The New Era of Learning

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ABSTRACT

It is widely understand in today almost everyone lives in changing society both in technology and innovation in many sectors; production leaning, logistical process, retailing, hospitality and tourism industry, healthy system, including education transformation to blend learning and online learning. The opportunity for learning seem boundless, offering accessible online platform, active learning to be emphasized with 21st skills; big data analysis skill, digital literacy skill, or even life skill essence as important as lifelong learning. Effectiveness of learning is not depended on teacher only, but peer-to-peer model in learning environment can create new creative thinking ideas. It is inevitably almost possible for learners for self – development and sharing in digital community with innovated technology. Finding alternative tools, methods, and media of learning for all, especially new generation in order to fulfill entrepreneur' needs in task requirements with high creativity and fruitful performances, and to be ready for the future abundantly.

Keywords: active learning, 21st century skill, innovation, technology, and creativity.

INTRODUCTION

Vision of the Office of Education Council reform decade (2009 - 201) stated that *"All Thai people will have access to high Quality lifelong learning"*. IMD World Competitiveness Center (2018) is publishing that a data benchmark ranking Thailand from 27th in 2017 to 30th in 2018 regarding on the quality of education system. Office of the Education Council (2018) reported about National Education Plan of Thailand in 2560-2579 mentioned that human resource development strategy is one of the main strategies to cope with these disruptive changing in environment are digital revolution to industry 4.0 transformation, changing from millennium development goals (MDGs 2015) to sustainable development goals (SDGs 2030), adaptation with Asean citizen, and readiness for Thailand 4.0. According to The Program for International Student Assessment is a worldwide study by the Organization for Economic Co-operation and Development aims to evaluate education system with comparative data on the extent to which 15 – year - old students in mathematics, science, and reading (OECD 2018). The scores result of Thai students are lower than Malaysia, and standard, although Thailand spends a lot of budget higher than Vietnam, the quality are less. (Office of the Education Council 2018) Moreover, almost all Thai students are lack of participations in teaching and learning, the uncompleted structures of infrastructures, hard to access of information, and inequalities in the Thai economic and educational system, or even welfare system in teacher career path must be addressed through pedagogy, curriculum, and teaching - learning systems were aligned to ensure the more flexible implementation in student - centered active learning. With attracting the talented people to the field of teaching at all levels and the updated in - service training of teaching to enhance the quality and innovated learning.

As these situations, education system development and education revolution are the very important strategies of competitive advantage with other countries. Not only dual degree in school, institution, university, but also readiness for civic education with essential skills in 21st century (3Rs and 8Cs) for life – long learning indefinitely. Therefore human resources development is the significant obligation for nation improvement in Thailand 4.0.

ACTIVE LEARNING

Ng (2005) mentioned that learning is not put into action comes to no avail. Learning is perceived as a process of engaging and manipulating objects (Piaget 1983), experiences (Dewey 1938), and conversations (Vygotsky 1986); in short, learning is cumulative, iterative, and social. While as learning is a contextualized process of making sense of experiences in terms of prior knowledge within social and physical contexts over time (Rennie and Johnston 2004).

There are many types of learning. David Skyrme Associates (2008) classified type of learning as the following are: type 1. Learning the facts, knowledge, process, and procedure, applied to known situations where changes are minor, whiles, type 2. Learning the new job skills that are transferable to others and applied to new situations where change response exists needs to be changed, bring outside expertise, type 3. Learning the dynamics situation where the solution need developing, experimentation, and lesson is the model of learning, and type 4. Learning the creativity and innovation, design the future rather than merely adapting to it.

Generally, learning can divide into 2 categories are learning in school and learning in real life or (lifelong learning). Fundamentally, learning in classroom is the basic education for human. It is the process for people who have to learn and self-development, however lifelong learning may come through actual experiences especially learning from work-based learning (WBL). Boud and Solomon (2001) defined work based education is a class of universities program that brings studying and working to create new learning opportunities in the workplace. A widely accepted work-based learning is offered by Seagrave et al. (1996) as *"learning for work, learning at work and learning through work"*. Billet and Choy (2013) cited that there were yet to be agreed about learning through work. Many organizations would like to seek the right candidates who suit with the real task not only study in classroom but also understand in job characteristics and appropriated working skills. Furthermore, Trego (2016) classified learning into 2 types is active and passive learning in table 1 as bellowed.

Table 1: Type of learning (Trego, 2016)

Type of learning	Learning activity	Learning outcome
Passive	Learning from reading	10% effectiveness with defining, describing, or explaining
Passive	Learning from listening	20% effectiveness with defining, describing, or explaining
Passive	Learning from see or observing	30% effectiveness with demonstrating, applying or practicing.
Passive	Learning from see and listening	50% effectiveness with demonstrating, applying or practicing.

Active	Learning from writing and speaking	70% effectiveness with analyzing, creating, or assessing
Active	Learning from doing	90% effectiveness with analyzing, creating, or assessing

Active learning is occurred by the learners is the centered in class through critical discussion, case study learning exposes students to real-life situations using business cases through a comprehensive interaction between students and instructors Barnes, Christensen, and Hansen (1994). Summing activity up, class discussions based on case studies enable students to be proficient in communication, self-management, including decision-making and problem-solving skills through the use of experiential teaching (Sawyer, Tomlinson, and Maples 2000) peer-to-peer learning, think – pair- gaming, work in small group, collaborate, share their own experiences, or even provide the example(s) in day to day life related to the topic. The role of a lecture coaches the students learn how to connect the new world with their own searching and learning by doing. On the other hands, passive learning is based on lecturing with Q&A, or quiz with students via reading or listening mainly in class.Indeed, learning can occurred both in and outside a classroom, it cannot refuse that learning in classroom is a basic method to provide information, knowledge, including the real job experiences, or namely; work based education. It is a way to test drives a career path. However, how accomplish learning in class are, it relied on many factor.

SKILL MATTER

The 21st century skills are the essential skills for surviving in the digital age. (Envision enroll, 2017). Many institutions have clustered the critical skills for today students' development into 4 areas as the following: collaboration and teamwork, creativity and imagination, critical thinking, and problem solving. The author agreed that skill is the ability which enable someone do the task or activity well with continuous training. The 21st century skills are flexibility, initiative, social skills, productivity, and leadership (Thoughtful learning, 2018). Whiles, The Edvocate (2018) classified the 21st skills into 3 groups are 1). Foundational literacy (the ability in apply core skills in daily tasks) as literacy, numeracy, scientific literacy, ICT literacy, financial literacy, and cultural literacy. 2). Competencies (the ability in dealing with complex issues) as critical thinking skill, creativity, and communication, and 3). Character quantities (the ability in surviving in changing environment) as curiosity, initiative, adaptability, leadership, social awareness and grit or persistence.

Furthermore, Office of the Education Council (2018) classified the 21st skill centuries are **3Rs** and **8Cs** as the following; **3Rs** are Reading, (W) Riting, and (A) Arithmetic, **8Cs** are critical thinking and problem solving, creativity and innovation, collaboration teamwork and leadership, communication information and media literacy, cross-cultural understanding, computing and ICT literacy, career and learning, and compassion.

Author agrees that the 21st century skills are about the level of social- emotional learning, level of grit, social and cultural awareness, including the sense of human being in prosperous surviving. Moreover, the key success factors of learning is lifelong learning, learning by doing, learning from experiences, or learning from mistakes, learning every day in daily life. It is quite challenging how to cope with no planning situation, it is defined the meaning of life skill; however life skill still covering in inter communication effectiveness, problem solving skill, ability to handle with contingency situation, or decision making skill, ability for comprehension things around the world. It is really valuable skill for make your life

Balance with happiness.

Table 2: Required skills in 21st century

Skills in 21st century	Concept
Life skill	The skill for living with better the quality of life or adaptive behavior for surviving in dynamics circumstances.
Digital literacy skill	The skill for accessing, or analyzing information through wireless electronic devices.
Big data analytic skill	The skill for convergent, analyzing, or synthesizing data science.
Critical thinking skill	The skill for rational thinking, context, or subject deeply analyzing.
Imaginary skill	The skill for creative thinking, thing out of the framework in novel way.
Team playing skill	The skill for working or collaboration with others.

From table 2. There is not the exactly dichotomy the 21st century skill, however, there is a spectrum in type of the essential skills which is very important for surviving and growing to be ready for the smart global citizen. It would be recognized on the matter of skills in working, and living, how survive in the disruption of information technology in transmission, it rely on the big data science connect to internet of thing or, artificial intelligence as does the robotic and automation in many sectors in industry. Especially, the explosion of this disruptive changing transfer workforce and production have chance to lose their jobs highly or ambiguous demands, so education development or new generation preparation both the capacity, experience, knowledge, or even sciences out of uncertainly for coping disruptive emerging.

TECHNOLOGY & INNOVATION

Technology tools were designed and enable the manipulation of information such as automated information search and retrieval, decision support system, expert document management technology. Nowadays many industries conduct their business through algorithm processing, sensor - equipped device, Beacon, Blockchain, robotic process automation, or artificial intelligence (AI) in virtual reality (VR), including augment reality (AR) in disruptive economy and society. Intelligence encompasses abilities that are associated with idealism, concepts and practical rationality; to understand and solve the complexity in real lives, including to adapt behavior to the environment. (Promta and Himma 2008), there are many kinds of intelligence such as emotional intelligence, analytic intelligence, artificial intelligence (non- living, machine); ability to learn how

to solve the problem (s), how to make any decision, how to process, understand in natural language, or how to act in any programmed situations.

Even so, many industries are recognized in these innovative technologies implementation wisely and cautiously whether automobile industry such as Tesla electric car, the autonomous car (self-driving car), energy safety and storage with Solar system, new transportation system with Hyperloop, including Space Exploration (Space X). In addition, innovative technology that address the disruption to conventional retailing sector in new model of production, supply chain process, inventory management, online payment system (PayPal), transactional exchange process through Crypto Currency or Bitcoin (digital currency) under Blockchain – based platform while improving transparency to every parties and representing more opportunities for the user(s) or retailer(s) for the efficient transaction in security.

Moreover, education sector, innovative technology support and broaden opportunity for lifelong learning such as Skype, Moodle system, Canvas, Edmono, LEB2, including Open edX platform provide massive open platform and area for learning in all courses. It would be the independent and self-directed learning, flexible learning, distance learning, student center -based learning via computer-mediated communication, computer-supported collaborative, etc. For instances; flipped classroom is a new method of teaching is turning the traditional classroom into new dimension of online learning. Learners will online and discuss with the instructors anywhere, anytime, do the activities either homework or discussion forum. No more or less, guiding them to become the self - paced directed learners with multimedia.

Innovation in education is bringing changes that have impact far beyond alternations in learning for all, disruption in how teaching methods are, how lessons are being taught, what are activities, what skills are requires considered useful. Theses phenomenon provide opportunities and chances for self-development and social well-being around the world. For example; in U.S.A. peer to peer learning in Math and Coding workshop with students in secondary schools by recruiting teacher from secondary students to teach their friends in Java and visual programming, including robotic through smart phone apps, websites producing or games workshops. LinkedIn is the tool for inviting; Google Chat and WebEx is the tool for training others. (Bidwell 2017). In addition, Apple's CEO Tim Cook cited that coding is the best foreign language for learning that any learner around the world can learn. (Lyer 2017). That's coding become one of the most in - demand skill, as the document of job search platform, it indicated the result of the highest paying jobs in the U.S. (Glassdoor 2017) meanwhile; coding or programming expertise is required skill for the new generation.

Briefly, technologies are still integrated Omni - channels, connected the powerful networking connection with partnership, optimized the internet of things, and increase more opportunities for all. It redefined in the meaning of social revolution in new context indefinitely.

DISCUSSION

As this innovation in education changes the traditional learning in class to the new way of learning to develop both what demands of the workplace, how to create the content, how to make the future of talented skills, and how to build the environment of self & share learning. Although there are many institutions design the courses for variety; certificate, degree, or non-degree both in technical and soft skill development in short courses, semi or fully degree, dual degree in Thailand; Thai MOOC, Thailand cyber university, etc. the fulfillment of learners is depend on his own pace of performance, readiness of self-learning, agility and individual's level of grit. All Thais should recognize and take this valued opportunity for self-development in career planning and pathway, and finally ready for the completed global citizen with technology, explored big data, and automatics robotics instead. More interesting, perhaps, is the worthwhile vision for the new generation with disruptive changing on a new role (s) of learning both in school, institution, and

university. No more or less, an intelligence of technology remains is driven in the growth of many industries, the question of whether there is a high quality of Thai education. It is widely regarded children as the valued human resource for smart motivation with variety types of teaching either teaching without teacher or learning without instruction (s). The designed own learning path with an effectiveness of lifelong learning ought to be embed in self – recognition, self - awareness, and self – development. Finally, social community and country will be better in new path of discovery.

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