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Digitalization in Early Childhood Education in Vietnam

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Abstract---*Digital transformation is the process of transforming interactions between actors on a traditional platform to interactions on a digital platform. This is the revolution that takes digitization or data as the foundation for development. This process is continuous and never stops. Digital transformation is a systematic process, so when all political, economic and social fields undergo digital transformation such as e-government, digital economy, digital businesses, digital banking, population, digital health, digital tourism education is also in this inevitable trend. The article points out that digital transformation of education and training is a core part of taking advantage of the impact of the global industrial revolution 4.0. and how technology is transforming early childhood education. Why is technology important in early childhood education?*
Keywords---*digital era, digital transformation, early childhood education, education, industrial revolution 4.0*

Introduction

Digital era or digital age - a transition from an industrial economy to an information-based economy using computers or other digital technology devices. The digital era began at the end of the last decade with the advent of computers and the Internet and the beginning of digitization, which was also the beginning of the third industrial revolution. The emergence of high-speed computers, broadband Internet of new generations (3G, 4G and now 5G), and handheld smart devices, smaller and smaller in size with increasingly cheaper prices, has strongly promoted the process of accelerating digital transformation globally and in each country, in all socio-economic fields, creating an increasingly close connection between the real world and the cyberspace and the virtual world (Heeks & Bukht, 2018; OECD, 2020; OECD, 2019).

The emergence of AI and a number of other digital technologies have accelerated the qualitative change of digital transformation, especially the breakthrough in the transition from automatic production to intelligent production, creating the core of the Fourth Industrial Revolution (Industry 4.0) changes the world faster than any other Industrial Revolution in the history of human development. Industry 4.0 has been strongly influencing digital transformation in all fields of global socio-economic life, including education (Heeks & Bukht, 2018; OECD, 2020; OECD, 2019; Siebel, 2019; World Bank, 2010; UNICEF, 2010).

Digital transformation

The concept of digital transformation is a concept born in the booming internet era, which has become popular in recent years. Digital transformation is generally understood by definition as the process of changing from a traditional operating model to a digital operating model by applying new technologies such as big data, internet of things (IoT), cloud computing (cloud). Digital transformation surpasses traditional roles such as sales, marketing, customer service. Instead, “digital transformation” begins and ends with how you think about and engage your customers in a different way (Heeks & Bukht, 2018; OECD, 2020, 2019; Siebel, 2019; World Bank, 2010).

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According to the definition of the Ministry of Information and Communications, *"Digital transformation is the use of data and digital technology to comprehensively change all aspects of socio-economic life, reshaping the way we live, work and relate to each other."* Accordingly, the digital transformation process includes three levels:

a. *Level 1 - Digitization*: is the transform of entities (objects, things, etc.) from physical form (analog) to digital form, creating digital versions of entities can be seen as the digitization of "hard documents" or paper documents into "soft" files that can be stored on a computer. This can also be seen as a computerization step, which is part of the digital transformation process.
b. *Level 2 - Digitalization:* is the level that defines how the organization operates based on digital technologies and digitized data. For organizational units or businesses, this stage needs to create or innovate the business model of the organization or business to adapt to the emergence of digital environments, prepare for a complete transformation that uses digital and data technologies to create greater new value for the organization. After the digitization process, digital data has made it easier for each organization and individual to manage it more effectively, but most of the ways that organizations use these digital resources are still traditional methods. The digitization of operations is still just using digital data, processing or automating data to simplify the way of working. At this level, the traditional or digital way of working is faster and better through instant data access without having to search hard copies of data in the repositories.
c. *Level 3 - Digital transformation*: is the implementation of comprehensive digital change by each individual and organization according to a new operating model at all levels and in all fields from senior to all levels, members, from digital competence to digital economy, digital government, digital society and digital culture. To complete this level, the country or each organization needs to develop a roadmap, plan and measures to implement these changes with specific deadlines. Digital transformation requires each organization and business to rethink everything they are doing, from internal systems to interactions, customer relationship management, partners, both online and in person, to figure out how to make change more effectively, or enhance more positive experiences.

Digital Transformation & Early Childhood Education
Preschools in Vietnam

Preschools in Vietnam and pre-Kindergartens in Vietnam have a few similarities. They are categorised under the pre-primary category which aims to promote kindergarten and school readiness in children. Both preschools and pre-Kindergartens in Vietnam emphasise on the importance of play, discovery and hands-on learning. Activities such as music, dance, art, physical play and dramatic play can be found in both preschools and pre-Kindergartens. Next, preschools and pre-Kindergartens in Vietnam promote the developmental learning and growth in children. The education a child receives in the preschool and pre-Kindergarten in Vietnam will help build communication skills, self-confidence and self-esteem alongside academic skills. The term, 'kindergarten', was coined by Friedrich Froebel, a German educator. The Kindergarten Movement introduced the concept of children as plants and teachers as the gardeners who take care of them - kinder meaning child and garten meaning garden (Bennett, 2008; Country Meters, 2015; Thao & Boyd, 2014; Hayden, 2013; MOET, 2006; MOET, 2014).

What Age Do Kids Start Preschool in Vietnam?

Typically, most children enter preschools at age four or five. There are also programmes that cater to three-year-olds. However, the decision of when a child enters preschools is solely up to the parents. Several factors should be taken into consideration by parents who want to enrol their children in preschool. These factors are age, maturity, sociability, and temperament, among others. In Vietnam, children enter preschools, also known as pre-primary schools, between the ages of three and six. Preschool education in Vietnam is not compulsory. However, Vietnam's Ministry of Education and Training (MOET) is working towards having all Vietnamese children attend preschool when they are five years old so that they will be prepared to enter primary school the following year (Hayden, 2013; MOET 2006; MOET, 2014).

What Topics are Learned at Preschools in Vietnam?

There are many types of early childhood education in Vietnam available today but play-based learning is one of the most popular. In play-based learning, children learn by interacting with the world around them. Activities include

doing puzzles, playing with blocks, painting and drawing, reading books and listening to stories or poetry. Children also play dress up and participate in music, dance and drama activities. In terms of physical play, children climb and play on outdoor equipment. They run, swing and jump with other children. Playing with clay, sand, water, paint, paper and colours are also common in play-based learning (Thao & Boyd W. A., 2014; Hayden, 2013; MOET 2006; MOET, 2014).

Types of Preschools in Vietnam

Preschools in Vietnam consist of state-run and private nurseries and kindergartens. Nurseries, or crèches, cater to infants aged three months old to toddlers aged three years old. In Vietnam, children aged between three and six enter preschool. Approximately half the preschool system in Vietnam is made up of state-run kindergartens. There are also private kindergartens which use Vietnamese as the medium of instruction and international kindergartens, which can be found in big cities and use English as the medium of instruction (MOET 2006; VN, 2020; VN, 2019).

Technology transforms early childhood education

When it comes to the role of technology in the early childhood education years, it can be a bit of a controversial topic. While some people may think that young children don't need technology, it can actually play a positive role in a child's learning and development. Plus, in today's technology heavy world, learning how to use it is a necessary life skill. It's not only the students who benefit with the use of technology though. It also provides early childhood educators with unlimited access to newer, more innovative teaching methods that allow them to facilitate an active learning environment for their young students (Thao & Boyd, 2014; Hayden, 2013; MOET 2006, 2014; UNESCO 2004, 2006a, 2006b, 2011, 2012, 2013; Index Mundi, 2015; Kelly, 2000; Lattman, 2014).

Supports Social and Emotional Development

Using touchscreen devices are the easiest for preschool age children, as their fine motor skills are still developing. When touchscreen devices are used in the correct way, they can actually encourage children to work together and improve their social skills by taking turns and sharing ideas as they complete online activities side by side and view educational content.

Encourages Students to Follow Multi-Step Directions

It's not always an easy task to teach young children to listen and recall when it comes to following directions, but using digital devices in the classroom, such as tablets, computers, and smart boards, all require children to follow multi-step directions. Examples of this are turning the device on, swiping to the left or right, and selecting items on a screen (Sousa & Rocha, 2019; Hinings et al., 2018).

Helps Teach Basic Academic Skills

One of the main uses for technology in the classroom is teaching and reinforcing core academic skills. One simple learning activity designed for a tablet or computer can help children learn counting, numbers, letters, colors, sounds, matching shapes, etc. Activities can be adapted to fit the individual needs of the student much easier than traditional printed worksheets and packets. For example, students who breeze through an online activity could be switched to a more advanced level, whereas students who are struggling to answer questions correctly can review the material they answered incorrectly or be redirected to another activity that's more on their level (Odom & Diamond, 1998; Blackwell et al., 2014).

Makes Learning an Enjoyable Process

Not all students naturally love school and learning, but most students do enjoy using technology. This is something that early childhood educators can use to their advantage when it comes to getting all children to enjoy the learning process. Technology offers lots of fun and innovative activities that appeal to children of all ages.

Using Technology to Become More Collaborative

Teachers can mediate students' learning and facilitate digital storytelling with apps like iMovie, Explain Everything, and Book Creator. Through those mediums, students will effectively be given the power to communicate their ideas via technology. In this way, teachers become knowledge brokers who filter information for students by guiding them through their learning process. Teachers can mix learning styles for a more effective result. For instance, students who learn better through visual cues and other senses will be encouraged by rich multimedia elements that can be rendered using technology. But the best part is that children are allowed to present their understanding of ideas in ways they feel comfortable with, while simultaneously working in collaboration with others (Thorpe et al., 2004; Leeflang et al., 2014; Killian & McManus, 2015).

Promotes the Reggio-Emilia approach

The Reggio-Emilia approach is a philosophy that values the child as a capable and competent individual who's rich with knowledge and wonder. Essentially, it puts the child at the forefront of the learning process. With the new normal shaking up the way education is done, this approach believes in the child's central authority over their own learning. This setting promotes encouragement and interaction of others, endorses the explorative aspects of their creativity, and provokes innate curiosity – enabling the child's ability to become smart and competent future leaders. Grounded on independence, this setting excels with the rapid shift towards technology since the digital age allows the student to explore multiple ways of paced learning through various doors.

Opens a New Door with Play-Based Learning

Geoguessr, Kahoot and Minecraft are just some of the game-based learning tools that are improving day-to-day teaching methods. With play based learning (you can learn more here), educators take the focus away from structure, and instead let children explore independently. For instance, Minecraft can be used to create a world for students and teachers alike to explore and discover new things with each other's help. Children will enjoy the freedom to make their own choices, while also using this technology as a tool to enhance their creativity. Kahoot! assists teachers in monitoring students' progress across a topic by checking their topic understanding. According to Science Direct, 30% of students improved their test scores by up to 55% with competition-style games like Kahoot! Geoguessr is another great example that can aid students by pinpointing their exact geographical locations, and then asking them to identify the location they are in. With these types of tools at hand, teachers can execute campaigns to provide fresh and dynamic modes of facilitating learning (Riyanti et al., 2022; Peter, 2015).

Disseminate Information Effectively Through Technology

The days of the whiteboard are almost gone, replaced by popular screen casting tools that allow teachers to show students vivid representations of what they are trying to teach. These tools can help toddlers better understand ideas in a more comprehensive way. The ease of Internet accessibility and the plethora of software that assist the learning process grant teachers the ability to take on more sophisticated techniques in a dynamic learning environment. For instance, Google Classroom is a cloud-based classroom that gives teachers the liberty to create, organise, and share educational materials with their students. With these tools, they can also develop digital literacy skills by allowing students to work individually or collaboratively in an online environment. Transitioning from whiteboards to technology is beneficial for both teachers and learners; it allows them to gain more flexibility and freedom when teaching, while also enhancing their skills in search of answers (Psacharopoulos, 1994; Vesper & Gartner, 1997).

Emphasise Social Skills Through Technology

As toddlers are still developing their fine motor skills, they can use technology like touch screen devices as a tool to take turns and work collaboratively with others. This provides an avenue for them to communicate with other kids their age and develop new friendships—which is a critical point in their social trajectory and ability to interact with others. Help Toddlers Learn Basic Academic Skills: One of the main uses of technology in the classroom is giving the students a platform to learn more effectively. A plethora of learning apps directed to toddler or early education students riddle the app market, helping them absorb information even beyond the classroom. Academic skills that can be honed from technology include counting, telling colours apart, sounds, matching shapes. Technology can help

students learn at their own pace too. If a student makes a mistake, technology allows them to review and redo their progress without holding back other students—creating a much more customisable approach (Alaloul et al., 2020; Leong et al., 2020).

Conclusion

It can be said that the world is rapidly entering the digital era, and the accelerating fourth industrial revolution is changing the foundations of growth and development on a global scale. In the field of education and training, the breakthrough of new technologies will disrupt the traditional modes of education and training activities, as well as change the structure of the system and each educational institution. Each country, each organization, and the whole education and training system need to make the most of the opportunities that digital transformation brings in development, in which early identification of the roadmap and speeding up the transformation process at all level of education system has vital meaning. However, this process also contains challenges from unprecedented new relationships arising, traditional relationships may be interrupted or terminated.

Thus, digital transformation opens an unprecedented opportunity for all countries to make a comprehensive change, a historic transformation in education and training. Each country will have to make adjustments to make the most of opportunities, exploit its specific advantages to make a breakthrough so that it can change the country's ranking on the world map of education and training. In short, digital transformation is no longer a good thing to have in education and training. In the digital age, it is a must for the whole education and training system, every institution, every school, every staff and every student, every learner at all levels of education. Understanding what that means and how to implement it for organizations, schools or for each of us including ourselves, will be the key to competing and rising in the current technology landscape. Education and training leaders and managers engaging in digital transformation must consider existing operating models, processes and technologies, and must be willing to innovate and experiment to overcome current challenges, take advantage of opportunities, take advantage and achieve the goals of digital transformation in the whole system, each school organization, and all stakeholders in education and training.

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