Digital Challenges: The Digital Competencies of Educational Institutions

Vichian Puncreobutr*, Ph.D.
Lecturer, Faculty of Education, St Theresa International College, Thailand
Email: vichian@stic.ac.th
* Corresponding Author

Budsayarat Puncreobutr
The Secondary Educational Service Area Office 2, Bangkok, Thailand
Email: budsayaratpun@gmail.com

Received: 04/12/2023 *Revised: 13/12/2023* *Accepted: 15/12/2023*

Abstract

The rapid changes driven by information technologies in today's world have led to an increasing number of innovations that facilitate human convenience, new types of business together with new careers. However, these technologies can also become dangerous if misused for cyberbullying, violation of privacy, and cybercrimes like online financial fraud or scams. Society expects all levels of educational institutions to be highly accountable for developing its human resources readiness for the shift toward a full digital society. Therefore, educational institutions must enhance their information technology policies to not only use information technology for learning management and for some administrative purposes, but to inhibit digital competencies for developing human resources readiness to deal with current and emerging changes. This also includes allowing students to find opportunities to develop themselves amidst new unfamiliar obstacles, to recognize their online vulnerabilities, and protect themselves from being online victims. Furthermore, educational institutions can leverage their digital competencies to work with communities and society to solve problems and develop human resources through lifelong learning, thus driving society to be ready to accept various changes in the world, in the digital society.

Keywords: Digital Challenge, Digital Transformation, Digital Competencies of Educational Institutions

Digital Society and Digital Era

The advances of computers for managing information over the internet and social media have changed the way people live. This resulted in the emergence of new types of businesses and transactions such as selling/ buying on online stores without depending on a store front, a

new way to work where one does not have to physically clock in at the office, but can work anytime, anywhere virtually, or one can make money deposits or withdraw online instead of going to a bank. There are both positive and negative results to livelihoods regarding these changes. The key positive side of these technological advancements gave way to the development of machines like robotic waiters or robotic vacuum cleaners which gave more convenience for humans. On the other hand, the key negative side is when one can use these technologies to access personal information and use it for criminal activities.

The advances in the development of information technology are in parallel with those of communication technologies. Therefore, the digital era is divided into 4 eras.

1. **Digital Era 1.0** or the **e-mail and websites** era is the origins of using digital technology to change from offline to online way of life, for example, the switch from posting letters at the post office to sending electronic mail, or the change from distributing publications or brochures to displaying information on a website, or instead of renting a physical space for a store to renting a webspace to display product and company information on a website. It is common today that all the educational institutions, whether they are schools, colleges, or universities use digital technologies to run their own websites to provide information and provide a platform for students and parents to make inquiries and suggestions or submit complaints through the institution's website. The institutions also provide each of their faculty members and students with an e-mail address to communicate with each other, as well.

2. **Digital Era 2.0 or** the era of social **media and e-commerce.** This period of transformation is the **extension** of the use of digital technologies where users or consumers began to widely build online networks that evolved into social networks that widened personal engagements, public dissemination of information, and commercial communications. Furthermore, when the connections between commercial networks became more prevalent, they opened gateways for consumers to quickly access various services through each brand's online content. When some internet consumers began to see the connections between consumers and their own brands, they themselves became new content creators who started a new model of business called e-commerce in which products are sold on social networks anytime and anywhere. Educational institutions would also start to use these digital technologies or platforms like Facebook, Instagram, and even E-Bidding procurements until it became a norm.

3. **Digital Era 3.0** or the **big data and application era** is the era of digital **growth** due to increased use of social media and e-commerce. Huge volumes of data arise from use, also known as big data. The sources of big data are the data are originate daily from, for example, the use of smart phones communications, business correspondences, online commercial transactions, and banking transactions on social networks. Every day, data analysts of proprietors will process, substantiate, and make connections to consumer behaviors and needs for their companies. These analyses or **analytics** helped companies plan their production and services that precisely respond to the needs of the consumers. In so forth, there was a need for real-time reporting so companies could respond rapidly to consumer's needs thus, **cloud computing** was invented. Cloud computing is beneficial because of its ability to process and

store unlimited data, it could be easily and quickly accessible anywhere and anytime, and its easy features for managing and sharing information. This made it possible for users to select a variety of resources from multiple sources to do their work, thus reducing costs and speeding up production/ sales, and services to consumers. To bring more convenience to customers, businesses have pulled information from big data to develop applications for smart phones/tablets, offering new services for customers, and subsequently gaining advantages over their competitors. Educational institutions have also begun to use these digital technologies such as applications for online meetings, seminars, learning management, examinations, and assessments.

4. Digital Era 4.0 or the era of **AI and robots** is the **developmental** period for incorporating intelligence with technologies by harnessing the computing powers from a combination of applications that automatically learn users' behaviors to perform algorithms without human interventions. This is a step beyond the limits of creative innovations that brought even more convenience for consumers with products and features like self-driving cars, turning on air conditioners remotely before reaching home, and switching lights on/off by motion sensors. Also, the continuous technological developments in this digital era will rapidly lead to substituting human workers with robots in every way, for example, news broadcaster robots, or medical robots for diagnosing patients before seeing a doctor. In the future, educational institutions may use these digital technologies to employ instructional robots for teaching.

The digital transformation, from using computers to process information offline and on the internet, on e-mail and websites, to the creation of social networks and e-commerce. People have learned to take advantage of the vast volume of data on social media by manipulating big data with cloud computing, analytics, and applications. Therefore, consumers unknowingly use applications either directly or indirectly. The uses of digital technologies in this manner are pushing the society to harmoniously co-exist with AI and robots, not only in the commercial sector, but unavoidably in the education sector, as well.

Education and Digital Transformation

The dynamics of information technology have caused the world to change rapidly. The occurring changes have both positive and negative impacts on people’s lives. The positive impacts influenced businesses that never existed before, new careers, and innovations that provide more convenience for humankind. The negative impacts are the misuse of technologies, for example, posting rude comments, forwarding and sharing information that violates people’s privacy, cyberbullying, and intentional or unintentional slandering which could be illegal. This also includes the dangers from criminals who would use technologies to access other’s bank accounts, using fake social media accounts for financial frauds, more familiar to everyone as call center gangs. If the society cannot fully utilize the positives, or if many problems occur from the negatives, this will bring damage to the country in terms of its opportunities for development and competitiveness. The negative side of technology can also cause serious economic downfall.

Thus, educational institutions at every level must urgently respond to the digital transformation. It is not sufficient to just use information technology for “Internet and website" or respond only to changes in the "Digital Era 1.0", but institutions must thoroughly and completely respond to all changes whilst taking advantage of technologies from each digital transformation era. Digital technologies must be applied to not only educational administration but also to learning management to fulfil society’s high expectations of their accountability for preparing its people of all levels and ages to both be ready and manage the current and impending changes.

Educational institutions must first transform themselves, the key aspect of which is to acquire digital literacy and learn how to be a participant of the digital society. Next, they must change how they would apply digital technologies which involve restructuring their organizations and modifying their digital ecosystem.

The digital transformation of an institution involves factors ranging from strategy, engagement, innovation, technology, data & analytics. Hence, an organization that wants to go through digital transformation must place importance on each of these factors (Scott, 2017).

There are many ways institutions can respond to digital transformation depending on their potential. In this regard, the fundamentals for educational institutions to adopt digital technology is based on their ability to balance the following 6 factors:

1. Strategic transformation of the institution with a strategy that takes the institution to reach its goals. There must be a clear goal for leveraging digital technology. The goal should be different from those of former strategies and should be unique to other educational institutions: to see what others have not seen. Take note that if an institution adopts digital technology without a strategy or adopts the wrong strategy, it has not gone through digital transformation but just modified its job scopes or workflows from analog to digital.

2. Engagement with personnel and the involved, such as administrators, teachers, students, and clients or service recipients to foster cooperation, build loyalty, and reduce resistance from its personnel. An institution loses its opportunities to adapt if it does not engage well and continuously with its people.

3. Changing the institution’s culture of people development. The institution must enforce its people to learn continuously, to broaden their digital knowledge and capabilities for the benefit of the institution. As such, its personnel will expound their digital knowledge and competencies to create suitable and timely innovations that are unique to the institution. There must also be free activities not attached to the conditions of time and place.

4. Use technology as the main tool for work. In this instance, technology as a tool extends to IT equipment, work systems, users, and very capable system administrators. Should an institution use ineffective tools, or it has effective tools, but its personnel lack the technological know-how and understanding, or do not have the ability to operate the tool, then this institution loses the opportunity to transform.

5. Optimal use of data & analytics for maximum benefits. That is, if any institution does not collect data, categorize and analyze the data, or the institution lacks the use of data,

or there is the use of data through incorrect decisions, the institution cannot use data to drive itself and loses the opportunity to adapt.

6. Creating a digital ecosystem. The digital ecosystem is the most important aspect of digital transformation for educational organizations. Institutions must transform their digital ecosystem by incorporating the use of digital technology in everything starting with the curriculum, teachers/lecturers, pedagogy, extracurricular activities, student, and user helpdesk to learning support systems**.**

That is the educational institution's response to digital transformation must apply all 6 elements of digital technology to manage educational institutions in a balanced way. Therefore, the educational institution will possess digital competencies that are ready to develop human resources both in educational institutions and develop members of the society surrounding the educational institution.

It can be said that educational institutions that have digital competencies must be the sum of many competencies related to personnel, customers, or service recipients of educational institutions, including digital competencies of educational administrators, teachers, learners and people in communities and society.

Digital Competencies of Educational Administrators

Administrators are key people in digital transformation. In their leadership role, they must foresee and prepare for changes; they are accountable for the ensuing changes and the sustainability or the dissolvement of the institution, all of which affect the stability of the education systems and the systems for the development of the country's human resources.

There are standards for the digital competencies of administrators. For example, the National Educational Technology Standard for Administrators: ISTE (2009) stipulated 5 aspects concerning the digital standards for administrators namely digital vision, digital world learning culture, professional digital practices, systematic institution transformation, and digital citizenship. The international scholastic community also puts high importance on the digital competencies of administrators. Sheninger (2014) specified that the leadership of administrators of the digital age must adhere to 7 main pillars for communications, public relations, image building, professional development, adjustment of learning field vision, and the environment. Another scholar, Sullivan (2017) stated that administrators of the digital age must have key digital competencies such as digital literacy, digital vision, digital presence, digital adaptation, digital self-awareness, and awareness of the digital culture, and so forth.

Although there are standards for digital competencies and academic digital leadership for administrators, many administrators have yet to drive their institutions to become leaders of digital competencies development for teachers/lecturers. This situation arose because the administrators themselves lack key academic leadership skills, thus teachers/ lecturers have not been developed to acquire sufficient digital competencies to make students good digital citizens.

A good administrator must be able to use science and art to combine administrative resources in the administrative process to effectively achieve the institution's set objectives.

More specifically, if an institutional objective is to be digitally competent, then the administrator must have the digital competencies for the science and art of administration.

Therefore, the digital competencies of administrators are to artfully use the science of administration to build circles of engagement in the digital society. It is not enough for an administrator to be an academic leader, to be knowledgeable, or to have administrative skills, but it is a vision of an administrator who can combine the art and the science of administration to create a circle of engagement so everyone in the organization can live together in harmony in the digital society.

The digital competencies of administrators for creating a circle of engagement in the digital society consist of the following 3 components:

1. The ability to create shared commitments to form a digital society. This ability is for administrators to draw collaboration among people in the institution to create a common commitment for the willingness to learn and take advantage of digital technology, the ability to inspire others to produce results digitally suitable for the institution, the ability to create positive energy for people in the institution, and the capability to create digital communities or digital societies in educational institutions.

2. Engagement skills for the digital society. These are required skills administrators must have to establish a shared commitment to form a digital society at the institution. These include sensitivity skills, setting instructional direction skills, infrastructure management skills for the institution to effectively support the digital society, digital skills to create a new culture in the organization, digital skills for supervision and consulting, and the skill to build bodies of knowledge and good practices from the lessons learned while maintaining a digital society at the institution.

3. To administrate the institution based on the principles of sufficiency economy in the digital society. Which is the ability to strike a balance during the institution's transition so that its digital transformation is done carefully with awareness of the changes based on the 3 main principles of sufficiency economy, the principles for sustainable development of Thailand with self-sufficiency. Self-sufficiency consists of moderation, reasonableness, and self-immunity. Details are as follows:

3.1 Moderation is the moderate use of digital technology which is not too much or not too little, without burdening self and others. That is, to achieve self-sufficiency mentally, socially, economically, technologically, and the proper care and conservation of the environment.

3.2 Reasonableness is the rational use of digital technology. Any decision must be made based on the causes, the outcomes, and potential impacts. That is, to make decisions based on reasonability and righteousness. As well as making decisions to benefit everyone at the institution, learning development, and the creation of good digital citizens.

3.3 Self-immunity is the safe and cautious use of digital technology, and to prepare for the effects of changes by considering the possibility of short-term and long-term situations at present and in the future. Self-immunity, thus, is making decisions based on knowledge (stock of all relevant knowledge - making prudent and cautious decisions based on knowledge, wisdom, or academic principles), ethical qualification (making decisions based on morality, ethics, and good governance with integrity. Making decisions with effort, commitment and

patience that will not offend others, and to persevere, i.e., not to abandon work midway or to give up until successful).

Therefore, the digital competencies of educational administrators consist of the use of the science and art in educational administration, the skills for building engagement in the digital society, and operating based on the principle of sufficient economy in the digital society. These competencies are needed for the institution and its people in traditional educational institutions, to transform, to be ready for changes in the digital world, and to create a circle of engagement for everyone at the institution to participate in the digital society.

Digital Competencies of Teachers

It is also important that teachers possess digital competencies because teachers/lecturers are the implementers and the ones who transfer digital competencies to students. So, if teachers/lecturers do not possess or have the proper level of digital competencies, there would be an unavoidable impact on students' digital competencies.

Many countries have established digital competence frameworks for teachers. Some interesting frameworks are, for example, the European framework for the digital competence of educators (Redeker, 2017), UNESCO ICT competency framework for teachers (The United Nations Educational, Scientific, and Cultural Organization, 2018), professional digital competence in teacher education (Geir et al., 2014; Oliver et al., 2021), and the teacher digital competency framework (Falloon, 2020), etc. It was also found that the digital competence frameworks for teachers have set similar standards for the levels of teachers' digital competencies.

The European framework for the digital competence of educators is an interesting framework because it divides the digital progression of teachers into 3 phases: A, B, and C, with 2 levels for each phase, totaling 6 levels of digital competencies for teachers as follows.

Level A1: Newcomer. At this level, the teacher can sometimes conduct lessons with digital technologies. Key competencies of this level are the awareness of the use of digital technologies to augment learning management and for internal communications, but the teachers at this level have either never or rarely used digital technology or searched for information on digital technology. They mostly used the technologies to prepare lessons, search

for lesson topics, or to find new knowledge. These teachers should be coached to increase their digital competencies in learning management.

Level A2: Explorer. At this level, teachers explore ways to incorporate digital technologies in their instructions and for their professional development. Teachers at this level can leverage digital technologies in their lessons. Key competencies of this level are the beginners' ability to adapt available digital technologies like smart boards for teaching or to incorporate technologies with learning objectives or course descriptions. Nevertheless, teachers at this level are yet to possess the sufficient level of digital competencies to meet the stipulations of the framework, and therefore need guidance and assistance to increase their understanding of the use of digital technology, to be shown examples of how to use technology in teaching. They also should be encouraged to share their digital experience in learning management with others.

Level B1: Integrator. At this level, teachers begin to creatively integrate digital technologies to manage various tasks or work systems within the scope of the learning objectives. Teachers at this level are also capable of integrating the available digital technologies for instruction and organizing in-class or extra-curricular activities. Key competencies of this level are the ability to select suitable technologies to support the teacher's work, or for learning management, to align these uses to the contexts of the course contents, the ability to organize, manage, and integrate the available technologies in the classroom or the applications on students' devices into class instructions, and the ability to integrate information gathered from digital technologies or to use interactive applications in learning activities. Teachers of this level should be encouraged to enhance their digital competencies through the professional learning community (PLC).

Level B2: Expert. At this level, teachers are digital technology experts who can effortlessly and expertly use various digital technologies to perform a variety of tasks in multiple ways. Moreover, the teacher can purposely use digital technologies to develop and promote learning strategies and confidently guide and assist students. Key competencies of this level are the ability to analyze relevant data to enhance learners' activities and to elevate the teaching profession, the ability to use a wide range of digital applications, the ability to choose the right digital technology and maximize its benefits for the subject being taught or for the course objectives, the ability to minimize or avoid the risks of using digital technologies that do not align with the course descriptions, and the ability to design curriculum to fit the existing digital environment. Teachers at this level should be encouraged to continuously explore new ideas or to experiment with new digital tools.

Level C1: Leader. At this level, teachers are digital technology leaders who can envision and set guidelines for the appropriate use of digital technologies in various contexts. Teachers at this level can monitor, modify, and enhance the use of digital technology for improving learning strategies, and to provide flexible support to the learners. Key competencies of this level are the ability to make careful decisions to choose the right techniques for using digital technology or to discern the best methods within the learning framework for using digital tools in various digital activities, the ability to organize interactive classrooms which can be managed in the digital environment, the ability to audit and assess the effectiveness of the application of digital technologies on learning strategies, digital tools, or digital activities used in learning management, and the ability to correct the competency deficiencies from findings until best practices for teachers to leverage on their digital competencies are found or to develop a good guideline for teachers to continuously apply their digital competencies. Teachers at this level should be recognized as an advisor, one who creates passion for learning, the creator of bodies of knowledge, and the agent of digital technology knowledge transfer for teachers in educational institutions.

Level C2: Pioneer. At this level, teachers are digital pioneers who can create better approaches from good or best practices of applying digital technologies to learning management and professional development for teachers. At this level, the teacher can innovate the creative use of digital technologies in learning management and/or teaching professional development. Key competencies of this level are the ability to combine and use a wide range of modern digital technologies based on complex working principles, for example, the development of curriculum, learning models, or suitable teaching techniques on the digital

ecosystem for various subjects. Teachers at this level should be recognized as a role model for applying digital technologies to learning management or the teacher who possesses exemplary digital competencies at the institution.

From the teachers' digital competencies based on these six levels above, it is evident that there is a relationship between the teachers' digital competencies and the approach to enhance the teacher's digital competencies. The relationship is shown in Table 1.

Table 1: The relationship between digital competencies and teacher digital competence enhancement

Teacher Digital Competencies		**Competence Enhancement**	
Level	**Competencies**	**Development Guidelines**	**Expected Results**
A1	To use digital technology to prepare lessons, find information for lessons, or to acquire new knowledge.	Provide advice on how to use digital competencies to manage learning.	Use existing digital technologies to manage learning in classes.
A2	Starting to use existing digital technologies to organize class instructions.	Exchange digital experiences with colleagues.	Regular use of digital technologies in learning management.
B1	To use digital technologies for tasks or learning management within the context of activities or subject content.	Professional Learning Community: PLC	Optimize the use of digital tools.
B2	To choose the appropriate digital technologies for achieving the learning objectives of the course work.	Ongoing new digital tools training	Use digital tools to organize learning units in subjects.
C1	To use the techniques and algorithms from a wide range of digital tools for suitable development within the contexts of educational institutions.	Recognized as an advisor/ one who creates passion for learning	Good practices for using teachers' digital competencies

Therefore, it is the joint duty of administrators and teachers to develop their digital competencies to reach C1 or C2 level as soon as possible. Administrators should periodically assess all teachers' digital competencies to plan programs to raise their competencies. Furthermore, each teacher should conduct a self-assessment to determine the amount of time needed for raising one's digital competencies based on the European framework for the digital competence of educators. The raising of teacher's digital competencies will not only benefit teachers because of their professional self-development, but it will also be beneficial to learners since teachers are responsible for raising the learner's digital competencies, as well.

Digital Competencies of Learners

Learners' digital competencies are most important in learning management. The final outcome in this endeavor for educational institutions is to create **digital citizenship**. Specifically, one must be able to be happy in the digital society, to be able to take advantage of digital technologies in daily life, to hold a profession and be in harmony with others in the digital world. However, one must not misuse or illegally use digital technologies to cause trouble to society.

Many countries have set several frameworks for learners' digital competencies, for example, Singapore's educational framework for developing learners to be good digital citizens of Singapore (Ministry of Education, 2014), New Zealand's development of student attributes in digital citizenship, a case study (Netsafe New Zealand, 2015), 8 digital life skills all children need and a plan for teaching them (Park, 2016), a global framework of reference on digital literacy skills for indicator (UNESCO, 2018), and digital citizenship (Ribble, 2019), and so forth.

Although there are many different frameworks for students' digital competencies, the final outcomes of learners contain 2 parts. The first is the core principles of being good digital citizens which are the learner's digital competencies, the second is the activities that create or develop learners to be good digital citizens.

The core principles of being a good digital citizen, or learner's digital competencies are the ability to use digital technology based on equality, the ability to effectively apply digital technologies to daily life, and to use digital technologies responsibly. Details are as follows:

1. Using digital technology based on equality while being respectful of self and others. This principle aims to equip learners with the key competencies of digital etiquette, smart data access, safeguarding self and others in the digital world, and compliance with digital laws.

2. Effectively apply digital technologies to daily life. This principle aims to provide learners with the key competencies of searching and communicating in the digital world for effective learning and presenting their work and/or products in the digital world.

3. Awareness of safety and responsibilities while using digital technology. This principle intends for learners to have the following key competencies: the ability to safeguard self and others' digital information, and to use digital technologies without harming self or others physically or mentally.

In order to To develop learners to be good digital citizens, various training activities must be organized to cover 4 important behaviors:

1. Content assessment in the digital world. This behavior training aims for learners to participate in creating good relationships with others in the digital world through different channels of communication and be able to assess contents to determine whether they are true or fake, trustworthy or suspicious, and safe or harmful.

2. Risk awareness and risk management. This behavior training aims to provide students with activities for dealing with various types of cyberbullying and cyber threats, as well as to responsibly create digital footprints which they may have to deal with its consequences in real life.

3. Taking advantage of digital technology while learning or doing activities. This behavior training intends to have the learners participate in activities for learning from information, results from studies, or from other's work, for designing content to present the lessons learned or the results from studies, as well as for creating content in the digital world.

4. Exhibiting creative use of digital technology. This behavior training aims for students to participate in activities handling their own and others' personal information in the digital world, time management for multi-tasking in the digital world, and self-governance while doing activities on digital platforms, as well as expressing care for their own and others' feelings and needs in the digital world.

The relationship between learners' digital competencies and the activities to create and develop learners to be good digital citizens is shown in Table 2.

Table 2: Learner's digital competencies and activities to build good digital citizenship

Teachers →

Learners' Digital Competencies		Activities to Create or Develop Learners	
Core Principles of Good Citizenship	**Competencies**	**Activities**	**Learner Behaviors**
1. Use based on equality	Digital etiquette	Communication to build good relationships with others	1. Digital information assessments
	Smart data access	Determination of true/fake, trustworthy/suspicious, or safe/harmful contents	
	Safeguarding in the digital world	Dealing with cyberbullying and cyber threats	2. Risk management
	Compliance with digital laws	Responsible for the creation of digital footprints	
2. Application in daily life	Searching/communications for learning	Gain knowledge from others' digital works	3. Utilization
	Presentations/contents	Design presentations/create content in the digital world	
3. Responsible use	Protect own and others' digital information	Handling own and other's personal information	4. Expressions of creativity
	Enjoy digital content without harming own and others' physical/mental health.	-Time management in the digital world -Care for own and others' feelings/needs.	
Good Digital Citizens	**Expectations of the Institution**		**Learner Outcomes**

← Learners

Therefore, the 8 digital competencies of learners based on the 3 core principles of good digital citizenship is the responsibility of every teacher. Teachers must have digital competencies to design appropriate activities for building good digital citizenship, in at least 9 groups with learners at each level appropriately, in order to create the 4 important behaviors. Then the learners will see opportunities to develop themselves amidst new and unknown obstacles while sustaining the ability to protect themselves from becoming victims of technologies from their weakness.

Digital Competencies of People in Communities and Society

An important point here is that educational institutions, administrators, teachers, and learners must not detach themselves from society. In other words, they should not view their relationship with society or communities as collaborators of certain missions or activities but must treat them as inseparable partners. Reason being that learners are the society's children and grandchildren who would graduate to become citizens of society. A clear illustration of this point is the national initiative for developing people's digital competencies in the past that only focused on administrators, teachers, and learners, but not the people of communities or society.

The state of digital competencies of society or of the people in communities and society is seriously problematic. There are numerous misuses of technologies for misconducts such as cyberbullying, violation of people's rights through information theft, and the harm on people of all ages in society from online criminal activities like cyber frauds. It can be said that the level of digital competencies of society is quite concerning, to state similarly, the development of learners to be citizens with digital competencies has been a failure.

That is, to effectively develop learners' digital competencies, the leaners must be learning together with society through educational activities. These activities must address the current state of society's digital literacy, problems and impacts from digital media addiction, and digital presence. Also, the previous solutions, the remaining issues, the actual root causes of the problems, solutions society can make on its own, solutions dependent on other agencies, and the lessons learned. The activities should further address problems that may surface in the future, and directions for the prevention of problems from the digital world, the effect of which may vary depending on the domain of society or educational institutions.

The combined lessons learned from the victims, former abusers, and survivors of digital harm will be good case studies for the learners, teachers, administrators, and educational institutions for preparing next generations of learners before they immerse themselves and learn in their societies. The preparation should involve continuous improvements of learning processes. Consequently, educational institutions will possess digital competencies for developing society's human resource to be ready to deal with the current and future changes.

Educational institution collaborations with society in the development of digital competencies can happen at any education level. The digital competencies development of elementary school students should be activities designed to learn how to process digital contents so students can recognize opportunities to improve themselves while dealing with unfamiliar problems, and the ways to protect themselves from being victims of the digital world from their own weakness.

Activities for developing digital competencies of lower secondary students should prepare students to have awareness of the country's current and future risks, the present unknown risks which may later surface, and to be able to visualize or understand the risk management guidelines of various countries to prevent oneself and society from becoming victims of the digital world.

The development activities for developing higher secondary school and vocational school students' digital competencies should encompass how to optimize the use of digital technologies, to develop own content, enhance communities' products, and create a following for them on the digital world.

The digital competencies development activities for higher education students should be relevant to students' exhibition of the creative use of digital technologies in their academic community services, the ability to integrate several technologies into their works for the society to avoid dangers in the digital world, develop solutions in cooperation with communities and societies, or to develop new digital platforms. These platforms should be created for the community's specific to the domain of the student's educational institution. The digital competencies development for this level of students will also help develop the communities' and society's human resources through lifelong learning, it will also drive the society to be constantly ready to manage changes in the digital society.

It is the duty of educational institutions to Educational must develop the digital competencies of communities or society by transferring the combined institutions and learners' body of knowledge to the society to prepare The purposes of which are for preparing the learners to be good digital citizens and to build sustainable digital competencies for society. Because today's learners are from all age groups, thus digital competencies development is a lifelong learning for all members of society. Similarly, the development is to enable the society to have the key core competencies to use digital technology on the basis of based on equality, to effectively apply digital technologies to daily life, and to be conscious of online safety, and to use digital technologies with responsibility.

The resultant digital competencies of society, besides being an important mechanism for creating good digital citizens, people of all ages will be able to have a full presence in the digital world and in all its dimensions. That is, the digital competencies of society will make society in both the physical and online worlds fully enjoyable.

Expectations from Digital Challenges: Digital Competencies of Educational Institutions

The expectations from digital challenges are for educational institutions, educational administrators, teachers, and those involved in learning management to focus on the digital competencies of their institutions. These expectations do not just call for the development of new educational tools, equipment, or technologies, but they require the institutions to transform. The institutions must be able to adjust themselves and handle the digital society that will continuously increase its influence on learners and people in society and will inevitably affect the state of educational institutions.

Digital competencies of educational institutions pose the challenge for educational institutions to have the ability to develop digital competencies for all learners in the formal, informal, and lifelong learning education systems, and people in society to handle the digital

world. Educational institutions must create good digital citizens for societies who possess the following competencies in the digital world, survival, to happiness, and valuability. These competencies are illustrated in Figure 1.

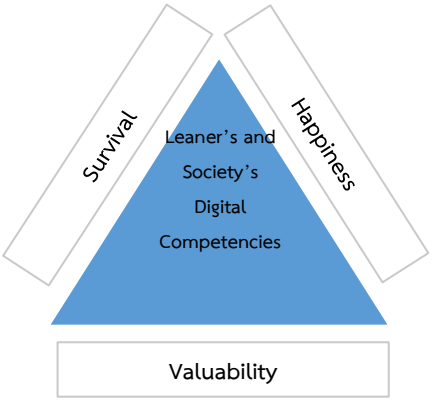

Figure 1: Educational institutions' digital competencies of good digital citizens for society

The digital competencies educational institutions must develop to create good digital citizens for society will provide the society with 3 important outcomes, or SHV, as follows:

1. Survival (S) Everyone can handle the forthcoming digital world and survive the advancements in the digital world including its present and unfamiliar dangers, and those that will occur in the future.

2. Happiness (H) Everyone can handle the forthcoming digital world, to be happy while living with others in the digital world.

3. Valuability (V) Everyone can handle the forthcoming digital world, to maintain valuability by supporting others and creating benefits for society.

The expectations from digital challenges in educational institutions or the challenges for educational institutions to develop digital competencies to create good digital citizens for society are urgent challenges educational institutions must address. Because everyone, whether they want it or not, will have to deal with a digital world that will continue to exacerbate crises.

Epilogue

"The world has changed, lifestyles have changed, and educational institutions cannot survive if they don't change."

"We need to have digital transformation in educational institutions as soon as possible before schools are subject to digital disruption."

"Digital transformation in educational institutions in which school administrators use different methods and commitments will lead to different digital competencies of educational institutions."

"Digital competencies of educational institutions must be the sum of many competencies related to personnel and customers or service recipients of that educational institution, these include digital competencies of school administrators, digital competencies of teachers, digital competencies of learners, and digital competencies of people in communities and society. Therefore, it is the duty of everyone in the educational institution to

everyone in the educational institution has to plan together and work together to follow the plan, join together and drive to the fullest to achieve results, join in checking/evaluating, join in improving, correcting, developing, and join in to be proud of the success."

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