CHAPTER 2

LITTERATURE REVIEW

In this chapter, the researcher studied the following, theories, other related documents, and research for the research study, "A Guideline for Developing Administrators' Digital Competence in the Next Normal Era at Kampong Chhnang Provincial Teacher Training Center, Cambodia."

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Cambodia's National Education Agenda Focusing on Digital Technologies

Administrators' Digital Competence and ICT in Cambodian Education

The use of Information and Communications Technology (ICT) in Cambodia's education system remains restricted, and the government must engage in digitalizing education, supporting Information and Communications Technology (ICT) research and development, increasing public-private partnerships, encouraging autonomous learning, and enabling the adoption of blended

learning. Stakeholders such as educational institutions, instructors, parents, students, and the commercial sector will also play an important part in realizing Cambodia's digital transformation of education. Despite the fact that the COVID-19 epidemic has caused significant disruption, it also offers Cambodia with a wonderful chance to promote Information and Communications Technology (ICT) integration in education and support the digital transformation of its education system (Heng. 2021 : 3).

Due to a shortage of human resources and equipment, Cambodia's Information and Communications Technology (ICT) infrastructure in education has not yet been completely developed. The scarcity discovered of ICT organization development prior to the COVID-19 disruption era is that UNESCO noted challenges that hampered the project, such as a lack of Khmer language resources, poor English skills of trainers and trainees, poor infrastructure, a lack of hardware, and a lack of action taken by the MoEYS to implement the current Information and Communications Technology (ICT) in education policy (Richardson. 2008 : 72). As a result, most educational institutions administrators are not fully trained, and their digital competence is still limited. Therefore, national education policy should prioritize and reinforce educational institutions administrators' digital competence in order to prepare them to meet the 21st century's needs.

Recognizing this challenge, Ministry of Education, Youth, and Sport (MoEYS) in Cambodia designed and implemented a strategy to accelerate education in Cambodia at all levels, so that students, educators, and administrators can use Information and Communications Technology (ICT) and digital tools not only for study and work, but also for their careers:1) MoEYS will ensure that all Cambodian students who complete a formal program of study can use their ICT knowledge and abilities to further their education and professional career.2) MoEYS will improve the efficiency and effectiveness of teaching and learning in teacher training centers, schools, and other educational institutions by utilizing ICT technologies and e-resources. 3) MoEYS will use e-learning to help with educational service delivery to all educational sub-sectors, as well as institutional human capacity building and lifelong learning. 4) By making systematic use of information, the MoEYS will increase its efficiency and capability for evidence-based decision-making and knowledge-sharing, while also expanding its capacity for administration, operations, and digital data collection. 5) MoEYS will provide infrastructure, connectivity, and design standards, as well as integrate all national and sub-national offices into a single networked system.

To provide resilience, the system will provide adequate physical and logical security, as well as offline replication. 6) MoEYS will prioritize the usage of open-source software and Khmer language applications for teaching and learning while adhering to Cambodian copyright regulations. To inform MoEYS of institutionalization possibilities and assure the availability of an operating budget, all Information and Communications Technology (ICT) intervention plans must include a total cost of ownership study. 7) MoEYS will advocate for media literacy, user privacy, and ethical ICT use, as well as the prevention of all forms of cyberbullying and harmful technology use. 8) MoEYS will provide the required financial resources from the RGC budget to support ICT in education, as well as manage PPP and donor partner assistance for both capital and recurring expenditures (MoEYS. 2018 : 2-3).

Overall, the use of Information and Communications Technology (ICT) in Cambodia's education system is still limited, and the government must invest in digitalizing education, promoting Information and Communications Technology (ICT) research and development, expanding public-private partnerships, fostering autonomous learning, and facilitating the use of blended learning. Prior to the COVID-19 disruption era, UNESCO discovered a scarcity of Information and Communications Technology (ICT) organization development, such as a lack of Khmer language resources, poor English skills of trainers and trainees, poor infrastructure, a lack of hardware, and a lack of action taken by the MoEYS to implement the current ICT in education policy. However, Ministry of Education, Youth and Sport (MoEYS) has devised and implemented a plan to accelerate education in Cambodia at all levels, allowing students, educators, and administrators to use ICT and digital technologies not just for study and work but also for their careers.

Digital Competence in Cambodian Education Before the COVID-19

Cambodia's school system has gone a long way since the country's recent devastation. During the Khmer Rouge regime, educational institutions were abandoned, books were burned, and professors and intellectuals were either killed or fled to other countries. Following the fall of the Khmer Rouge regime in 1979, turmoil and bloodshed prevented significant advancements in schooling. There are very few instructional aids and digital learning resources accessible. Training for teaching and academic professionals is insufficient. Despite the fact that basic computer skills training has been given for teacher trainers since 2003, there have been fewer opportunities for

teachers to practice owing to a lack of computer facilities (there were on average only 2 computers for 15 teacher trainers per college). The final assessment for the program's outcome is based on observations of lessons and monitoring of the use of ICT equipment (Dionys. 2012).

Canadian-born Jeremy Hockenstein, CEO and co-founder of Digital Divide Data, had visited Cambodia on holiday from his employment as a McKinsey consultant in the United States in November 2000. Even while Cambodians seemed to appreciate education and sought methods to empower themselves, he was shocked by the country's degree of poverty and the absence of opportunity for young people to develop jobs and provide for their families. The circumstance presented a variety of human resource management issues for Digital Divide Data (Mathew and et al. 2009 : 2).

According to the country's history, administrators' digital competence was still poor before the pandemic due to a lack of resources and training courses, and ICT infrastructure management at educational institutions was also underdeveloped. Prior to the COVID-19 outbreak, Cambodian higher education infrastructure and learning resources were mostly used for on-campus teaching and learning. As a result, when educational institutions were ordered to close, the absence of digital infrastructure and learning materials became a serious difficulty for the majority, if not all, of Cambodia's educational institution (Heng and Sol. 2021 : 34).

Overall, since the country's destruction, Cambodia's education system has come a long way. Educational institutions were closed down, books were burned, and academics and intellectuals were either executed or fled to other countries under the Khmer Rouge government. Following the overthrow of the Khmer Rouge administration in 1979, unrest and bloodshed hampered considerable progress in education. There are limited instructional aids and digital learning materials available. When educational institutions were ordered to close during COVID-19, the lack of digital infrastructure and learning materials posed a severe challenge for the majority, if not all, of Cambodia's educational institutions. This demonstrates that digital competence in Cambodian education has not completely matured and is not yet prepared for upcoming events such as the COVID-19 crisis.

Digital Competence in Cambodian Education in the COVID-19

The COVID-19 epidemic has affected many aspects of human life. One of the educational problems has been the shift from onsite to remote learning, as institutions with online facility problems must do the same (Phonnong and Keeratichamroen. 2022 : 15). During the crisis, everyone must maintain social distance, and most workplaces, including educational institutions, demand their employees work from home; understanding digital technologies is therefore essential. Digital technology has become increasingly important in all sectors of life, including education (Kanoksilapatham. 2022 : 346). On March 16, 2020, the Ministry of Education, Youth, and Sport (MoEYS) in Cambodia announced the closure of all educational institutions, including public and private schools (MoEYS. 2020 : 3). This decision, like many others around the world, was made to prevent the spread of COVID-19. To be able to respond to current and future changes and lead educational institutions through various problems and obstacles, the head of the institution requires essential leadership and management knowledge and skills or competencies in managing the various changes that affect educational institutions (Joungtrakul and et al. 2021 : 31). Cambodia was seeking for a larger foundation to restructure and recover from the COVID-19 crisis in an inclusive manner. The digital economy offered a feasible path to doing this, notably in Cambodia, where considerable legislative measures to encourage digital transformation are already underway (Banga and Velde. 2020 : 1).

COVID19 has severely hampered efforts to enhance Cambodia's education system since early 2020. However, the epidemic has provided a chance to not only deepen educational reforms, but also to increase the use of ICT and contemporary technology in education. The epidemic, in fact, serves as a catalyst for reforming and upgrading the educational system. As a result, all key stakeholders, notably the Ministry of Education, Youth, and Sport (MoEYS), must capitalize on the crisis and capitalize on the good momentum to continue Information and Communication Technology (ICT) adoption and integration in education (Heng. 2021 : 7). To illustrate, virtual meetings were employed in several online learning tools to replace face-to-face meetings that were formerly used for teaching and learning. The construction of online learning programs was mandated for all Cambodian schools to provide students with additional alternatives for studying and to aid in their skill development (Em. 2023 : 1). While the variety of digital platforms aided in filling learning gaps during the COVID-19 outbreak, Cambodia's digital divide remains a major

challenge. Nonetheless, digital schooling is not going away in Cambodia. While it gained traction during COVID-19, this is an important area of concentration for educational growth. It is also directly tied to Cambodia's goals for a digital economy and being a middle-income country by 2030. Digital learning is expanded into three areas: 1) Create digital infrastructure: To assist with this, the government has identified eight objectives in its current Education Strategic Plan. Among these initiatives are the adoption of new management and administrative processes to improve governance efficiency, transparency, effectiveness, the development of national and sub-national standards for infrastructure and network connections, and collaboration with private companies focused on digital technology, 2) Increase training capacity: In addition to instructors, the entire school administration must be better prepared and taught to function digitally, and 3) Adapt content and curriculum: Once administrative capability is established, One believes that the emphasis may shift to effectively adapting material for digital platforms. "Currently, the curriculum and instructional content are on 'paper,' and this must be converted to a digital format," he argues. (IIEP-UNESCO. 2020).

Overall, the COVID-19 outbreak has had a wide-ranging impact on how people live. One of the educational issues has been the move from onsite to remote learning, which requires educational institutions with online facility issues to do the same. Cambodia was looking for a larger foundation to help it reorganize and recover from the COVID-19 issue. The digital economy provided effective ways to do this, particularly in Cambodia, where considerable legislative measures to encourage digital transformation are already underway. In reality, the pandemic acts as a catalyst for altering and enhancing the educational system. As a result, all major stakeholders, particularly the Ministry of Education, Youth, and Sport, must capitalize on the crisis and the positive momentum in order to continue ICT adoption and integration in education. It is also strongly related to Cambodia's aims, which consist of three main areas: creating digital infrastructure, increasing training capacity, and adapting content and curriculum to enhance a digital economy and become a middle-income nation by 2030.

Importance of Administrators' Digital Competence in Cambodian Education

1. Before the COVID-19

Digital technologies were not frequently put into practice in Cambodian education before the COVID-19 due to a lack of training and supporting tools. The Information and Communication Technology (ICT) infrastructure environment of Cambodia education was underdeveloped, and internet connection was extremely sluggish, preventing students from accessing various resources. Smart gadgets were used more frequently by public workers and instructors. As a result, when designing educational content, it was important to attempt to create textbooks and lectures while keeping in mind that it is a practical course (Park. online. 2016).

Despite the fact that the survey found that the use of technology in Cambodia was still insufficient, the ministry of education has been working to reform and encourage its usage. The Ministry recommended promoting the use of Information and Communications Technology (ICT) in the teaching and learning process, research, and administration by forming a cyber campus consortium and connecting it to other virtual institutions across the world. This approach will also encourage the digitization of Khmer language books as well as the translation of foreign core literature into Khmer (Nguon. 2015 : 60). The use of Information and Communications Technology (ICT) in Cambodia's education system remains restricted, and the government must engage in digitalizing education, supporting Information and Communications Technology (ICT) research and development, increasing public-private partnerships, encouraging autonomous learning, and enabling the adoption of blended learning. The Cambodian Ministry of Education recommended the following proposal for Information and Communications Technology (ICT) use in education: 1) ICT Use in Schools: a) Encourage the use of ICT in secondary schools to improve the quality of teaching and learning, starting with science, foreign languages, social science, and math. b) When available, modify the secondary curriculum to include proposal for using ICT to teach science, foreign languages, social sciences, and math. The curriculum should also encourage the use of technologies such as VCDs, video and audiotapes, radio and television, c) Offer ICT as a life skill course where resources allow, and d) The use of ICT in schools should follow an ethical framework in order to respond to the four pillars of the national education system. 2) Knowledge Management System: a) Create an online National Clearing House for Khmer and foreign language teaching and learning resources; and b) Provide links to useful educational portals and websites, collections of

teaching and learning resources prepared by teachers and other professionals, and collections of freeware and shareware software for free download, all of which are available in Cambodia and on the internet worldwide (MoEYS. 2004 : 14).

Overall, digital technologies were not frequently put into practice before the pandemic due to a lack of training and supporting tools. The Information and Communication Technology (ICT) infrastructure environment of Cambodia education was underdeveloped, and internet connection was extremely sluggish, preventing students from accessing various resources. Despite the study finding that technology use in Cambodia is still minimal, the ministry of education has been attempting to reform and encourage its use. The Cambodian Ministry of Education, meanwhile, has put effort into promoting and recommending the use of ICT in education.

2. In the Next Normal Era

As a preventative action against the spread of COVID-19, the Royal Government of Cambodia (RGC) decided to close all education institutions, including public and private schools, on March 16, 2020. These school closures have disrupted learning in all of Cambodia's estimated 13,482 schools, from pre-school to upper secondary, affecting an estimated 3.2 million pupils (MoEYS. 2021 : 5).

Despite the massive interruptions, COVID-19 has presented a wonderful opportunity for extending the use of Information and Communications Technology (ICT) in education and furthering educational reforms (Heng. 2021 : 4). This transformation not only aided Information and Communications Technology (ICT) during the pandemic, but it also marked a significant shift in the New Normal Era. According to Ministry of Education, Youth and Sport (MoEYS) access to appropriate and dependable infrastructure, information technology, communication devices, and basic learning materials is required for both the demand for and supply of education service delivery, in order to fully participate in alternative distance learning initiatives and ensure continuous learning (MoEYS. 2021 : 8).

Every educational institution must guarantee that its Information and Communications Technology (ICT) infrastructure management is reliable and accessible in order to perform the best possible remote learning and teaching, and that their administrators, educators, and other stakeholders are capable of using digital technologies. During this moment of unexpected and unprecedented educational upheaval, UNESCO's Global Education Coalition works to support

inclusive learning opportunities for children and youth. Investment in remote learning should both reduce the immediate disruption created by COVID-19 and provide the groundwork for future education systems that are more open and adaptable (UNESCO,2020: 6).

Overall, despite the numerous disruptions, COVID-19 provided an excellent opportunity for expanding the use of Information and Communications Technology (ICT) in education and developing educational reforms. It not only aided Information and Communications Technology (ICT) during the pandemic but also marked a significant shift in the New Normal Era. To fully engage in alternative remote learning efforts and assure ongoing learning, information technology, communication devices, and fundamental learning materials are necessary for both the demand for and supply of education service delivery. Because accessing Information and Communications Technology (ICT) requires every educator and school administrator to have a certain skill, building administrators' digital competence is crucial to accessing Information and Communications Technology (ICT) use while it is a compulsory tool used to manage school administration as well as distance learning during the disruption and the Next Normal Era.

Administrators' Digital Competence in Education Overview

Administrators in Education Overview

Administrators must be the driving force and role models that initiate or promote change inside their institutions (Lindley. 2009 : 4). Administrators are those who plan the activities and arrange the administrative management process (Surya. 2011 : 91). Therefore, we must comprehend what the administration is. According to this researcher many individuals have interpreted the term "administration" to refer to management. In addition, they have also defined "administration" as a generalized type of human behavior found in an organization and a process by which decisions are made as well as the process of administering and directing life in any social organization, such as a school or various companies.

Having learnt the traits and duties of the administrators and the management process, knowing about the competence that leads to being good administrators is also crucial. Administrative skills are crucial for administrators at all levels and in all organizations because effective administration is reliant on fundamental administrative talents such as knowledge, conceptual skills, technique, teaching, and humanism. The administrator should have all five

administrative skills that are required in the twenty-first century, including technology and digital literacy abilities, learning innovation skills, communication and listening skills (Sonsaard and Darbavasu. 2019 : 528) Even though having technology skills is important in the 21st century, the same researchers have also indicated that leadership skills and knowledge of psychology are also required for organizational management in order to achieve organizational success, such as creating a work-oriented organizational culture, focusing on effective communication, the selection, development, and retention of qualified personnel.

According to the era of change and things that are always being updated, including the way people think, live, and work, administrators' jobs are more likely to be creative, critical, and visionary. The school administration of the twenty-first century must adapt its management methods and policies to meet the demands of the time. Because the world has advanced in all disciplines, it is no longer adequate for schools to maintain instructional programs using traditional tactics or methodologies. It is critical for the school's administration to establish school-independent routes via planning and goal-setting (Serhan. 2019 : 29). To get administrators to be well-prepared within their management goal, there should be a model for them to follow, as a previous research study revealed that the administrative innovation management model in educational institutions involves five elements:1) objectives, 2) principles, 3) administrative innovation input factors, 4) the administrative innovation process, and 5) innovative output (Sombunsin and Wannasri 2022 : 9).

Overall, administrators must be the motivators and role models who begin or support change inside their organizations and are in charge of directing, coordinating, and planning the administrative management process. Meanwhile, critical factors such as knowledge, conceptual skills, technique, teaching, and humanism are required to be good administrators. The administrator should possess all five administrative talents necessary in the twenty-first century, including technology and digital literacy abilities, learning and innovation skills, communication and listening abilities, and leadership abilities. Furthermore, corporate success requires leadership abilities and an understanding of psychology, as well as a focus on developing a work-oriented organizational culture. To meet the needs of the twenty-first century, school administration must change its management practices and policies.

Digital Competence in Education Overview

Digital competence is defined as the capacity to confidently utilize electronic media for work, entertainment, and communication, in addition to logical and critical thinking, managing information, and high-level communication skills (T Bashkireva and et al. 2020 : 4). Additionally, these researchers stated that in order to prepare schoolchildren for professional activity and support professional digital competence, the educational environment should take into account the age-related physiological, mental, and psychological traits of students.

Another study suggested that digital competence is an emerging concept that is linked to technological advancements as well as the political goals and expectations of individuals in a knowledge society. It is made up of a range of skills and competencies, and its scope is broad: literacy and information science, media and communication, technology and computing (Ilomäki and et al. 2011 : 8). They also stated that "digital competence" includes 1) technical skills for using digital technologies, 2) abilities to use digital technologies in a meaningful way for working, studying, and everyday life in general in various activities, 3) abilities to critically evaluate digital technologies, and 4) motivation to participate in the digital culture. Techataweewan and Prasertsin (2017 : 217) have also defined the term digital competence similarly, suggesting that it is a set of skills for using and being aware of digital information, technology, and media for finding, assessing, producing, and communicating as needed.

Because we live in a world of constant updating, things are changed virtually every day; therefore, digital skills are an ongoing study. As a result, we must continue to learn and improve. The first thing that comes to mind when thinking about overcoming digital skill inequalities is education or training of users to gain these abilities (Van Dijk and van Deursen.2014). The most natural approach to learn them is to doing and seeking supports from others in their social surroundings. However, they also argued that formal education and adult courses still remain necessary for learning appropriate digital skills, while younger generations most need formal education to learn and be aware of content-related information, communication, and strategic skills. Although there are ways for us to improve our digital competence, we also need to learn about some other factors that influence individuals to develop that certain skill. In order to enhance and exploit the full potential of the older population, it is necessary to employ complete and trustworthy information, background, and consciousness from gerontological domains, as well as the use of

instruments suited to meet the constraints of this group (Garcia and et al. 2021 : 198). Digital competence has become crucial for employability. To illustrate, Europe has created a conceptual framework of digital competence in order to research and improve the quality and relevance of training and other methods of acquiring skills, to make skills more visible and comparable, and to improve information and understanding of skills intelligence in order to help people make better career choices, find quality jobs, and improve their life chances. The European Commission established the Digital Competence Framework as shown in Figure 2 for Citizens, often known as DigComp, to assist the growth of digital competence among Europeans. It outlines what competencies are required to become digitally competence (Centeno and et al. 2019 : 3).

Overall, the confident use of electronic media necessary to earn knowledge and skills in personal and professional growth due to a high level of logical and critical thinking aimed at regulating the information and communication received is referred to as "digital competence." Digital competence is made up of a variety of skills and competences and has a broad scope: literacy and information science, communication and media, technology, and computing. To research and improve the quality and relevance of training and other methods of acquiring skills, to make skills more visible and comparable, and to improve information and understanding of skills intelligence in order to assist people in making better career choices, finding quality jobs, and improving their life chances, the European Commission established the Digital Competence Framework for Citizens, often known as DigComp, to help Europeans improve their digital competence.

European Digital Competence Framework in Education

The European Commission established the Digital Competence Framework for Citizens, commonly known as DigComp, to assist the growth of digital competence among Europeans.

It outlines what competencies are required to become digitally competent. The skills agenda consists of five areas, 1). Information and Data Literacy, 2). Communication and Collaboration, 3). Digital Creation, 4). Safety, and 5). Problem Solving. They were created for Europe with the goal of improving the quality and relevance of training and other methods of acquiring skills, making skills more visible and comparable, and improving information and understanding of skill intelligence to help people make better career choices, find quality jobs, and improve their life chances (Centeno and et al 2019 : 3).

The digital competence of pedagogical specialists is essential for the implementation of the new professional roles of the educator in response to the ever-increasing requirements for it in the context of a 21st-century school and in the context of the global digital transformation of the economy and education. By outlining the key abilities that ensure instructors have the entire range of practical experience (Tsankov and Damyanov. 2019 : 4). This researcher used European digital competence framework to investigate the structure of educators' digital competency by identifying the key abilities that ensure their complete practical experience. The empirical study shows a self-assessment of prospective pedagogical experts trained in the professional area of pedagogy, as well as highlights from their actual capabilities of handling certain practical tasks using information and communication technologies. Another research in Spain also adapted this European framework to conduct their study. Melilla, a Spanish autonomous city in northwest Africa, has one of Europe's worst rates of academic failure and desertion. Improving pupils' digital competency would be an excellent strategy to address this problem. To accomplish so, instructors must possess sufficient digital abilities as well as the ability to teach them. The Spanish adaption of the European Framework for Digital Competence of Educators was used to examine the self-assessment responses of teachers in training at the Faculty of Education and Sport Sciences in Melilla, Spain, to estimate teachers' level of digital competence. Several quantitative approaches were employed to assess data gathered from a questionnaire based on the framework's items (García and et al. 2023).

DigComp, the European digital competence framework, offers a complete and extensive framework for citizens; it has the capacity to be tailored to the demands of various target groups. Despite this, no contemporary research has focused on the need of having a unified framework for elementary and secondary education (Guitert and et al. 2020 : 1). As a result, this study adapted this framework to create a standard framework for elementary and secondary education that promotes the development and assessment of digital competence. The DigCompEdu framework is intended for educators at all educational levels, including general and vocational training, special needs education, and non-formal learning environments, from early childhood through higher and adult education. Its goal is to give member states, regional governments, pertinent national and regional agencies, educational institutions themselves, and public or private professional training

providers a generic reference framework for creating digital competency models (Redecker. 2017 : 9).

According to the researches mentioned above, the European Digital Competence Framework has played a critical role since it explains what competences are necessary to become digitally competent and is utilized to support the rise of digital competence. Furthermore, it was intended to improve the quality and relevance of training and other methods of skill acquisition by making skills more visible and comparable, as well as improving information and understanding of skill intelligence to assist people in making better career choices, finding quality jobs, and improving their life chances.

Digital Competence Transformation in Education

1. Before the COVID-19

Technology has transformed the way we study, interact, entertain ourselves, get information, and acquire knowledge in every facet of our daily life. These changes are and will continue to be visible at all levels of the educational system. This process is posing new issues for instructors' working techniques in pedagogical, didactic, and administrative contexts, as well as the development of students' digital building and specialized knowledge and fundamental abilities (Kelentric and et al. 2017 : 1).

According to a study conducted in Norway on how policy documents in the nation over the last ten years have interpreted ICT and digital competence in teacher education and in schools, There was a claim that general epistemological changes may be registered in the new school curriculum and the new General Plan for Teacher Education within the Norwegian educational system, Many of the same difficulties face higher education in general, since digital competency and new modes of teaching and evaluation must be established in order to capture “how teachers teach and learners learn” in the digital era, and Action Plans, White Papers, and the incorporation of concepts into curriculum may all be seen as having been impacted by the digital revolution. At the same time, it may be Aid that the policy documents help to set the stage for future discussions on what learning means in the twenty-first century (Krumsvik. 2011 : 48-49).

Calvani and et al (2010 : 161-162) stated that there is now enough agreement that a concept of digital competence must move the focus from a simply technical meaning to a more nuanced idea in order to be pedagogically useful. Such a notion should place a greater emphasis on

intellectual and critical elements, as well as the capacity to comprehend the underlying nature of technical phenomena and awareness of the ethical and social consequences of using online technologies. They indicated that the term “digital competence” consist of ; 1) Multidimensional: it entails the integration of cognitive, relational, and social talents and capabilities, making it a nonlinear concept, 2) Complex: it is not entirely measurable with single tests; Some components of this skill are hard to ascertain, at least in the near term, and may remain hidden, requiring more time and quite different situations to develop, 3) Interconnected: it is not distinct from other talents or fundamental competencies with which it overlaps (for instance, reading, problem solving, numeracy, logical, inferential, and metacognitive skills), and 4) Sensitive to the socio-cultural context: it would be unreasonable to imagine a single model of digital literacy that is appropriate at all times and in all circumstances; the meaning of this literacy will likewise alter depending on the varied educational environments (basic training, professional training, lifelong learning, specialized training).

Overall, technology has changed the way we study, socialize, enjoy ourselves, gather information, and learn in all aspects of our everyday lives. These changes may and will be seen at all levels of the educational system. This transformation raises new concerns for instructors' pedagogical, didactic, and administrative strategies, as well as the growth of students' digital building, specialized knowledge, and fundamental abilities. There is now widespread agreement that a concept of digital competence must shift from a purely technical definition to a more nuanced one in order to be pedagogically valuable. This theory has categorized digital competence into multidimensional, complex, and interconnected sensitive to the socio-cultural context.

2. In the COVID-19 and Its Implications for the Next Normal Era

In today's digital environment, the school must reinvent itself, which is made even more urgent by the Covid-19 epidemic. Training, internet connection infrastructure (hardware and software), digital competence, teaching, and learning tactics of students and academics are all critical (Sá and Serpa. 2020 Online). During the crises, technology enabled many of us to continue our everyday tasks as citizens and preserve a relational thread with the world and our social surroundings, although at a great emotional cost. The idea behind educational reform has tended to focus on the significance of acquiring knowledge, skills, and capacities to cope and prosper in the twenty-first century. However, the health crisis has brought to light not only the accomplishments,

but also the shortcomings and inconsistencies that have resulted from the reform, and it has made us aware of the need of actions to address these limits. Teleworking abilities, teacher design competency, and self-regulated learning skills of children, teens, and young people engaged in digital environments: all of these variables reveal a desire for deep, critical, and ongoing learning that will enable us to stay in control of our own lives (Gewerc and et al. 2020 : 374).

During the quarantine, the Ukrainian Ministry of Education and Science hosted a number of events to aid in the implementation of remote education at higher education institutions. Three online workshops for teachers have been held: "Using activity-based components in Moodle system distant learning and online communication". The topic was continued in the second online session with the following issues: 1. Moodle exams for knowledge control (Recourse Test). Creating, editing, and posting test tasks in the Moodle system. 2. Communication methods for remote learners using digital technology (interactive online boards, Google documents, a platform for conducting online classes). The final lecture is titled "BigBlueButton Service Tools for Conducting Online Classes" (the seminar is for those who are planning to use the software BigBlueButton in distance learning) (Trubavina and et al. 2022 : 4).

Since the global epidemic triggered by COVID-19, the globe has undergone tremendous changes, and all of society's systems have been affected in all countries. While educational changes take longer than changes in other individual contexts, the pandemic has demonstrated human beings' capacity for change and adaptability. This possibility became obvious following the rigorous lockdown edict imposed on people in Spain in the middle of March. Face-to-face educational institutions became virtual in less than 48 hours, resulting in changes for the educational community (Moreno and et al. online 2020 :13).

Overall, since the global epidemic triggered by COVID-19, the globe has undergone tremendous changes, and all of society's systems have been affected in all countries. Educational institutions must reinvent itself in today's digital world, which is rendered even more essential by the Covid-19 outbreak. Training, internet connection infrastructure, hardware and software, digital competence, and student and academic teaching and learning strategies are all crucial. The health crisis has highlighted not just the successes, but also the flaws and inconsistencies that have come from these policies, and it has made us aware of the need for action to address these limitations.

Kampong Chhnang Provincial Teacher Training Center Administration Management

Background and Former Training Formular Transformation

Kampong Chhnang Provincial Teacher Training Center (PTTC) is situated a long national road 5 in Kampong Chhnang province, about 89 kilometers from Phnom Penh, the capital of Cambodia. Kampong Chhnang province is bordered by Kampong Thom province to the north, Kampong Cham province to the east, Kampong Speu province to the south, and Pursat province to the west. It covers an area of 5521 square kilometers and has a total population of about 538,945 people (Cho and Nagoya (2018 : 1). Kampong Chhnang has the same hot and humid climate as other provinces throughout Cambodia. Rainy season is from May to October (temperatures of 27–35 °C, 90% humidity), winter is from November to March (temperatures ranging from 18 to 28 °C), and summer is from March to May (temperatures ranging from 28 to 36 °C). Geographical conditions have made this province accessible for a living, particularly with transportation and for receiving a formal education. This convenience led the Cambodian government to decide to establish a teacher training center in this region for the purpose of training teachers for primary schools (Luk and et al. 2022 : 30).

Kampong Chhnang Provincial Teacher Training Center (PTTC) started operating on April 16, 1981, and is known as a primary school teacher training center. The campus is situated in the Preah Bat Suramarit High School quarter in Sre Pring Village, Angkat Kampong Chhnang, and Kampong Chhnang City, about 2 kilometers south of the Kampong Chhnang Independence Monument. As shown in Figure 2, its location is surrounded by community resources, including a hospital, market, school, pagodas, and public transportation services, which makes the center accessible to the community (PTTC. 2019).

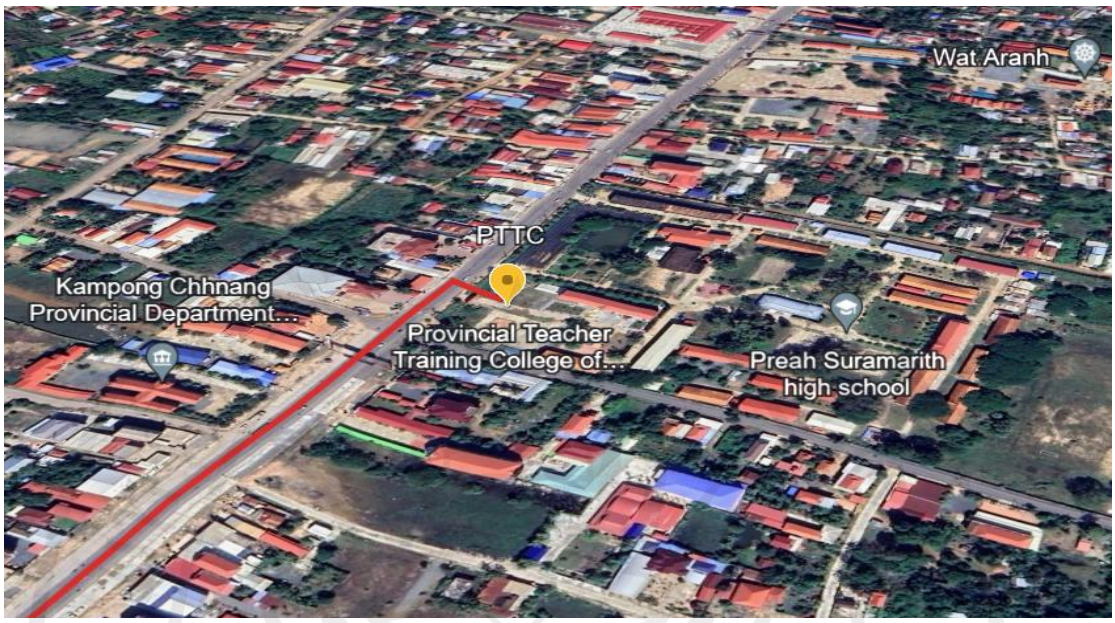

Figure 2 Kampong Chhnang Provincial Teacher Training Center Captured by Google Map Camera (PTTC. 2019).

Kampong Chhnang Provincial Teacher Training Center (PTTC) first started with 1 administrative building that consists of 2 floors with 9 classrooms and a meeting room, 1 student dormitory building, 1 bathroom building, and 1 kitchen (PTTC Record). Following its operating process when it first started, there were 28 staff members in total, including 2 leaders, 13 teacher trainers, 11 kitchen staff, and 2 security guards. The following table, shown in Table 1, is the list of staff members when Kampong Chhnang Provincial Teacher Training Center (PTTC) first began its operation in 1981 (Luk and et al. 2022 : 32).

Table 1 List of staff members in Kampong Chhnang Provincial Teacher Training Center (PTCC) first operated in May 16, 1981 (Luk and et al. 2022 : 32).

No	Position	Number	Total
1	Leaders	2	26
2	Teacher Trainers	13	
3	Kitchen Staffs	9	
4	Security Guards	2	

Kampong Chhnang Provincial Teacher Training Center (PTTC)'s first training course focused on administrative policy and technical training for psycho-pedagogy, followed by training formulas 7+1 and 8+1. These training formulas were used until 1989. A total of 3,657 teacher trainees participated and were trained. The center transformed its training formular again during 1990–1993 from 7+1 and 8+1 to 8+2. The training course during those years focused on building primary school teachers and adding up the skills of those who participated in the 8+1 training formula course. A total of 842 teacher trainees participated and were trained. Following the new reform in 1993, Kampong Chhnang Teacher Training Center (PTTC) transformed the training formula from 8+2 to 11+2, and it was used until 1998. A total of 264 teacher trainees participated and were trained. The following Table 2 shows the former training formular transformation as well as the number of teacher trainees who participated in those years.

Table 2 Former Training Formular Transformation (PTTC. 2020)

Year	Number of Trainees	Training Formular	Training Course
1981-1989	3657	7+1 and 8+1	Administrative Policy and Technical Training for Psycho-Pedagogy
1990-1993	842	8+2	Primary School Teachers and adding up the skills of those who participated in the 8+1 training formular course
1993-1998	264	11+2	Primary School Teachers

Current Infrastructure and Training Formular

Kampong Chhnang Provincial Teacher Training Center (PTTC) now has another new building that consists of three floors with 15 rooms, a football field, and a valley ball court, which is a generous gift from Samdech Hun Sen, Prime Minister of the Kingdom of Cambodia (MoEYS). The purpose of building this is to help the center be more efficient in terms of administrative management, learning, and teaching processes. In the meantime, the existing old building in the center has also been repaired and renovated to add extra rooms and spaces. The repair process was under the direction of the Ministry of Education, Youth, and Sports (MoEYS) through the GPE project. Currently, Kampong Chhnang Provincial Teacher Training Center (PTTC) has a football field, volleyball court, study building, a generous gift from Samdech Hun Sen, Prime Minister of the Kingdom of Cambodia, an ADB building with five rooms, the main office, and a student dormitory building (PTTC. 2023).

Nowadays, Kampong Chhnang Provincial Teacher Training Center (PTTC) has 27 employees: 17 teachers with a higher education degree, 9 teachers with a basic education degree, and 1 teacher with a primary school teacher degree. The following Table 3, is the number of the employees who are currently working in Kampong Chhnang Provincial Teacher Training Center (PTTC) (PTTC. 2023).

Table 3 Number of employees who are currently working in Kampong Chhnang Provincial Teacher Training Center (PTTC) (PTTC. 2023).

N^{o}	Role	Number	Total
1	Leaders	3	27
2	Administrators	3	
3	Academic Staffs	5	
4	Teacher	16	

Following its strategy reform, Kampong Chhnang Provincial Teacher Training Center (PTTC) has transformed its training formula again from 11+2 to 12+2 starting in 1998 and continuing to the present. A total of 2152 teacher trainees participated and were trained. However, during the COVID-19 crisis, no trainee was selected for the academic year 2020–2022. The

following Table 4 shows the number of teacher trainees who participated in the training course from 1998-2021 (PTTC. 2021).

Table 4 Number of teacher trainees participated in training course in Kampong Chhnang Provincial Teacher Training Center (PTCC) from 1998-2021 (PTTC. 2021).

Year	Number of Trainees		Batch
	Total	Female	
1998-2000	126	33	17
1999-2001	140	45	18
2000-2002	140	45	19
2001-2003	100	31	20
2002-2004	95	29	21
2003-2005	120	48	22
2004-2006	61	22	23
2005-2007	120	60	24
2006-2008	100	49	25
2007-2009	90	38	26
2008-2010	87	47	27
2009-2011	77	47	28
2010-2012	80	52	29
2011-2013	80	43	30
2012-2014	180	100	31
2013-2015	100	73	32
2014-2016	180	100	33
2015-2017	66	39	34
2016-2018	62	33	35
2017-2019	55	35	36
2018-2020	48	35	37
2019-2021	45	31	38
2020-2022	No trainees selected due to COVID-19 crisis		

Goals and Strategy Focusing on Improvement and Digital in Education

Kampong Chhnang Provincial Teacher Training Center (PTTC) has set its vision to prepare the primary school teacher trainees to reach the level where they fully unlock their potential and are able to use their skills ethically, and highly recognized by the community. The center's missions are to:

- Provide knowledge to the teacher trainees and shape them to be effective teachers
- Provide further training to the existing teacher trainers who are currently working in the center to upgrade their level.

In order to reach the vision and missions set, Kampong Chhnang Provincial Teacher Training Center (PTTC) has three main strategies: develop teacher training centers; develop professional skills for teacher trainers and teacher trainees; and strengthen the monitoring system to assess existing and new teacher trainers' working performance (Luk and et al. 2022 : 50). Kampong Chhnang Provincial Teacher Training Center (PTTC) has encouraged and sent its administrators and teacher trainers to participate in various professional development, including digital in education training program such as MOOCs and Digital Development for Digital Economy (PTTC. 2023).

Related Documents and Research Regarding Administrators' Digital Competence

Llomaki and Lakkala (2018) conducted a research study and developed a model that explains the significant aspects of enhancing schools using digital technology, helps in revealing variations across schools, and highlights their best practices and issues. The study revealed that educational administrators at the local and national levels may be interested in assessing the state of using digital technology in schools. These researchers suggested that when aiming for improvements, local and national school administrations focus on schools as knowledge work organizations, such as increasing the quality of pedagogical and knowledge practices in schools using digital technology. All aspects of the innovative digital school model should be considered, and the first step should be to commit the staff to change by developing shared visions and goals for pedagogical development through digital technology and by supporting school-level practices that include both students and teachers.

Apsorn and et al (online.2019) studied the components and do confirmatory factor analysis, and study the perceptions of ICT leadership of administrators in Thailand. The study indicated eight components: 1) developing a vision and administrative plans for the use of ICT in schools, 2) establishing strategies for promoting teachers' and students' use of technology in instruction; 3) developing plans for improving teachers' and supporting staff's technological skills; managing, supporting and facilitating an atmosphere conductive to the use of ICT and providing information technology (IT) resources; 4) ; learning about meeting ICT related challenges with prudence and care; 5) acting as a role model in applying ICT to daily personal and professional matters; 6) sharing knowledge, 7) opening up opportunities and creating an ICT culture in schools in order to develop a learning community, and 8) overseeing and doing follow-up on data storage and data updates for the benefit of decision making and problem solving for using to develop guidelines for efficiently and effectively improving the capacity of ICT school administrators.

Soeung and Chim (2022) studied the impact of COVID-19 on teaching online at an upper secondary school. The study did not only discover the needs for online teaching but also found significant practical consequences for central-level people and policymakers. They stated that schools in Cambodia still lack technology-readiness programs as well as restricted digital infrastructure and instruments. In this regard, they proposed that, for school resumption, a digital working environment be fostered at the school level for both teachers and school administration staff. COVID-19, on the other hand, was considered to offer a great deal to educational institutions in terms of implementing the digital revolution of education 4.0.

Asio and Bayucca (online.2021) studied and analyzed the level of digital competence of school administrators, the readiness of schools, and perceived challenges on the delivery of distance learning. The study used the statistical tool to analyzed the data: frequency, percentage, and rank. This study discovered that administrators had various results with remote learning the institution was not yet ready to establish a distance learning plan.

Oznacar and Dericioglu (online.2017) studied the thoughts of state high administrators to determine the obstacles that they are exposed to while using technology and attempting to integrate technology in their schools. It was discovered that administrators are not concerned about the usage of technology at school, but they fail to incorporate technology into the classroom.

Yuliani and et al (online.2023) studied school management system assistance with technology awareness at SMP Negeri 13 Dumai. The implementation of this school management system help program intends to give instructors at SMP Negeri 13 Dumai assistance in using the school's technology. The result showed that there was an increase in technological awareness capabilities at the management level, which may be assessed by three primary aspects, namely: (1) increasing their knowledge about awareness in the field of sensitivity (perceptual component) where managerial staff in SMP Negeri 13 Dumai is able to identify and implement existing technology in the field of education (2) second component, insight (interpretation component) where insight, the ability of managerial staff in this school to understand the reasons for mastering renewable technology for efficiency and effectiveness in the school management system and (3) the third component is communication.

Rina and Sugiarto (online.2022) studied the skills of electronic archives (e-archive) in managing school administration through the network (cloud). The activity findings show that education personnel can manage school administration papers electronically via the network (cloud). Education personnel can categorize different archives as active or inactive, and their maintenance is focused on electronic materials via scanning or scanning for digital archive management.

Ellis and et al (online.2021) conducted a study to look into North Carolina school administrators' perceptions of digital learning competencies for administrators to establish digital-age learning organizations and identify best practices to assist educators and students. Data were gathered in the 2018–2019 academic year via a web-based questionnaire given to current and previous Educational Leadership Program students (n = 21/52) and six semi structured interviews. The findings provided evidence for the development of a new digital learning credential for educational leaders.

Luecha and et al (online.2022) conducted a study of program development of digital leadership for school administrators. The research aimed to investigate the components and indicators of digital leadership in school administrators, as well as the current state of desirable conditions and necessities for digital leadership in school administrators. It also aimed to develop a digital leadership development program for administrators and to investigate the effect of using a digital leadership development program in school administrators. The findings revealed that 1)

school administrators' digital leadership consisted of seven components and 22 indicators, 2) Desirable Conditions for School Administrators' Digital Leadership, 3) Program development for digital leadership for administrators is feasible and valuable in general, it was at the highest level, and 4) Program outcomes, 4.1) Development of digital leadership programs for school administrators.

Suksai and et al (2021) conducted study research about a digital leadership development model for administrators in basic education to fulfil the Thailand 4.0 policy. The research aimed to explore the components of Digital Leadership and develop a Digital Leadership model. The study found that the component of Digital Leadership consists of 1) Vision Leadership, 2) Use of Digital Technology in teaching, 30 Use of Digital Technology in management, 4) Digital Technology support and management in education, 5) Use of Digital Technology in measurement and evaluation, and 6) Ethics in the use of Digital Technology. The digital leadership model consists of (1) context, followed by its three main points: (1.1) policy as a guideline for implementation (1.2) principle as a guideline for development (1.3) the objective of indicating changing behaviors, and (2) guidelines for digital technology development, followed by its four main points: (2.1) input consists of administrative structure, technology, and organizational culture (2.2) digital technology development processes such as the design thinking process (2.3) Digital leadership productivity and cognition (2.4) Feedback, both direct and indirect, was useful Information for the digital technology development model that was suitable, feasible, useful, and consistent with the research framework.

Balakrishnan (online.2023) did a study looking into administrative support and convenience factors affecting the usage of ICT in teaching and learning management. The study was carried out using a qualitative approach. The findings revealed that administrators promote and enable the degree of ICT usage in teaching and learning management, which is critical and contributes to teachers successfully using ICT in the direction of teaching and learning.