charitable donations, although it is difficult to quantify these benefits, particularly the external outcomes, when determining the fraction of this sector. Moreover, according to Naidoo (2010), this field has been one of the most important engines driving progress in developing countries since the 1990s. It also offers human resources with which the country, especially in developing countries, can increase its attractiveness and economy (World Bank, 2017). Education is a well-known tool that societies can use to increase their economic growth to compete in the global market; consequently, with education reforms, extending access can aid in advancing social justice (Chen et al., 2018).

The neoliberal trend has permeated all parts of higher education. Rather than focusing on public ownership and administration, the 1990s reform strategy focused on the market (Van Vught, 1992). Universities, thus, can generate their own money with a variety of market-related activities to reduce budgetary limitations (Lee, 2012). With the greater impact of this tendency, numerous features alter, such as from annual line-item budgeting to block grants (Weiler, 2000). Apart from key financial sources such as government funding, funding reforms focus on diverse funding sources, performance-based and competitive funding, and public spending cuts (Schiller & Liefner, 2007). This shift has influenced higher education financing in favor of cost sharing, making private sector participation more prevalent (Goksu & Goksu, 2015). According to Chapman et al. (2010), because a large proportion of the population is impoverished, developing countries provide limited access to education, especially at the highest levels. Therefore, providing financial support for higher education has become a crucial strategy; this includes government-sponsored, institutionally funded, and privately funded assistance programs (Hauptman, 2007). However, it is widely accepted that public funding is critical to increasing educational quality to enhance participation and stimulate research and development funding in underdeveloped and advanced developing countries (Hauptman, 2007; Schiller & Liefner, 2007; World Bank, 2011).

Cambodia, like other developing countries, is transitioning to a knowledge-based society (MoEYS, 2014). This implies that the government perceives education as a tool for stimulating economic growth and enhancing social standards and that it should encourage its citizens to be creative, competent, and persistent. To achieve its national development goals, Cambodia has adopted and improved a variety of policies targeted at enhancing educational quality for the benefit of social and economic progress. Despite improvements, Cambodian higher education still faces significant obstacles, including poor teaching quality (Ahrens & McNamara, 2013), a scarcity of academic research (Heng et al., 2022, 2023), financial constraints (Mak et al., 2019), and management and administration (Williams et al., 2016).

This chapter aims to examine the current situation of Cambodian higher education in three major areas: regulations, governance, and funding. The chapter also makes some suggestions depending on the present situation.

The background of Cambodian higher education

The Cambodian traditional schooling system has long been linked to religious institutions, particularly Buddhism, as a means of educating its people on several topics, such as social conduct, numeracy abilities, and basic literacy, among others. However, conventional education was gradually altered when Cambodia was a French colony, which sparked a secularization of schooling (Leng, 2013). Cambodian modern education, like that of other colonies, is the outcome of external influences, i.e., Western colonial encroachment. Until the early 1900s, the so-called 'modern French educational system' was introduced, which was intended for the elite Cambodian groups of the colonial powers (Ayres, 2000; Dy, 2004). However, the country's educational system received little attention (Chandler, 1991). Some years before the end of the almost century-long French colonial administration, some national institutes were established as the common notion of the Cambodian modern higher education system (Williams et al., 2014). For instance, there were national institutes for studies in economic sciences, law, and politics, and the suzerain state's educational system had a significant impact on these institutions (Kitamura, 2016). Sam et al. (2012) concluded that issues with the Cambodian educational system included the blending of both systems (i.e., old Khmer and Western), financial restrictions, a shortage of qualified teachers, and poor educational quality.

Aspects of education expanded dramatically in the 1960s after being taken for granted for so long under French colonial rule. In contrast to the colonial era, under the rule known as 'Sangkum Reastr Niyum' or 'People's Socialist Community,' Prince Norodom Sihanouk believed that education was the key to modernizing and developing the country, and he actively promoted strategic education initiatives ranging from primary to university education (Clayton, 1995). The financial budget for education received a significant allocation, approximately 20% of the budget during that period (Tully, 2006). The King's educational strategy led to a rising number of elementary schools, secondary schools, and universities (Chandler, 2008). The Education Ministry was in

charge of the governing structure and finances, which included the implementation of a fee-free policy related to scholarship financing for all higher education students (Sloper, 1999). In 1955, only a third of Cambodian children had access to basic education; by 1970, that number had increased to three-fourths, with an increase in high school students from 5,000 to 118,000 and teachers from 7,000 to 28,000 (Becker, 1998). By 1969, King Sihanouk's regime had built 3,202 primary schools, 163 secondary schools, and nine universities (Ayres, 1999). Higher education expanded faster than the economy's ability to absorb its graduates into meaningful employment during the late 1960s and early 1970s (Chandler, 2008). According to Dunnet (1993), with its most progressive educational practices, Cambodia could reportedly reach its highest literacy rates compared to its Southeast Asian rivals in the 1960s. Therefore, this accomplishment represents a cornerstone in the state's efforts to optimize its ability to support education because "for the first time in Cambodian history, the state assumed a genuine presence in the localized world of the country's rural villages through the erection of schools and, in turn, the appointment of state representatives: teachers" (Ayres, 2000, p. 41).

After more than 15 years of prosperity and peace under the Sihanouk regime, General Lon Nol, supported by the United States, toppled King Sihanouk on March 18, 1970 (Chandler, 2018). Following that, Cambodia became engulfed in armed conflict, while the newly formed government displayed minimal dedication to advancing the education sector or enacting innovative educational strategies and policies (Pov & Kawai, 2020). As a result, the Lon Nol government drastically reduced funding for education and implemented the closure of numerous rural schools (Dy, 2004). Simultaneously, a considerable portion of the national budget was directed toward financing the costs related to war and defense (Pov & Kawai, 2020). Teachers had to abandon their positions; classrooms were destroyed; and students frequently faced difficulties in safely attending school due to the volatile conditions outside their homes (Ayres, 2000).

On April 17, 1975, Pol Pot came to power with the ambition to construct a new Cambodia and proclaimed an end to Cambodian history, which spans almost two thousand years (Chandler, 2008). In this regime, only the most rudimentary reading and numeracy programs were permitted, while official university education and other degrees were discontinued since people were required to

labor in factories and fields. In his speech on the Four-Year Plan, Pol Pot emphasized learning letters and numbers as a major goal of basic education (Chandler et al., 1988). However, the regime's goal was to achieve absolute devotion to its authority and violent repression of critics (Path & Kanavou, 2015). Tens of thousands of instructors and future educators were purposefully targeted for systematic destruction (Clayton, 1998). Unfortunately, the idea of an agrarian utopia, which included city evacuations, the eradication of markets and money, and agricultural collectivization, resulted in Cambodia falling into a tragic history.

The Khmer Rouge regime was overthrown on January 7, 1979, as a result of the Vietnamese invasion of Cambodia. However, during the years 1979–1989, up until the withdrawal of all foreign forces, the United Nations prohibited several other countries from providing assistance and donations to Cambodia. The educational sector, exhausted of its most precious resource, was rebuilt from scratch by recruiting people to work as teachers and trainers in schools and higher education institutions (HEIs). People with no educational background were chosen to teach (Becker, 1998), aligning with the saying that goes, “Those who know more instruct those who know less.” Nonetheless, the higher education sector remained stagnant (Duggan, 1997), despite technical support from the communist bloc, such as Vietnam and the former Soviet Union. This sector received little attention during that time, for Cambodia had yet to find a peace agreement among the conflicting groups, such as the Khmer Rouge and two other groups (Smith-Hefner, 1990). It appears that higher education was not the government's primary focus, as there was still political turmoil, social discontent, and little support for economic transformation.

In the 1990s, after the Paris Peace Agreement and UN-sponsored elections, the educational sector underwent significant modifications since institutional reforms were implemented. Between 1993 and 1997, there were several policies and legislative efforts to handle issues affecting the segment and HEIs (Sloper, 1999). For example, the Education Investment Plan (1995-2000) was an early attempt to incorporate donor assistance into the field of education and was created with financial backing from the Asian Development Bank (ADB) to improve and restore higher education in the nation. Meanwhile, the shadow of socialist influence or a Soviet-style higher education system had vanished with the new supremacy of Western Europe, America, and Australia, as well as the

approach of privatization and marketization that allowed institutions to earn a profit (Kitamura, 2016). From then on, eight new universities were established between 1979 and 1997 (Vann & Zигuras, 2017), and the public administrative institution emerged and grew into a semi-autonomous institution (Pit & Ford, 2004). Moreover, the emergence of a market economy has raised demand in the job market and the higher education sector. As a result, HEIs have expanded from eight in 1997 to 23 in 2000, 97 in 2010, and 128 in 2021, with an almost tenfold increase in student enrollment from 28,080 in 2000 to 223,221 in 2010 and 201,910 in 2020 (Sok & Bunry, 2021).

Regulations for Cambodian higher education

‘Regulation’ refers to an established system of laws, rules, and standards that stipulates how higher education might improve governance and quality (Healey, 2020). In theory, a free market is optimal because it facilitates economic efficiency and effective resource allocation. This is primarily achieved through the ‘invisible hand’ principle, where market forces of supply and demand steer the economy towards equilibrium. On the other hand, open markets are prone to manipulation, market failures, and wealth disparity. Thus, regulations are mostly used to moderate the benefits and drawbacks of market economies. Likewise, whenever there is a balance between market and government engagement, markets are held in check. As Kennedy and Stiglitz (2013) state, “every successful market economy has been based on achieving an appropriate balance between the market and government” (p. 102).

In recent decades, higher education systems across the globe have shared a common trend (Un & Sok, 2022). This trend, shaped by the principles of neoliberalism, advocates for the participation of the private sector in the establishment of higher education institutions (HEIs). In the case of Cambodia, Un and Sok (2022) noted that this trend ushered in a higher education reform allowing public HEIs to accept self-sponsored students through the introduction of fee-paying programs. Even if the neoliberal agenda had been adopted (Un et al., 2018), this scenario would not have occurred without government intervention. As Article 66 of the Constitution states, “the State shall establish a comprehensive and unified system of education throughout the country, capable of guaranteeing the principles of freedom of education and equal access to schooling.” In collaboration with its partners, the Royal

Government of Cambodia adopted a slew of national policies and legislative frameworks.

Among these crucial instruments were the 1992 Sub-Decree on Establishing and Managing Higher and Technical Education Institutions and the Royal Decree on the Legal Statute of Public Administrative Institutions introduced in 1997 (Un & Sok, 2014). These instruments have relaxed the state monopoly, which is very selective and exclusive, admitting only a few students. In 1997, the government adopted public-private partnerships, which formally promoted private higher education providers to complement public ones and permitted public HEIs to offer fee-paying classes (Leng, 2013). As a result, the first private institution, Norton University (NU), was founded in 1997 to provide educational services with reasonable tuition fees. The rapid growth of higher education reached a turning point at that time, from a few thousand students to a quarter-million students and over 100 universities. In addition, in 2002, Sub-Decree No. 54 on University Establishment Criteria was issued to outline the requirements and conditions for the Ministry of Education, Youth and Sport (MoEYS) to inspect the university's establishment. The next year saw the promulgation of the Royal Decree on Accreditation of Higher Education, which sought to create a judicial mechanism to manage accreditation in all HEIs and ensure compliance with international standards. More importantly, the law on education, for the first time in Cambodian education history (Chhinh & Dy, 2009), was issued in 2007 to identify procedures and criteria at the national level for constructing a specified, suitable framework that allows academic freedom based on the Cambodian Constitution. These regulations provide a snapshot of Cambodia's effort to advance postsecondary education, where the government, especially HEIs, is committed to executing a variety of measures meant to address the most urgent problems.

Despite all of these ongoing reforms, Cambodia will require many more reforms to address policy capacity constraints and create a flexible legal system. Cambodian policies and legal frameworks are in their infancy in terms of formation and execution (Mak et al., 2019). Furthermore, a limited legal framework can prevent higher education from becoming effective because "the lack of direction from the government has made higher education in Cambodia become market-driven and profit-oriented in an uncontrolled way to most extent" (Ros & Sol, 2021, p. 30), and it also causes the country to face a crisis of

PhD inflation (Thun, 2021). Furthermore, Cambodian higher education is still in its early stages of development (Un & Sok, 2018). Yet, the broad reform measures aimed at enhancing financial management in academic institutions and bolstering public support have not yielded the desired results thus far (Mak et al., 2019).

Governance of Cambodian higher education

The term ‘governance’ refers to the formal process of organizing and managing HEIs, with an emphasis on fostering transparency and upholding accountability. So, governance or institutional arrangement is utilized by HEIs as a means to regulate organizational and personal conduct (Carvalho, 2020). Along with financing and talent acquisition, governance is one of the most crucial elements in achieving world-class higher education standards (Salmi, 2009). This is due to its influential role in shaping the quality of higher education and its contribution to national growth. Higher education has grown increasingly important, resulting in extraordinary developments in HEIs, limiting direct state control and granting universities more autonomy. According to Berdahl (1990), autonomy is “the power to govern without outside controls” (p. 171). Berdahl (1990) differentiated between two sorts of institutional autonomy: substantive autonomy, in which goals and programs are under the university’s authority, and procedural autonomy, in which goals and programs will be accomplished under the university’s authority. In this environment, a critical evaluation of the accountability and autonomy between the state and HEIs is necessary.

A Royal Decree on the legality of public administrative institutions, introduced by the Cambodian government in 1997, outlines the steps and requirements for public agencies and institutions to become autonomous units known as Public Administrative Institutions (PAIs). Concerning HEI governance and management, this decree is regarded as a crucial shift in the higher education environment in Cambodia. This is an illustration of how Cambodia is working to decentralize power and enhance financial management by granting public HEIs more autonomy. Prior to this shift, the state, with its eight public HEIs, was the exclusive provider of higher education (Un & Sok, 2014). Instead of being controlled directly by a parent ministry, HEIs that have attained PAI status have more autonomy and authority to manage themselves under the

direction of the highest governing board, which has at least five delegates from the relevant ministries, including the parent ministry, the Ministry of Economy and Finance, the Council of Ministers, and MoEYS (Touch et al., 2014). Furthermore, many stakeholders are involved in the governance process of Cambodian higher education, as noted by Mak et al. (2019). These include the Joint Technical Working Group on Education, the Sub-Technical Working Group on Higher Education, the Rector Council of Cambodia, the Cambodian Higher Education Association, and the Accreditation Committee of Cambodia.

However, the lack of a ‘checks and balances’ mechanism that can effectively determine the balance between governmental interventions and autonomous HEIs, ensuring transparency and accountability, hinders the development of higher education. Despite the adoption of privatization, Leng et al. (2022) claimed that “the Cambodian higher education system and institutions remain highly state-regulated, state-steered, and centralized” (p. 14). Moreover, the governance structure of higher education is fragmented among parent ministries due to the lack of a cohesive government body (Un & Sok, 2018). In Cambodia, there are now 130 HEIs, 82 of which are privately operated (MoEYS, 2022). MoEYS oversees 82 HEIs, while the other 42 HEIs are supervised by 15 different ministries and state institutions (MoEYS, 2022). Even though the Department of Higher Education appears to perform a significant coordination role, given the number of HEIs that fall under its purview, its duties are somewhat constrained (Sen, 2012).

Financing for Cambodian higher education

The term ‘finance’ in this context refers to the national budget allocated to higher education as part of the government’s successive support for public HEIs to maintain their daily operations and management as well as to encourage participation while upholding the promise of equal opportunity. The development and improvement of higher education are inextricably tied to finance, as sufficient funding can mobilize talent to enhance quality and improve investment in personnel, programs, and equipment (Hauptman, 2007). With a neoliberal approach, the marketization of education becomes a potent force driving diverse types of privatization. This allows universities to generate their own funds to mitigate budgetary limitations by engaging in a wide range of market-related activities. However, finding better ways to raise

the quality of teaching and research and increase accessibility for improvised groups within the higher education landscape is a major challenge in the industrialized world (Hauptman, 2007).

Cambodian higher education was predominantly state-controlled, state-regulated, and elite-focused before the advent of public-private partnerships, which officially endorsed private providers of higher education in response to rising local needs. According to Un and Sok (2022), privatization was carried out for at least two reasons: first, the growing demand from high school graduates exceeded the capacity of state-run HEIs; and second, state-run HEIs could no longer guarantee career prospects for their graduates following the dissolution of state-owned businesses and job placement policies, as well as the problem of skills mismatches in the labor market demand.

The Ministry of Economy and Finance establishes rules and regulations for the financial management of public funds. With line-item budgeting, the technical supervisory ministry negotiates and consolidates the annual budget proposals of its public HEIs before submitting them to the Ministry of Economy and Finance for authorization (Mak et al., 2019). However, public support for higher education is modest due to the establishment of for-profit courses at public HEIs and a significant influx of private sector investments into HE. Although Cambodia is moving toward a knowledge-based society, significant improvements to its education policies have yet to be realized, owing in part to the lack of higher education funding. Over the past ten years, public financing for education reached 0.0005% of the Gross Domestic Product (GDP) and constituted less than 10% of overall spending, ranging from 4% in 2012 to 9% in 2016 (Mak et al., 2019). In comparison to its Asian counterparts, Cambodia relies more heavily on private sources for HEIs, primarily through tuition fees and other services, whereas its Asian counterparts lean toward government funding. The three primary sources of funding for Cambodian public HEIs are government financing, student fees, and other income streams such as private donations, consulting services, commercial activities, and contract research (Ting, 2014, as cited in Mak et al., 2019). Due to a lack of public funding for higher education, all public HEIs are dependent on student tuition fees. Therefore, Cambodia is regarded as one of the least-invested countries in higher education in the region, with private sources, especially tuition fees, being the primary and growing source of revenue (Mak et al., 2019). This funding shift

has significant implications for educational access and equity. The financial burden has transitioned from reliance on state financing to assist in covering the expenses of teaching students to other sources of revenue, such as tuition fees from students and their families. Consequently, Cambodia lags behind other ASEAN countries in terms of higher education accessibility, with an accessibility rate of 16% in 2014, dropping to 12% in 2015, and further down to 11% in 2016 (Mak et al., 2019).

The ways forward

Cambodia needs to put in more effort to achieve its goal of becoming a knowledge-based society since its higher education issues regarding regulations, governance, and financing have not yet been adequately addressed. By 2020, Cambodia had a total population of 16.72 million, with individuals under the age of 35 accounting for 65.6% of the total (Ministry of Planning, 2020). Unfortunately, 17.8% of the population lives in poverty, and approximately 4.2% in Phnom Penh, along with 12.6% in urban areas and 22.8% in rural areas, fall below the poverty threshold (Khmer Times, 2021). Due to a shortage of qualified workers and an increasing youth population, the country has to expand its education sector, particularly as a solution to educational inequality at higher education levels. Understandably, such an undertaking is long-term, and the results may not manifest for years to come. Nonetheless, the importance of education for economic and social progress necessitates a higher level of government involvement.

In the matter of regulations, despite the fact that Cambodian higher education has grown since the adoption of economic reform, market-driven and profit-oriented practices are becoming increasingly unrestrained, with more *laissez-faire* and mechanisms to decrease state intervention. Therefore, Cambodia should contemplate this trend carefully. A balanced approach, maintaining harmony between market mechanisms and government intervention, can promote inclusive growth in higher education with equity and accessibility. Moreover, more weight should be given to evidence-based policies than subjective judgments, which should be more involved with the domestic academic and research communities as well as international bodies to build a strong evidentiary and technological foundation on which the government can better improve higher education.

Regarding governance, there is a higher education quality assurance and assessment body called the Accreditation Committee of Cambodia (ACC). However, this committee's capabilities must be strengthened in order for it to effectively and promptly address issues related to management, complaints about the quality of education, and the challenges associated with system and curriculum development in HE. In addition to giving HEIs more autonomy, accountability must be reinforced. HEIs must be accountable to their stakeholders through transparent and efficient management. Simultaneously, it is crucial to ensure that HE, being an academic entity, functions effectively and efficiently, fostering openness, relevance, and quality in teaching and research while resisting political interference. With strong regulation and effective governance, higher education may expand its capacity, resulting in more equity and access and qualified graduates to respond to the market demand.

In terms of financing, increased investment in higher education is vital for accomplishing national policy objectives. As previously stated, the sector is currently underfunded, putting substantial financial burdens on students and their families. Given the growing youth population and economic development, government spending on higher education should be increased to ensure quality and extend access to justify its redistributive actions. Additionally, a transparent, accountable, and comprehensive financial management system, including block grants as well as performance-based funding, should be fully established. Of course, improving widespread access to higher education through increased state funding requires diverse mechanisms. These may include a redistributive tuition charge model, state grants, provisions for tuition and living expenses, student loans, and scholarship quotas. However, these initiatives are predominantly driven by a combination of political will and genuine commitment. For instance, in the Philippines, de-privatization has occurred as a result of the government's ability to counter private school influence in legislation (Saguin, 2022).

Conclusion

Higher education has evolved significantly in conjunction with global and regional developments since the concept of a knowledge-based society began.

Even with privatization and marketization, with less direct state supervision and more autonomy for universities, the issue of public goods still justifies government intervention and redistribution. Since enacting economic reforms, Cambodia has reaped the benefits of increased international investment and capital inflows, which have been accompanied by an influx of highly skilled employees and the rise of commercial higher education providers to augment the public sector. However, this movement was also sparked by concerns about educational quality, access, and equity, as well as governance. Therefore, Cambodia has much work to do in higher education regulations, governance, and financing and should strengthen its attention to human capital development by reforming higher education to be more modern and adaptable to create a knowledge-driven society. By improving administrative competencies, boosting funding, and refining policy-making processes, the government could drive significant progress in its education sector. This would not only strengthen Cambodian higher education at the national level but also enable it to embrace the internationalized trend by developing more global and regional connections. Furthermore, Cambodia should shift its perspective from solely focusing on the progress made since the “Zero Year.” It would be beneficial to consider the broader global trend and explore potential strategies for elevating the quality of its HE. Of course, the government plays a pivotal role in optimizing the costs and benefits, as expansion inevitably implies additional expenditure. This trade-off should be carefully considered to ensure sustainable growth.

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