Higher Education 4.0: The Adaptation of Global University

Dr. Jakkrit Siririn
JakkritSiririn@gmail.com
National Interest

ABSTRACT

The main mission of higher education institutions in Thailand by the Office of the Commission on Higher Education [1] states that higher education institutions must perform in four aspects: producing graduates, researching, providing academic services to society. and the preservation of arts and culture It is a strict practice that universities across the country must carry out such missions. which is a broad mission framework If the context of the environment should be taken into account especially in the context of time because in the present era The environment of tertiary education has changed dramatically. Especially when entering the Education 4.0 era, as Paitoon Sinlarat [2] has said that Thai education 4.0 is education in the productive era. It is an era that requires as many products or products as possible for the benefit of one's own community and other communities. with educational skills that focus on doing and doing And then come out as a product. Moreover, Thai education 4.0 is considered an era entering the 21st century where Thailand must look at productivity in a manner that can keep up and move forward.

KEYWORDS: New educational world, Adaptation, Global university

Received: 1/12/2021
Revised : 17/12/2021
Accepted: 17/12/2021

Introduction. Therefore, the real mission of Thai higher education Therefore, it is a new mission that, in addition to taking into account the guidelines related to the four main missions of higher education institutions set by the Office of the Higher Education Commission, is therefore a new mission. University personnel in the era of Education 4.0 will have to unravel the concept of the old framework that has been done and is being worked on. to a new adaptation to be consistent with the current situation Because higher education institutions are academic centers. as a flag for society and is the foundation of the country's thinking to drive development in various fields Up in the country, especially in the Thailand 4.0 era, the world is not the same world anymore.

Graduate production: The first task that is compulsory for university professors in Thailand in addition to doctoral studies is entry into academic positions This is a mission that is halfway between the production of graduates and research. It is indirectly producing graduates. In addition to entering academic positions. The role of thesis advisor is also one of the main tasks of university professors. And the mission of being a supervisor for an internship or cooperative education of students is another role of university professors. culminating in an entry into an administrative position. Research: Entering academic positions with research results. writing teaching materials Teaching documents for the course Composing academic textbooks or a collection of academic works and academic books for the course It is the primary role of university professors in research missions.

Academic Services: Research Tool Verification Mission Including the mission of being a qualified person to consider research articles or academic articles It is an important mission when it comes to academic service or academic service to society. that university professors have acted on behalf of the university and on behalf of the academic network or being a consultant to government agencies business organization and civil society groups

Preserving Arts and Culture: culminating in admission to administrative positions appointed by the University that are directly related to art and culture preservation obligations, mainly due to its activities. It is the role of line B and line C personnel that is not the teaching mission of line A personnel.

Higher Education 4.0

If we consider the context of today's world, there is a code for different eras. happening in the world It started in the 1.0 era, which refers to the agriculture era, 2.0 is the industrial age, 3.0 is the information and communication technology, and 4.0 is the post-information and communication technology world. The direction in which the world is moving has pushed all circles to follow be it political, economic, social, and national and international level

Toffler [3] referred to the First wave or the first wave of humanity. It is an agricultural society that has existed for thousands of years, beginning from the first day that humans stopped hunting expeditions. turned to farming and raising animals which is considered a big turning point in life to bring together groups, to form a society, to develop into a culture and began to have time to

consolidate, which coincides with the 1.0 second wave era, or the second wave, Toffler said, is a post-industrial revolution that focuses on large-scale production and markets. Use machines to make lots of items. By having influenced many changes in the way of life of people. Third wave or the wave that It is the era of connectivity and access to information systems from all over the world. Under the linkage of basic elements that must have technology to support both computers and telecommunication structures born into a community be a network It is the starting point for the transition and the emergence of a new economy.

This is in line with Case [4] that the first wave in terms of information and communication technology (ICT) is from 1985-1999, the second wave is from 2005-2016. Third, from 2016 onwards, Case sees that the Internet has expanded greatly from 1986 to the present. and will play many roles in working for the global society whether education public health or even tackling terrorism, solving global warming and solving poverty.

Jeera Hongladarom [5] said that the first period was the period when the Internet was not very new, but after the year 2000, there were new IT products such as Search Engine, Google, Yahoo or Facebook that expanded very largely. climb But Steve Case's third wave is the Internet of Things. The role of the Internet will expand to the people widely. object point And can be connected to a lot, which follows Robots Robots are Things, but there will be Internet or Software that has the ability to do a lot. including thinking and having emotions Human-like intelligence, perhaps the third wave of the Internet was called the Fourth Industrial Revolution or the Fourth Stage Industrial Revolution.

It can be seen that the direction in which the world is moving has pushed all circles to follow whether it is political, economic, social, especially in the education field. which is a source of human resource incubation for various industries including government organizations, state enterprises, private sector, industrial sector, business sector, trade, commerce, financial and banking sector. and other sectors Therefore, administrators of higher education institutions in the Thailand 4.0 era must be executives with a vision that is up to date with the rapidly changing era. school in the new era Has moved a long way through the management style of old projects and paradigms.

Thailand 4.0

Talking about Thailand 4.0 is like talking about the changing times of the world society, that is, starting from the 1.0 era is the agricultural world, the 2.0 is the industrial world, and the 3.0 is the information and communication technology world. The 4.0 era is a post-information and communication technology world.

Thailand in the past has had continuous economic development since Thailand 1.0 focuses on agriculture, Thailand 2.0 focuses on light industry, Thailand 3.0 focuses on heavy industry and exports, Thailand 4.0 focuses on innovation-driven economy, with the main idea being: Shifting from product manufacturing to innovative products Suwit Maesincee [6] said Thailand 4.0 has thus

transformed the country's drive from the industrial sector. to driven by technology creativity and innovation and shifting from focusing on the manufacturing sector to focus more on the service sector

Developing the country under the concept of Thailand 4.0. by focusing on the participation of the private sector Finance and Banking Sector People's Sector Educational Institution Sector Universities and research institutes brainstorm Join forces to drive through projects, memorandums of cooperation, activities or research. by the operations of various groups of civil states, namely group 1, upgrading of innovations and products, amending laws and government mechanisms. Developing the industrial cluster of the future and attracting investment and the development of infrastructure; group 2, development of modern agriculture and development of basic economics and civil state; group 3, promotion of tourism and miles monetization and stimulating public spending, Group 4, Basic Education and Leadership Development or Pracharath Schools including the upgrading of professional quality and Group 5 promotion of exports and foreign investment. including promoting new entrepreneurs Each group is laying out a system and formulating guidelines for intensive policy driving.

The Adaptation of Global University

Higher education in Thailand 4.0 era amid rapidly changing situations in politics, economy, society, and cross-cultural concepts that are big trends in the context of globalization. Especially the knowledge of robots or Robotics, which is a new trend in the economy. Which has applied the concepts, theories and research related to robots to be applied in a variety of fields, as Phu Iamcharoenying [7] said about teaching and learning about robots that The robot market will grow a lot. The main reason is the rapid and continuous development of technology. If humans had better tools, they would be robots. It will help to save more labor and increase productivity. We need these technologies to increase productivity. optimize and reduce operating costs These are the keys to increasing competitiveness. and will be able to reach lower costs By working with more efficient and smarter processes. can create new innovations To help drive the economy Many countries around the world are paying special attention to this issue. Because he sees this as the heart of the future of competition. has turned to support the study of robotics Programming and STEM (Science Technology Engineering Mathematics) to the fullest by bringing these subjects to school from elementary school.

Not counting unmanned aerial vehicle technology or Drone Technology and Autonomous Cars Technology or Automatic Cars and 3D Printing Technology or 3D Printing (2017) which is a type of industrial robot refers to the process which is used to create three-dimensional objects by There is a layer of material next to it. together under the control of the computer These objects come in many shapes, such as geometric shapes. which has the same working principle as 2D printing technology that is printed in plane or X-axis and Y-axis by adding part of the Z-axis to create a 3rd dimension in printing

In line with the Kasikorn Research Center [8], which has discussed the use of robotic technology to help financial analysis, known as FinTech as FinTech, is a combination of Financial + Technology that literally means "financial analysis". Financial Technology In the future, FinTech will

become one of the key mechanisms that drive the financial system of the digital era. The global growth of FinTech will lead to the development of many new forms of financial services. especially the services in the 3 main financial transaction groups related to general consumers. Including transactions related to payments/transfers personal finance management and credit and funding Today, we can see examples of outstanding and world-renowned FinTech financial services in each of the major financial transaction segments. invest more thoroughly.

Especially the group of young income earners who are interested in modern technology. Due to the advantages of low service fees due to the use of computer programs primarily in operations, it reduces the cost of opening branches and hiring a large number of personnel as in traditional service providers. There is also a minimum investment limit set. or no minimum investment limit As a result, investment/financial advisory services are no longer limited to high-income groups as in the past.

Consistent with Jakkrit Siririn [9], who mentioned the meaning of Web 4.0 technology that the meaning of Web 1.0 (1990-2000), which is the beginning of the Web Broadcasting or One-way Communication until the Web 2.0 era (2000-2010) is the current time of Social Network, Web 3.0 (2010-2020) or Semantic Web will have characteristics of a semantic network or Semantic Network such as Intelligent Agent or Semantic Search and Web 4.0 (AD 2020-2030) is a Symbiotic Web or a website that works with Artificial Intelligence (AI) or artificial intelligence An example that has emerged is how the Siri program works on the iPhone.

In the current era, it is Web 3.0 era (2010-2020), or Semantic Web era, has applied Semantic-based Knowledge Management. This is the idea of John Davies, Marko Grobelnik and Dunja Mladenic [10] in the book Semantic Knowledge Management: Integrating Ontology Management, Knowledge Discovery, and Human Language Technologies. main mission Semantic-based Knowledge Management is the acquisition of in-depth knowledge, or Deep Knowledge, with the aim of applying knowledge in a specific field or Domain Knowledge, especially when linked to a computer system in the Web 4.0 era. based Knowledge Management is a precursor for building a knowledge base for computer programs. Ontology, which refers to the domain knowledge model, has two components from knowledge: Knowledge Engineers and Domain Experts The purpose of Ontology is to apply knowledge in a specific field to create a knowledge base for application in a variety of computer programs by technology, knowledge engineering, or Knowledge Engineering, which is responsible for system development, collection, arrangement. Collect and share knowledge from field experts applied to computer technology Especially Internet technology or Web 4.0 in order to manage knowledge for running more intelligently.

And is more automated at present There are several Ontology development programming languages for sharing and exchanging information on the Web, such as OWL (Web Ontology Language) standards, RDF standards (Resource Description Framework, XML Languages (Extensible Markup Language)), and URI (Uniform Resource Identifier) reference standards. And today, at least

two leading academic institutions have created tools to support the development of Ontology: Stanford University's Protege program and Osaka University's Hozo program.

The real mission of higher education

At present, although the main missions of higher education institutions by the Office of the Higher Education Commission are based on four aspects: producing graduates, research, and providing academic services to society. and the preservation of arts and culture, but in the context of the 4.0 era, higher education institutions or universities in the big picture It is necessary to accelerate the creation of new missions. This is a hidden mission in the form of bringing innovation or information and communication technology. to be applied in teaching and learning management Whether it is robotic technology or Robotics Technology, which includes unmanned aerial vehicle technology or Drone Technology and driverless car technology or Automatic Cars, there is also 3D printing technology or 3D Printing.

Including requiring Organize teaching and learning in a new way, taking into account the concept of FinTech or financial technology. Combined with theories about Web 4.0 or Symbiotic Web with Semantic-based Knowledge Management or Semantic Knowledge Management. To integrate in the management of education in the 4.0 era, the main principle is that Higher Education 4.0 will not become a forgotten field of higher education. can only be considered when adding new missions in innovation or information and communication technology to be integrated into the main mission of higher education institutions by the Office of the Higher Education Commission. society and the preservation of arts and culture, which means the production of graduates 4.0, research 4.0, academic services to society 4.0, and the preservation of arts and culture 4.0 by inserting the hidden mission in the form of bringing innovation or information and communication technology. to be applied in teaching and learning management In addition to being in line with the context of the world 4.0 era, higher education institutions or universities in the big picture is also consistent with the phrase When the world is not the same: a new adaptation of the university must also occur.

Conclusion. The true mission of Thai higher education These are the production of graduates 4.0, research 4.0, academic services to society 4.0, and the preservation of arts and culture 4.0, which must accelerate the insertion of latent missions in the form of applying innovations or information and communication technologies in teaching and learning management. To be in line with the context of the world 4.0 and education 4.0, whether it is robot technology or Robotics Technology, Unmanned Aircraft Technology or Drone Technology, Autonomous Car Technology or Automatic Cars, 3D Printing Technology or 3D Printing Financial Technology or FinTech theory Web 4.0 or Symbiotic Web using Semantic-based Knowledge Management to help manage knowledge. This is to encourage personnel in higher education institutions in the era of Education 4.0 to unravel the concept from the original framework that has been done and is being worked on. to a new adaptation to be consistent with the current situation Because higher education institutions are academic centers. as a flag for society and is the foundation of the country's thinking to drive development in various fields Up in the

country, especially in the Thailand 4.0 era, the world is not the same world anymore. And in order to be in line with the Thailand Education 4.0 era, which is considered the era that has entered the 21st century, Thailand must look at productivity in a manner that can keep up and move forward.

References

[1] Office of Higher Education Standards and Evaluation, *Higher Education Internal Quality Assurance Manual*. Office of the Higher Education Commission,2015

[2] Paitoon Sinlarat, *Education 4.0 is more than education*. College of Education. University Graduate Business,2016

[3] Toffler, Alvin, *The Third Wave. (Introduction)* .New York: William Morrow and Co,1980

[4] Case, Steve,*The Third Wave: An Entrepreneur's Vision of the Future. (152-154).* New York:Simon&Schuster,2016

[5] Jeera Hongladarom, "The third wave concept,"2016 [Online]. Available: www.naewna.com/view/columntoday/24691. [Accessed :May 5, 2017].

[6] Suwit Maesincee, "Thailand 4.0,"2016[Online]. Available:www.drborworn.com/articledetail.asp?id=16223. [Accessed May 5, 2017]

[7] Phu Iamcharoenying, "2560 PROJECT LAB, the new Thai robot. Tomorrow's column is already Morning,"*Weekend Nation Magazine*,no. 1300. 28 April, 2017

[8] Kasikorn Research Center. 2016. FINTECH and the changing form of financial services.

[9] Jakkrit Sririn, "Semantic-based Knowledge Management: Semantic Knowledge Management,"2017 [Online]. Available: www.okmd.tv/blogs/semantic-based-knowledge management-Semantic Knowledge Management. [Accessed May 5, 2017]

[10] Davies, John. Grobelnik, Marko and Mladenic, Dunja, *Semantic Knowledge Management: Integrating Ontology Management, Knowledge Discovery, and Human Language Technologie*s. USA. Springer,2009