

THAILAND



2022 Trend Report of Higher Education & e-learning in **ASEAN**



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Thai MOOC Celebrating Half Decade Milestone

#ThaiMOOC #MOOC #ACU #MHESI #halfdecade #lifelonglearning #COVID-19

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Thai MOOC is celebrating its 5th anniversary. Thailand Cyber University(TCU) project has introduced Thai MOOC, a national digital learning platform since 2017 under the 5 years strategic planning and in compliance with national policies and the long-term goals of the nation. During the COVID-19, Thai MOOC has become more popular among students, educators, as well as life-long learners as a valuable and reliable online learning resource.

01

Thai MOOC Celebrating Half Decade:

Thai MOOC(Thai Massive Open Online Course) celebrated its 5th anniversary on March 17, 2022, after Thailand Cyber University(TCU), Ministry of Higher Education, Science, Research and Innovation, had officially launched the platform in 2017.



Students, educators as well as life-long learners and the general public can enhance their knowledge, skills and abilities continuously throughout their lives at no costs, resulting in highly elevating Thai education and expanding learning opportunities for Thai people endlessly. As of 14 May 2022, Thai MOOC platform has a total enrollment of 1,406,677 members, of which more than 1,286,141 certificates issued. Besides, there are more than 530 courses on Thai MOOC.

This is a significant milestone demonstrating the steady growth in impelling open learning. Thai MOOC, the national life-long learning platform, supports unlimited number of learners, boundless learning which can be accessed anywhere, anytime with no charges.



Figure 1 : Thai MOOC stats (May 2022)

Implications

Thai MOOC is now with over a million registered learners and over a million certificates issued

02 Development plan:

Thai Cyber University (TCU) has developed teaching and learning management approach in an open system by seeing that Thailand should have a strategy to push for educational technology reforms in accordance with the 13th National Economic and Social Development Plan (Year 2023 – 2027) and related government policies.

- ▶ **The 13th National Economic and Social Development Plan (Year 2023 – 2027)** is an action plan during the second 5-year period of the 20-year national strategy and is the first development plan that begins the process of drafting a framework plan under the National Strategy (Office of the National Economic and Social Development Council, 2021).
- ▶ **According to the 12th goal of the plan, “Thailand has high-performing manpower, continually focus on learning, meet the development of the future”**
Due to the problem of manpower production, the competence is not in accordance with the job market demands in vocational and higher education. In the part of the university, there is a reduction of students and the challenges from the changing technology that enables online learning management on various platforms with low operating costs and individualized needs so universities can no longer focus solely on students in the system.

13 Milestones for Thailand's Transformation

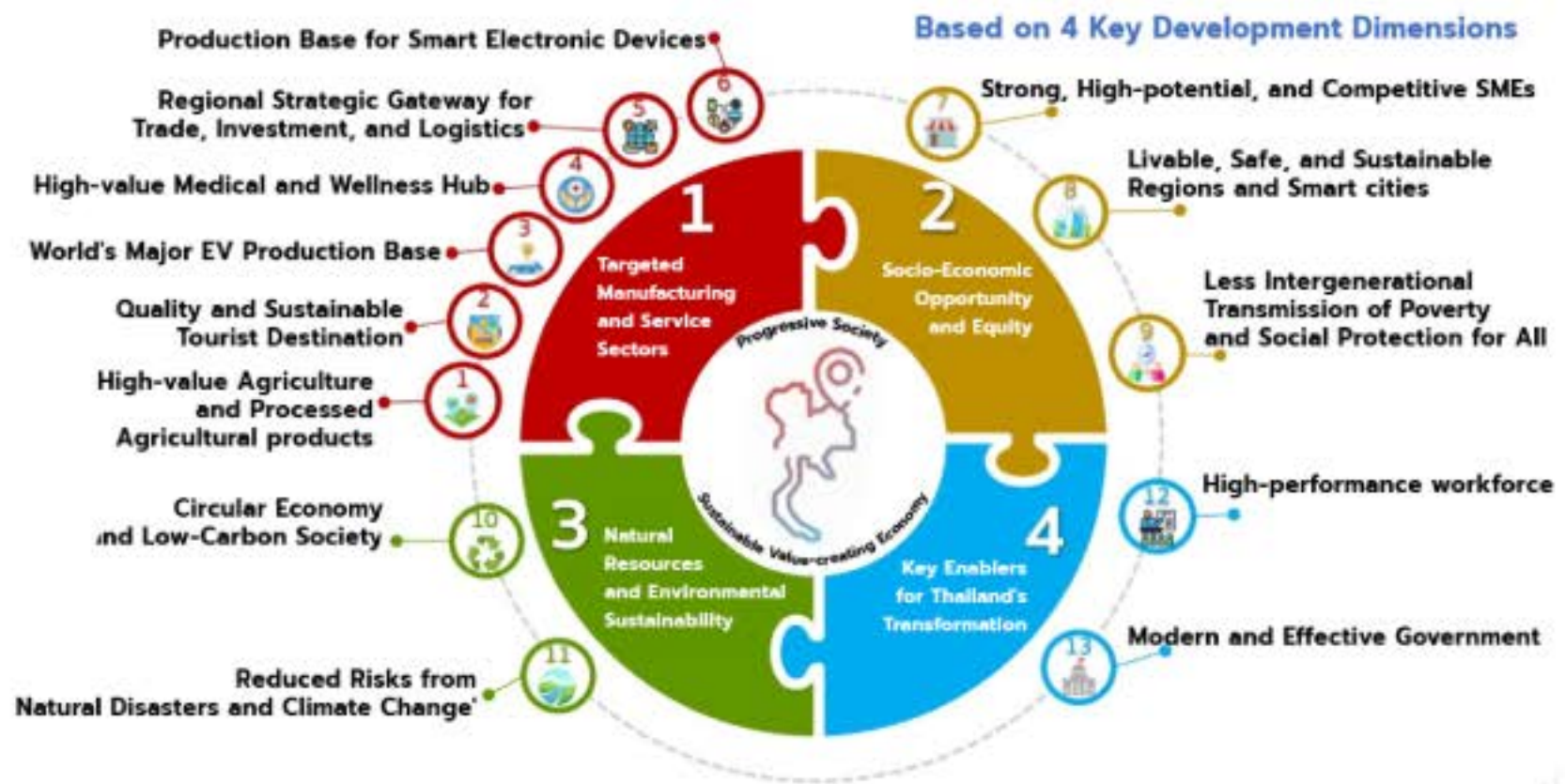


Figure 2 : The 13 Goals for Transforming Thailand as in the 13th National Economic and Social Development Plan(Year 2023 – 2027), with the 12th goal on High-Performance Workforce.

Therefore, the system must be changed to higher quality education, effective and easy to access for people of all ages from anywhere and at any time without any fees. At the same time, the development of high-performance manpower to transform the country into an innovation-based drive has many contributing factors: both technological advancements and innovations play a role in learning and empowering including educational institutions and training platforms, and the familiarity of Thai people in using technology.

With these factors, Thai MOOC is one of the important lifelong learning channels at national level, which is able to train both repetition and upgrade training to increase performance (reskill & upskill). Therefore, Thai MOOC plays a huge role in the development of high-performance manpower and education systems that meet the future development and help students learn effectively even when studying through online channels. TCU, accordingly, serves as a central organization in promoting learning, creating teaching materials, so that people can attend training and search for knowledge which can be used in the development of educational institutions in Thailand more effectively.

Moreover, Thai MOOC "life-long learning resource" is an important tool for the development of people of working age and older society with more diverse life spans which will affect the learning system that must be adjusted to be able to learn and develop competency all the time.

Thai people who still lack life skills in many areas such as financial savvy which leads some people to enter the cycle of informal and formal debt, digital knowledge to access basic government services in daily life, occupation, and access to digital technology products and services. Acquiring these skills and knowledge will help them stay up-to-date with technology and lead to the development of skills that are important in daily life and sustainable careers in the future.

Implications

Thai MOOC has been positioned as an effective tool transforming lives and enhancing the quality of manpower of the country. In-line with the 13th National Economic and Social Development Plan (Year 2023 – 2027) and other related national policies.

Over the past 5 years, Thai MOOC has played an important role in the education system during the period when the world and Thailand experienced the COVID-19 epidemic.

Universities and institutions must discontinue on-site studying which Thai MOOC has widely publicized about online teaching and learning as a substitute for on-site learning. During the uncommon situation of COVID-19, the average number of users in the system is more than 35,000 people per day. Moreover, educators and students have used online courses on the Thai MOOC digital platform as additional learning resources to supplement online learning in the course. Government and private personnel, and the general public used the platform to develop themselves while working from home. To facilitate online learning, Thai MOOC has published information about online teaching, techniques and tools utilized in online learning management as well as the exchange of experiences from each university through live streaming of the Thai MOOC talk program. Also, the program disseminates knowledge from experts and professors from universities in every region via Facebook Page and YouTube channel every week for 19 times from March to July 2022, thus, the program has gained a lot of attention and popularity.

During the COVID-19 situation, Thai MOOC platform has achieved another milestone as it is becoming more popular among students, educator and life-long learners. They have used online courses on the Thai MOOC platform as additional learning resources. Furthermore, Thai MOOC continues to develop the system incessantly in order to fully facilitate learners as a step forward for Thais to become a lifelong learning society.

For the first time, online education has been officially recognized for continuing education credit. For example, the Pharmacy Council of Thailand and Thailand Nursing and Midwifery Council, have endorsed Thai MOOC (and other reliable MOOCs) passing results as a part of continuing education program.



Figure 3 : Announcement by the Pharmacy Council of Thailand to endorse Thai MOOC (and other reliable MOOCs) passing results as a part of continuing education program.

In January 2022, Ministry of Higher Education, Science, Research and Innovation (MHESI) and the Office of Vocational Education Commission (OVEC) under Ministry of Education, signed a memorandum of understanding (MOU) to utilize the Thai MOOC as a digital learning platform for fostering quality and enhancement of vocational education of the country.



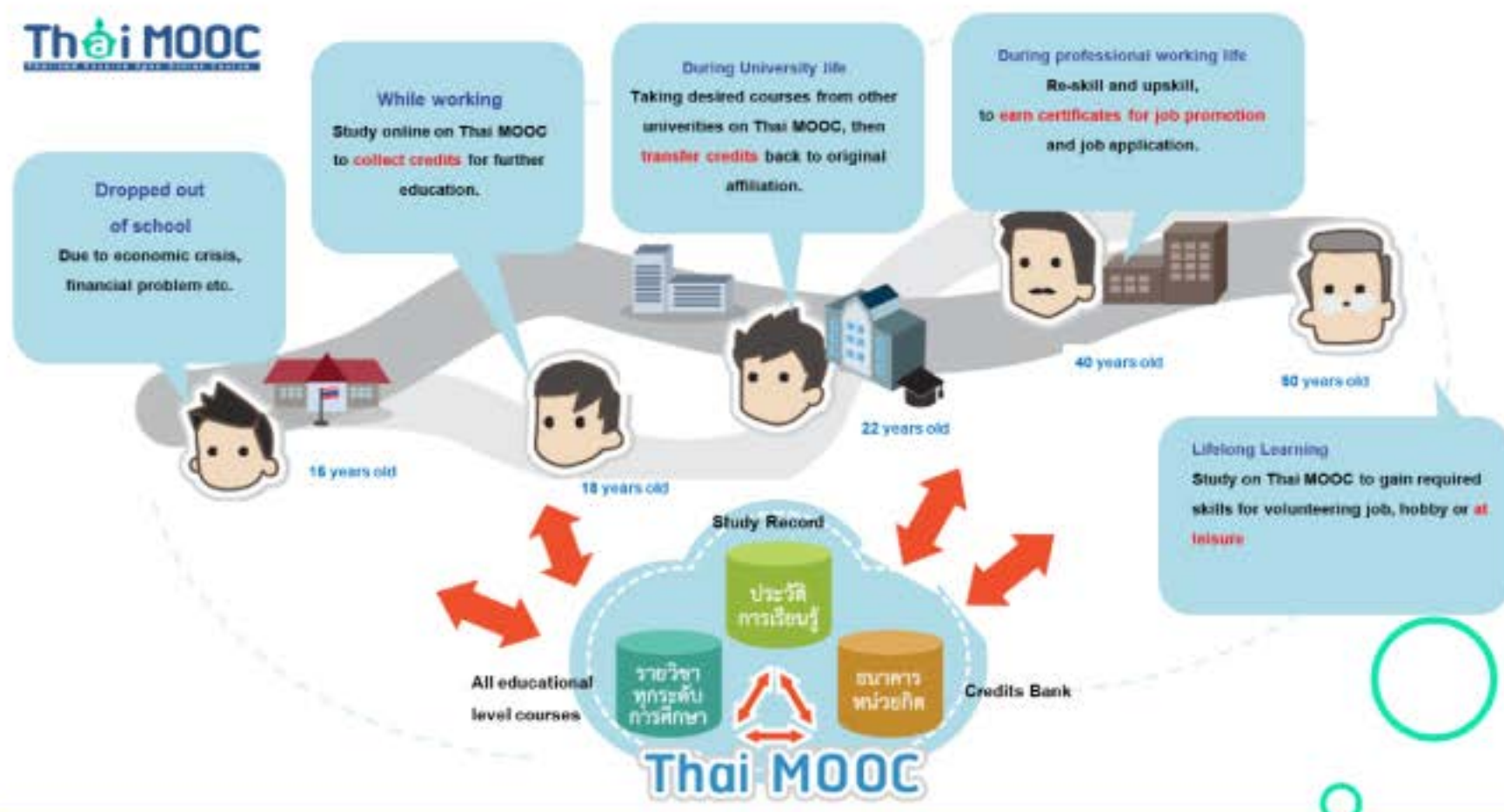
Figure 4 : Memorandum of Understanding ceremony between Ministry of Higher Education, Science, Research and Innovation (MHESI) and the Office of Vocational Education Commission (OVEC) under Ministry of Education for utilization of Thai MOOC to for foster quality and enhancement of vocational education of the country.

Recently, there have been 15 new official partners joining Thai MOOC, from public as well as private sectors within the country and internationally. The partnership enables courses development and sharing on Thai MOOC platform, resulting in more useful course creations as well as proper educational resource sharing.



Figure 5 : Recent Thai MOOC official partners from Public and Private sectors, nationally and internationally.

Evidently, Thai MOOC has celebrating its 5th anniversary by truly becoming a credible and reliable national digital learning platform serving learners of all ages as well as various professions. Strong and ongoing partnerships within the country and overseas have become a win beneath the wings of Thai MOOC, and hopefully there would be more positive outcomes deriving from this initiative for years to come.



The National Digital Learning Platform for Lifelong Learning : the Underlying Concept

Figure 6 : Thai MOOC serving Thailand as the National Digital Learning Platform for Life-Long Learning.

Implications

COVID-19 has paved a way for educational transformation. Online education has become vital for on-going human capital development during and beyond the period of pandemic. Innovative and interesting teaching and learning practices have emerged in all disciplines, whilst Thai MOOC is seen as an integral part of the process.

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Thai MOOC : Elderly Care MOOC, A Series of Skill Based MOOCs



#elderlycare #agingsociety #MOOC #ThaiMOOC #skillbasedMOOC

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Thai society has a growing population of elderly people by various factors, and the need for elderly caregivers has increased greatly. Care for the elderly is therefore a necessary occupation in an aging society and is greatly growing.

01

Elderly Care MOOC

At present, Thai society has a growing population of elderly people by various factors and the need for elderly caregivers has increased greatly. According to the Department of Mental Health, in 2020 there were 11,136,059 elderly people (16.73%), which can be predicted that elders in Thailand will increase to 13,311,787 people (calculated as 20.00%) in 2021, and become a complete aging society.

Thailand Cyber University (TCU) has recognized this problem by realizing the benefits and importance of developing people's knowledge, including about elderly care, so that they can access higher education knowledge freely through learning and teaching in an open system "Thai MOOC".

Promoting the elderly care workforce in the labor market is therefore essential and needs to always be adjusted to keep up with the changing world.





Figure 1 : Elderly Care in Thailand

Implications

Elderly care has become a much needed knowledge in Thailand. Thai MOOC has been utilized as a massive educational platform educating lifelong learners in Thailand for this area. The question is, would learning online provide adequate knowledge and skills required?

1) Cooperation with other institutions:

After the academic cooperation is made, Thai MOOC has launched a pilot project with Sukhothai Thammathirat Open University, Institute of Community Colleges and Thailand Professional Qualification Institute, which are working together to create ability courses. Thai MOOC plays a role as a coordinator and supports relationships with other MOOC by selecting similar courses from partner organizations combined with the cooperation of working between organizations so that Thai people will have the opportunity to learn from a variety of international perspectives. In the pilot project of the three organizations namely National Cheng Kung University, Taiwan and Sukhothai Thammathirat Open University. Elderly Care 1, 2 and 3 courses have been included as part of the learning materials.





Figure 2 : Collaboration behind the elderly care MOOC of ThaiMOOC - MOU Signing Ceremony at the Ministry of Higher Education, Science, Research and Innovation between the key stakeholders.

For the current Thai society, there is a huge increase in the elderly. Therefore, the demand for caregivers for the elderly has increased accordingly. Promoting the elderly care workforce in the labor market is essential and needs to always be adjusted to keep up with the changing world. The project for developing caregivers for the elderly is supported by the Thai Cyber University (TCU), which has an approach that focuses on upskilling to build new skills that are different from the old job and reskilling to help them work better, meet the needs of society and bring income as well as to ensure that the elderly receive quality care from knowledgeable and skilled caregivers. At the same time, the elderly is able to take care of themselves to a certain extent with the Massive Open Online Course (MOOC) that TCU has published widely used in learning today.

Implications

The much needed elderly care knowledge and skills set, have led to the cooperation and collaboration between ThaiMOOC and key stakeholders within Thailand and at the international level. Combination of knowledge from MOOC courses as a prerequisite for face-to-face traditional courses have enabled a very effective and reliable way for learning or upskilling or even reskilling in the elderly care areas.

2) Courses and curriculum:

The development of the 420-hour Advanced Caregiver Curriculum for the Elderly was developed this time with the goal of making it accessible to all learners. This means increased flexibility in time and location, based on the needs of the elderly and their perspectives on the elderly. Also, it needs to fit with a new normal lifestyle that people around the world are being affected by the COVID-19 which makes learning methods to be modified. This course will facilitate learning by letting learners learn through communication technology in a digital society and learn according to personal readiness. It can also enhance the working capacity of carers for the elderly and a career for learners.



Figure 3 : A Series of Elderly Care MOOCs on ThaiMOOC as developed by National Cheng Kung University, Taiwan.

Figure 4 : A Series of Elderly Care MOOCs on ThaiMOOC as developed by Sukhothai Thammathirat Open University, Thailand.

The structure of the curriculum and coursework consists of 2 parts which are Part 1, theory and practice sessions of 200 learning hours and Part 2, face-to-face practice of 220 hours as follows:

►► **Part 1 Massive Open Online Course (MOOC)**

Consists of 104 hours of theory sessions and 96 learning hours of practice experiments, totaling 200 learning hours. This part consists of 7 subjects which are:

- 1 General Knowledge for Elderly Care
- 2 Knowledge and Skills for Elderly Health Promotion
- 3 Knowledge and Skills in Assessment, First Aid, and Emergency Management of the Elderly
- 4 Knowledge and Skills in the Care and Rehabilitation of the Elderly
- 5 Knowledge and Skills in Technology for Elderly Care
- 6 Roles and Duties of Law and Financial Management for Elderly Caregivers.
- 7 Free Elective Courses for Careers

►► **Part 2 Face-to-Face practice requires 110 hours of practice in a healthcare facility and 110 hours in the community, a total of 220 hours.**

The practice style is divided into 3 levels, applied from the concept of beginner to expert. Each level has details as follows.

Level 1 Basic Practice which is an activity that learners can practice on their own after studying MOOC by doing it with the elderly or their families at home. Then, students will have to send the video back to the teacher for evaluation. It is an experience that needs to be practiced and can be practiced by themselves.

Level 2 Intermediate Practice which is an activity where learners have been through the practice of learning Thai MOOC. They can practice their skills under the care of a local and professional preceptor by assessing the practice according to the instructor's set. After completing the activities, a local and professional preceptor will endorse the process. It is an experience that requires practice.

Level 3 Advanced Practice which is an activity to enhance the learning experience through observation under the supervision of a professional healthcare worker. They act as a professional mentor preceptor under the cooperation of the skill mixed team. It is an experience gained by observation, not compulsory.



Figure 5 : Very First Batch of Graduates from the Elderly Care MOOC SkillBased Series
(as developed by Sukhothai Thammathirat Open University, Thailand)

Implications

The two parts course strategy has become a critical success factor towards success of the elderly care program.

3) Results and effects:

The Elderly Care curriculum has direct results as follows:

- 1 Uplift the well-being of the elderly through innovation of curricular development according to the framework of innovative design of open online learning and professional standards and qualifications of Thailand Professional Qualification Institute.
- 2 Provide opportunities for people of all ages to access to learning extensively according to their potential and readiness which will increase their chances of getting a job and make more income.
- 3 Promote lifelong learning among people in elderly caregivers, create opportunities for careers and extend professional qualifications into educational qualifications.
- 4 Respond to social changes that require the elderly to receive long-term healthcare within their own families and communities. For international effects, it supports the movement of the 2020-2030 decade of health improvement for the elderly by the World Health Organization (WHO) that indicates "A world where everyone can live a long and healthy life" together with the United Nations SDG 3rd Goal of Health and Well-being Development. It is working through research and development "Digital learning platform for seniors" to help seniors access various welfare resources like effectively guaranteeing the basic rights of being a healthy society for the elderly. These include the SDG 8: Decent Work and Economic Growth by promoting the elderly caregivers to receive certification of vocational competence, income generation, and equal career growth opportunities that leads to sustainable economic driving of the country.

At the national level, it affects the policy/plan and various departments as follows:

- 1 The 2nd National Plan on the Elderly (2002-2021), the 1st revision, 2009 in Strategy 1: on the preparation of the population for quality old age, Strategy 2: on the promotion and development of the elderly, Strategy 3: Social Protection System for the Elderly, Strategy 4: in the field of management for the development of work on the elderly with an integrated national approach, Strategy 5: Computing Develop and disseminate knowledge on the elderly and follow-up and assess the performance of the National Elderly Plan.
- 2 The Ministry of Social Development and Human Security in preparing the elderly for both physical and mental health, Social aspects in adapting and building family relationships in the community and the world today, Environment in preparation of housing and suitability for age and illness, and the economic aspect that must be planned for spending and saving in advance.

- 3 The 20 years Strategic Plan (2018 - 2037) of the Department of Elderly Affairs in point 2: Promoting income and working opportunities for the elderly to be able to take part in the labor market for caring for the elderly and point 3: The development of long-term care for the elderly, creating an effective mechanism for caring for the elderly, emphasis on personnel and practitioners development at the local level to have specific skills in caring for the elderly by creating a network of effective elderly care.

In addition, there is also an idea to develop an open system for grade transferring of online courses to accord with international standards. Learners can transfer their learning outcomes to educational credits or enter the professional qualifications assessment system that promotes, expands opportunities for people to access higher education and create a broader learning society and lifelong learning.

By the middle of 2023, Thai MOOC will be offering even more skills based courses including Network administrator, Data Science, and English language for Marine Officers. There will surely be many more courses on offer for skills based development for Thailand. Certainly, the inspiration and experiences gained from offering the elderly care program will serve as a good foundation for further developments for years to come.

Implications

Elderly care program is surely not the only skills based course on offer. In the future, more courses will be available, to serve the lifelong learners of Thailand.

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Work-Based Skills Courses in Thai MOOC

#workbasedskillscourses #ThaiMOOC #workbased #skills
#lifelonglearning #KMUTT #OVEC #PIM #MOOC

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Developing of work-based skills courses for learning and teaching in Massive Open Online Course (MOOC) of Thailand Cyber University Project (TCU), Ministry of Higher Education, Science, Research and Innovation (MHESI); is to enhance work competencies and lifelong learning for people of all ages and to produce potential human resources for the country.

01

Introduction

Work-based skills refer to courses that promote thinking, effective communication solutions, and collaboration to increase the efficiency of working in the organization, empowering workforce development, or living a creative and happy life (Hanley, 2022; Khlaisang, 2021; Khlaisang, 2020; Ministry of Higher Education, Science, Research and Innovation, 2022).

Developing work-based skills courses for learning and teaching in open systems (MOOC) of Thai Cyber University (TCU), Ministry of Higher Education, Science, Research and Innovation is to enhance work competencies and lifelong learning of people of all ages and to produce human resources for the country (Thammetar, Theeraroungchaisri, and Khlaisang, 2022).



Thailand's Vision (2037)



Figure 1 : Thailand's Vision 2037 (NATIONAL STRATEGY 2018-2037, 2019)

The visions of the 20-year national strategy are developing human resources to be proficient in their professional fields, responding to national needs and building global competitiveness, and developing human resources for the digital economy and society. These are under the "human resource development, taking into knowledge for future works" vision.

In this regard, Thailand Cyber University (TCU) sees it as appropriate to develop work-based skills courses, making teaching materials and tests according to the guidelines of preparing work-based skills courses for teaching in an open system (MOOC). The process starts by designing the curriculum to be modular and to develop competency for working and lifelong learning for people of all ages to produce human resources for the country (Thammetar, Theeraroungchaisri, Khlaisang, & Duangchinda, 2021).

At present, Thailand is shifting its economic structure towards an innovation-driven economy to overcome the trap of middle-income countries. Human Resources Development, Capacity Reform, and Transformation of Learning is one of the objectives of higher education management under the Higher Education Act of 2019, which is to develop human resources to be proficient in their field of study or profession. Moreover, it is to make human resources to meet the country's needs and build competitiveness on a global scale. Developing human resources to enter the digital economy and society is one of the visions of the 20-year national strategy. Human resource development takes into knowledge that is usable for future work.

The need for human resources requires those who are both knowledgeable, able to solve complex problems, have analytical thinking, creativity, effective communication, and collaboration. Especially in the age of data, the ability to analyze the data, create models to predict the future, and data-related products can add value to businesses. These abilities give business the confidence and the ability to make better decisions. These are the key factors in the industrial turnover in the 4.0 economy era. The development of human resources in data science is therefore critically important.

From the needs above, Massive Open Online Course (MOOC), which can create a lot of interest for learners and therefore, is appropriate for developing human resources so that Thai people can study and learn conveniently and equally. This will ultimately result in the development of a sustainable learning society because MOOC is an educational system that allows a large number of people from all over the world to participate in accredited courses from higher education institutions at the same time. Thus, students can learn through the online system in the new spheres they desire. It provides alternatives that are more convenient for learners so that learners can learn and practice on their own without any restrictions on time and place.

We use a form of teaching or training of Massive Open Online Course (MOOC), especially the creation of a learning model that focuses on the development of thinking abilities of personnel that can promote thinking, problem-solving, communication, and working together effectively. This method results in increased efficiency of work in the organization or creative and happy living that meets the human resources needs of industries in the 4.0 economy era (Ministry of Higher Education, Science, Research and Innovation, 2022).

Therefore, it is necessary to develop work-based skills courses by using open online learning MOOCs to enable learners to have the ability to think and analyze data, search for something new, and learn to meet currently needed skills. Accordingly, these skills will create higher service value and reduce repetitive skill-based tasks to increase efficiency in working in the organization.

Implications*

The long-term national strategy (2018-2037) has strong focus on human capital development. But what roles could Thai MOOC play to support the strategy?

02 Development strategy

Thailand has a strong focus when it comes to developing human resources to seamlessly serve the industries and the workplaces. The key question is, how to properly and effectively prepare the learners for the industries with highest efficiency possible. With this, the royal Thai government has introduced the long-term national strategy (2018-2037) with a great emphasis on human capital development. There are two distinct strategies that clearly reflect on the needs for skills-based development. The two strategies are highlighted below.

NATIONAL STRATEGY 2018 – 2037

Strategy 1 Developing Thai people of all ages in all dimensions

- Substrategy 1.4) Develop the working age to have necessary competencies for occupation and connect with the future work world by promoting and distributing the opportunity to develop competence for all groups of workers. Both increasing and developing new skills and knowledge to make human resources have skills that match the job and career changes, develop old skills, and thus increase working capacity.

Strategy 2 Developing high-performance human resources

- Substrategy 2.1) Develop high-performance human resources that are in line with the needs of the target manufacturing sector and can create future jobs. Starting by encouraging all sectors to integrate and link cooperation in education, training and jointly manage learning in the modern world that covers job abilities, life skills, digital competencies for careers, daily life, and the right to access basic government services.

To enable Thailand's long-term competition, it is necessary to invest in human resources to provide knowledge and skills that are consistent with work and life in the 21st century, as well as to promote lifelong learning and develop skills for the future by developing mechanisms and measures to promote education and lifelong learning to enhance new performance Supporting careers that change according to the changing trends of technology in the world. And increase the ability to be hired by supporting education and training programs through formal education, non-formal education and informal education It covers the upgrading of knowledge and skills development systems for working-age personnel through a multi-level training.

Upskill/Reskill Learning through Massive Open Online Courses (MOOCs) and adjusting the education system to meet the needs of working people, such as the development of the National Credit Bank System, which is a factor that will elevate the development of Thailand into the future. Reduce dependence on foreign experts This is to create competitiveness for the country in the long run. and push Thailand to become a developed country Implementation of teaching and learning in an open system (Thai MOOC) is to support online teaching through a central learning platform. that gives the public the opportunity to learn Anytime, anywhere encourages people to be born "Lifelong Learning" (Lifelong Learning), and supports various agencies. Both the education sector and the public and private sectors in distributing knowledge to people both inside and outside the education system. Currently, there are more than 1.4 million learners in the Thai MOOC Platform system, with more than 1.3 million successful students and certificates.

There is cooperation in bringing knowledge from 120 educational institutions including public and private organizations both domestically and internationally to publish more than 500 online courses, able to meet the needs of promoting lifelong learning and improving work skills. for students, and working-age people to have competencies that are ready to enter a career, and have skills that can be developed into higher education or building a business in the future. Thai MOOC will be moving forward to strengthen the people in workforce as well as the pre-service learners for the skill-based education.

Ministry of Higher Education, Science, Research and Innovation jointly signed an MOU with 4 agencies: King Mongkut's University of Technology Thonburi, Marine Department, Marine Police Department and Thoresen (Bangkok) Company Limited to developing careers in mariners at Montien Hotel, Surawong, Bangkok on June 30, 2022.

The signing of this Memorandum of Understanding on Academic Cooperation is a collaboration in the development of permanent personnel working in the professional field. Seafarers and those interested who want to pursue a career as a navigator. It will focus on developing online courses for open study in the English for Seafarers personnel. These courses will serve as a starting step and will be extended to be a part in the curriculum of King Mongkut's University of Technology Thonburi (KMUTT).



Figure 2 : Ministry of Higher Education, Science, Research and Innovation jointly signed an MOU with 4 agencies : Developing careers in mariners on June 30, 2022.





Figure 3 : Ministry of Higher Education, Science, Research and Innovation jointly signed an MOU with Office of Vocational Education Commission on January 6, 2022.

Vocational education management aims develop Thai citizen to have knowledge and skills required for entering the labor market and meet the needs of business and industry. Currently, driving the economy to recover after the COVID19. In realizing this objective, MHESI, Office of the Vocational Education Commission (OVEC), and Ministry of Education (MOE) have signed a memorandum of understanding (MOU) to strengthen the country's vocational education.

The parties agree to join together to enhance teaching and learning process with information technology and to develop relevant online courses in an open system, from the knowledgeable experts, faculty members, as well as a large number of vocational learning materials. Thai MOOC will be the digital learning platform to serve this purpose, as a professional learning resources for supporting and enhancing vocational education. At the same time, the resources will also be disseminated to the public to increase work potential or change the line of Upskill / Reskill in the fast and efficient way.

Under this cooperation, the Thai Cyber University (TCU) project, Ministry of Higher Education, Science, Research and Innovation (MHESI) will work with the Center of Vocational Manpower Networking Management (CVM), Office of the Vocational Education Commission (OVEC), Ministry of Education; in various fields, starting from the area of digital business technology. which has Thonburi Commercial College as the pilot CVM to develop online courses in an open system that are the core of learning, such as principles of design thinking and digital business innovation.

Massive Open Online Course (MOOC) is a learning and training model that Thailand has been interested in applying to manage people's lifelong learning with the advancement of information technology and communication that grows without limit. As a result, various educational institutions use MOOCs in teaching and learning management for learners. Panyapiwat Institute of Management also deems it appropriate to support the project to develop online teaching media (PIM MOOC).

Examples of courses developed by Panyapiwat Institute of Management with cooperation from Thai MOOC have brought various interesting courses and are now a learning resource for people who are interested in the Thai MOOC platform such as Personality Psychology and Adjustment, Professional retail management strategy, Business Research Methods, Learning and Development, etc.

Panyapiwat Institute of Management (PIM) will open Modern Trade Business Management (Continuing Program) (Internet-based Distance Education) : CIMM to combine teaching approaches by using online learning in an open system (MOOC) together with work-based education and a workshop, to grooming students to be graduates with knowledge, skills, and practical work ability, ready for the working environments. The use of online learning in an open system will expand educational opportunities for learners in various provinces across the country. To be able to study together with working in retail business establishments scattered across the country with quality and efficiency.

At present, in various organizations throughout the world, information technology and social media have been widely applied in teaching and learning. It provides alternatives and helps facilitate more learners. Students can learn on their own anytime, anywhere without limitations.



Figure 4 : Cooperation of Thai MOOC Panyapiwat Institute of Management on Modern Trade Business Management (Continuing Program) (Internet-based Distance Education) : CIMM

As Thailand is gearing up itself to become an innovative-driven economy, the needs to develop human capital and ongoing up and reskilling processes have become much more crucial than ever. Thai MOOC, by Thailand Cyber University Project (TCU), Ministry of Higher Education, Science, Research and Innovation (MHESI); has expand into a new spectrum of services by offering work-based skills MOOC courses to the public. Presently, there are three on-going developments of such courses at higher education level, vocational level, as well as pre-university level, which are:

- Development of permanent personnel working in Seafarers with King Mongkut's University of Technology Thonburi (KMUTT) MOOCs.
- Development of vocational workforce in Digital Business with Office of Vocational Education Commission (OVEC) MOOCs.
- Development of workforces in Modern Trade Business Management with Panyapiwat Institute of Management (PIM) MOOCs.

These three developments are serving as a foundation model for many more work-based skills MOOC courses that will be offering on Thai MOOC soon. The application of work-based skills courses in Thai MOOC from agencies, educational institutions for practical skills might involve these simple four steps:

1. The institution determines the required course by selecting the already available course or produces a new course to be offered in Thai MOOC with Thai MOOC standards. The online part could provide theoretical background or necessary information before the learners start their practical part of the course.
2. The learner learns from Thai MOOC or from other accredited providers, according to the course schedule. This would normally be a series of MOOC courses plus onsite practical
3. The learners complete course requirement, which might include a test on Thai MOOC and physical examination, or combination of both.
4. Successful learners would then be certified for the skill acquired.

As the ultimate goal of Thailand is to become an innovative driven economy, the road ahead is long and there will be many obstacles to overcome. Thai MOOC and work-based skills courses could provide an effective way to overcome the hurdles, which we would surely look into the future with a great believe that our education will lead the way, in the right way, and for all the Thai citizens.

Implications

Becoming and innovative driven economy might still be a long way ahead, but the outlook of work-based skills MOOC courses looks to be very promising indeed.

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Thai MOOC Unique Strengths in Cooperation with Other Organizations at National and Global Levels



#empoweringcollaborations #ThaiMOOC #cooperation #partnership

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Thai MOOC has cooperated with over a hundred universities and leading education institutions in production and improvement on MOOC platform and courses, to ensure qualities and effectiveness on its courses for lifelong learners and sustainability of lifelong learning. Moreover, Thai MOOC is now collaborating with international MOOCs to have an exchange of information and bringing in top-rated MOOCs for Thai learners.

01

Introduction

Thailand Cyber University Project (TCU), under the Ministry of Higher Education Science Research and Innovation (MHESI) has provided Thai MOOC services, an initiative project since 2016, cooperated with over a hundred universities and leading education institutions in production and improvement on MOOC platform and courses, to ensure qualities and effectiveness on its courses for lifelong learners and sustainability of lifelong learning. Thai MOOC is now collaborating with international MOOCs to expand open online platforms, interchange resources and lesson learns to share achievement and to bring in top-rated MOOCs for Thai learners. The collaborations are divided into 2 main parts which are national collaborations and international collaborations which are Empowering National Collaborations and Empowering International Collaborations.

Implications

As every partnership is rather unique, Thai MOOC's partnerships provide qualities contents, platform, as well as sound-management to ensure mutual success among the stakeholders.

02 Empowering National Collaborations

Thai MOOC has cooperated with more than 100 universities nationwide, leading organizations in the country and educational institutions at different levels and more than 20 public and private organizations for example, the Office of the Civil Service Commission (OCSC), Digital Economy Promotion Agency (DEPA), Office of the National Digital Economy and Society Commission (ONDE), and Thai PBS television station. TCU participates in developing online courses and disseminating them for the public to access and learn on the Thai MOOC digital platform in order to produce and develop quality online courses in the subjects that the providers specialize in. The aim is to support lifelong learning and create sustainability for Thai society according to the 20-year national strategy 2020 - 2027. Here is a recap of recent cooperation milestones from 2019 onwards.

The collaboration and projects which Thai MOOC has been working on nationally are as follows:



Figures 1-2 : MOU Signing on Academic Collaborations for the use of technology for distance learning via online system Thai MOOC on 6 August 2019 at the Ministry of Higher Education, Science, Research and Innovation.



Figures 3-4 : Academic Cooperation Memorandum Signing Ceremony between Ministry of Higher Education, Science, Research and Innovation (MHESI) and Office of Vocational Education Commission, Ministry of Education Thailand (VEC) on January 6th, 2022



Figure 5 : Academic Cooperation Memorandum Signing Ceremony between Ministry of Higher Education, Science, Research and Innovation (MHESI), King Mongkut's University of Technology Thonburi, Marine Department, Thailand, Marine Police and THORESEN & CO., (BANGKOK) LTD. at Montien hotel, Surawong Bangkok on June 30th, 2022



Figure 6 : Course "Elder Care in the Digital Age" from the cooperation project of 4 institutions.

The course is offered through the Thai MOOC platform by the collaborations of STOU, ICCS, TCU, and TPQI. The aim is to upskill & reskill human resources to become skillful in their profession. Learners take the course via Thai MOOC and assess the knowledge at the test center according to TPQI standard. After they pass the exams, TPQI certificates would be issued, the data will be stored in learners' e-Portfolio.

Thai MOOC has various partners who play important role in enhancing the knowledge for Thai learners including International Health Policy Program Ministry of Public Health, Thailand, King Prajadhipok's Institute, Thailand, Office of the Vocational Education Commission, King Mongkut's University of Technology Thonburi, Marine Department, Thailand, Marine Police and THORESEN & CO., (BANGKOK) LTD. and more.



Figure 7 : Teachers from Chumphon Phonpisai School, Nong Khai province organized activities to promote learning skills in the 21st Century for students in Grade 4 by assigning students to manage self-learning sessions via Thai MOOC. On March 1, 2022, the school held a certificate awarding ceremony for 226 students that passed the learning criteria.



Figure 8 : Partners of Thai MOOC

Thai MOOC has cooperated with leading international universities in the exchange of online courses to ensure high quality and popularity of online courses from foreign countries for Thai learners. We are continuously looking for strengthening the cooperation in course exchanging, course co-creating, and co-developing of MOOC courses. Thai MOOC has been working in academic cooperation including MOUs signing and MOAs to carry out educational activities with government agencies and higher education institutions abroad, especially, the exchange of courses on the MOOC online learning platform.



Figure 9 : MOOC Exchange Collaborations with Oversea Universities (23 courses as of 2021)

Thai MOOC Course with English caption (6 Course)

Institution	Course	No.	Language		Link
			Audio	Subtitles	
Mae Fah Luang University (2)	Special Interest Tourism	MFU001	ENG	ENG/THA	
		MFU001-KR	ENG	KOR/THA	
	Aromatherapy Massage	MFU002	ENG	ENG/THA	
Chulalongkorn University (1)	Data science essential and application	CU023	THA	ENG/THA	
		CU023-KR	THA	KOR/ENG/THA	
Chiang Mai University (2)	Cultural management for tourism	CMU030-EN	THA	ENG/THA	
		CMU030-KR	THA	KOR/ENG/THA	
	Northern Thai Food	CMU014-EN	THA	EN/THA	
		CMU014-KR	THA	KOR/ENG/THA	
Mahidol University International College (1)	Tourism and Hospitality Management 4.0	MU016	THA	ENG	

Thai MOOC Content Cross-loading between Oversea MOOC Platforms

Country	Platform	Institution	Course	No.	Audio	Subtitles
China (11)	Thai MOOC	Tsinghua University, XuetangX	New Horizons in Chinese Philosophy	XUETANGX001	ENG	ENG/THA
			Exploring Psychology's Core Concepts	XUETANGX002	ENG	ENG/THA
			Tsinghua Chinese: Start Talking with 1.3 Billion People	XUETANGX003	ENG	ENG/THA
			Water and Wastewater Treatment	XUETANGX004	CHN	ENG/THA
		Changhua Christian Hospital, Taiwan	Capacity Building for Dementia Long-term Care Giver	CCH001	THA	THA
			Diabetes Care	CCH002	THA	THA
		National Open University of Taiwan	Creative Marketing	NOU001	CHN	CHN/ENG/THA
			Open Mind! Cross-Boundary New Media and Creative Public Relations	NOU002	CHN	CHN/ENG/THA
			Business Opportunities in East Asia	NOU003	CHN	CHN/ENG/THA
		National Chiao Tung University	Creative Essentials of Economics	NCTU001	CHN	CHN/ENG/THA
		National Cheng Kung University	Elderly Care I	NCKU001	CHN	ENG
Italy (2)	edX.org	Federica	Robotics Foundations I - Robot Modeling THAI	edX.org	ENG	ENG/THA
			Robotics Foundation II - Robot Control THAI		ENG	ENG/THA
Japan (1)	Thai MOOC	National Defense Academy of Japan, Department of Humanities	"Japan Affairs" using e-learning	KJU001	JPN	THA
Korea (9)	Thai MOOC	K-MOOC	A bridge to the world: Korean Language for Beginners I	K-MOOC001	ENG	KOR/ENG/THA
			A bridge to the world: Korean Language for Beginners II	K-MOOC002	ENG	KOR/ENG/THA
			Environmental Design for Everyone	K-MOOC003	KOR	ENG/THA
			Introduction to Edutainment Park System	K-MOOC004	ENG	ENG/THA
			Introduction to Quantitative Investing	K-MOOC005	ENG	ENG/THA
			Cultural Psychology	K-MOOC006	ENG	KOR/ENG/THA
			A bridge to the world: Korean Language for Intermediate I	K-MOOC007	KOR	ENG/THA
			A bridge to the world: Korean Language for Intermediate II	K-MOOC008	KOR	ENG/THA
			A bridge to the world: Korean Language for Intermediate III	K-MOOC009	KOR	ENG/THA

Figures 10-11 : detail of Thai MOOCs content Interchange between Oversea MOOC Platforms



At the global stage, our strong partnership with major MOOCs and OER providers around the world, enables collaborative course development and exchange between Thai MOOC with other major MOOC platforms and universities with ASEAN and other countries in Asia, Europe, and the US. This includes ASEAN Cyber University (ACU) establishment project, and K-MOOC from South Korea, JMOOC from Japan, XuetangX from China, Federica Web Learning from Italy, and recently MERLOT.org from the US. Primarily, the current operational plan of Thai MOOC focuses on technology compatibility and content exchanges between the partners. MOOC providers and their courses on Thai MOOC platform include China (11 courses), Italy (2 courses), Japan (1 course) and Korea (9 courses) as follows:

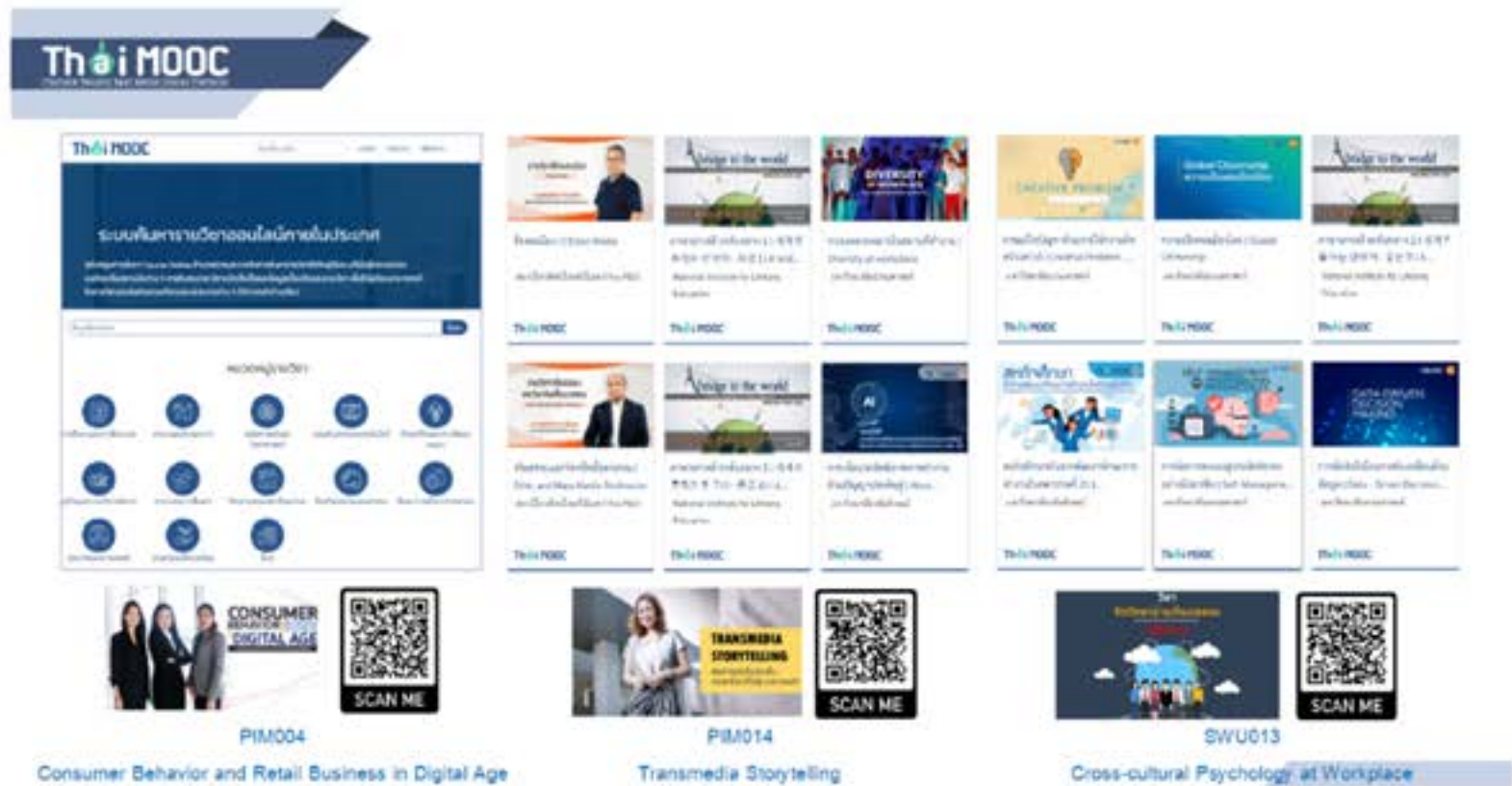
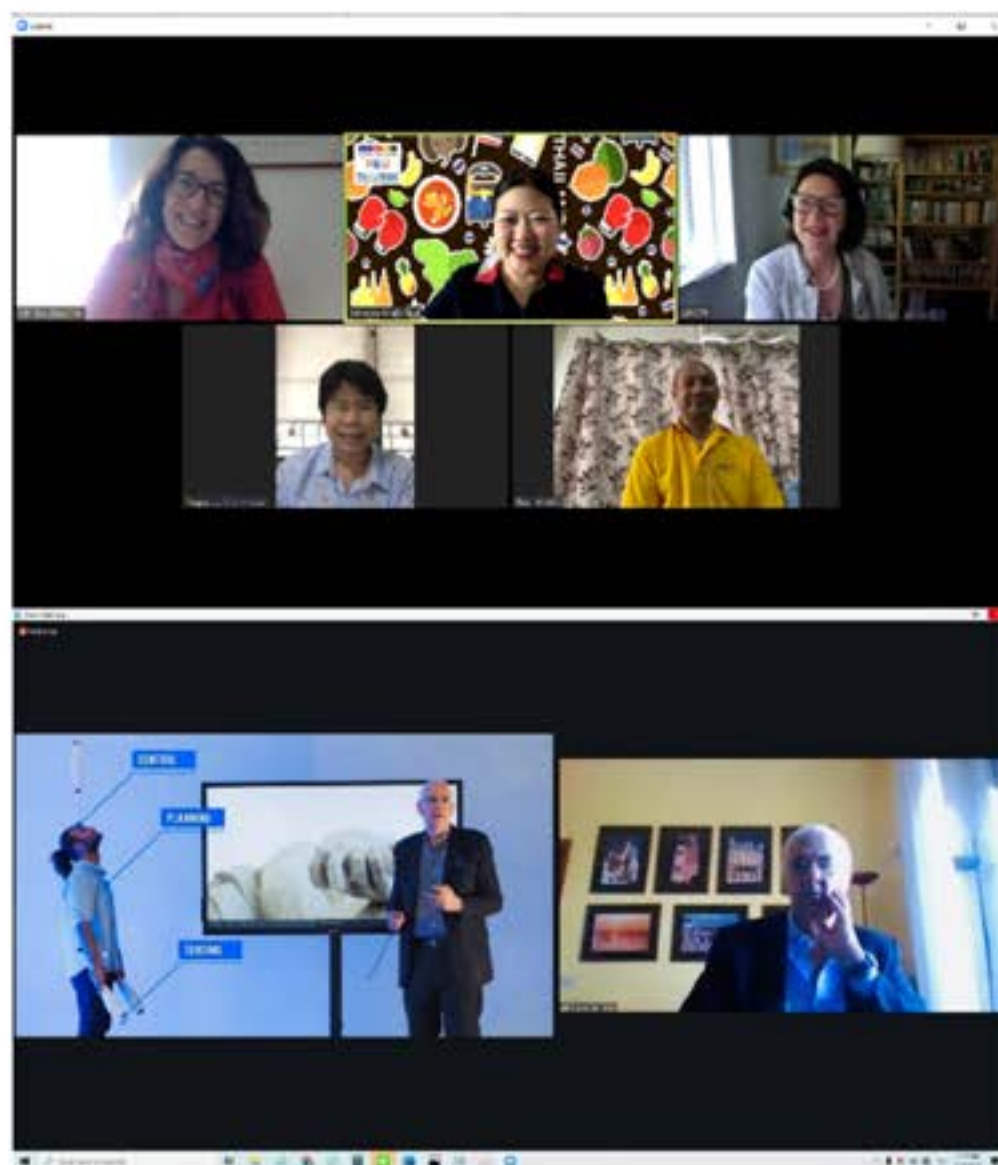


Figure 12 : Example of exchanged courses on Thai MOOC platform

Xuetangx, China: Various courses have been published on the platform such as Chinese Landscape Painting Technique, Geology and Engineering Geology, Chinese Grammar Class and Elementary Chinese Grammar.



Figures 13-14 : Thai MOOC have a joint project with the Federica Web Learning, Italy. Courses from Federica Weblearning have been exchanged to be published on the Thai MOOC platform, namely, Robotics Foundations I, II - Robot Modeling.

K-MOOC, Korea: Course K-MOOC001 'A bridge to the world: Korean Language for Beginners' by Sungkyunkwan University has over 14,422 users on Thai MOOC platform signifying the Korea culture and its language are becoming more popular among Thai learners.

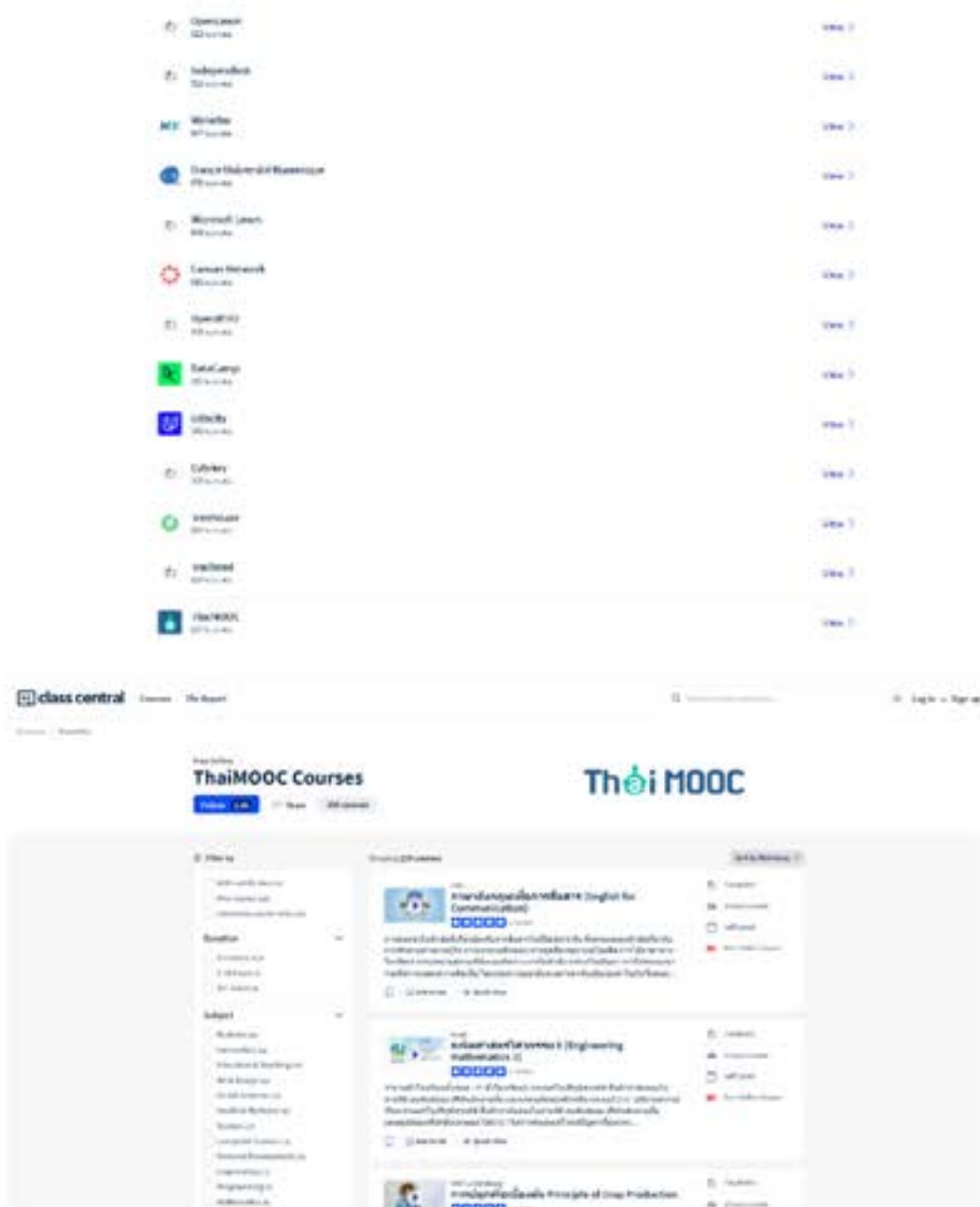
The screenshot displays the Thai MOOC interface for the course 'A bridge to the world: Korean Language for Beginners I'. The header features the Thai MOOC logo and navigation links. The main content area shows the course title in both Thai and English, along with a video thumbnail. The sidebar on the right provides additional details: the provider is the National Institute for Lifelong Education, the start date is 29 November 2021, the language is Thai, the cost is free, and the course is self-paced. A button labeled 'ไปยังรายวิชา' (Go to course) is also visible.

Figure 15 : Course K-MOOC001 A bridge to the world: Korean Language for Beginners on Thai MOOC

JMOOC and Kyushu University, Japan: Courses have been exchanged from JMOOC to be published on Thai MOOC platform in subjects "Japan Affairs" using e-learning by Kyushu University

National Chiao Tung University and National Open University of Taiwan: Creative Essentials of Economics NCTU001, Creative Marketing NOU001

The screenshot shows the 'Providers' section of the class central website. It lists various educational institutions and their associated MOOCs. Each entry includes a logo, the provider's name, and a 'View' link. The providers listed are Udacity, Coursera, edX, FutureLearn, and others. The interface is clean and organized, with a search bar at the top and a sidebar on the right.



Figures 16-18 : Thai MOOC on Class Central Database

Thai MOOC Courses also have been listed at the class central MOOC course directory for broaden access from MOOC learners all over the world (<https://www.classcentral.com/providers>)

Moreover, there are the collaboration and projects which Thai MOOC has participated in internationally as follows:



Figure 19 : MOOCs Policy Expert Forum Thursday 20 – Friday 21 September 2018 at Hotel Windsor Suites and Convention, Bangkok, Thailand



Figure 20 : The JMOOC K-MOOC and Thai MOOC Executive Meeting for Collaborative Activities Planning in combining with "Nano degree" content experts meeting 15-16 January 2018 the Windsor Suites & Convention Hotel, Bangkok, Thailand



Figure 21 : Expert Meeting on Credit Bank System

Expert Meeting on Thai MOOCs platform development and credit banking system on 6-7 February 2021 at Amari Watergate hotel, Bangkok, Thailand.



Figure 22 : The 10th TCU International e-learning Conference 2019 Imagine MOOCs for All July 08-09, 2019 BITEC Bangna, Bangkok, Thailand



Figures 23-24 : The 11th TCU International e-learning Conference 2020: Disruptive Ecology : New Normal of Education in Post COVID-19.

There were 30 keynote speakers and invited speakers from almost all continents in the world sharing the challenges of online education, as well as MOOC during this post COVID-19 era.



Figures 25-26 : The 12th TCU International e-learning Conference 2021: Empowering New Normal Global Online Education.

More than 800+ participants joined the live webinar and up to 10,000 viewers watched our on-demand webinar on our Facebook page.



Figures 27-30 : The 13th TCU International e-learning Conference 2022: Social Change and Future of MOOCs

Our latest conference which was live in 3 modes, onsite online and on metaverse for the very first time. There were 9 keynote speakers and 27 invited speakers from all continents in the world sharing the challenges of social change in online education, as well as MOOC during this post COVID-19 era.

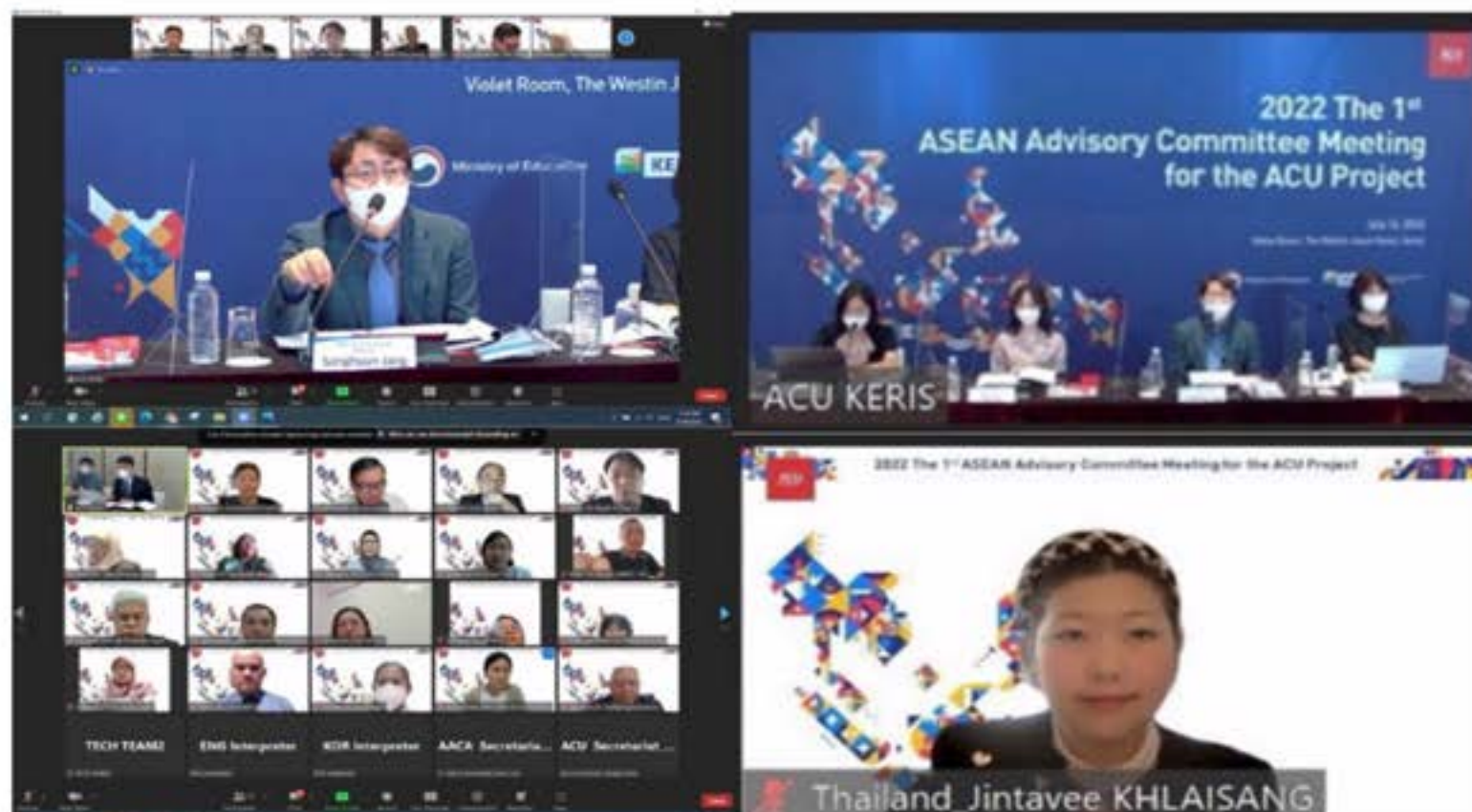


Figure 31 : Thai MOOC attended the 2022 ASEAN Advisory Committee Meeting for the ACU Project on July 14, 2022.

The discussion focused on strengthening international cooperation among ASEAN countries focusing on online higher education, demand driven courses and programs, and to expand open online platforms and resources interchange to share achievement. ACU Project and TCU Project have a follow up discussion planned for OERs interchange between the two platforms (<http://www.aseanoer.net> and <https://thaimooc.org>)

Implications

Since the Thai MOOC initiative since 2017, Thai MOOC has enjoyed a sensational record, with so many local institutions and organizations joining, as well as many more global partners collaborating with Thai MOOC, this is no wonder why we have now almost 1.5 million learners. Thai MOOC is now one of the biggest National Digital Learning Platforms with a big and strong foundation, synergizing with hundreds of partners to empower the new era of digital lifelong learning and higher education in Thailand. The content interchange for learning platform and MOOC course directory, and a credit bank system will be our next stepping stone.

Thai MOOC, as part of the Thai Cyber University (TCU) project, has created an open online courses platform that brought together universities to empower open online learning since 2017. Over time, Thai MOOC has improved, developed, and transformed into Thailand's major Massive Open Online Courses platform, to support a wider number of learners with various learning demands. Similar to other countries, Thai MOOC is eventually considered a national digital learning platform for lifelong learning and is supported by the Ministry of Higher Education, Science, Research and Innovation (MHESI). Thai MOOC will continue seeking the opportunity to collaborate with other agencies to improve the platform and make the most benefit to all learners.

At national level, Thai MOOC has been recognized for providing a sustainable way to foster lifelong learning with national standards, providing a meaningful collection of courses for everyone as well as serving the national credit bank system. This is truly a "trusted" enabler for upskilling and reskilling human capital of the nation, in-line with the national long-term strategies.

At the global stage, Thai MOOC is seen as a "trusted" partner. Exchange of quality courses, course meta-data, as well as directory management among the partners have put Thai MOOC as a strategic alliance with many popular providers and organizations. The road ahead is still a long way, but surely is interesting and promising.



Khlaisang, J. (2021). Envisioning the Future of Thai MOOC: The National Digital Learning Platform for Lifelong Learning. Presentation presented at The Forum of Long-Term Care In 2021, January 29, 2021

Thammetar, T., Theeraroungchaisri, A., Khlaisang, J. (2022). Thailand Massive Open Online Courses. Retrieved on 10 August 2022 from: <https://bit.ly/3KiZpFp>

Ministry of Higher Education, Science, Research and Innovation. (2022). Thai MOOC Talk on Tour (Online Show & Share) Ep.5. Retrieved from <https://cutt.ly/VDO-Talk-EP05-01>

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Thammetar, T., Theeraroungchaisri, A., Khlaisang, J., & Duangchinda, V. (2022). Thai MOOC story: Anytime Anywhere Everyone Can Learn to Empower Lifelong Learning. Thailand Cyber University Project. Presented at The International e-learning Conference 2022: Social Change and Future of MOOCs.



ThaiMOOCVERSE: Exhibition in the Metaverse World of Thai MOOC

#ThaiMOOC #metaverse #ThaiMOOCverse #ADDIE model

Associate Professor Dr. Surapon Boonlue / King Mongkut's University of Technology Thonburi
 Associate Professor Dr. Thapanee THAMMETAR / Silpakorn University and Thailand Cyber University
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ThaiMOOCVerse is a project created from the concept of a meeting in the Metaverse by applying the ADDIE model as a design and development model. Its objectives are to be a communication channel and a place for activities in the Metaverse. The ThaiMOOCVerse is also created to study the visit behaviors of the seminar participant.

01

Introduction

The COVID pandemic has caused many changes. Organizing seminars has shifted from in-person participation, activity, and site visit to virtual events. ThaiMOOC is an online learning platform of the Thai Cyber University Project (TCU) under the Ministry of Higher Education, Science, Research and Innovation (MHESI). It serves as a unit to produce, store and collect knowledge resources in the form of online lessons. Each year, number of learners who have passed at least a Thai MOOC course grows rapidly. Besides disseminating knowledge, TCU also serves as the center of the country that provides a knowledge exchange platform, both domestically and internationally in the field of online lesson development by organizing seminars, namely the Thailand Cyber University (TCU) International e-learning Conference (as known as TCU-IEC or IEC).



More than 13 annual international conferences have been organized since the past decades. In 2022, the TCU working team decided to organize the event in 3 formats: On-social via Facebook, Online via Zoom, and On-verse via Spatial.io.

Spatial.io was used to develop the Metaverse in ThaiMOOCVerse project. Its objectives are to be a communication channel and a place for activities in the Metaverse. The ThaiMOOCVerse is also created to study the visit behaviors of the participants. The process of creating and developing ThaiMOOCVerse was divided into steps according to the ADDIE model to create a prototype that meets the needs of most users. The details will be discussed in the next section.

Implications

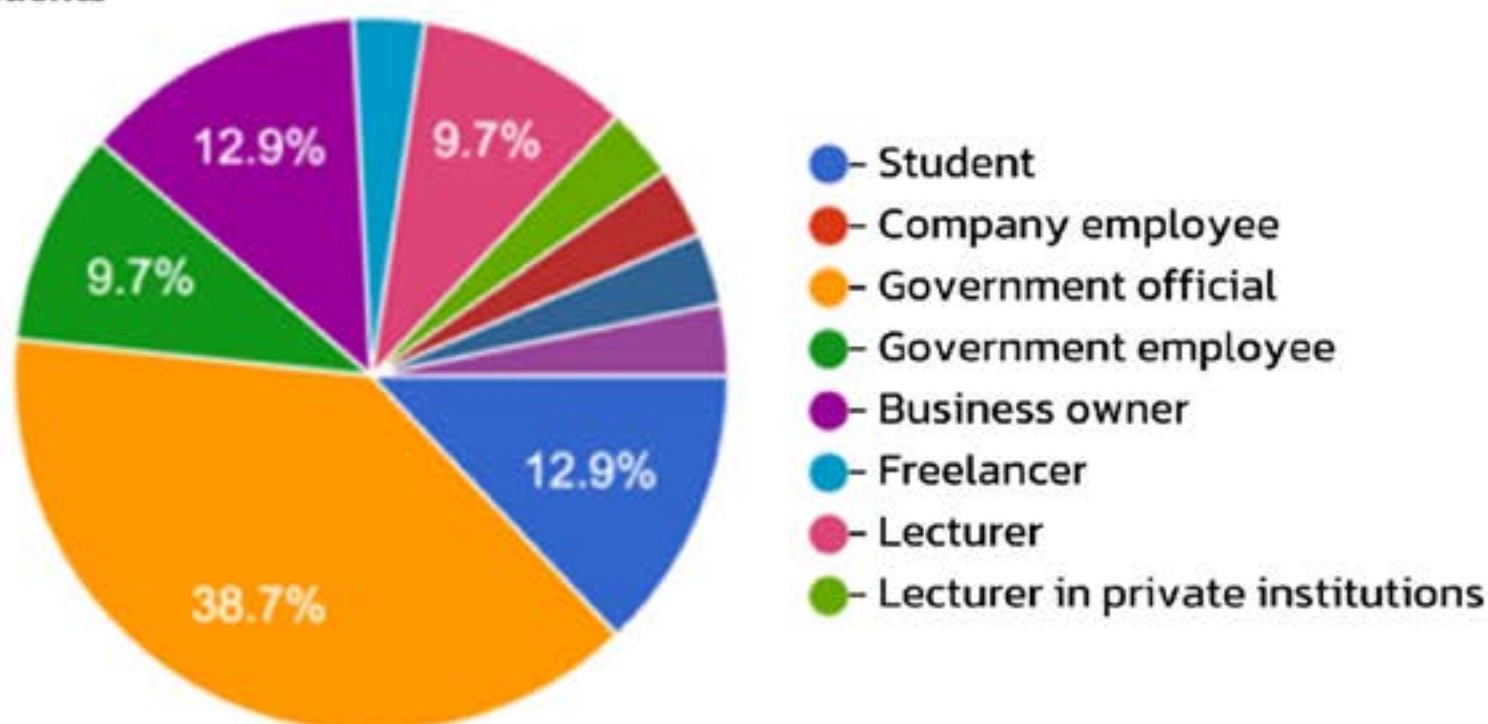
There is a national strategy and planning to develop Thai MOOC further to provide a meeting platform service for use in higher education both in the Ministry of Higher Education, Science, Research and Innovation; and other interested agencies.

02 Analysis

The analysis process. The analysis was conducted using documents and guidelines for the development of the Metaverses, as well as the survey from people who participated in the introduction of the ThaiMOOCVerse project and access. Below are the analysis results.

Occupation 31 respondents

Thai MOOC



Educational level

31 respondents

Thai MOOC

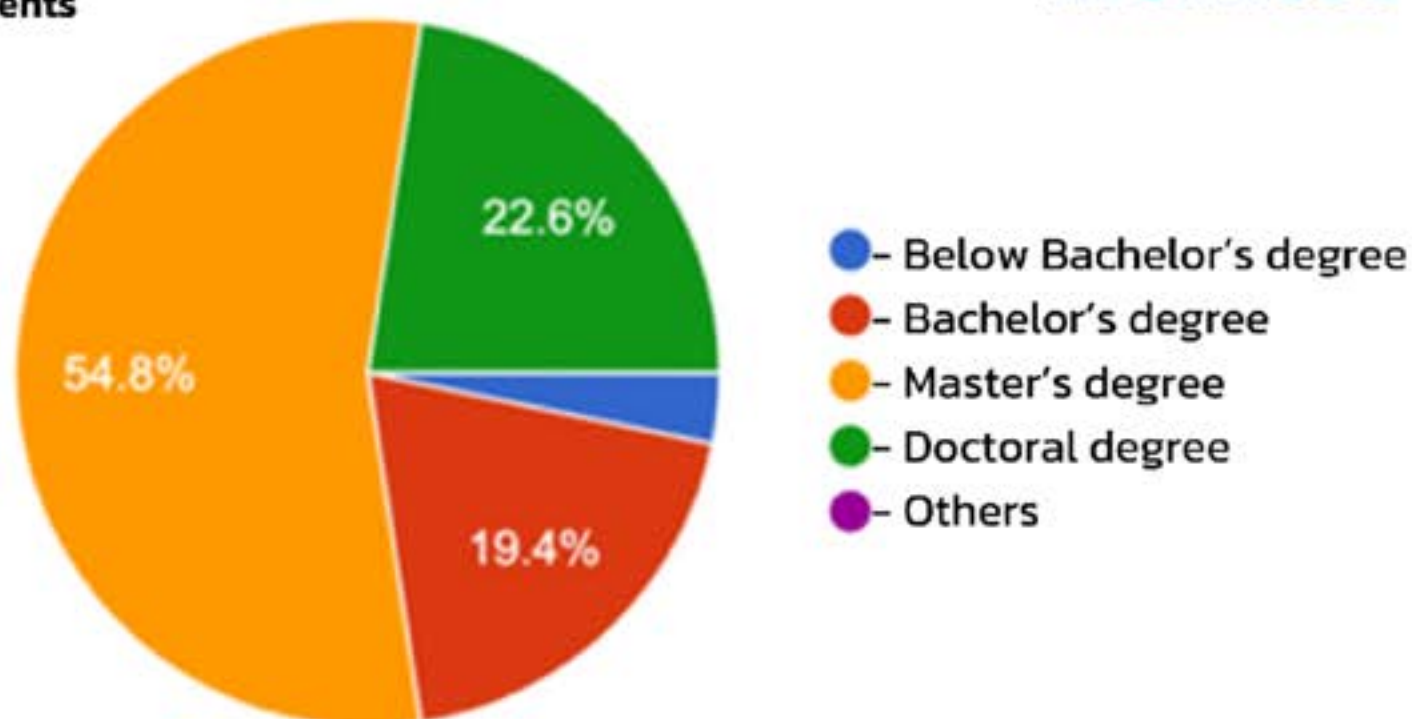


Figure 1 : Information of respondents

Figure 1: shows that most respondents are government officials and have a Master's degree. Most of them follow the meetings of Thailand Cyber University regularly.

Internet speed regularly used

31 respondents

Thai MOOC

Have you ever used Metaverse (Spatial.io) before?

31 respondents

Thai MOOC

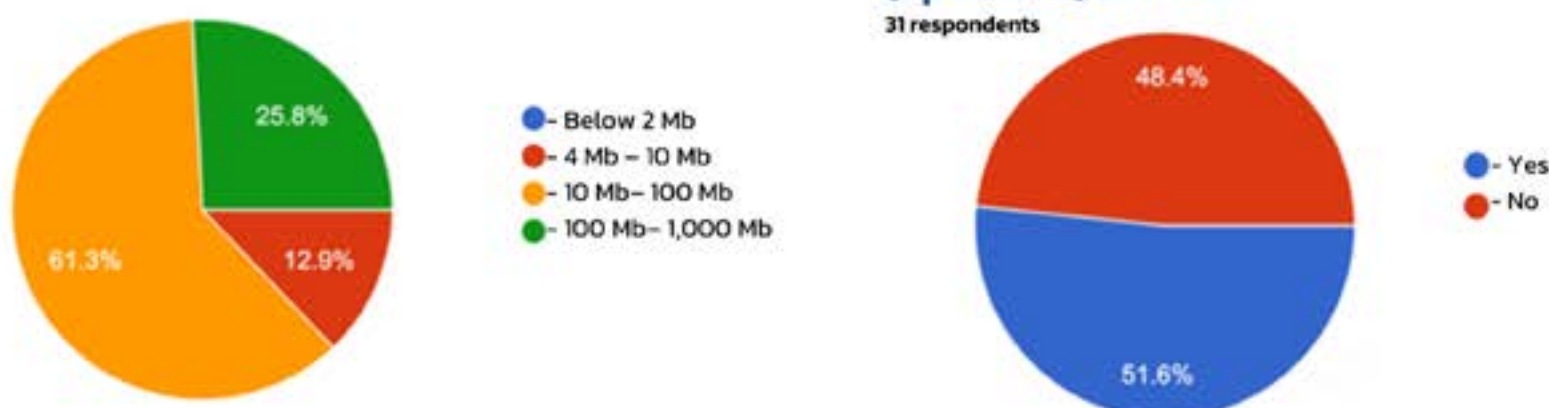


Figure 2 : Internet speed and Metaverse experience of respondents

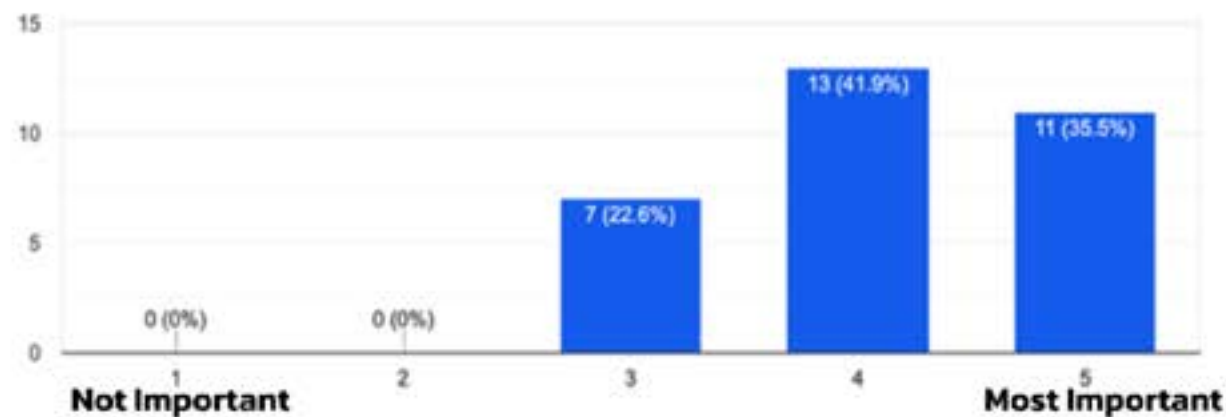
In terms of the device to access the internet and Metaverse, it was discovered that most respondents used computers/Notebook/MacBook to access the internet (74.2%), followed by personal computers (51.6%), and smartphones (48.4%), respectively. Some respondents also used iPad, tablets, Oculus, and Hololens glasses, respectively.

The scale of attending virtual meetings or events was divided into 5 levels, from most to least or never attending the virtual meeting. The study found that most respondents had never attended a virtual meeting (38.7%), followed by participation at the moderate level (32.3%), low level (16.1%), high level (9.7%), and highest level (3.2%) respectively.

How important it is to participate in virtual activities via Metaverse and to create interaction?

Th@i MOOC

31 respondents



What level is the need of listening lecture from international keynote speakers via Metaverse?

Th@i MOOC

31 respondents

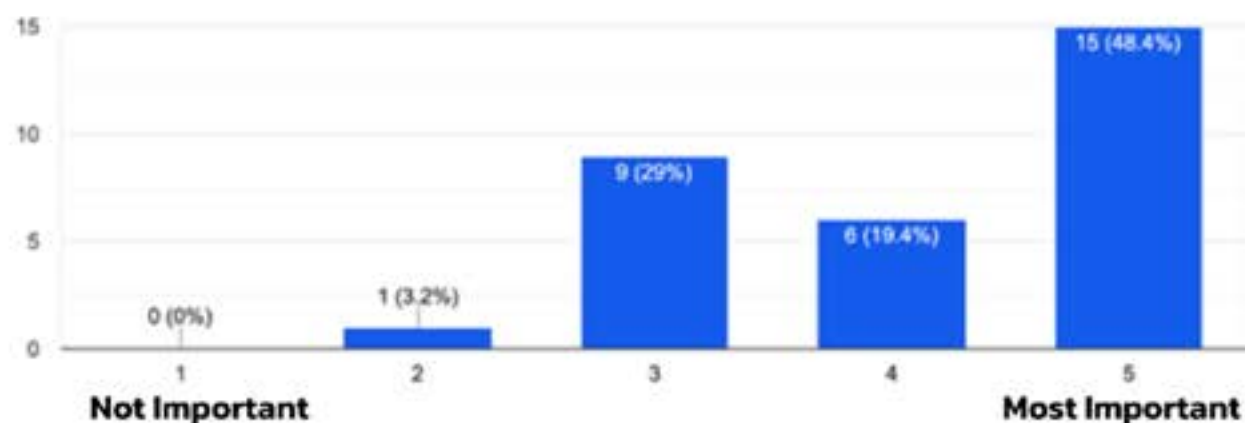


Figure 3 : Information on needs to participate in activities and to listen to speakers via the Metaverse

Figure 3 shows that most respondents had a high level of need to participate in the activities.

The demand for listening to speakers through the Metaverse is also at a high level. The open-ended questionnaire about the reasons for participating in the Metaverse found that the respondents wanted to study new innovations, study the development of MOOCs technology, look for online learning options, attend exhibitions, participate in discussions, attend virtual meetings, create another world of Metaverse 3D designs, explore ideas from different countries, exchange ideas, make new friends, explore knowledge/concepts/tools to help manage lifelong learning, experience all virtual activities, experience tool advancement, join the activity, gain inspiration in the development of MOOC, access to virtual worlds without limitation of locations, experience new and cutting-edge technologies, and experience various technologies from the perspective of people wearing VR glasses.

03

Design

From step 1, the working team analyzed the data obtained from the study of the document, the survey, and data collection in step 1. The results were used to design the workflow, using various technologies to respond to the user.

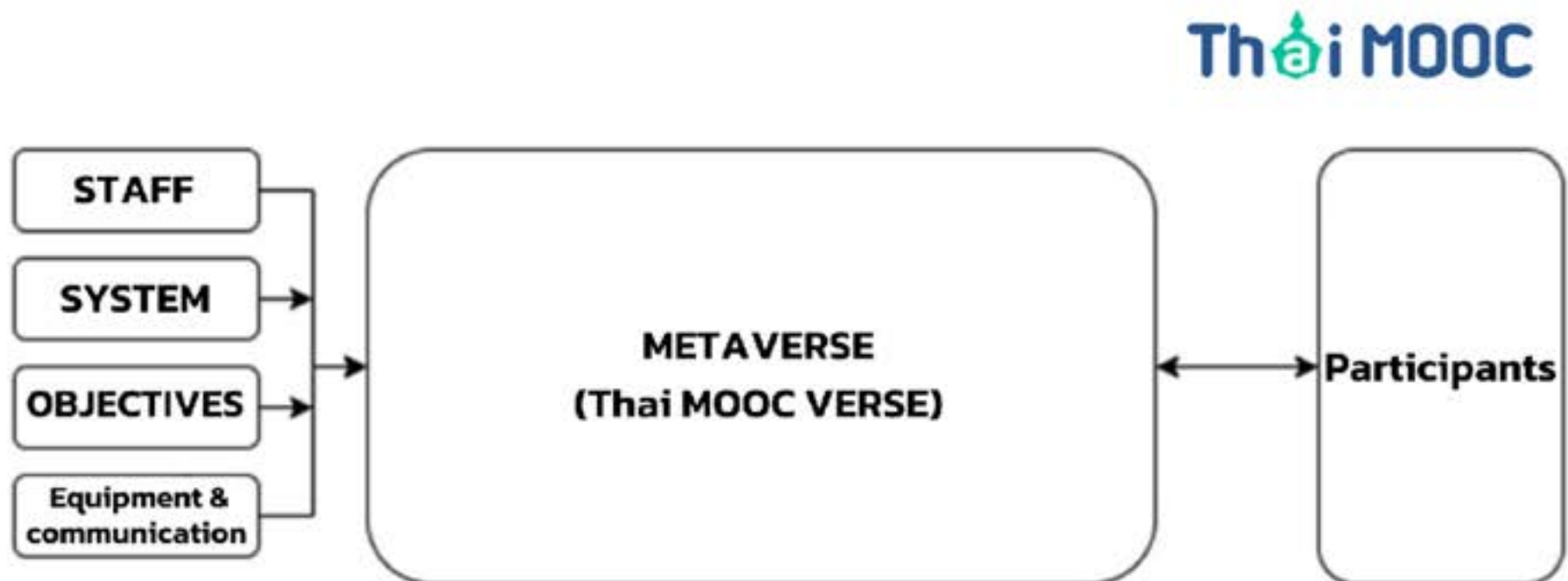


Figure 4 : Workflow of ThaiMOOCVerse

The design includes three phases according to the system model: Input, Process, and Output. The design begins with the workflow and staff usage in different parts, followed by the system design and selection of systems or platforms suitable for use. The goals or objectives of the use must be clear and cover the mission. This also includes the design of all the tools and equipment used in the project. The design of the process includes the workflow or the process of using the system, starting from the login, activities, communication, and evaluation. The working team has designed a user interface with an emphasis on ease of use. According to the survey, half of the respondents have used the Metaverse in the past.

04

Development

The development process is divided into two parts.

- 1) The first part is to develop an exhibition venue on the Metaverse system with the Spatial.io program, using the process of virtualization from many events in the past. Blender, a 3D graphic program was used to design and create venues for the Spatial.io program.

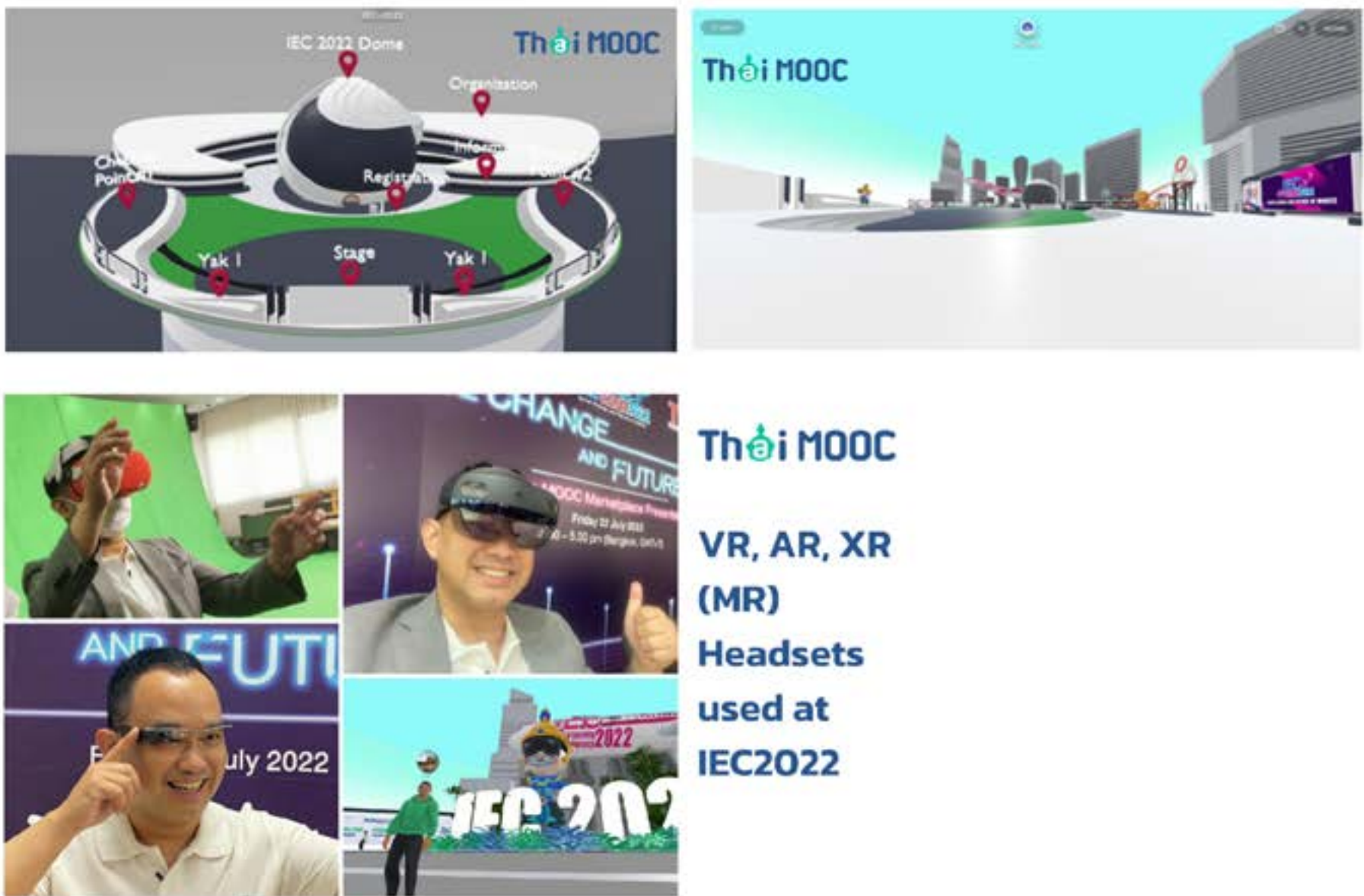


Figure 5 : Map and landscape of the developed ThaiMOOCVerse as well as Headsets used at IEC2022

The locations in the ThaiMOOCVerse

- 1 Registration point. This is the point where the avatar is logged in. The user must press the link to go to the form entered in the system.



Figure 6 : The first page of ThaiMOOCVerse Registration point with the dinosaur as an assistant to do activities

- 2 Dome shows a notice board to introduce the speaker at each period. Before walking into the dome, the user can take a photo with speaker posters.



Figure 7 : Keynote speakers and invited speakers (hall of fame)

- 3 Stage exhibition area is in the back, opposite the dome. This is a video display area of events and activities that occur at that time. If the users walk closer to the stage, they will hear the sound more clearly.



Figure 8 : Broadcasting meetings from Zoom through the virtual world in the Metaverse

- 4 Giant (Yak), named Phiphek, is the symbol of the ThaiMOOC project. It represents curiosity and seeking knowledge all the time.
- 5 Check-in Point #1 is a place where the avatar comes to take pictures and talk and exchange opinions together. The background is a giant wearing Hololen glasses and an IEC2022 banner.
- 6 Check-in Point #2 is a place designed to be an amusement park. There are big cats and roller coasters. It is a rest area for the participants of the seminar.
- 7 Information service point. This point provides answers and information. The informants are volunteer students.

- 8 Exhibition and product booths of project sponsors are areas for agencies and exhibitors.



Figure 9 : Booths of sponsors and cohosts for public relations (bottom) Atmosphere at the event

2) Live broadcasting system and activity development for the event in a metaverse exhibition

- 1 Two media and live broadcast staff bring the live broadcasting activities from ZOOM and Facebook to broadcast on the big stage of this event.



Figure 10 : keynote speaker

- 2 Volunteer avatar students who join the event will wear dinosaur costumes to make them different from other avatars in the system. Volunteers perform various duties.
 - One public relations officer is responsible for answering questions of the avatar about the schedule and activities that will take place.
 - Two guide staff are responsible for bringing the avatars who have arrived and haven't been able to go to different parts or to be able to walk in different parts on their own.
 - Two photographers are responsible for taking pictures and videos of the seminar participants and bringing the images obtained to post them where the avatar can click on the link to load their own image.



Figure 11 : Dinosaur introduces the participants.

05 Implementation

►► Implementation

The working team has designed and formulated a clear flowchart of the workflow after designing the mission and working process. The workflow is as follows.

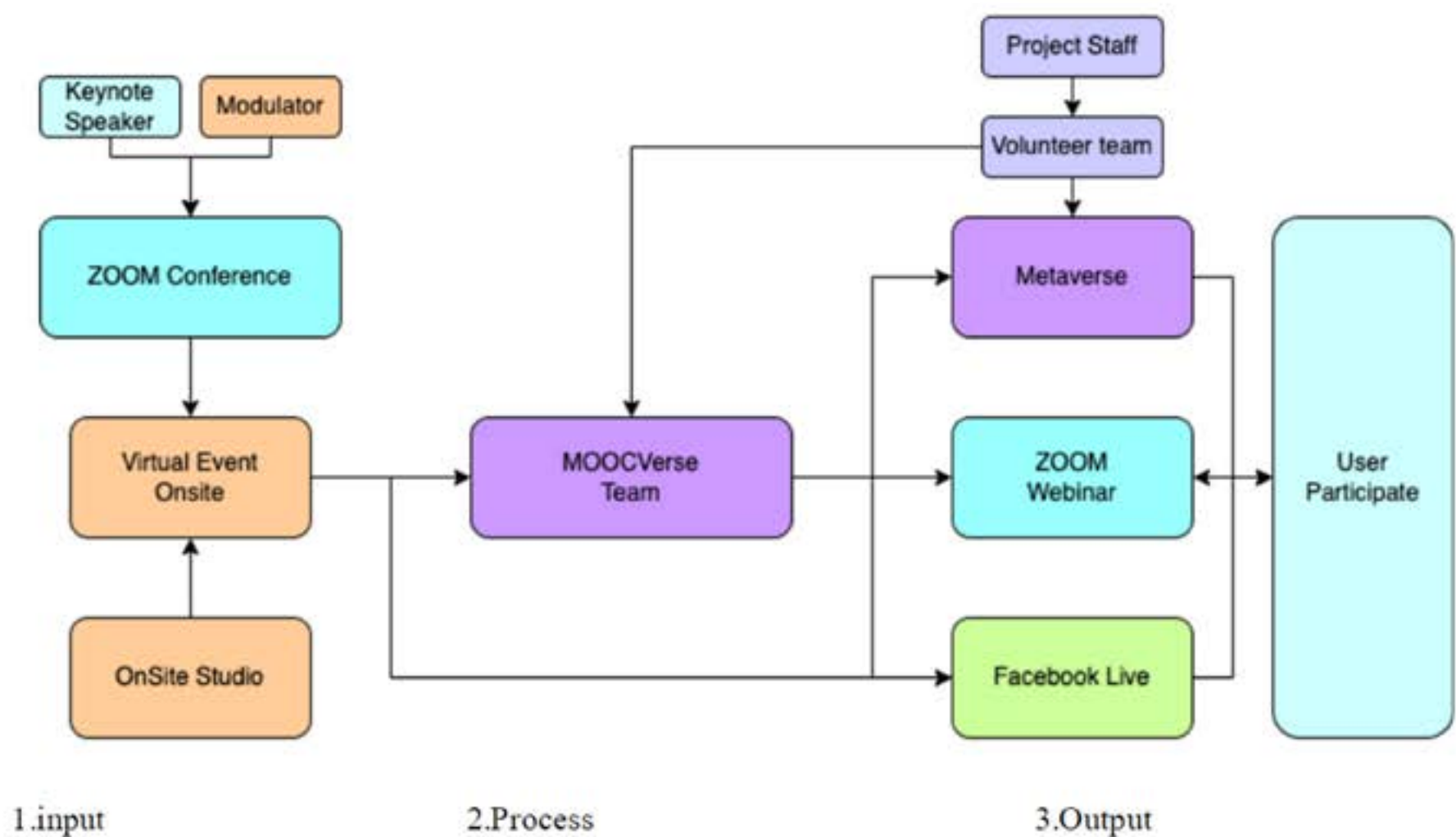


Figure 12 : Workflow of ThaiMOOCVerse

The functioning of the systematic process.

- 1 Input media and activities from various sources.
 - The ZOOM Conference system provides a meeting with international and domestic speakers. Videos and audio from the venue are imported into the system for further transmission to other sections.
 - Virtual Event Onsite system is a visualization system for organizing a meeting by bringing images from the ZOOM program to integrate with the studio with the team and the operator in the same place.
 - Onsite Studio system is a studio used for filming and recording videos to other systems.
- 2 Process is the working process of ThaiMOOCVerse that brings videos and audio from Virtual Event to be arranged into a large screen display. The working team selects videos and audios from various systems to be displayed in this section.



Figure 13 : Audio-visual media from the ZOOM Conference program and Facebook displayed in ThaiMOOCVerse

- 3 Output is a system where seminar attendees can participate in various activities according to the objective of this event. The participant must become an avatar into the Metaverse via the website with the Spatial.io program. It can be accessed from any available device, such as computers, tablets, smartphones, and oculus glasses. Each device will have different user features and avatar controls. The avatar will be able to communicate with other members and do activities such as walking, attending lectures, taking pictures at various shooting spots, and talking with other avatars.

► Evaluation

The objectives of the development of TCU's ThaiMOOCVerse for the IEC2022 conference.

1. To be a communication channel and a place for activities in the Metaverse.
2. To study the visit behaviors of the seminar participants.



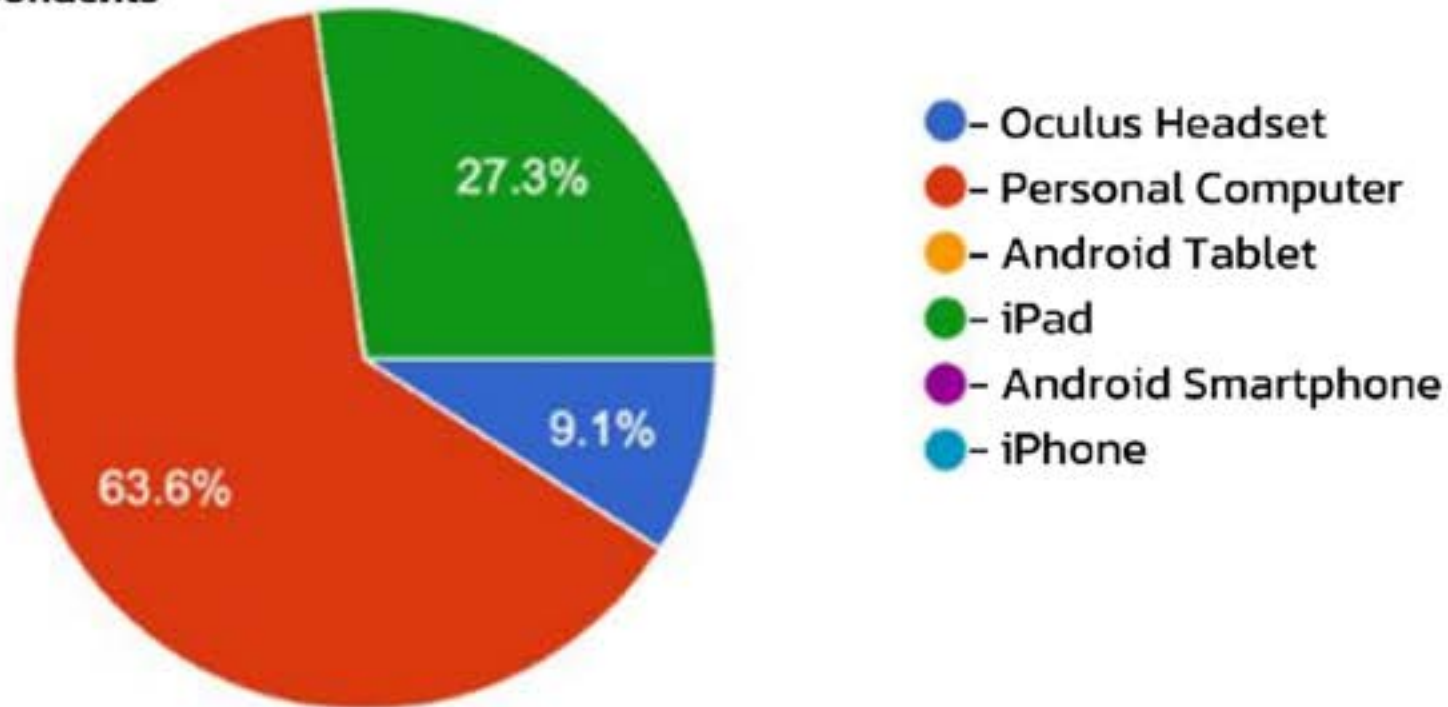
Figure 14 : IEC2022 Conference

The results of the use of the ThaiMOOCVerse system for the IEC2022 conference on July 22, 2022 are as follows.

The ThaiMOOCVerse system was developed as a communication channel and a place for activities in the Metaverse system. It was designed and developed to allow the avatar to join the system. According to the login log, there are more than 300 visits on the conference day. There have been more than 1,500 visits until now. Until today, the conference is still accessible. It was found that most avatars logged into the Metaverse to listen to lectures from foreign speakers and explore the Metaverse system to take photos at various locations and check-in points. Also, they met and talked to people whom they knew in the system.

How did you visit ThaiMOOC Verse

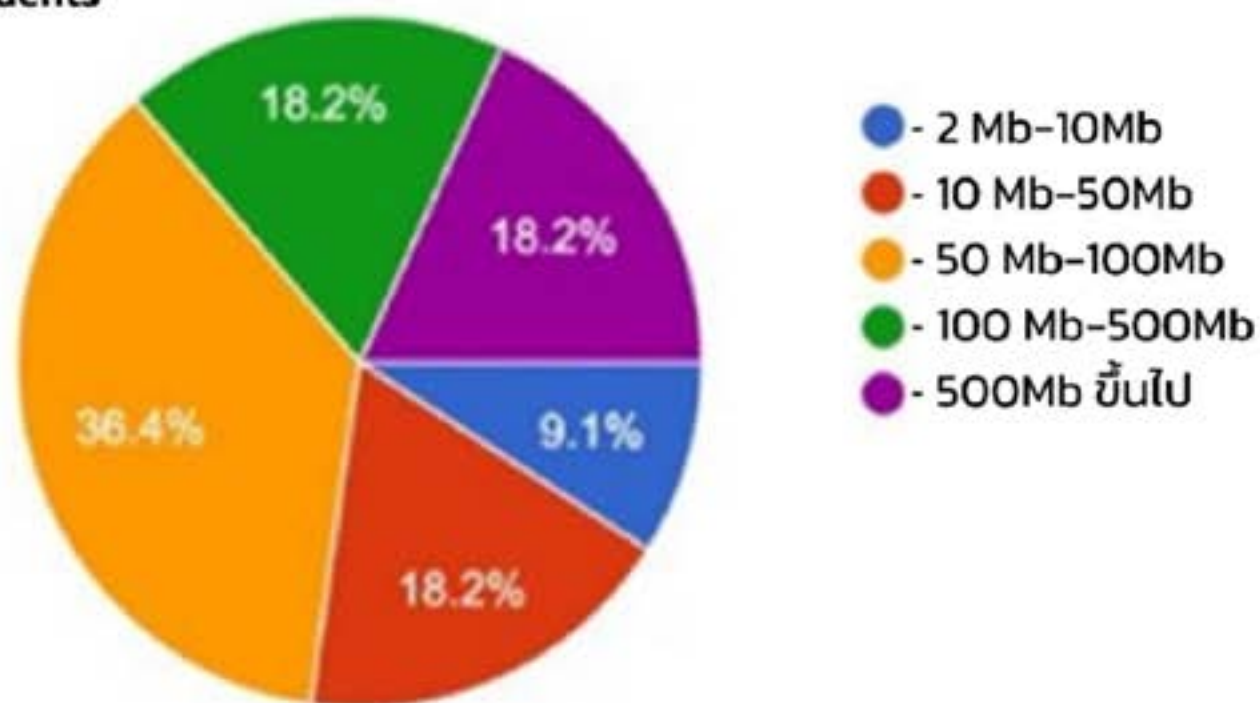
11 respondents



ThaiMOOC

Internet speed used to access ThaiMOOC Verse

11 respondents



ThaiMOOC

Figure 15 : Data from respondents about devices and internet speed in the Metaverse.

According to the survey responses in the system, it was found that the majority of participants, 63%, logged into the Metaverse from a computer and iPad, respectively. As for the internet speed, 38% used internet speed 51-100Mb/S, indicating that internet speed is one of the limitations of accessing the system.

What level do you think Metaverse make you feel that you actually participate in the Conference?

11 respondents

Thai MOOC

What level do you think Metaverse make you feel that you meet your friends and communicate with others like you are in the same place?

Thai MOOC

11 respondents

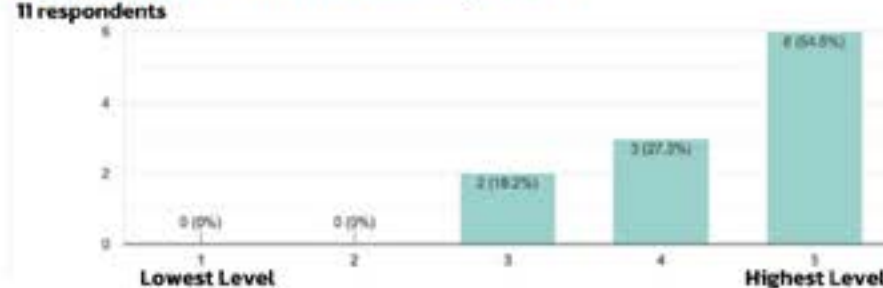
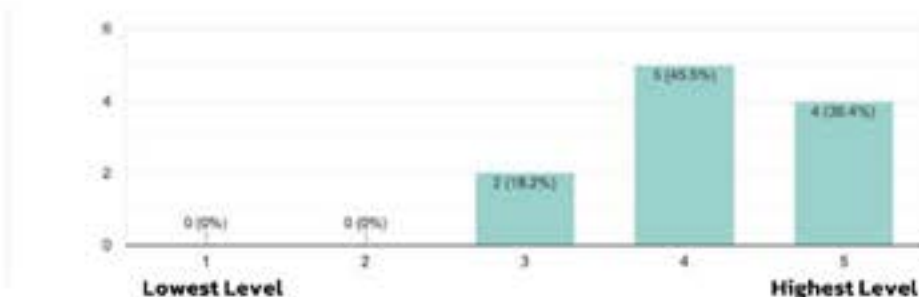


Figure 16 : Response from the participants about advantages and disadvantages of the Metaverse system

What level do you think Metaverse will complement online meetings?

11 respondents

Thai MOOC

What level of difficulty to enter Metaverse?

Thai MOOC

11 respondents

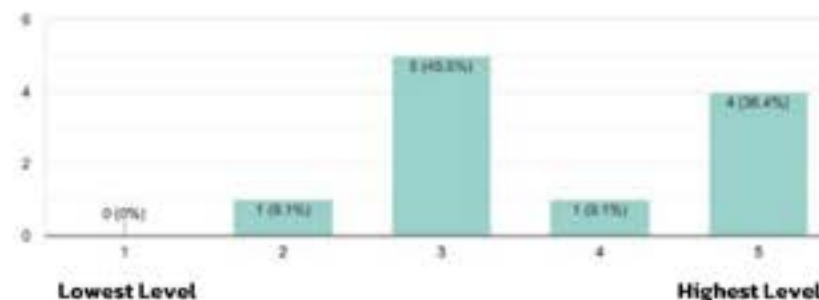
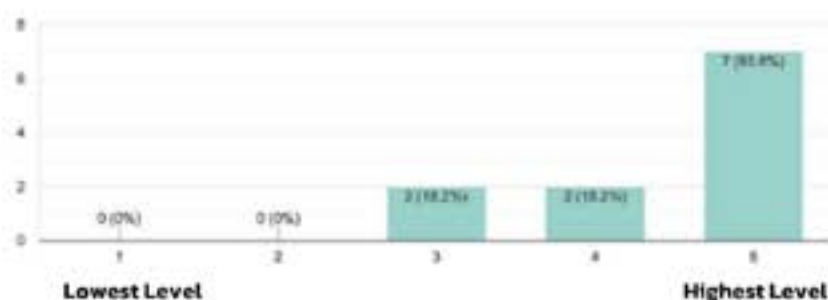


Figure 17 : Response from the participants on the opinion of the Metaverse system

From the survey responses in the system, it was found that most Metaverse participants felt that they have actually joined the event at level 4, which means they had a feeling that they were being at the conference at the high and highest level.

- Most Metaverse participants think that the Metaverse will complement online meetings at the highest level, showing that the participants had confidence in ThaiMPOOCVerse to participate in the conference at the highest level.
- Most Metaverse participants thought that entering the Metaverse would enable them to meet friends and communicate like they were in the same place at the highest level.
- Most Metaverse participants thought they experienced difficulty logging in to the Metaverse at a moderate level, by logging in from a computer and iPad, respectively. As for internet speed, 38% of the participants used an internet speed of 51-100Mb/S, indicating that internet speed is one of the limitations of logging in to the system.

The answers to the open-ended question from participants are as follows.

Question: Do you use a real photo or fictional character to enter an avatar?

Metaverse participants answered that they used a real photo because their friends can recognize them. Also, they wanted to test the system. Few participants who did not use the real photo commented that they used another picture because they could edit the photo according to their own needs. What users think of this Metaverse system is virtual because it was as if they had actually been there.

Challenges, problems and obstacles

Most problems are from the device because the Metaverse employs the spatial.io. program which produces a 3D image. It requires high machine resources and internet network resources. This causes participants in the Metaverse to see blurry images and slow motion there are a lot of objects in the Metaverse.

Another problem found is the Metaverse system has simultaneously limited access because it requires relatively high server resources.

07 Conclusion

The authors suggest the direction to implement Metaverse in various dimensions as follows.

- 1 The organizing of activities in the Metaverse. This is very important because whether or not the user would feel if they are in the Metaverse virtually, depends on the activities that they do while participating.
- 2 Metaverse technology. Technology and equipment are important. To create a virtual image on a current website or 3.0 website, the data must be fetched in large quantities. Therefore, if new technologies are used in the development, it will make the system easy and convenient to use.
- 3 The environment design in the Metaverse is what gives the avatar an immersive or virtual feeling of being in it. Environment design has to be developed to be realistic by using new technology.
- 4 Measurements in the Metaverse are another concept for research and development. Accessing the Metaverse is like joining the real activity. Therefore, a new measurement and evaluation method should be developed.
- 5 Management in the Metaverses. In the future, the Metaverse will be the technology that brings viewers from far away locations by accessing from different devices. Having a virtual space in the digital world will cause digital assets to have a higher value. Online trading marketing, exhibition center, and tourism can bring many benefits.
- 6 Supporting the Metaverse with various resources will drive the creation of the Metaverses for more applications.
- 7 Ethics in the Metaverse. The virtual occurring in the Metaverses may cause the avatars to have new behaviors and skills. Anonymity, concealment, and disguise may occur. Therefore, ethical checking and promotion in the Metaverse are important. There should be some indoctrination and protection to participate as a digital citizen.

- 8 Establishment of an organization in the Metaverse. In the future, the Metaverse will come in the form of Web 3.0. It will not be strange that in the future we will see various organizations have a space in the Metaverses like having an organization website in the Web 1.0 era and social networking in the Web 2.0 era. The entering of Web 3.0 will create the Metaverse of organizations.

Based on the aforementioned approach to implementing the Metaverse in various dimensions, ThaiMOOC plans to further develop ThaiMOOCVerse to provide a meeting platform service for use in higher education, both in the Ministry of Higher Education and other interested agencies. IEC2022 Conference can be visited virtually via the link: <https://spatial.io/s/IEC-2022-62cf8a88c0de3b0001590dc5?share=8915952788380156904>.

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EMPOWERING Lifelong Learning with Thai MOOC ACADEMY : Accredited Online Lifelong Learning at National Level

#empowerlifelong learning #ThaiMOOC #ThaiMOOCacademy #national

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Higher education in Thailand has gone through a major change to create a learning society, promote lifelong learning, and respond to learning in the new era that connects formal education, non-formal education, and informal education. The Ministry of Higher Education, Science, Research and Innovation (MHESI) is now introducing ThaiMOOC Academy.

01

Introduction

Higher education in Thailand has gone through a major change to create a learning society, promote lifelong learning, and respond to learning in the new era that connects formal education, non-formal education, and informal education. The Ministry of Higher Education, Science, Research and Innovation (MHESI) has improved higher education standards and educational quality assurance by amending the ministerial regulations and laws related to higher education standards, such as Ministerial Regulations on Higher Education Management Standards and Ministerial Regulations on Higher Education Curriculum Standards. The Higher Education Standards Committee has issued several related notifications, such as the Notification of Educational Management via Information Technology Systems and the Notification of Guidelines for the Operation of Credit Bank of the Higher Education.

These changes reflect the direction in driving higher education in Thailand to open to education in a variety of formats and channels, including learning in a classroom and learning through technology, formal education, non-formal education, and informal education which can link and transfer learning outcomes and educational qualifications through the credit bank system. This is considered a great development in higher education management as well as lifelong learning.

The Notification of Educational Management via Information Technology Systems has enabled educational institutes to provide education via information technology to create effective learning and produce learning outcomes that meet the goals of the curriculum and course. Higher education institutions that would like to open and offer a degree program via information technology must be legally established. They also have to have the readiness of personnel, equipment, technology, support systems and other resources that are suitable and sufficient for educational management via information technology. The criteria can be applied to all degree courses delivered via information technology. The programmes must be consistent with higher education curriculum standards, higher education qualification standards, and other related standards of the Ministry of Higher Education, Science, Research and Innovation.

The Notification of Guidelines for the Operation of Credit Bank of the Higher Education has made interested people able to study in informal education, non-formal education, and informal education without limitation of age and educational background. Students can collect learning results in the credit bank system of higher education institutions.

The credit can be transferred to study courses in higher education institutions. Higher education institutions that would like to implement the credit bank, must seek approval from the Council of Higher Education Institutions and apply for registration with the Higher Education Standards Committee. Higher education institutions must set regulations for the credit bank system, the credit transferring system and mechanism, and evaluation criteria and methods. There must be a committee to formulate policies and a unit to provide advice and consultation.

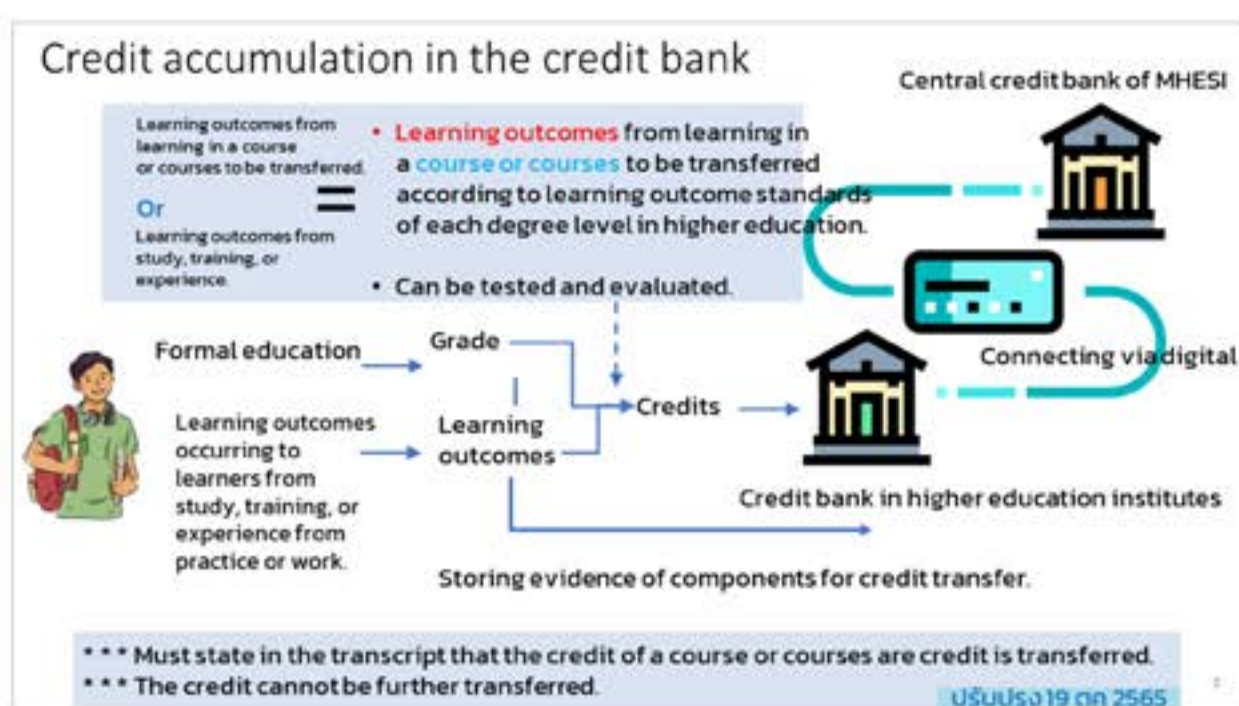
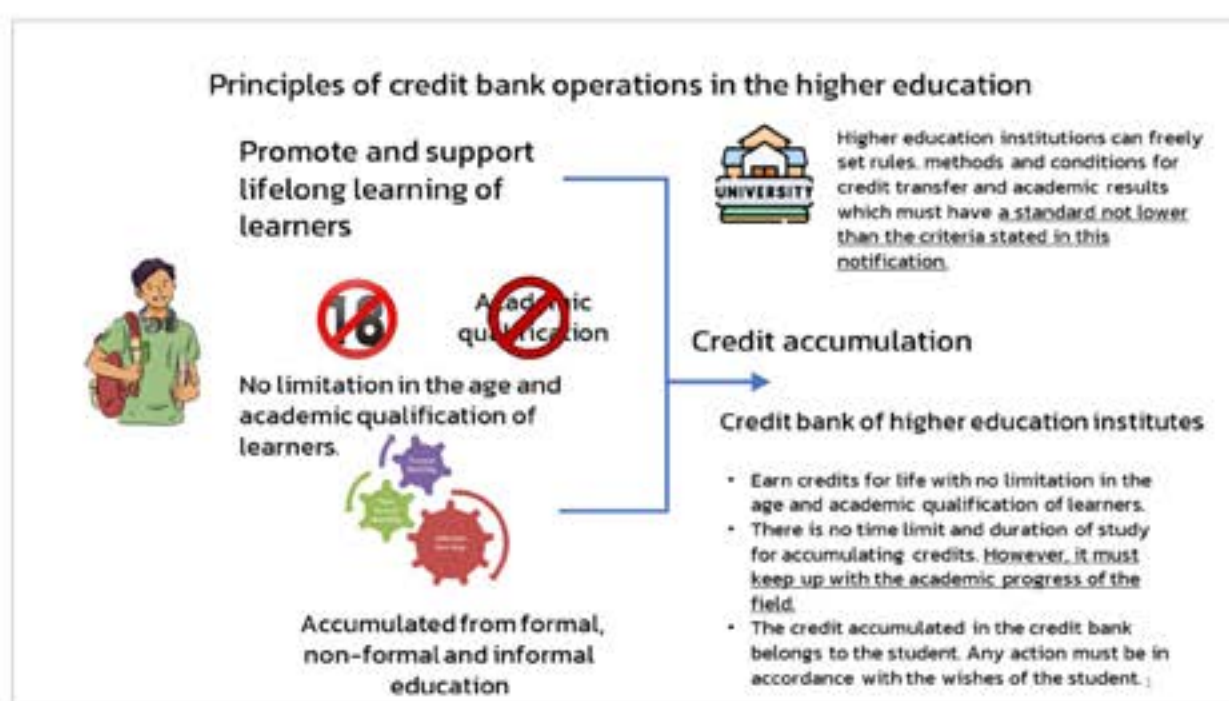
The committee has to review and revise the criteria and methods used in the evaluation. Higher education institutions can publish criteria and methods for credit transfer and study results to the public. A report on the operation must be prepared to present to the committee after the end of the every academic year.



Implications

Systematic change of ThaiMOOC Credit Bank System is a key principle for national lifelong learning accreditation process.

ThaiMOOC academy is not alone in the national lifelong learning accreditation process and management. The Ministry of Higher Education, Science, Research and Innovation (MHESI) and higher education institutions are the key stakeholders of the process. Figure 1 reveals Principles of Credit Bank operations in the Higher Education, and figure 2 depicts Credit Accumulation in the Credit Bank (as of October 2022). Figure 3 then illustrates Learning Process and Credit Bank of ThaiMOOC Academy.



The accumulated credits must be stated in the transcript that they are courses obtained from the credit transfer. The credit cannot be further transferred.

03

Criteria and Method for Credit Transfer

Implications

Criteria and methods for credit transfer of formal education together with Criteria for transfer of credits for non-formal and informal education; have become a foundation of ThaiMOOC Academy.

Criteria and methods for credit transfer of formal education

Credit transfer of formal education covers associate's degree, bachelor's degree, and postgraduate degree. The difference in the criteria is that the scores for the associate's and bachelor's degrees must have a minimum score of 2 from 4. The postgraduate degree must have a minimum score of 3 from 4. The associate's and bachelor's degrees can transfer not more than 3 out of 4 of the course credits. The postgraduate degree can transfer not more than 1 out of 2 of the course credits. Both levels have to exclude courses from their own higher education institutions. As for the transfer of thesis courses at the postgraduate degree, it shall be in accordance with the criteria by higher education institutions with the approval of the council.

Higher education institutions

Credit Bank of Thai MOOC Academy

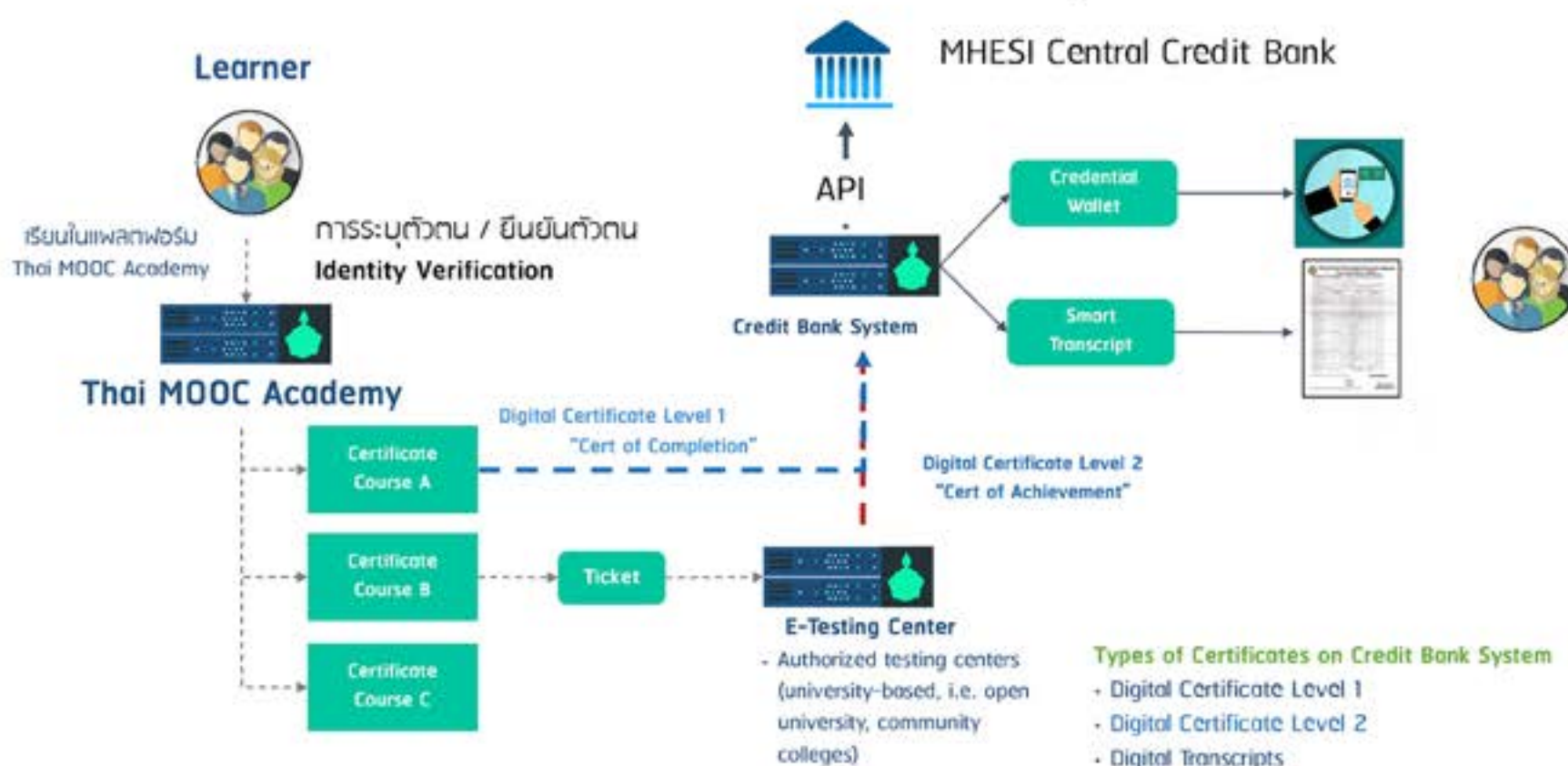


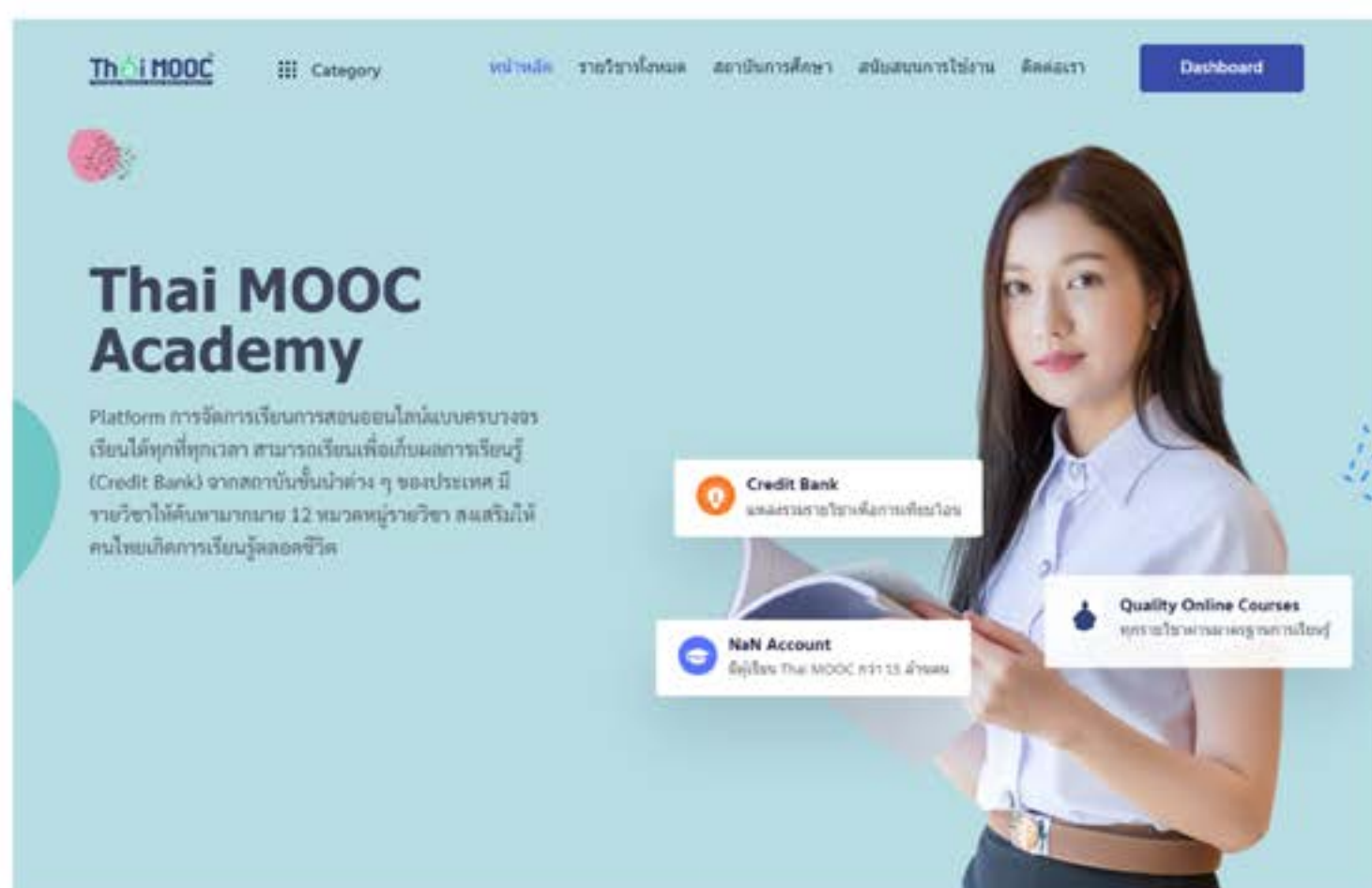
Figure 3 : Learning Process and Credit Bank of ThaiMOOC Academy

Criteria for transfer of credits for non-formal and informal education

Non-formal and informal studies have learning outcomes that are consistent with the desired learning outcomes of the course or subject group to be transferred. The learning outcomes to be transferred are not limited to the amount of time it takes to learn and gain experience in that learning outcome. It must keep up with the academic progress of the field. There must be a record according to the learning outcome assessment method, without specifying the letter grade or grade point. Evidence of information supporting the credit transfer comparison must be recorded. The learning outcomes that are requested to be transferred cannot be used to calculate the cumulative grade point average.

ThaiMOOC Digital Platform for Lifelong Learning started with the need to spread knowledge widely and expand learning opportunities to everyone through digital platforms. It has a learning management system, a signing-in and out system, and a certificate of study in PDF format. The platform has gradually been developed after many universities have been ready. Each university and government and private agency have started to have its own platform.

ThaiMOOC's new platform, ThaiMOOC Academy, has been developed to support MOOC courses that can be used for credit transfers. It has been improved in various aspects, both from the student's and the teacher's aspects. For students, the first page of the platform has been updated to be easier to use and understand. Most importantly, it was improved to be better used on mobile phones. There is also an additional system that is the main feature of the platform, a credit bank to accumulate learning results. In the future when students receive the learning certificate, credits can be accumulated and used. This is to drive and support the accumulation of credit for future general learning outcomes. There is also a student profile screen to show on social media that they have completed their studies.



ค้นหา รายวิชาออนไลน์และหลักสูตรฝึกอบรม

ผู้เรียนสามารถค้นหา รายวิชาออนไลน์ หลักสูตรฝึกอบรม และข้อมูลอื่น ๆ ได้ผ่านช่องค้นหาด้านล่าง เพียงใส่ Key Word ที่ต้องการ หรือสามารถคลิกเลือกค้นหา รายวิชาจากหมวดหมู่รายวิชาจำนวน 12 หมวดได้

Figure 4 : ThaiMOOC Academy Website (Under development)

A study in ThaiMOOC Academy starts with students registering in the system. There is an additional step to verify a student's real identity by using 5 important pieces of information in the student's ID card. After that, students can log in and study through ThaiMOOC Academy. After completing the course, the results will be stored in the credit bank system. Learners can view their learning results and learning history at any time from their Credential Wallet. They can also download transcripts that have been documented and encrypted with government-supervised data retention and encryption standards of the Digital Government Agency (DGA) and Electronic Transactions Development Agency (ETDA).



Figure 5 : Credential Bank and Credential Usage of ThaiMOOC Academy

04 How is Credit Bank better?

Implications

Credit Bank system of ThaiMOOC Academy has been designed with the stakeholder's in mind. Features are there to assist the learners as well as employers.

ThaiMOOC academy has 7 distinct features for its Credit Bank system. The features include:

- 1 A certificate is available in PDF format with embedded details of the learner, courses, and learning outcomes, as well as the electronic signature of the agency issuing the certification. Document is forgery-prevented by using the same standards as the digital transcripts of the university (Digital Transcript).
- 2 Learning results are conveniently collected.
- 3 The external credit with the same standard can be transferred into the same wallet.
- 4 Students can accumulate learning results indefinitely.

- 5 The system can extract information from learning certificates without requesting information on ThaiMOOC Academy.
- 6 Most importantly, ThaiMOOC can create a QR Code that can be scanned through a mobile phone. It can be used to verify the correctness and increase the ease of viewing basic information of the document to make it more reliable.



Figure 6 : ThaiMOOC Certificate with unique certificate QR code and URL

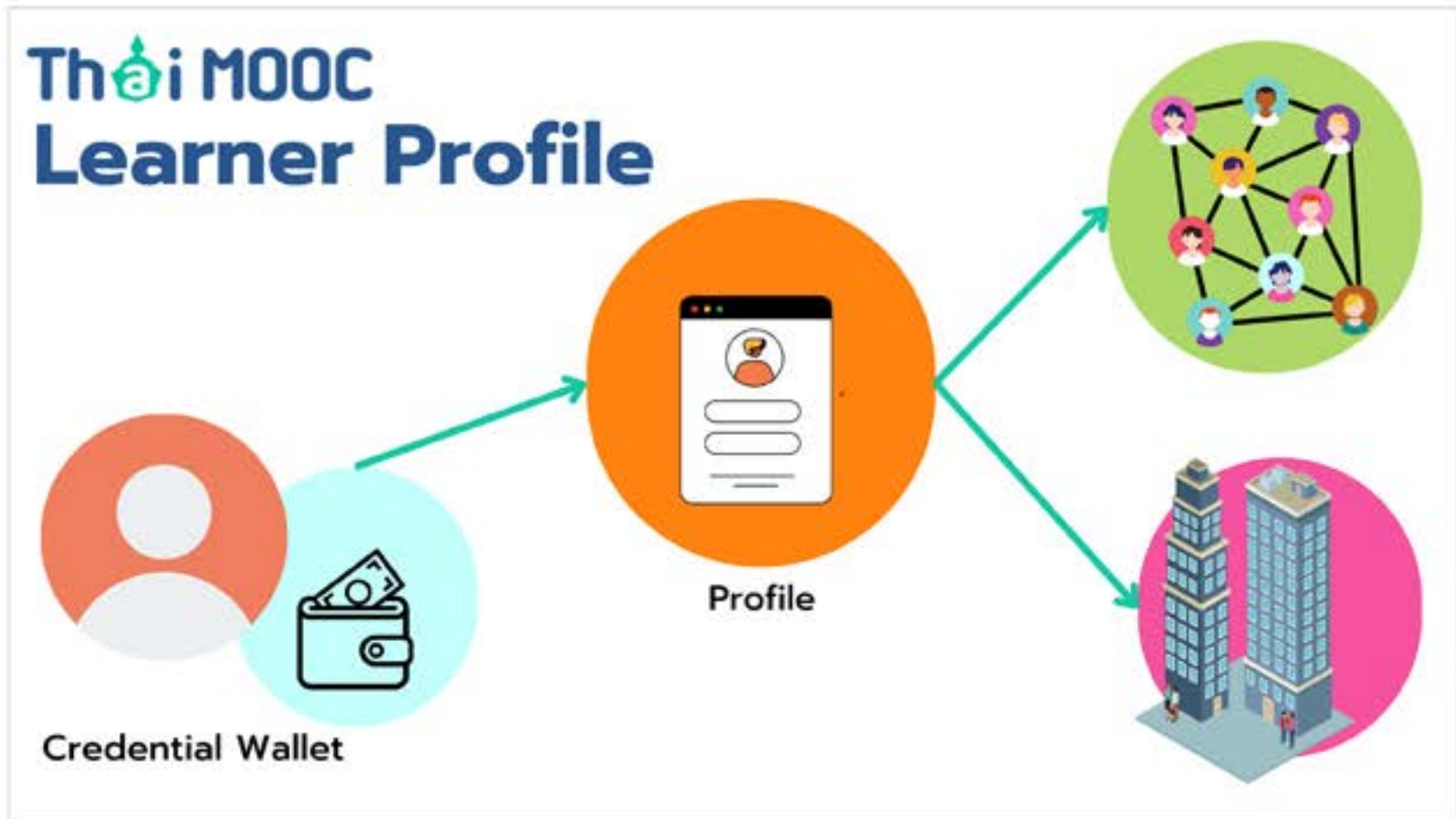


Figure 7 : Digital Certificate Validation Website by Electronic Transactions Development Agency (ETDA)

This is an example of the website of ETDA where students can log in by themselves. The certificate files received can be examined in various aspects, including credibility.



Figure 8 : Learner's Profile

Students can edit and decorate their own profile page by inputting basic information and scope of interest. They can also choose which subjects they want to display on social media and show to companies that they to apply for a job, etc.

ThaiMOOC, as part of the Thai Cyber University (TCU) project, has been service the nation as an open online courses platform that brought together higher education institutions to empower open online learning since 2017.

In 2022, ThaiMOOC has earned a significant upgrade with a total revamp of the whole process, in the quest to become a most complete national Lifelong Learning platform with a national Credit Bank System as well as a Learner's ePortfolio System interconnected. As a result, Thai MOOC academy has been introduced as a graduate of the existing ThaiMOOC system. The future of ThaiMOOC academy looks surely promising. It would really be interesting to see and learn from feedback of not only the learners, but also educational institutions of all levels, as well as employees. 2023 will be an interesting year for ThaiMOOC academy, especially for further development and features enhancement.

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2022 Trend Report of
Higher Education &
e-learning in ASEAN



Published in 12. 2022 **Publisher** ACU Secretariat (ASEAN Cyber University Secretariat)
Address 64, Dongnae-ro, Dong-gu, Daegu, Republic of Korea
TEL. +82-53-714-0114 **Homepage** <https://www.aseanoer.org>