Education 4.0: New Challenge of Learning

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Abstract

The dynamic fast changing world has led to transformation from agricultural society to industrial society, with more advancement in information technology and innovation that is named as the Economy 4.0 era. Therefore, it is vital for the youth to keep pace with changes in order to be competitive. The learner needs to have the skills and abilities to respond to the current social changes. This is a new challenge to re-define the new Education 4.0, to identify the intelligent people, who are creative and innovative. It is a challenge for the learner to seek the learning outcome with regard to the learning management by the teacher.

Keywords: learning; challenges; Education 4.0

1. Introduction

At present the economy is undergoing phenomenal transformation. Since from the industrial revolution, there has been the wide array of information and communication technology, which play an important role in daily life style, and creating digital society. The new pace of virtual world brings a sea change in the lifestyle of the people from reality.

Since it has become the digital society, it creates changes in the lifestyle of people irrespective of distance, time and places. It connects everyone globally with wider vision and keeps updating faster. People must live together among the new social media environment, and it is essential to be aware and knowledgeable about the social media. Besides this, the work and structure of the organization would also change. Life would be more attached to the machinery with more advancement in its functions and programs. All those involved will have a high life expectancy (Pooworawan, 2015).

The changes in the social economy have been evolving steadily. Formally, it was the Economy 1.0 era, until it became the digital social economy, the Economy 4.0 era (Luankaew, 2016 page 1-4), which play an important role in the changing the life style.
Economy 1.0 has slowly changed. Previously, it was a complete agrarian society, with less machinery, such as, weaving tools, and simple basic steam engine. In this era, work was shared among labors on the basis of physical fitness and capability.

Economy 2.0 was changing faster with industrial revolution. Using energy resources like oil, electricity and solar steam engine. It has developed an improvement in working process. And it is commonly known as the Industrial era.

Economy 3.0 has been a fast changing economy. By using the information technology, the work performance has been improved. It had the communication network and fast exchange of information. This is an era of borderless world, which is of creating specialized skills in producing a variety of products. This period was commonly known as globalization era.

Economy 4.0 has led us in an era of unprecedented change. The acceleration of change has phenomenally increased in this period. It’s the virtual world connecting with the cyber world, blending into a world of reality. It is an era of creating innovative knowledge, but over the period of time, it becomes obsolete and a new knowledge emerges. It is an era of innovations that integrates with knowledge.

The different conditions of social economy in the respective era urged for unique and respective skilled set of human capital. The onus of developing the required skilled set lies on individuals in learning management, to develop the knowledge, skills and abilities relating to the matter in accordance with the need of the society (Sinlarat, 2016).

Leapfrog (Harkins, 2008) named the education in the era responding to the agrarian society as Education 1.0, industrial society as Education 2.0, globalization as Education 3.0, innovation as Education 4.0.

Upon studying the details in education of the respective era, it is found that there are diverse inputs from various studies (Koantakool, 2016; Jeschke, 2014; Sinlarat, 2016).

Education 1.0 responded to the need of the agricultural society. The knowledge is transferred from the teacher to the learner, using the concepts and comprehensive study would takes place. The learner follows the teacher who focused on explanation as the main method.

Education 2.0 responded to the requirement of the industrial society with the concept of teaching to learn rather not much of being creative. The learning management focused on learning the technology is to use as tools in the work.
Pooworawan (2015) points out the education in this era as Mass Production. Those who graduated will have the same qualification. Educational institution is like an industrial plant, the student is like a product, the curriculum is as specification of the product, the exam is as a control of quality, certificate or the diploma is like a guarantee paper and the educational institution is like a brand of the product.

Education 3.0 addressed the need of the ‘technology society’. It creates knowledge by supporting self learning. Education in this era uses learning technology in forms of teaching materials, digital media and social media. It focuses on interactive learning. Leapfrog (Arthur M. Harkins, 2008) stated that this learning management empowers students to generate knowledge, not merely to consume.

Education 4.0 is catering to the need of the society in ‘innovative era’. It is in accordance to the changing behavior with the special characteristics of parallelism, connectivism (Goldie, 2016), and visualization. This learning management must help to develop the learner’s ability to apply the new technology, which will help the learner’s to develop according to the changes in society. Sinlarat (2016) stated that the learning management of this era is a new learning system, allowing the learner to grow with knowledge and skills for the whole life, not just to know how to read and write. To be able to live in a society and to be equipped with the best of his/her ability. Therefore, Education 4.0 will be more than just an education.

Hence, learning management must respond to the changes in social and economy environment to cater the human capital need. There must be a change in learning management, which is not attempting to build up the skills in 3 R’s of reading, writing and arithmetic’s, to produce good and clever youth to live in a happy society rather it must also create the quality and skills responding to Education 4.0

2. The required skills

Learning management responding to Education 4.0 is with a purpose to build the individuals for being ready to be creative and innovative. Therefore, the required skill for the youths covers the life skills and the skills of creating innovation.

The life skills or the innovative skills to live in the era of Education 4.0, besides possessing 21st century skills which consists of leadership, collaboration, creative, digital literacy, effective communication, emotional intelligence, entrepreneurship, global citizen, problem-solving and teamwork. It has also to include the skills of building an intelligent nation or intelligent people who are with critical thinking, creativity and innovation, cross-cultural understanding, information and media literacy, career and learning skills.
Skill for innovating-the process of seeking the possibilities in innovative design, selection of the best way to produce, and leading the most worthy way that help to gain benefits from the innovation. Of which each process requires different skills such as, critical thinking, design and selective thinking, productive and problem-solving thinking, entrepreneurial thinking, responsible thinking, social-consciousness thinking, scenario thinking.

The skills which derives from integrating the life skills and innovative skills together becomes the main characteristics, to develop individuals to use Intelligent agents, Mobile technologies, Cloud computing and services, which Marinela and Andreescu (2011) explained that they are the main attributes of cloud computing which are service based, scalable, elastic, shared, metered by use, and delivered through internet technologies.

3. Challenge in Educational Management

To develop youths to use new technological applications for using intelligent agents, Mobile technologies, Cloud Computing and services (Nedeva and Dineva, 2012), it is very essential to search for new approach and ways in learning management; addition to the learning management of 21st Century Skills.

Many concepts of the learning management for the 21st Century Skills are still very interesting or could be used, such as the concept of Zhoa (2012), Sinlarat (2016) and Gomaratat (2015).

The concept of Zhoa (2012) is to arrange the learning process such as being in the real situation of working in the plant. As of Sinlarat (2016), there are 4 ways: 1) Critical-Based Instruction, 2) Creativity-Based Instruction, 3) Productivity-Based Instruction, and 4) Responsibility-Based Instruction. From Gomaratat (2015), arranged to adapt the Constructionist Learning, that are 3R, 3I and 3P. The 3R is Regulating the understanding, which consists of Recalling, Relating, Refining; the 3I is Investigating, that consists of Inquiring, Interacting, Interpreting; and 3P is Producing, creating work by Participating, Processing, Presenting.

Jeschke (2014) proposed that Social & Virtual Learning must be the Learning with social media, in large groups and in virtual environment, suggested the process as: Massive Open Online Courses: MOOCs. While Teaching tools (edudemic), (2012) have stated the 10 powerful tools for future, namely, visual Learning, evolved currencies, personalization, gamification, social media, game-based learning, connectedness, crowdsourcing—it is distributed problem-solving and production model which has solved the problem through the process of Project-Based Learning, Digital and Physical Merge, which is cited and acknowledged by (Nedeva and Dineva, 2012).
However, whether the educational management is adopted with 21st Century Skills, together with Social & Virtual Learning, would be facing different issues and obstacles. Still it is difficult to confirm whether it is successful; hence it remains as a challenge. Also, another challenge is ability of the learner to seek the learning outcome and suitable approach for learning further.

4. Conclusion

Today, it is the digital society where the life style has changed, learning management should respond to the changing behavior of the learner. That is, to re-define the education in order to respond to the innovative society or Education 4.0. Therefore, it is not enough to define the education for 21st Century Skills only, but also to consider the learning management in the aspect of Social & Virtual Learning; that the graduates will become intellectuals and eventually that would help to build an intelligent nation. In order to develop people with new technological innovations for using Intelligent agents, Mobile technologies and Cloud computing and services (Nedeva and Dineva, 2012); the appropriate model of learning management stated above is still a challenge of learner’s ability to seek further.

References

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