2023 Trend Report

Higher Education & e-learning in ASEAN



Vol. 3

KERIS KOREA EDUCATION AND RESEARCH INFORMATION SERVICE
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01

Integration of Online and Offline Learning

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Embracing the Future of Education: A Blended Approach in Brunei

#Blended Learning #Government Efforts

Jiyeon Moon / Hanyang University



Brunei's Ministry of Education has effectively combined traditional and digital learning in a blended approach. Accelerated by the COVID-19 pandemic, this strategy enhanced IT infrastructure, upgraded teachers' e-learning skills, and promoted collaboration. This blend of online and offline education requires considerable efforts, offering a potential new paradigm that leverages the strengths of both methods.

01 Brunei's Approach to Blended Learning

In May 2023, I had the opportunity to attend a dialogue session between the leader of higher education in the North of Vietnam and students. To prepare for this dialogue, the university conducted a survey of nearly 16,000 students, belonging to 202 academic classes (27 classes of high-quality systems, 175 classes of the regular system) and collected 383 questions, feedback, suggestions of students to the school.

The survey results are aggregated into 15 main groups of issues related to students (Table 1). In each problem group, the university determines what the student's issues.

▶ Backgrounds

The traditional methods of education and learning, once conducted through books and chalkboards in classrooms, have undergone a profound transformation over the past several decades. Their previous semblances are almost indiscernible, a testament to the total evolution they have experienced. The present era is characterized by the progressive utilization of online platforms across the spectrum, from primary to higher education institutions, thereby conducting learning amidst the wave of digitization.

In our previous issue, we discussed the concept and advantages of 'flipped learning,' where learning is initially facilitated through video lectures, followed by corresponding lectures in the classroom. Now, we intend to take a step further based on this concept. We aim to delve into the strategy of blended learning, which synthesizes the benefits of both face-to-face and internet-based learning, and explore how Brunei is promoting such an approach.

▶ Main contents

- **What is Blended Learning?**

The concept of 'blended learning' is variously defined depending on the scholar. Two of the most frequently cited definitions in the field are worth mentioning. Firstly, Graham(2006) asserted that "Blended learning systems combine face-to-face instruction with computer-mediated instruction." Additionally, Garrison & Kanuka(2004) defined blended learning as "The thoughtful integration of classroom face-to-face learning experiences with online learning experiences." Both interpretations consider face-to-face education and online learning as essential elements. Some researchers have debated the required proportions of face-to-face and online education in a curriculum to classify it as blended learning, with some arguing that about 50% of the total educational time must consist of online education.

The application of blended learning in modern education is gaining a firm foothold. Educators around the world are mixing internet-based e-learning with traditional learning methods to provide a diverse array of learning experiences and environments. Students are utilizing various learning resources available online, such as video lectures and real-time classes. Conversely, in offline settings, they internalize the subject matter through substantial face-to-face classes, discussions, experiments, and other activities.

- **Direction of Education in Brunei**

Several years ago, the Ministry of Education in Brunei announced its e-learning strategy through the 'Ministry of Education's e-Learning Strategy 2018-2022'. This strategy aimed to enhance students' learning experiences and ultimately improve learning outcomes by actively utilizing e-learning in Brunei's education system. The strategies for education and learning to achieve this goal, along with their applications, are as follows:

1. Adoption of Information Technology and Communication(ITC)
   ITC was actively introduced and utilized for e-learning, allowing students to access and learn from educational materials through digital devices and an internet connection. The impact of COVID-19 accelerated this change, showcasing active usage of platforms such as LMS and Moodle in Brunei's universities. After COVID-19, it is reported that about 75% of households were equipped with high-speed internet (Broadband).

2. Strengthening Teachers' Ability to Use e-Learning
   Educational resources were provided to enhance the ability of teachers to utilize the e-learning system appropriately when conducting education. With this, teachers were able to produce learning materials or deliver lectures online, providing appropriate guidance and instruction to students.

3. Improving School and University Infrastructure
   There was a desire to strengthen the infrastructure of schools and higher education institutions to effectively implement the e-learning system. Particularly during the COVID-19 pandemic, the Ministry of Education and UNN (Unified National Networks), the national communication infrastructure provider in Brunei, cooperated to implement an e-education solution to ensure that students could actively participate in online classes from home. UNN upgraded its broadband network to address the issues of increased traffic and data volume due to augmented home internet usage. Additionally, they provided access to mobile networks so that teachers and students could use data and traffic related to specific educational websites and applications. Through this, teachers were able to provide online classes, and students from economically disadvantaged families were assisted in participating in online classes and e-learning. In support of this, over 15,000 laptops and more than 1,700 mobile devices enabling internet access for educational tools like Zoom were purchased and distributed.

4. **Strengthening Collaboration and Communication**
   The government's learning strategy emphasized collaboration and communication between educators and students, both of which are crucial in e-learning. Supported by the government initiatives mentioned earlier, students were able to communicate with their peers, undertake projects, and share opinions through discussions on online platforms and social media.

All of these strategies and practices were grounded in blended learning, the integration of e-learning and offline studies. Notably, this integrated approach to learning continues to be actively utilized even after the termination of face-to-face encounters due to the pandemic.

▶ Conclusions

The global trend of substituting traditional face-to-face classes with online classes has allowed many students, schools, and teachers to experience the advantages of both face-to-face and online learning. The acceleration of such experiences in Brunei, particularly under the COVID-19-induced acceleration of e-Learning, is likely due to the efforts of the Brunei Ministry of Education to enhance students' educational experiences. This case of Brunei demonstrates the necessity of government support in the transition process towards a paradigm of blended learning experiences. Although various opinions exist on the balance between online and offline education, educators and institutions need to carefully consider their curricula to prevent gaps in students' learning experiences resulting from the combination of the two.

Implications

In the wake of the pandemic, the global educational landscape, which had transitioned to online learning, is now progressing towards a new paradigm that harmonizes online and offline learning. Experiencing both online and offline education has allowed us to understand the advantages and disadvantages of each, and now we are set to evolve into a new educational experience that leverages these strengths and addresses the weaknesses. However, just as we experienced during the switch to online education, a successful transition to this new educational paradigm will require significant effort spanning governments and educational institutions.

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2023 Trend Report

Transforming Malaysian Education: Hybrid Learning in Higher Education and Digital Integration in Schools



#Ministry of Higher Education
#Hybrid Learning #University Education

Mr. Wooyong Shin / Yonsei University

Malaysia's Ministry of Higher Education plans to implement a hybrid learning system in universities, allowing students to attend on-campus lectures only in their first and final year of study while offering flexibility to study from home during the intervening years. In parallel, the Ministry of Education is focusing on integrating digital technology into the education system, providing training to teachers, distributing laptops, and implementing support programs to enhance teaching effectiveness.

01

Ministry of Higher Education Introduces Hybrid Learning System for Universities, Promoting Flexibility and Cost Savings

The Ministry of Higher Education has announced its plans to implement a hybrid and flexible learning system in universities. Datuk Seri Mohamed Khaled Nordin, the minister, explained that this system will involve students attending on-campus lectures only during their first and final year of study. In the intervening years, students will have the choice and flexibility to study from home, eliminating the need for physical attendance in classes.1

During the closing ceremony of the "Jom Masuk U 2023" program and the launch of the Institutions of Technical and Vocational Education and Training (TVET) Foundation Program at the University of Malaya, Nordin highlighted the benefits of this initiative. He emphasized that the new system will provide students with the opportunity to organize their schedules more flexibly and reduce their education costs. Moreover, this approach will enable graduates to enter the job market a year earlier.



Nordin disclosed that 19 public universities are prepared to implement this flexible learning system, offering a total of 95 bachelor's degree programs for the 2023/2024 academic session. Furthermore, the duration of some programs will be shortened from four to three years.

The ministry has identified 44 study programs in nine higher education institutes that can have their study periods shortened. In addition, as part of the Family's First Student Development Program (Sulung) initiative, 10,000 students representing the Bottom 40% income family will receive full tuition fee exemptions at all public universities.

Implications

The implementation of a hybrid and flexible learning system in universities has the potential to increase accessibility and affordability in higher education. By allowing students to study from home for the middle years of their program, the system eliminates the need for physical attendance and provides flexibility in organizing schedules.

02

Ministry of Education Clarifies SPM Exam Dropout Figures and Emphasizes Digital Integration for Future Education

The Ministry of Education (MoE) has confirmed that approximately 29,663 registered candidates, including private candidates who were enrolled for one or two subjects, did not take the Sijil Pelajaran Malaysia (SPM) examination last year. Deputy Education Minister Lim Hui Ying clarified that this number accounts for 7.3% of the total registered candidates, which is in line with the figures mentioned by Prime Minister Datuk Anwar Ibrahim during a recent dialogue program. The former Education Minister, Datuk Dr Radzi Jidin, had stated that only 14,858 candidates (3.8% of the total) who were registered for six subjects, including private candidates, did not attend the examination. Lim provided this clarification during a parliamentary session while addressing a question raised by Roslan Hashim regarding the discrepancy between the dropout figures mentioned by the Prime Minister and the Ministry of Education's data.2

Meanwhile, the Ministry of Education will enhance the teaching system through digital technology integration, providing training and guidance to teachers to improve their digital education skills and fulfill their responsibilities. The Ministry has conducted 1,789 digital training programs and distributed 50,000 laptops to schools, facilitating the modernization of teaching. Additionally, a service program with support from leading digital education experts has been implemented to assist teachers in integrating educational technology effectively.

Implications

The implementation of digital technology in education is becoming increasingly important and is being prioritized by the Ministry of Education. This implication arises from the Ministry's emphasis on improving the teaching and learning system through digital integration, providing training to teachers in digital education, and supplying laptops to schools and educational institutions.

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Approach to the Implementation of Open Educational Resources (OER) University System in Engineering Education at YTU with Specific Logic Model

#Open Education Resource (OER), #Engineering Education, #Specific Logic Model

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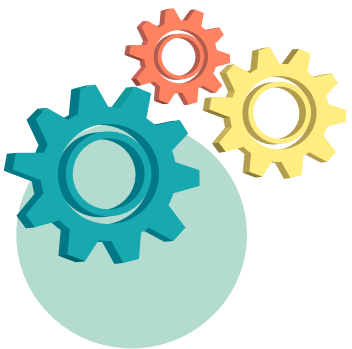
Yangon Technological University initiated the Open Education Resources (OER) university system in Engineering Education for the development of a "parallel learning universe" to boost and enhance significance to existing engineering education establishment by creating pathways with flexible conditions for all learners using open learning materials accommodated on the Internet to earn reliable credentials from accredited HEIs. Individuals are unrestricted to learn from the OER platform and other digital learning materials accommodated on the Internet. The central problem is that learners who access those digital learning materials on the specific web and acquire knowledge and skills either officially or casually, on their own or in groups, cannot eagerly have their learning assessed and consequently take delivery of proper academic recognition for their efforts.

01 Accredited University (YTU) in Myanmar

Yangon Technological University is the best flagship research university in Myanmar. There are twelve engineering and architectural departments in YTU. Among them, eleven engineering departments, including Department of Civil Engineering, Department of Mechanical Engineering, Department of Electronic Engineering, Department of Electrical Power Engineering, Department of Mechatronic Engineering, Department of Computer Engineering and Information Technology, Department of Chemical Engineering, Department of Textile Engineering, Department of Petroleum Engineering, Department of Mining Engineering, and Department of Metallurgical Engineering and Material Sciences are fully accredited by the Federation of Engineering Institutions of Asia and the Pacific (FEIAP) and Myanmar Engineering Council (MEngC) based on the guidelines and manuals of FEIAP Level Accreditation in 2019. That accreditation recognition is program-wise system for engineering education based on Outcome-based Education (OBE) Implementation.



YTU officially offered the formal education in Myanmar when the date after establishment of engineering education in 1924. YTU tried to enhance the traditional education system before 2015. In 2015, the OBE System was initiated to YTU to walk on the pathway for Quality Assurance Implementation Mode. That is the right time to implement the OBE System in Engineering Education in Myanmar.

The research group activities for all departments led the outstanding research in YTU to become the best flagship research university in the nation in 2014. The formal and non-formal education systems are critical to developing human resources nationwide. Therefore, YTU is intended to initiate the Open Education Resource (OER) University in Engineering Education with a specific model. The online learning management system implementation and blended learning modes are the flagship projects of YTU.

Implications

YTU always holds the idea of "Without OBE, No Accreditation". The engineering education through ICT platform can enhance the best practice for formal and non-formal education. The OER university initiated by YTU recommends the establishment of an innovative organization among like-minded institutions in the formal education zone to outspread their community service and outreach missions and visions in ancillary enhanced access to higher education in engineering specifically for those all learners who lack the means or right to use to follow the traditional learning routes.

02

Specific Logic Model of YTU

The intended specific logic model for OER university system of YTU is shown in Figure 1. There are three main components such as open collaboration and networking between OER universities, services for engineering educational institutions, and support infrastructure for OER

The OER university system of YTU would:

- facilitate accredited educational institutions to deliver assessment and credit pathways for formal academic credit
- recognize courses and programs based entirely on digital resources through a network of participating universities.

The specific logic model of YTU differentiates among three core components required to accomplish the OER university implementation.

- **Collaboration and Networking between OER universities:** concealments those activities where cross-institutional collaboration is more actual than institution-based service endowment.
- **Services for Engineering Educational institutions:** designate the fee-for-service ingenuities that will be delivered by participating institutions in engineering education on an experiencing no loss method.
- **Support infrastructure for OER:** integrates the cross-cutting infrastructure obligatory to upkeep an accessible network for the OER university scheme.

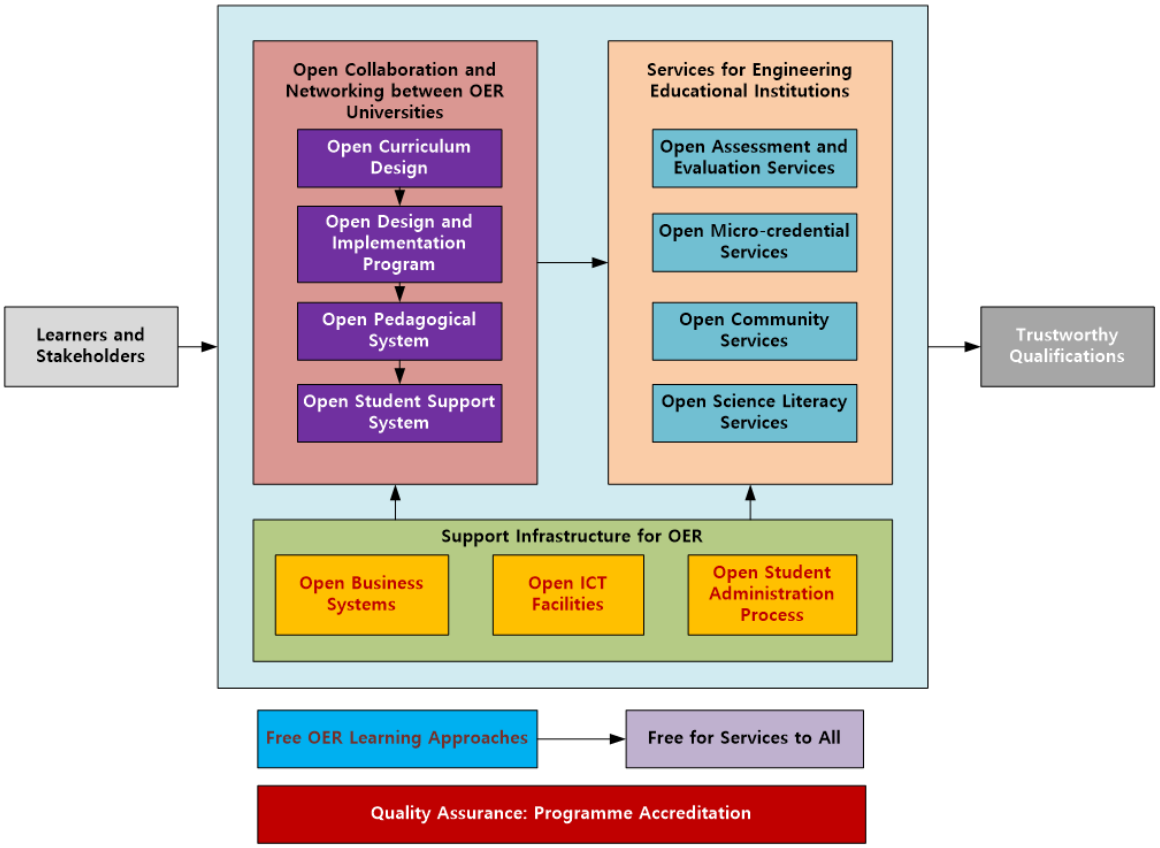


Figure 1. Specific Logic Model for OER System

Implications

The crucial outcome of the OER university system implementation of YTU might be to deliver flexible corridors to ensure that OER learners can accomplish trustworthy qualifications. Quality assurance and program accreditation are the groundwork stone on which the implementation is centered. The OER university system implementation of YTU could arrange for a flight of stairs to trustworthy credentials based uniquely on OER, and the specific logic model affords an outstanding framework for designing the distinctive system.

03

Implementation of OER at YTU

Based on the idea and background knowledge of specific logic models to implement OER at YTU, the open curriculum design was developed by collaborating with many partner universities in ASEAN, Korea, Japan, and the EU. The effective course materials were formulated based on the experimental studies and theoretical analyses. The OER could also be accessed in the LMS platform of YTU in current situation. All materials would be fully accessed after completing the web security processes and uploading the repository for e-sources, such as research publications and learning materials, to all learners. The completing percentage of OER in engineering courses at YTU is only sixty percent at present.

Implications

Collaboration, networking, and internationalization are essential to establish OER at YTU generally. The main concepts of learning materials in free mode are based on the outstanding efforts of the autonomous bodies in a university. Therefore, the implementation process plays a crucial role in enhancing formal and non-formal education in engineering and technology.

04 Questions and Challenges for OER University System at YTU

- How to develop the engineering course materials for all learners internationally?
- Finding a free online platform or specifying that learning materials for the OER university system could be established and converted into open file formats that are equally accessible by an assortment of Learning Management Systems (LMSs).
- Be efficiently creative. Start without thinking about current systems and engineering courses. Rethink components of learning.

Implications

The effective implementation of the OER university system at YTU could be way forwards to promote the university ranking worldwide. Each creativities would necessitate several activities to accomplish the envisaged outputs within the specific logic model.

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02

Education Utilizing Automation Technology

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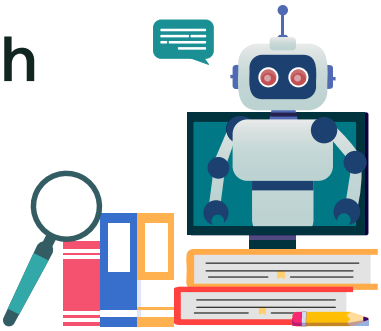
Embracing AI in Education: Singapore's Approach and Edtech Startups Harnessing ChatGPT

#Chat GPT #Edtech Startups
#Personalized Learning #Artificial Intelligence

Mr. Wooyong Shin / Yonsei University



In the Singaporean education sector, impact of ChatGPT, an AI-powered tool, is quite notable. While some institutions globally have banned chatbots due to concerns of misuse, Singapore is embracing AI and edtech startups are leveraging ChatGPT to provide personalized learning experiences and support to students, indicating a diverse approach to integrating AI in education.

01 Edtech Startups Rapidly Growing in Singapore

The introduction of ChatGPT has sparked contentious discussions in the field of education. As educational institutions and educators grapple with the implications of this transformative technology, there are significant concerns regarding its use in classrooms.

These concerns are not unfounded, as a survey revealed that approximately 26 percent of teachers have already caught students using ChatGPT for illicit purposes.1 In response to these risks, some educational institutions worldwide have swiftly imposed bans on chatbots due to fears of students misusing them for activities such as cheating and plagiarism.

However, Singapore's education landscape presents a different perspective. While there is some apprehension towards AI, the focus is on coexistence and harnessing the potential of AI tools. Institutions like Singapore Management University and Nanyang Technological University are embracing ChatGPT and similar technologies while seeking to implement measures to regulate their usage.

Furthermore, there has been a surge in educational technology (edtech) startups in Singapore that leverage AI to disrupt the education sector. These platforms, including JustAskProf, Higgz Academia Technology's TutorEva, Geniebook, and Explico, offer various AI-powered solutions to assist students in different subjects and examinations.

JustAskProf, founded by industry veterans Keith Carter, Amaline Lim, Emmanuel Carter, Ian Hai En, and Jess Uy, is a free-to-use AI tutor platform that utilizes OpenAI's ChatGPT. It aims to help parents prepare their children for various exams and industry certifications by providing assistance in subjects like economics and biology. The platform's unique feature is its ability to translate content from English to multiple languages, benefiting expats and individuals with limited English proficiency.

Higgz Academia Technology, initially founded in Beijing and later registered in Singapore, developed TutorEva, an app that scans math problems and offers step-by-step solutions through an AI tutor. The app can solve high school and university level math, including algebra, math modeling, and geometry. The company recently integrated ChatGPT into TutorEva to provide more human-like responses and enhance students' understanding of math concepts.

Geniebook, founded by Zhizhong Neo and Alicia Cheong, employs AI technology to identify students' academic strengths and weaknesses. It delivers targeted practice questions and generates personalized revision plans to accelerate learning outcomes. The platform also offers live online classes and facilitates teacher-student interactions.

Explico, founded by Ashutosh Shukla and Sandesh Shetty, utilizes AI and machine learning to customize learning modules according to students' specific needs. It also provides adaptive assessments, performance feedback, and benchmarks students against local and international standards.

While AI-powered tools and platforms offer valuable support and personalized learning experiences, they are not intended to replace educators. Instead, they aim to complement traditional teaching methods and create a symbiotic relationship between technology and educators. AI can provide instant assistance, adaptive learning, and virtual reality experiences, but it lacks the capacity to instill moral and ethical principles, which remain essential aspects of education.

Implications

The global education landscape is responding differently to the integration of AI in classrooms: while some educational institutions around the world have implemented bans on chatbots due to concerns of misuse, Singapore's education landscape is taking a different approach. Singapore is embracing AI tools like ChatGPT and exploring ways to regulate their usage in order to harness their potential. Through such, we can realize that different regions and institutions have varying perspectives on the integration of AI in education, leading to diverse approaches and strategies.

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A systematic evaluation for the development of online assessment systems at HUST in the COVID-19 pandemic

Nguyen.Thi. Thu-Giang, Nguyen.Thi. Huong-Giang / Hanoi University of Science and Technology

The global COVID-19 pandemic has significantly impacted education worldwide, affecting all levels of learning. As a result of the abrupt shift from traditional classroom teaching to online platforms, teachers and students were forced to quickly adapt to this new method of teaching and assessment methodology. Due to the limitations of the IT infrastructure of higher education institutions in general and of HUST in particular, it is challenging to build a comprehensive examination system immediately during the COVID-19 pandemic. It needs a total solution and a combination of different ways to meet the output learning standard requirements and various types of exam methods as well as supporting multiple exam takers fairly.

In this report, we analyze and evaluate the specific needs of both teachers and students to deploy online assessment systems adapt to output learning standards and HUST conditions. The systems had been implemented in practice for HUST since the spring semester of the school year 2021 now with hundreds of thousands of exam takers using the system bringing efficiency in training at HUST during the pandemic.

01 Investigation of examination methods at HUST

At HUST, there are thousands of courses running with hundreds of thousands of students participating each semester. These courses included the smallest size (30 students) to large one (over 200 students) for professional training, lab/practicing classes, and theoretical ones, respectively. Therefore, the online exam classes had been organized based on these sizes. Moreover, arranging for almost all of exam subjects during a short time (only 3 weeks) is challenging. So, based on the different training programs, the characteristics of courses, there could be classified some kinds of online exam methods as bellow:

1. Quiz exam
   It is an objective test including various types of question such as: multiple choice, fill in the blanks, true or false and short answer, calculated question. It is organized as question banks and quizzes on the online system.



2. Open-ended essay exam
   A subjective test including questions that require students to write essays, papers, or reports. It evaluates students' ability to apply knowledge, thinking, and viewpoints to solve problems. Students do handwritten essays on paper, scan and submit them through the online exam system.

3. Question-and-answer exam
   It is the exam form that teacher gives questions, students have to answer right at the exam session or students preparing assignments/essays submitted on the system. The process needs recording and uploading to the online system.

4. Others
   other types of exams that based on synchronized online system (thesis defense...)

Based on the classification of exam methods, the Training Department of HUST also performed the preliminary survey about the readiness of students for online exams to ensure technical conditions (such as: the capacity of computers, mobile phones with availability of internet connection) via social networking channels such as: Planner, Face book and the school's SIS system. Table 1. Illustrate the results of registered courses corresponding with the online testing method. In which, the quiz exam was the most popular exam format, with 1,847 registered courses and 80,018 students. While the open-ended essay exam was the second most popular format, with 1,033 registered courses and 40,558 students, the question-and-answer exam had 973 courses with 39.412 registered students. The remainder is the “others" category including a variety of exam formats, such as oral exams, practical exams, and presentations included 148 registered courses with 5,296 students.

Exam formats	Number of registered courses	Number of Students
Quiz exam	1847	80,018
Open-ended essay exam	1033	40,558
Question-and-answer exam	973	39,412
Others	148	5,296

Table 1. The investigation of registered courses and students readily took part in the online assessment in the spring semester of the school year 2021.

02 Investigation for online assessment system

Firstly, to identify suitable systems that can support online exam formats, we investigated several online learning and exam support platforms. Specifically, Microsoft Teams [1] and Google Classroom [2] [3] are powerful online learning and exam support platforms whose service providers extend many support functions for educational institutions during the Covid period. Google Classroom is a combination of Google Docs, Google Drive and Gmail as an online classroom, so it can be said that this application is very versatile, multitasking. In which teachers can also create assignments and view their progress as well as leave assessments for students' work to help students improve their mistakes next time. The advantage of Google Classroom is that the tools are simple and easy to use, but nothing is perfect, if users want to log in to Google Classroom, they have to log in directly to Google Apps for Education without going through Email or other account types cause many inconveniences to users.

At HUST, lecturers and students are provided with copyrighted MS Office 365 accounts that offer a range of online services, including Teams. Using Microsoft Forms, instructors can easily create quizzes and assignments and view students' progress. While these platforms offer significant advantages, they also have some drawbacks. For example, they do not allow for the creation of question banks in various repositories, questions cannot be edited during testing, and they cannot be duplicated or restored for other exam classes. Additionally, there is a lack of systematic monitoring mechanisms and functions to limit cheating, leading to heterogeneity in learning management. This tool may deploy for Open-ended essay exam, Question-and-answer exam, and "Other" test method.

Besides, the survey of domestic online assessment commercial platforms, such as Viettel and VNPT [4], revealed that although these systems are well developed and based on the technical infrastructure of major internet providers in Vietnam, they mainly cater to K12 education with simple exam standards and limited types of questions. Therefore, they may not be suitable for a multidisciplinary university like HUST.

With the open-source software platforms that support online assessment functionalities, we considered the popular platforms such as Canvas, Moodle, and Open-Edx and Blackboard [5] . These act as not only learning management systems but also online assessment ones. In which, Moodle is considered the most powerful system [6] that have been deployed as a key learning management system at HUST currently [7]. Moodle is highly customizable functionality with lots of plug-ins. By default, it provides over 10 types of questions from simple ones (True/False, short answer, essay) to more complex ones (calculated, embedded answer) and modified question types. That is suitable for STEAM subjects. Additionally, Moodle allows deploying an e-assessments safely by using a web browser environment (SEB). This plugin regulates access to various resources such as system functions, external websites, and applications, and ensures that unauthorized resources are not utilized during the examination. Moreover, lecturers and administrators are able to set their private key for each quiz to enhance the security of exam sessions. Therefore, Moodle was chosen to deploy the online exam system for the HUST during the Covid pandemic.

03 Conclusion

The report has compiled surveys of the main online exams at HUST, tools that can support these types of exams in the covid period so that the appropriate exam system can be selected for other forms of assessment. together. With a very large number of online exams, it is necessary to have strong configuration systems to be able to hold many tests at the same time. Therefore, during the covid19 period, the quiz exam is deployed on an online exam system based on LMS, the Teams system used for Open-ended essay exam, Question-and-answer exam, and "Other" test method.

More details of the deployment of the online system will be discussed in the next reports such as the Regulations on organization of online exams of HUST; The process of students entering the exam through SEB on the LMS exam is supervised through TEAMS by the exam administrator; Training teachers to build a multiple-choice question bank and use the online exam system; Organizing testing system and demonstration exams for students to familiarize themselves with the online exam system. Some results for the online exam system will be illustrated in the next sections.

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[5] A. Elzainy, A. El Sadik, and W. Al Abdulmonem, "Experience of e-learning and online assessment during the COVID-19 pandemic at the College of Medicine, Qassim University," J. Taibah Univ. Med. Sci., vol. 15, no. 6, pp. 456–462, Oct. 2020, doi: 10.1016/j.jtumed.2020.09.005.

[6] P. Hill, "Moodle US: A changing business model that goes beyond the US," PhilOnEdTech, Apr. 29, 2021. https://philonedtech.com/moodle-us-a-changing-business-model-that-goes-beyond-the-us/.

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03

Various Efforts for Advancement in Higher Education

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Cambodia 01

Korea 02

Laos 03

Techno Pre-Incubation Challenge Cambodia 2022

Pre-Incubation, Challenging, ITC

Ms. CHOM Sreylam / ITC



After the final pitch of Techno Innovation Challenge Cambodia, the top 8 teams are selected for the next step of the program, called the Techno Pre-Incubation Program, or 10 weeks of training. The top 8 teams were also awarded the co-working space (ETI) at ITC and a 10-week training or incubation program for developing their business ideas and delivering their products into real-world projects. After the pre-incubation program, the 8 teams participated in the final pitch again on 28th May 2022 to get some funding to support their projects by representing the detailed information, business models, and demonstration of the prototypes of their project to the expert juries.

01

Techno Pre-Incubation Challenge Cambodia 2022

The Institute of Technology of Cambodia (ITC) is a Cambodian Higher Education Institution providing engineering fields, which was founded in 1964 and supported by cooperation between Cambodia. More than 10000 executive members have graduated from ITC, which has a clear long objective and mission. The fourth objective of ITC is to train engineers in innovation and entrepreneurship in order to create highly skilled jobs and answers to future challenges. With the partner in the CNEUF project, ITC launched a new season of TICC2022, and there are over 30 teams and 9 individuals registered to join the competition. Among 29 teams who reached the semi-final, the program has selected 15 teams to continue to the final pitching program. The best eight teams are chosen for the next step of the program, "Techno Pre-Incubation Program or 10-week training program". For 10-week training program focuses on 10 Business modules for the teams to build the business of their project in order to deliver their product to the real world. In 10 weeks, the program invited our experienced trainers, based on their business skills, to provide the training and share to team about the business ideas that fit with the teams' projects. The training session took progress online using Zoom meetings due to the COVID-19 pandemic.



The program invited expert trainers from different sectors in the business world to train the selected teams of TICC2022 about 10 business modules such as:

- Entrepreneur Mindset, BoomCamp Overview and Business Models
- Customer Development
- Product – Market Fit
- Market Channels and Positing
- Core Competencies
- Team Strategy
- Review of Business Models
- Financial Strategy
- Pipeline Management
- Art of Pitch Training



Figure 1. Expert Trainer

During the training sessions took place online that were managed by Microsoft Team. The meeting started every Saturday morning, and it took about 2 to 3 hours. Also, there were 25 candidates representing the eight teams for the programs.

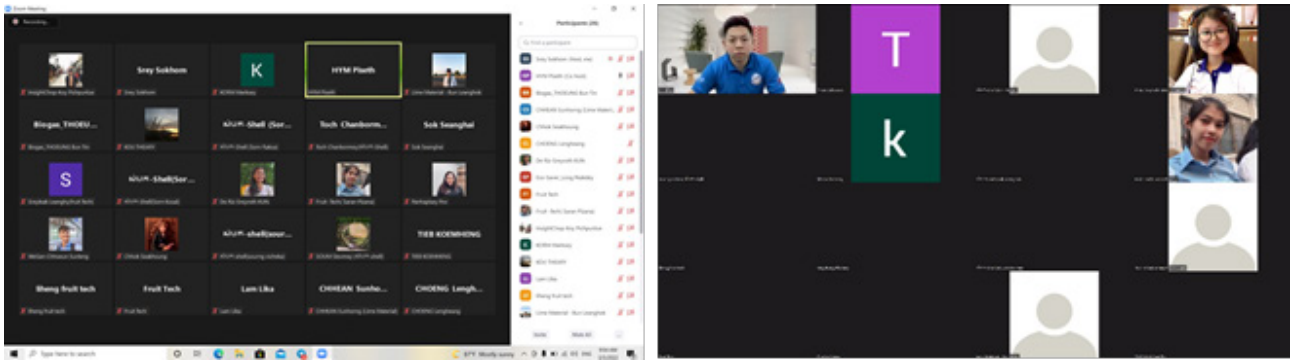


Figure 2. Some Activities

The final pitching took place on 28th May 2022, after finishing 10 modules of Business models. The purpose of this final pitch is to select the best 3 teams of all among 8 teams that joined and trained so well for 10 weeks that made good progress in their startup to reach their business goal to get 3400$ funded. Here is the agenda of the final pitch day

Saturday, May 28th, 2022 Final Pitching		
08:00 - 08:30	Arrival of participants (Online)	Coordinator
08:30 - 08:35	Welcome Speech, Launch the final pitching program	Coordinator
08:35 - 08:40	Welcome Speech from Smart Axiata	Mr. Sajid SALIM, Digital Transformation Project Manager, Smart Axiata
08:40 - 08:45	Welcome Speech from KE	Mr. Sunsatya Chea, Entrepreneurship Development Manager of Khmer Enterprise
08:45 - 08:50	Welcome and Opening Speech from ITC	Dr. Chunhieng Thavarith, Advisor of ministry MoEYS to Institute of Technology of Cambodia
08:50 - 09:00	Welcoming to the Judging Committee	Coordinator
09:00 - 10:00	Video of each team pitching and Q&A	Judging Committee (3 groups) 10 min Presentation and 10 min Q&A
10:00 - 10:15	15 min Break	
10:15 - 11:15	Video of each team pitching and Q&A	Judging Committee (3 groups) 10 min Presentation and 10 min Q&A
11:15 - 11:25	Jury discussion	
11:25 - 11:30	Announce the final result,	
11:30 - 11:40	Acknowledgments to participants for providing information for the next activity and closing program	Mr. LAY Heng, Project Leader and Vice Dean, Faculty of Electrical and Energy Engineering
End of program		

The program will invite judges experienced in various fields of the business world to select the top three teams. Here is our judge's panel



Figure 3. Judges Panel

Winner Teams

After 10 weeks of training in the Techno Pre-Incubation Program 2022, the 8 teams were selected to compete with each other in the Final Pitch Techno Pre-Incubation Program 2022 in order to find out the top 3 teams. In addition, the three teams with the highest scores from the judges were selected, which are as follows:

Eco Saver: producing food containers out of rice straw fiber which is 100% biodegradable. Rice straw will be buried in open soil at a size of 5× 20 cm and a depth of about 5cm within 6 months.

Insightchop: providing used chopsticks a second life by transforming and elevating used chopsticks into new materials and valuable products.

Lime Material: Made of a lightweight hollow wall panel with C&D waste aggregate, plastic pellets, and glass fine in replacement of up to 50% of natural aggregate. The product aims to provide better quality, cost, and time-saving for our customers.

▶ Team winner



Team InsightChop



Team Lime Material



Team Eco-Saver

▶ Team prototype



InsightChop
: new materials transform from chopsticks



Lime Material
: Wall Panel



Eco-Saver
: food containers out of rice straw

Implications

Difficulty: It cannot be applied to all activities and has some technical problems due to telecommunication, low internet usage of applicants, prototyping (slide closed), etc.

References

Special notes [Special notes]

Techno Innovation Challenge Cambodia's Facebook page, https://www.facebook.com/innovationchallengecambodia/?ref=page_internal





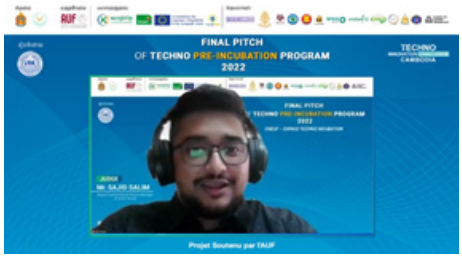
Dr. Chunhieng Thavarith



Mr. Sunsatya Chea

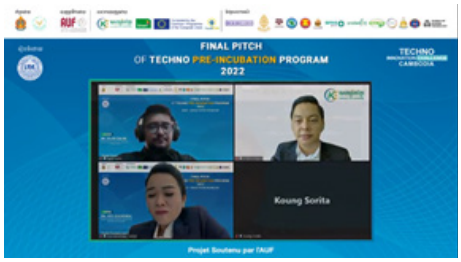


Mr. LAY Heng



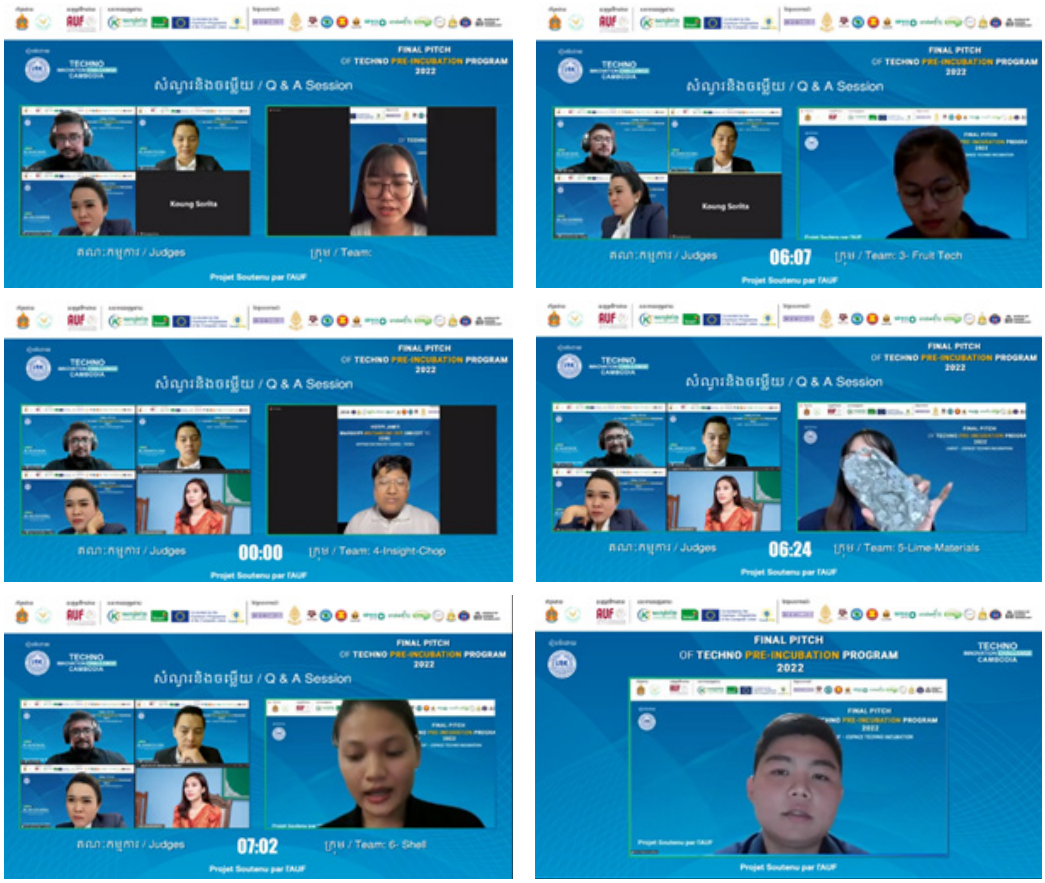
Mr. Sajid SALIM





Judges Panel

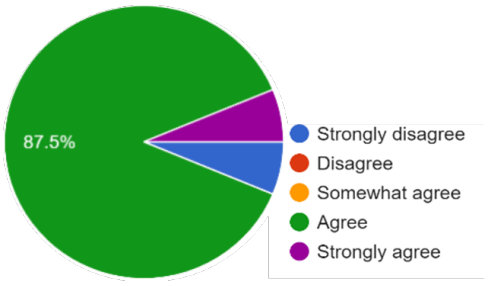
The Techno Pre-Incubation Program, implied by the objective of the center, aims to



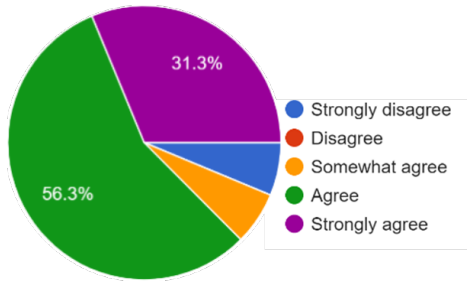
Teams Panel

Promote entrepreneurship culture and practice among students by commercializing innovative ideas. The program is open to the public and students in all universities in Cambodia (both public and private). For this year, the program selected 8 groups from Techno Innovation Challenge Cambodia 2022 to train about the business modules. Here is some feedback from contestants (17/32 contestants)

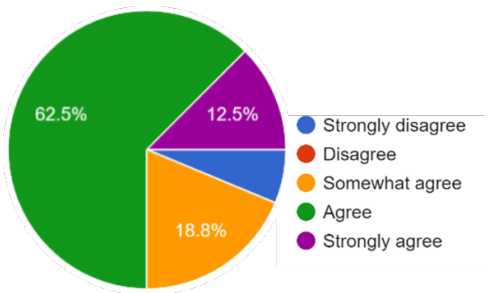
1. Needs Analysis



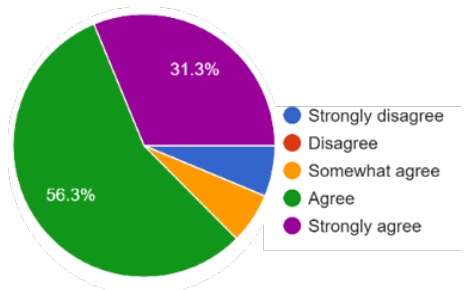
2. I can improve my Technical skill and Entrepreneurship



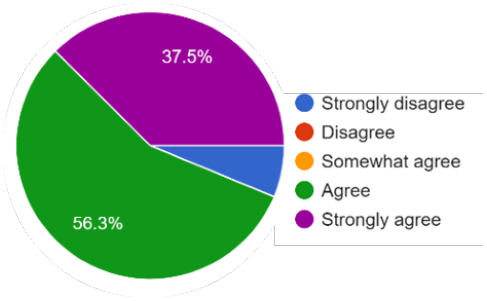
3. I can understand the complete design experience



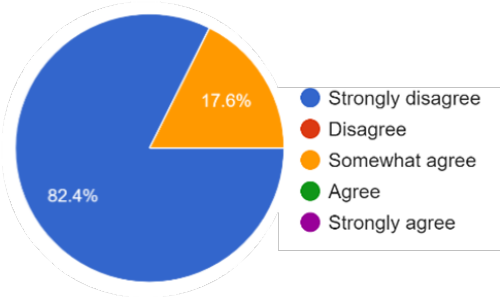
4. I can increase my soft skills: creativity, Presentation skill, Problem-solving, teamwork and/or Self-confidence.



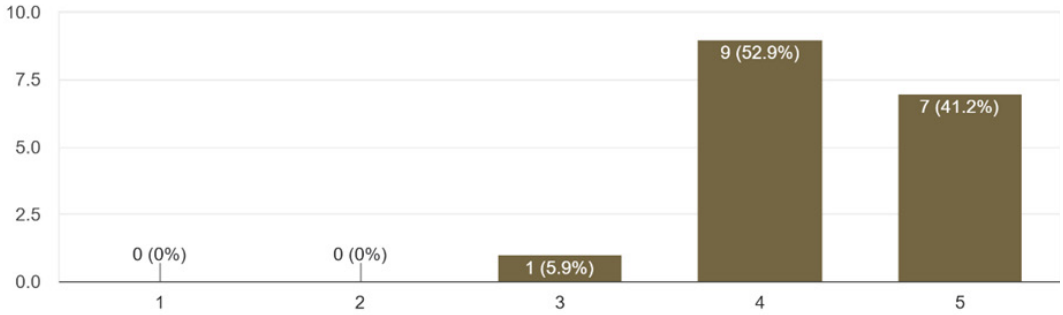
5. I would recommend this event to my friends and others.



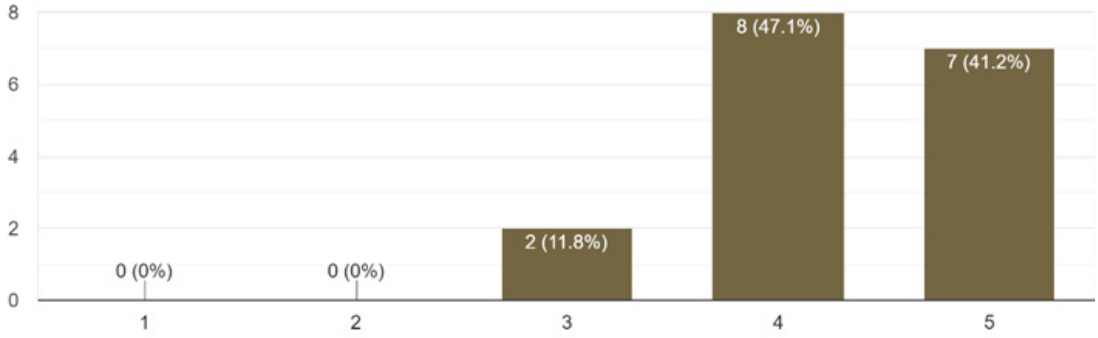
6. I will continue work on your project or similar project after the event



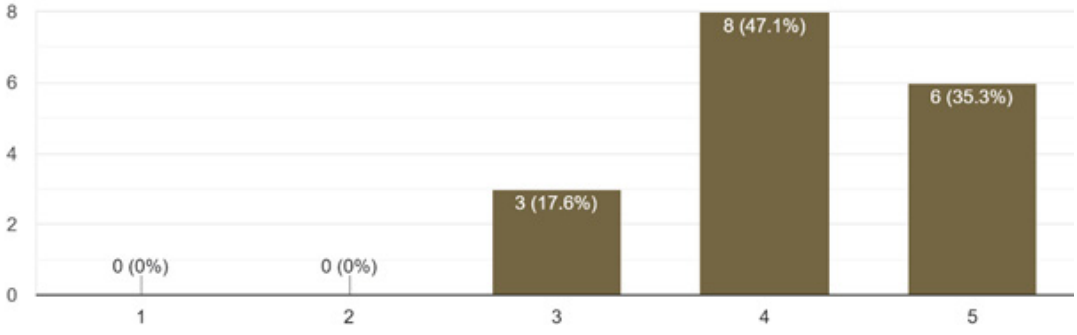
7. How satified were you are with the program



8. How relevant and helpful do you think it was for your future career?



9. How satisfied were you with the session content



Transforming Education: South Korea's Initiatives for Equity and Autonomy in Higher Education

#Ministry of Education #Private Education #Suneung #Deregulatory Measures

Mr. Wooyong Shin / Yonsei University



The Ministry of Education in South Korea has announced a comprehensive plan to reduce private education costs for students and grant universities greater autonomy. The plan involves eliminating "killer questions" from the national college entrance exam to level the playing field. Additionally, universities will have more freedom to manage their curricula and offer interdisciplinary programs. Students will be able to change majors, and online degree courses will be more accessible.

01 Ministry of Education Introduces Comprehensive Plan to Promote Equity and Reduce Costs of Private Education

The Ministry of Education introduced a comprehensive plan to reduce the costs of private education for students. The first step involves establishing a committee led by public school teachers under the ministry's guidance. This committee will be responsible for adjusting the difficulty level of the Suneung, the national college entrance exam.1

The committee aims to restore fairness to the test by eliminating "killer questions" that have been included in previous exams. These questions were considered excessively difficult and were not covered in the standard school curriculum, leading students to rely on private academies for better preparation and higher grades.

Deputy Prime Minister, Lee Ju-Ho, of Korean Ministry of Education emphasized the ministry's commitment to taking action against the market of private education that profits from students and parents by providing these killer questions. Additionally, the government is considering legal measures against those involved in selling Suneung questions to private institutions.

While there are concerns that removing killer questions will make the Suneung easier, Minister Lee reassured that the test will still differentiate students based on their achievements. The ministry also plans to create a learning environment where students can engage in self-study using EBS, an educational broadcaster, and have access to expanded free courses and additional after-school teaching services.

South Korea experienced a significant increase in private education spending, reaching a record-high of 26 trillion won ($19.9 billion) last year. The majority of this spending was on English and mathematics preparation for the Suneung. To address this issue, the ministry plans to involve public school teachers in determining the exam questions and provide free college counseling services for high school students.

Moreover, the ministry aims to enhance equal opportunities in college admissions by closely monitoring university admission exams and ensuring that the questions align with the materials taught in class. Additionally, extracurricular activities will be made more accessible for elementary school students, and the curriculum for children aged 3 to 5 will be revised to facilitate a smooth transition to elementary school.

The ministry intends to absorb the demand for private education within public education by expanding sports and fine arts programs, improving facilities, and collaborating with private organizations. It will also address improper operations in private English academies for young children through partnerships with education offices.

Implications

The comprehensive plan introduced by the Ministry of Education to reduce the costs of private education is the potential for increased equity in educational opportunities. This can provide students from disadvantaged socioeconomic backgrounds with a fairer chance of succeeding in the college entrance exam and accessing higher education.

02

Fostering Flexibility and Autonomy: Ministry of Education Unveils Deregulatory Measures for Universities

The Ministry of Education has announced a series of deregulatory measures aimed at granting universities greater autonomy in managing their curricula and providing students with more flexibility in choosing or changing their majors. The ministry revealed a proposed revision to the enforcement decree of the Higher Education Act, which includes provisions for universities to operate their school organizations more freely.2

According to the ministry, local universities will have the opportunity to eliminate barriers between departments and colleges, allowing for the establishment of interdisciplinary and free major departments. This move encourages convergence and collaboration across various fields of study.

Furthermore, under the new rule, first-year students will have the option to change their major, enabling them to explore different academic paths. Traditional universities will also be permitted to offer online degree courses without unnecessary restrictions.

In the medical field, the ministry anticipates integrating the two-year preparatory course and the four-year regular course. This integration will allow medical schools to design and operate their curriculum more flexibly within a six-year timeframe.

Implications

By granting universities greater autonomy in managing their curricula and breaking down barriers between departments and colleges, the measures encourage convergence across various fields of study. This can lead to the development of new interdisciplinary programs and research initiatives that bridge different academic disciplines.

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Higher Education Department, Ministry of education and Sports, Lao PDR.

Dr. Khamkeo HANSANA



Some problems have been taking place in Higher Education Institutions in the current situation—for example, student mobility. Transferring learning outcomes from one program to another is difficult, like students who want to study in other domestic and foreign universities because of family movement or getting scholarships. However, the receiving universities tend not to accept the learning outcomes of the original universities. This makes them lose opportunities in their learning, such as wasting time studying the same subjects they studied. Furthermore, some of them got scholarships to study in foreign universities, like short and long-term student exchange programs. However, when they finished the program and returned to their universities, the credits that they earned were not accepted. This made them waste time because they needed to study again at their universities. Because of this, the Department of Higher Education, Ministry of Education and Sports, playing an important part in supervising Higher Education Institutions, takes credit transfer into account seriously and finds ways in order to solve such problems.

To solve these problems, the Department of Higher Education seriously created the Credit Transfer Agreement. This agreement aims to set a principle, regulation, condition, process, and measure on the Credit Transfer, the change of study field, monitoring, learning outcomes checking of both qualifications that are necessary to be compared between Higher Education Institutions inside and outside countries. This agreement promotes education cooperation, qualification recognition, and exchange. This agreement will become the reference for domestic and foreign universities to facilitate universities in transferring credits for students.

Currently, the National University of Laos itself, except other Higher Education Institutions, has created agreement on student mobility, the change of study field, and credit compare-transfer for students of the National University of Laos, and it has already been implemented. The Purpose of this agreement is to set a principle, regulation, and measure on mobility, change of study field credit compare-transfer for students who are permitted to move, change their study field or get internship scholarships in other domestic and foreign universities which have academic cooperation. This agreement aims to ensure uniform implementation of entire faculties in the National University of Laos and assess and monitor students' learning outcomes in each field of study to meet National, regional, and international quality assurance.

References

Higher Education Department (2023). Agreement on Credit transfer in domestic and foreign Higher Education institutions. Vientiane Capital, Lao PDR.

National University of Laos (2023). Agreement on Student Mobility, change of study field and Credit compare- transfer for students of National University of Laos, Vientiane Capital, Lao PDR.

04

Proposals for Higher Education Improvement

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Indonesia 01

Myanmar 02

Vietnam 03

Creating a Good and Attractive Content for E-Learning

#content #good #attractive # e-learning

Valentino Aris & Rahmatullah / Universitas Negeri Makassar
Arini Lestari / Universitas Andi Djemma



Makassar State University (UNM) is one of the best tertiary institutions in Eastern Indonesia and one of the higher education institutions focusing on developing online learning platforms. The efforts made by UNM to improve the quality of online learning at tertiary institutions have proven successful. UNM is among the 10 (ten) best tertiary institutions in conducting online learning in 2021 (www.unm.ac.id, accessed in 2023). This shows recognition of UNM's performance and innovation in implementing online learning, where information technology support in learning is a priority for the current chancellor's leadership (Husain, 2023). This achievement is inseparable from UNM's success in developing an integrated online learning platform called UNM's System and Application Management Open Knowledge (SYAM-OK).

The rapid development of technology is currently causing disruption, which also has an impact on the Education Sector in Indonesia. The implementation of learning in the education sector is different from the previous few years. Learning that used to be carried out face-to-face can now be carried out virtually using technology. Human resources in tertiary institutions must be able to use the latest technologies in the learning process. The Industrial Revolution 4.0 also demands the skills of graduates from educational institutions, which are very different from those of 10 (ten) years ago. These skills include higher-order thinking skills, unprecedented problem-solving, social skills, critical thinking, and cognitive abilities (www.ui.ac.id, 2022). These changes must be responded to by universities also using adaptation, flexibility, and agility in responding to these changes. One of the most appropriate steps to deal with this is the use of e-learning in the learning process. At Makassar State University (UNM), we use the UNM System and Application Management Open Knowledge (SYAM-OK) platform. SYAM-OK allows lecturers to carry out synchronous and synchronous (ASL) learning processes. Synchronous learning is face-to-face online learning using conference applications, while asynchronous learning is an online learning process that indirectly provides teaching materials and assignments. Teaching materials and assignments can be in the form of presentation files, books, other materials, sounds, videos, discussion forums, and other teaching materials. SYAM-OK can be said to have been successfully implemented in our universities (see the article in the previous volume). We then surveyed students in Makassar City who had used e-learning for learning at the college where they studied. The survey results showed that out of all respondents, there were 48.5% of students who said they preferred offline lectures, followed by 39.4% of students who said they preferred hybrid lectures, and the remaining 12.1% liked online lectures. This data shows that even though they have successfully implemented e-learning in their respective tertiary institutions, the majority of student interest in implementing learning is still in offline learning in class. Data can be seen in the following figure:

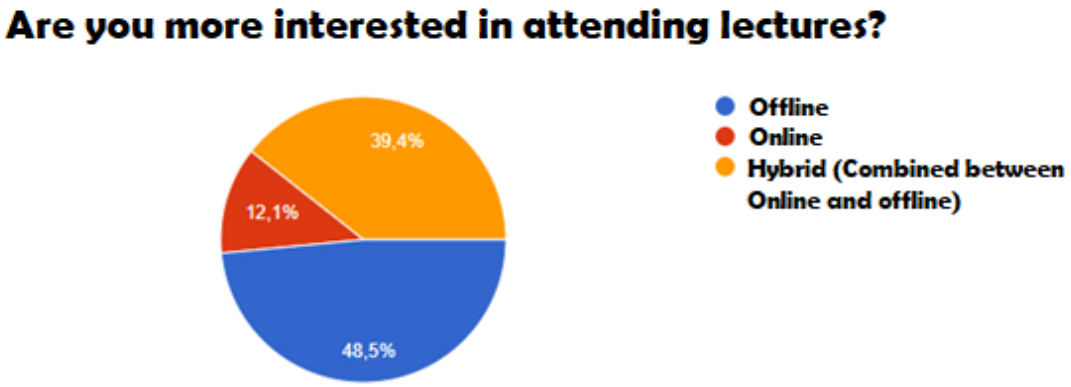

Figure 1. Results of a Survey of student interest in online lectures

Based on our interviews with all of these students, the majority said that their lack of interest in online lectures using e-learning was because the content or material on the e-learning platform was boring, poorly understood, unable to ask questions if something was not known and there was no synchronous interaction. Therefore, in this article, we will share our experiences in developing e-learning content so that the learning process can be more attractive to students.

1. Provide complete information, a warm and friendly welcome

The initial stage in using the e-learning platform for learning, of course, is to make an introduction regarding the subjects that will be taught on the e-learning platform. At this stage, enter a description of the course to be taught with the most complete information such as the name of the course, number of credits, a brief description of the course, subject matter, references used, and expected output from the course. The following is an example of the display of the e-learning page that the author has:

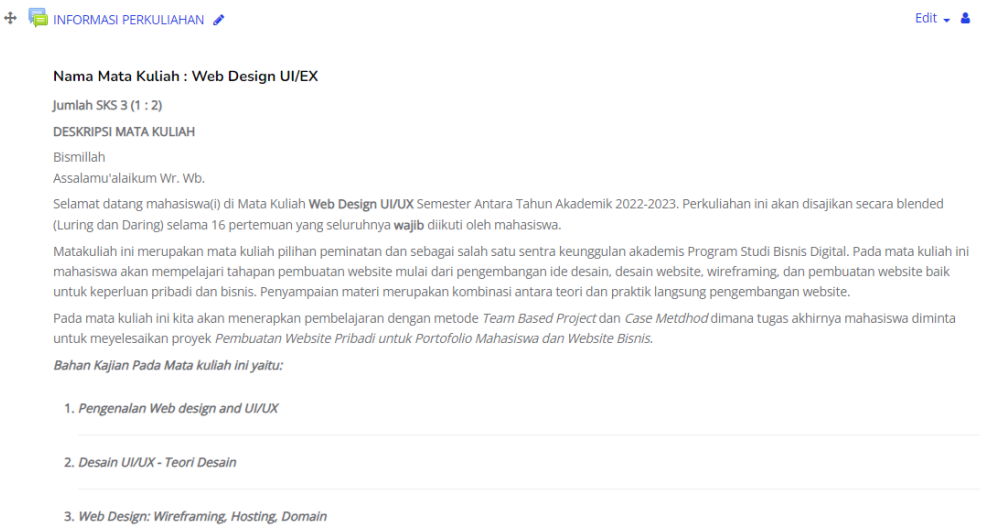

Figure 2. Courses on CMS SYAM-OK

For subsequent topics on the e-learning page, don't make it a habit to only include material files, presentation files, video files, and learning files. Provide detailed information for each subject and words that motivate and convince lecture participants that you will continue to accompany them during lectures and provide tools for discussion.



Figure 3. Examples of the subject matter of e-learning content

2. Creating an Attractive Presentation File

The next step for making lectures online in e-learning attract students is to create a presentation file that is visually appealing and content. Visually attractive, namely referring to the design of the presentation file template used and interesting in content, the contents of the presentation file are the latest knowledge that is up to date with current conditions. Another tip is to avoid using a font size below 20 on your presentation slides. You can read references on how to make a good presentation file with a bit of input from the author. Also, you can read references from Guy Kawasaki and apply them in your learning presentation file.

Another way to make it easier to create visually appealing presentation files is to take advantage of the Artificial Intelligence (AI) feature which is currently widely used in applications for making presentations. For example, for those of you who use Microsoft Powerpoint, if you are still making presentations with a design like in Figure 4, you should use the AI feature in Microsoft Powerpoint to produce a presentation like in Figure 5. As the method is quite easy, you just need to type the main theme from 1 page of the presentation slide, then select the Designer button on the Home Tab. Then AI will work to make you a template that best suits the presentation to be made. You just have to choose the best template that best suits the learning material you are making.



Figure 4. Basic Template Design

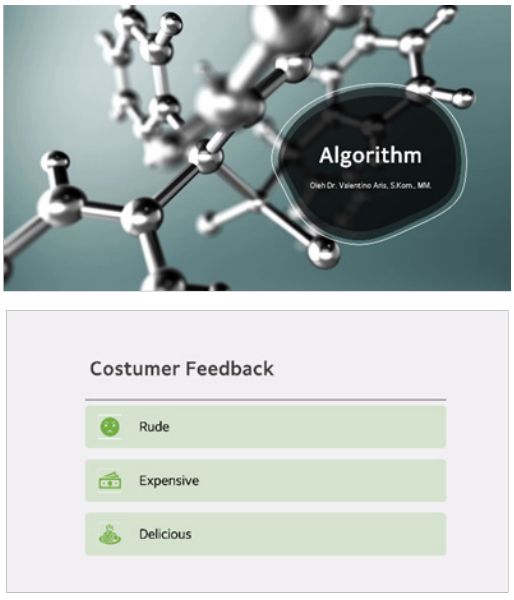

Figure 5. Template Generate Design from AI

Several other applications that can be used to create interesting presentation files that the author has used are Canva and Pitch. Canva can be accessed at canva.com, and the pitch can be accessed at the pitch.com link. The following shows the presentation template that the author made with these two applications:



Figure 6. Design Using the Canva Application



Figure 7. Template Generate Design from AI

3. Making Interesting Learning Videos

Another step that can be taken so that online lecture participants don't feel bored and feel lectures like in class is to make learning videos. This learning video may be in the form of a video presentation by the course lecturer or an animated video explaining lecture material. Based on the author's experience, the use of video as lecture content in e-learning is usually if the lecture material has a practicum element that must be practiced by students. Combining presentation files and animated video explanations of material can be done to prevent online lecture participants from getting bored with the material content provided.

In general, making learning videos can be directly carried out using a digital camera or a camera on a smartphone and then put into the e-learning platform. However, based on the author's experience, editing should be done first so that the video output is much better. Avoid using Zoom-recorded videos because based on the author's experience, students tend to get bored if the video provided is a recording of a Zoom meeting. Some video editing tools that can be used are Wondershare Filmora, Kinemaster, and Adobe Premiere.

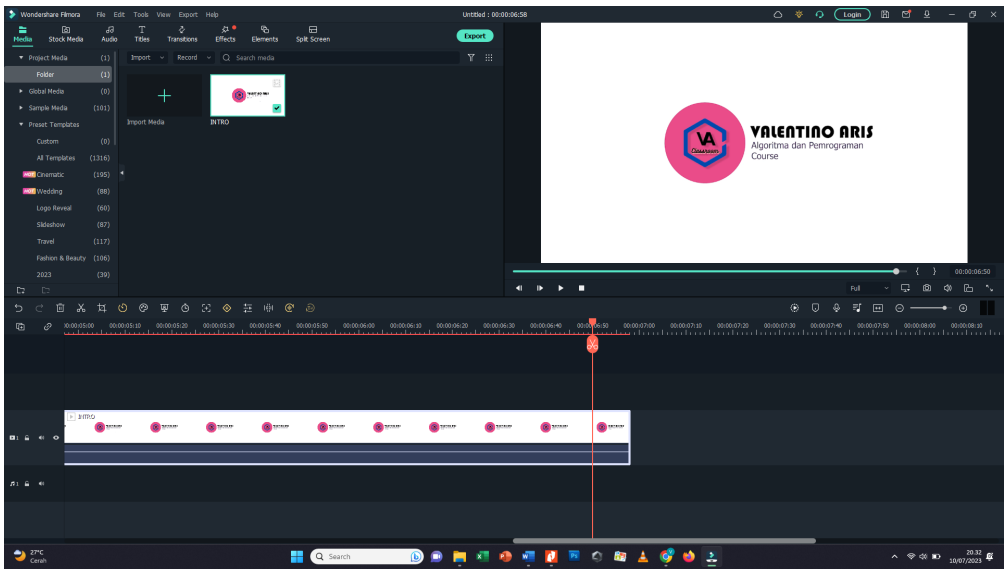

Figure 8. Editing e-learning video content using Filmora

The use of Artificial Intelligence (AI) for video editing for e-learning purposes has also proven capable of producing interesting learning content. One of the AI features that can be used to make interesting learning videos is text-to-video or text-to-animation. The application that can be used is Steve AI which can be accessed at https://www.steve.ai. Other AI applications that can be used are InVideo (https://invideo.io), Fliki (https://fliki.ai), and Clipchamp (https://clipchamp.com). The use of the Steve AI application can be seen in the following figure:

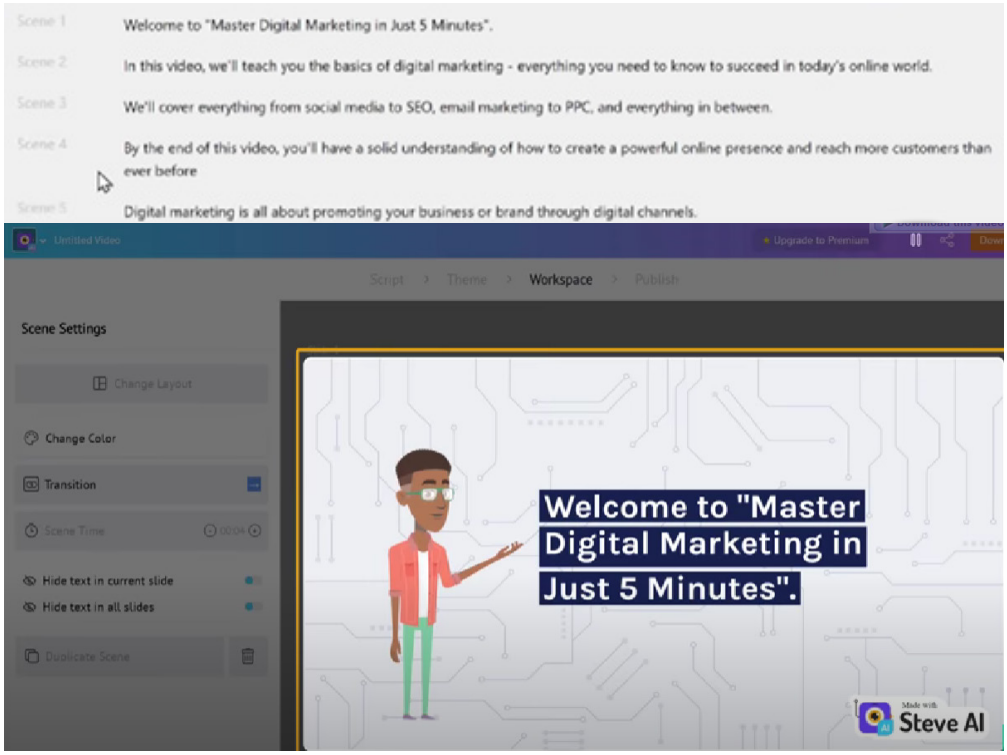

Figure 9. Steve AI to create learning videos

4. Combination of Synchronous and Asynchronous Learning

The use of e-learning allows learning to be carried out online without the need to meet face-to-face with lecture participants. Therefore, the success of a class made on e-learning is very dependent on the content in it. The content must be a mix of good and interesting book files, presentations, and videos. However, considering that the lecture participants in e-learning are generally around 30 to 45 participants with various characteristics, there are times when no matter how interesting the content is made, it will not be able to satisfy the lecture participants as a whole. We suggest that learning done on e-learning should be a combination of synchronous and asynchronous learning. Preferably in 3 or 4 meetings, there is 1 meeting that is held synchronously, to be able to find out the progress of lecture participants regarding the material provided in 4 meetings.



Implications

The development of technology and the internet in Indonesia has brought new changes in the learning and teaching process, especially in higher education. Universities are currently developing platforms for online learning, one of which is SYAM-OK at Makassar State University. The use of e-learning, of course, also faces various obstacles, one of which is how to attract the interest of learning participants so they don't get bored, the material can be easily understood, and there is interaction between participants and the teacher. One of the steps that can be taken is to develop good and interesting content on the e-learning platform. By following the steps that we apply based on experience, it is hoped that we can overcome obstacles in using e-learning for learning.

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Designing Gamification for Blended Learning in Higher Education

#gamification #blended_learning
#gamification_in_higher_education

Sella Mawarni / Makassar State University
Hartoto / Makassar State University



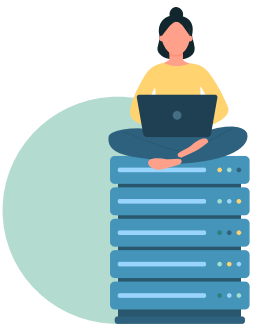
Effective gamification of learning can only be achieved if it has careful planning before it is implemented in class. Gamification-based learning planning has special characteristics compared to traditional learning stages.

01 Learning Gamification Design Stage

Applying gamification in learning is not just using game components, learning applications, or even rewarding students. Effective gamification of learning can only be achieved if it has careful planning before it is implemented in class. Gamification-based learning planning has special characteristics compared to traditional learning stages. We propose a gamification instruction planning template, which can be used by educators who plan to implement blended learning-based gamification in the classroom. In this gamification instruction planning template, there are several stages that need to be considered comprehensively.

1. Needs Analysis

Needs analysis is a critical step in designing a gamification-based learning plan. By doing this analysis, educators can get a comprehensive picture of the students who will be involved in the learning process. First of all, identify the general characteristics of students, such as age, grade level, and cultural background. Next, focus on specific characteristics that are the focus of attention, such as the level of cognitive abilities and technological literacy possessed by students. This information helps educators to develop appropriate and relevant approaches to using gamification elements. By understanding the abilities and needs of students in-depth, learning planning can be directed to provide learning experiences that are challenging but equally accessible to all students. In addition, needs analysis also allows educators to adapt challenges and assessments to suit students' abilities, thus creating a learning environment that is inclusive and beneficial to the development of each individual.



2. Formulating learning objectives

Formulating learning objectives is a crucial next step in gamification-based learning planning. Learning objectives are the main pillars in determining the design and implementation of learning activities and the assessment system to be used. Learning objectives must be formulated

clearly and specifically to provide proper guidance for students in achieving the expected results. The measurability of goals is also an essential aspect because this allows educators to measure student progress and achievement objectively. By having specific and measurable goals, educators can assess the extent to which these goals have been achieved and whether an expansion of learning is needed. In addition, learning objectives that can be achieved provide encouragement and motivation for students to work hard to achieve the expected achievements. By formulating learning objectives carefully, gamification-based learning planning will be more directed and effective in achieving optimal learning outcomes.

3. Storyboard (sketch out) your game

After identifying the challenge ideas in gamification-based learning, the next step is to develop a storyboard or gameplay. At this stage, educators need to design in detail how the game will take place and how the challenges will be arranged in a certain order. Game flow can be enriched with interesting game elements, such as rewards (points, levels, progression, badges, authority, virtual items, physical goods, severance, gifting, free items, virtual money); reward schedules (fixed interval reward schedules, fixed ratio reward schedules, variable intervals reward schedules, variable ratio reward schedules); avoidance (disincentives, leaky buckets); leader board (macro leaderboard, micro leaderboard, indirect competition, direct competition); status (avatar, social graph); quest (content unlocking, countdown, lottery, communal discovery, scaffolding) (Kim, S., Song, K., Lockee, B., & Burton, J. 2018). Each element must have a consistent and challenging relationship for students. In compiling storyboards, make sure that the rules for points and prizes given have clear objectives and can motivate students to participate and try to achieve higher achievements. It is also necessary to set clear criteria or rules for achieving a level up or earning a certain badge so that students have clear guidance in navigating the learning game. By carefully compiling storyboards, gamification-based learning plans will be more structured, and students will be involved in learning experiences that are both challenging and fun. For example, in the example of the challenge idea, students must collect at least 5 international course certificates to get top-up points for their midterm exam scores. The lecturer needs to write down the criteria for the point prizes that are obtained if students succeed in collecting 5 certificates, which of course, will be different for students who can collect more certificates. The difference in the number of certificates can be accumulated as additional points for top-up midterm scores.

4. Identifying resources

In this stage, identifying learning resources will become the basis for students in answering the challenges of gamification-based learning games. This learning resource plays an essential role in providing information, materials, or content needed by students to complete the challenges given. Learning resources can be provided before class starts so that students can study them at home before the learning session takes place. Learning resources can also be provided during class as a reference or guide for students in carrying out learning games.

One form of learning resources that can be used in blended learning patterns is learning applications or technology that supports gamification. Digital platforms or special applications can provide relevant content, challenges, or learning activities that match learning objectives. This approach not only adds to the attractiveness of learning games but also makes it easier for students to access learning materials whenever needed.

5. Identifying in-Class Activities

Furthermore, in gamification-based learning planning in a blended learning environment, it is necessary to identify in-class activities that will be carried out during face-to-face sessions. Face-to-face sessions are a valuable opportunity to reinforce the understanding and knowledge students have gained from previous challenges and activities. The form of in-class activities can be in the form of whole group discussions, differentiation/individualization, group activities, gameplay, or think-aloud activities. In-class activities can be designed to facilitate whole group discussions, which allow students to share understandings and experiences in achieving learning objectives. Differentiation or individualization approaches can be applied to accommodate the different needs of each student so that they can learn optimally according to their individual ability levels. Group activities can also be an important part of face-to-face sessions, where students work together to complete collaborative tasks and achieve common achievements. In addition, gameplay or learning games in class can be a driving force for student enthusiasm and participation. Gameplay adapted to the gamification theme can make learning more interesting and fun. Furthermore, think-aloud activities or open-minded activities can also be included as part of in-class activities. Through this activity, students are invited to verbally process their thoughts while completing challenges and explain the strategies used to achieve learning objectives. For example, when students have successfully collected 5 international course certificates, students are then asked to work in groups to discuss problems during the course for further discussion together.

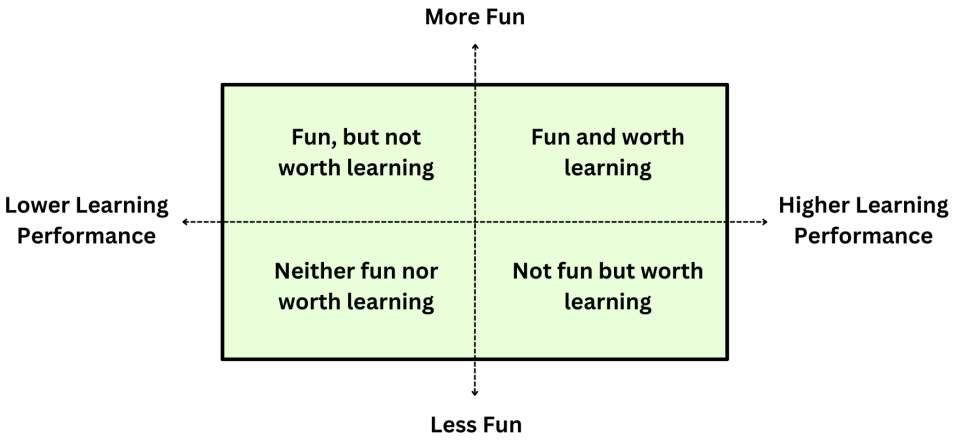
6. Creating the assessment

This stage aims to assess student understanding to measure the achievement of learning objectives. This allows educators to track student progress, identify potential improvements, and provide helpful feedback. Assessments can be designed in various forms, depending on the learning objectives and student needs. Assessments can be formative/summative, challenging questions, interactive quizzes, presentations, or traditional tests. Formative assessment aims to provide feedback throughout the learning process, so students can continue to improve their understanding, while summative assessment is used to evaluate the achievement of learning objectives in the end. Interactive quizzes can also be used to test student understanding in an interesting and fun way. Meanwhile, the traditional test remains an effective choice for measuring students' understanding of learning material in a more comprehensive manner. For example, after students get 5 international course certificates and carry out group discussions to assess understanding, students are given interactive quizzes regarding the MOOC instructional components in the course.

Implications

Gamification-based learning planning must consider the significance and relevance of using game elements in order to create an effective and fun learning environment in higher education. Through careful evaluation and appropriate improvement, gamification-based learning is expected to provide meaningful learning experiences and motivate students to achieve higher achievements in a blended learning environment. Thus, the use of gamification in learning can be an effective tool for improving the quality of education in tertiary institutions.

02 Learning Results that Apply Gamification



The purpose of applying gamification in learning is to create learning experiences that are "fun and worth learning." Finally, the application of gamification in learning can be grouped into four results. Namely, learning can be fun and worth learning, fun but not worth learning, not fun but worth learning, and neither fun nor worth learning. If the learning experience cannot achieve both elements of fun and worth learning or fun and relevant for students, their motivation and interest in further learning will decrease (Faghihi et al., 2017). If experiential learning is meaningful but not fun, students cannot discern the difference between a gamified learning experience and a traditional learning experience. Meanwhile, if the learning experience is fun but not useful for learning, the learning design that includes the game's dynamics must be evaluated.

Implications

Learning that applies gamification can be classified into four outcomes: learning can be fun and worth learning, fun but not worth learning, not fun but worth learning, and neither fun nor worth learning. The ultimate goal is to create a learning experience that is fun and worth learning so that learning not only makes students feel happy but is also able to master learning material in accordance with the learning outcomes set.

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Education Professional Development Scheme for Course Facilitator in Online Mode at YTU



#Engineering Teachers' Education #Capacity Building #Human Resource Development #21st Century Skill

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The fundamental concept for establishing a prestigious university directly depends on the fulfillment of the high-quality teaching staff of that university. The art of nurturing 21st-century-skillful engineering teachers is very soft and gentle. The essential ideas behind the training for highly qualified teaching staff are based on soft skills and hard skills with honesty and dignity. If someone does not meet those qualifications, the outstanding teaching staff with a righteous spirit cannot be nurtured. The educational professional development scheme for course facilitators via online mode is very important for the HRD scheme.

01 Ideas Behind the Nurturing the High Qualified Teaching Staffs

A University is an important place or service location that always provides high-quality teaching and learning environment. Yangon Technological University (YTU) offers outstanding services for teaching and learning processes in engineering education in Myanmar. There are three main processes to enhance the teaching staff's qualification based on (a) Nurturing the qualified teachers (Instructors and Lecturers) based on research activities, (b) Establishing precision research laboratories for experimental studies, and (c) Transforming the lectures based on the experimental research outputs effectively.

▶ Nurturing the qualified teachers (Instructors and Lecturers) based on research activities (Blended Mode)

The competency-based teaching staff's qualification is very important to nurture highly qualified teachers with the activities of basic and applied research works. Assessment methods on lesson planning, checking the teaching ability, and utilization of effective teaching methods tend to model teaching processes. Pre-service training is a good idea to nurture outstanding teaching staff. One of the activities is to offer refresher training on specific courses. Short-term and long-term certification programs are the solution for nurturing qualified teachers. The research group seminars play a significant role in formulating the fulfillment of the experience of research activities.

The research outputs shall have to transform the real lectures, and the standard teacher shall have to prepare effective lesson planning. After that, the teachers shall have to use the effective teaching method, especially the PODS method for

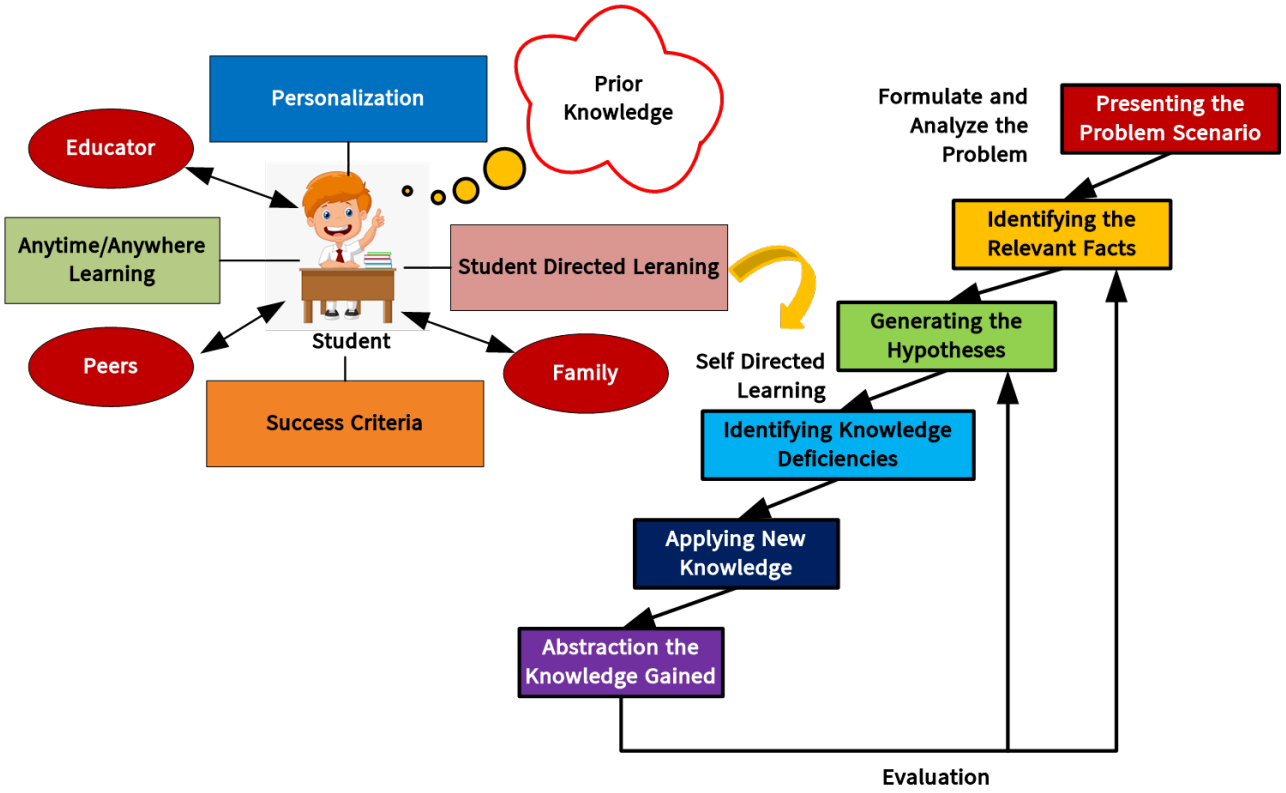

Figure 1. Student-Centered Approach and Problem-Based Learning

In the PODS learning cycle, students are encouraged to predict the result of a particular engineering experiment before any treatment. The experiment is then performed, and the students are encouraged to make a quantitative or qualitative observation of the experimental results. Students can then discuss and share their predictions and observations with the group or class; whether the same or not from any conflict between their predictions and observations can be solved during the discussion phase. After discussion, students understand the specific subjects underlying the observations amongst themselves and the facilitators. Figure.1 illustrates the Student-Centered Approach and Problem-Based Learning for outstanding services from YTU via online mode. Equipped with the four major competencies of the 21st century—collaboration, communication, creativity, and critical thinking—is to improve the quality of faculty at research-oriented universities. According to the discussions on some models for improving qualified teaching staff in a research university, YTU staff follow the development idea and experience based on several research activities. The next section is the supporting phase for teaching staff and students' research activities towards the research-based education (RBE) system. Figure.2 shows the analysis model for developing qualified teaching staff in the 21st century. There are five inputs and one output for the analysis model.



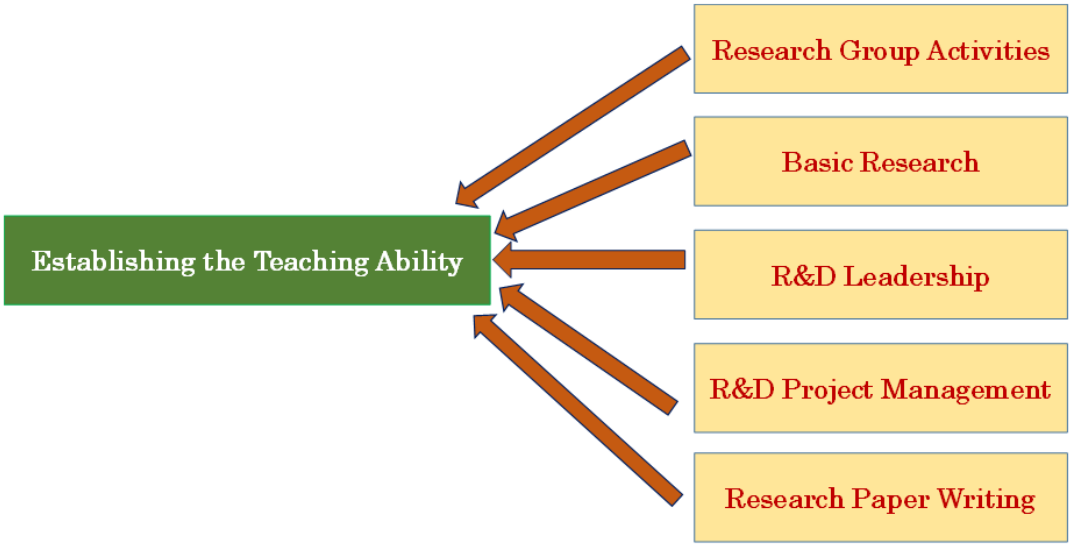

Figure 2. Models for Improvement of Teaching Staff Qualification (Blended Mode)

▶ Establishing the precision research laboratories for experimental studies

Figure 3 illustrates the model for the formulation of a research laboratory. To formulate the research laboratory under YTU, all teachers or researchers shall have to find the research problems from their own idea or from the industries and the research funds from the funding agencies like government research funds, U Nyi Hla Nge foundation, JICA project for EEHE (Enhancement of Engineering Higher Education). They shall have to prepare the research setup for doing research work, and they shall have to do their proposed research work. They also shall have to analyze the outcomes of their research findings. After that, they shall have to prepare the teaching materials, such as experimental procedures and lectures, for their teaching purposes. These steps are for establishing the research-based education system. After the accomplishment of the confirmed research outcomes, they shall have to prepare the laboratory manual for their students. And then, they shall have to collect the appropriate equipment according to the permission from the budget section to comply with the auditing rules and regulations. And then, they shall have to make the experimental setup for their laboratory. Finally, they shall have to establish a research laboratory for their students (target for research engineering and research scientists) by approaching outcome-based education.

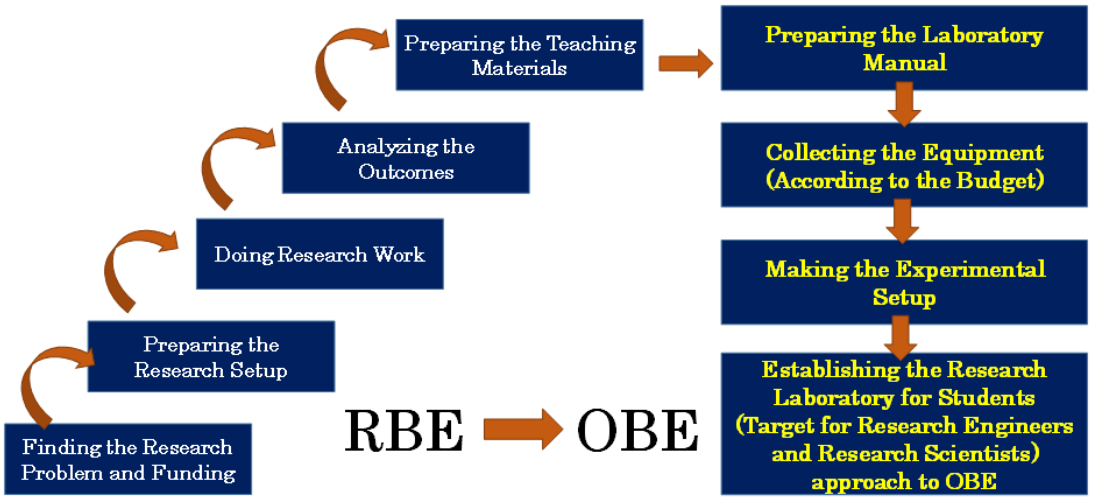

Figure 3. Model for establishment of research laboratory

▶ Transforming the lectures based on the experimental research outputs effectively

The last step is to prepare a good lecture from the research outputs. The course facilitators always prepared their course materials for online mode based on their experience in research activities.

The Learning Management System (LMS) is an effective modern tool for professional development via online mode.

Implications

YTU's approaches for nurturing the outstanding qualified teaching staff for engineering education are based on Research-Based Education (RBE) and offer Outcome-Based Engineering Education (OBEE) for all engineering graduates. The qualified teaching staff for engineering education shall have to follow the three steps model, including (a) Nurturing the qualified teachers based on research activities, (b) Establishing the precision research laboratories for experimental studies, and (c) Transforming the lectures based on the experimental research outputs effectively.

02 Analysis Model for Development of Qualified Teaching Staff via Online

Equipped with the four major competencies of the 21st century—collaboration, communication, creativity, and critical thinking—is to improve the quality of faculty at research-oriented universities.

▶ Academic Professional Competency for Teaching Staff at YTU

Yangon Technological University (YTU) recognizes the academic professional competency for teaching staff qualification based on the following criteria to establish the research-based university in Myanmar.

- Discipline Knowledge (Understanding DK theoretical underpinnings and ways of thinking)
- Self-Motivation Skills (A self-motivated teacher is focused on his/her growth and the growth of the students)
- Thinking Skills (Thinking creatively to generate innovative solutions)
- Research Skills (Solving unknown complex problems from society)
- Information Skills (Deciding what information is needed and where it might be found using appropriate technologies)
- Communication Skills (Communicating in ways appropriate to the discipline, audience, and purpose)
- Technology Skills (Using appropriate technologies recognizing their advantage and limitations)

- Learning how to learn (Take responsibility for one's own learning and development)
- Teaching Skills (Offer high-quality teaching for the students)
- An international perspective (Thinking globally and considering issues from a variety of perspectives)
- Cultural understanding (Respecting individual human rights)
- Professional Skills (Work independently and in teams, Demonstrate leadership, Professional behavior, and ethical practices)
- Interpersonal Skills (Empathy, Positive motivation, non-verbal communication, Humor)

All teaching staff shall have to be qualified with the abovementioned criteria for the recruitment process at YTU.

Model Implementation

According to the discussions on some models for improving qualified teaching staff in a research university for the OBEE system, YTU staff follow the development idea and experience based on several research activities. The next section is the supporting phase for teaching staff and students' research activities towards the OBE system. Figure.4. shows the analysis model for the development of qualified teaching staff. There are five inputs and one output for the analysis model.



Figure 4. Analysis Model for the Development of Qualified Teaching Staff

▶ Creation of Online Mode for Educational Professional Development (EPD) Program

Based on the analysis model, the educational professional development program could be conducted interuniversity system or through stakeholders' participation, especially Myanmar Engineering Council (MEngC). The outcome-based teaching and assessment processes are vital to nurturing excellent course facilitators for the continuous EPD scheme. After completing the EPD via online mode, the course facilitators could be operated to implement the Open Education Resources (OER) university system in YTU.

Implications

The high-quality teaching staff qualification model includes improving the supply and quality of teachers' continuous professional development (CPD) approaches via online mode; providing educational institutions high-quality teacher education models that respond to the evolving needs of schools, teachers, and educational society; and facilitating the acquisition of the competencies that teachers need, such as teaching transversal competencies, teaching heterogeneous classes, and collaborating with colleagues.

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Challenges and ideas of using RPA in solving administrative problems for Vietnam higher education



#RPA, #Robotic Process Automation, #Higher Education

Mr. Chu Van Huy / Banking Academy of Vietnam

University governance requires performing complex tasks, from curriculum management to resource allocation, people management (staff, lecturers and students). To evaluate whether the management is good or not, the opinions of customers (who are students) will be a very good measure to evaluate. However, with the feedback of students, determining the right solution to solve it quickly and effectively is always a big challenge. Robotic Process Automation (RPA) can be considered a good idea to support solving administrative problems for higher education.

01 Issues in management activities at the university

In May 2023, I had the opportunity to attend a dialogue session between the leader of higher education in the North of Vietnam and students. To prepare for this dialogue, the university conducted a survey of nearly 16,000 students, belonging to 202 academic classes (27 classes of high-quality systems, 175 classes of the regular system) and collected 383 questions, feedback, suggestions of students to the school.

The survey results are aggregated into 15 main groups of issues related to students (Table 1). In each problem group, the university determines what the student's issues.

Table 1. Statistics of some main groups of problems related to the problem students mentioned

No	Groups of problems related to the problem students mentioned	Number of issues
1	Register for classes, organize classes	35
2	Materials and textbooks Program, course content, assessment of learning results	42
3	Teaching methods	18
4	Academic advisor	8
5	Exam, test	45
6	Research activities	8
7	Internships End-of-course activities	8
8	Facilities for teaching and learning	51
9	Dormitory, canteen, parking lot, school security, prevention of social evils	82

No	Groups of problems related to the problem students mentioned	Number of issues
10	Library System of learning materials, documents	18
11	Health care and disease prevention	0
12	Implement modes for learners	0
13	Spirit and attitude of staff, lecturer, department, faculty, center,...	25
14	Activities of Youth Union, Student Union,... in students	28
15	Other problems	15
Total		**383**

Source: Statistics by the author

After the dialogue, the main issues related to the units in the university (departments, centers, faculties, etc) that need to be overcome are reviewed to find out the main causes and the ways to increase the satisfaction level of the students.

Table 2. Summary of major problems related to some units in the university

Units in the university	Major problems that need to be fixed	Related to Process or System?
Academic Affairs Office	Reviewing regulations related to functions and duties	Process standardization
	Communicating to all students by many channels, in different ways, the content of all training regulations for students to know and implement.	Student Portal (SP), Social network (SN), Email,...
	The reception and handling of problems with students should be flexible to ensure the best convenience for students	Training management system (TMS), SP, SN, Email,...
	The implementation of the Learning Management System (LMS) that needs to be deployed, during the implementation process, it is necessary to coordinate with the IT center and suppliers to promptly fix errors and arising situations.	LMS
	Immediately deal with the students' complaints such as: answering student questions, processing registration, postponing exams, etc. to ensure compliance with regulations and most benefits for students.	TMS, SP, SN, Email
Student Affairs Office	Disseminate and provide regulations, regulations and guidelines related to learners' rights and obligations.	SP, SN, Email
	Disclosure of information related to student interests such as scholarships, forging points, tuition fee exemption and reduction, subsidies, etc. publicly, democratically, transparently, in accordance with regulations.	SP, SN, Email
	In 2023, by 2024 at the latest, the entire process of handling administrative procedures must be digitized for students, so that students' emails cannot be responded to in a timely manner.	Student management system, SP, SN, Email,...
Department of Facilities Management	Review all facilities, equipment and related issues. Timely repair equipment to support learners at the lecture hall.	Facilities management system

Units in the university	Major problems that need to be fixed	Related to Process or System?
Department of Facilities Management	Regularly inspect and supervise, urge the security, cleaning, etc. to perform well the committed work.	Facilities management system
	Organize some halls as open spaces for students to study, group activities, discuss, etc.	
Library and Information Center	Review all regulations guiding the loan and return of books, management and use of library materials.	Process standardization
	There is a solution to notify the time to borrow and return books automatically.	Library management system, SP, Email,...
Center for Training Support	Timely capture students' reflections and recommendations to coordinate, handle, ensure security, order, safety and hygiene and other legitimate interests of students.	SP, SN, Email,...
Youth Union, Student Union	Ideal education for students. Besides, it is necessary to listen and create many useful playgrounds and activities for students.	SP, SN, Email,...
Faculties	Review the content students ask, complete and timely information for students.	SP, SN, Email,...
Academic advisor	Reviewing content related to academic advising work	Process standardization
	Support, advice and focus on students who are weak and under warning.	SP, SN, Email,...

Source: Statistics compiled by the author

Thus, it can be seen that there are still some limitations that need to be overcome for the university's governance to become better, such as:

1. Need to review and standardize business processes.

2. Lack of an automatic solution to notify students of necessary information through some main communication channels (such as SP, SN, Email, etc.) in the most proactive, easy and natural way.

3. Lack of automated solution to collect student feedback continuously, in multiple contexts, in real time.

Implications

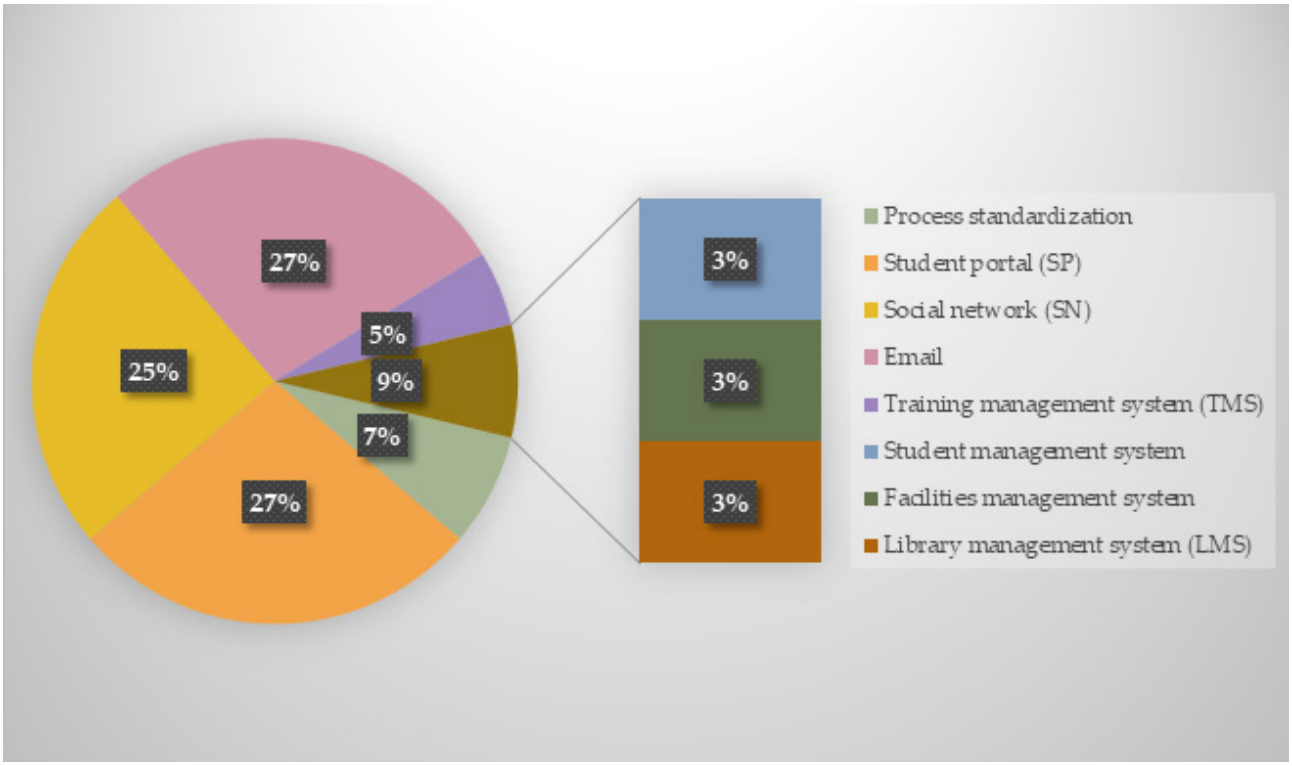
Understanding learners' wishes, committing to bring the best to learners, ensuring compliance with regulations, suitable to the circumstances of each school is considered the guideline of many higher education institutions. Educating students to clearly see their roles and responsibilities in building the school by being more active in learning, preserving the cultural environment, landscape, being more conscious, behaving more civilly, enthusiastically participating in university activities, without negative behavior. Therefore, to solve the problem of university governance, the requirement is to build a spirit of readiness for innovation, aiming to create and keep the connection between the university and students continuously in real time.

02

Some ideas to apply RPA for Vietnam higher education from the perspective of administrators

Through the statistics from Table 2, it can be seen that there is a huge amount of work related to the interaction between units in the university with processes and systems (SP, SN, Email, etc.) via computer (Figure 1). The above workload is very suitable for the application of RPA technology that I mentioned in volume 1st report [1].

Figure 1. Process and system statistics in interaction with students



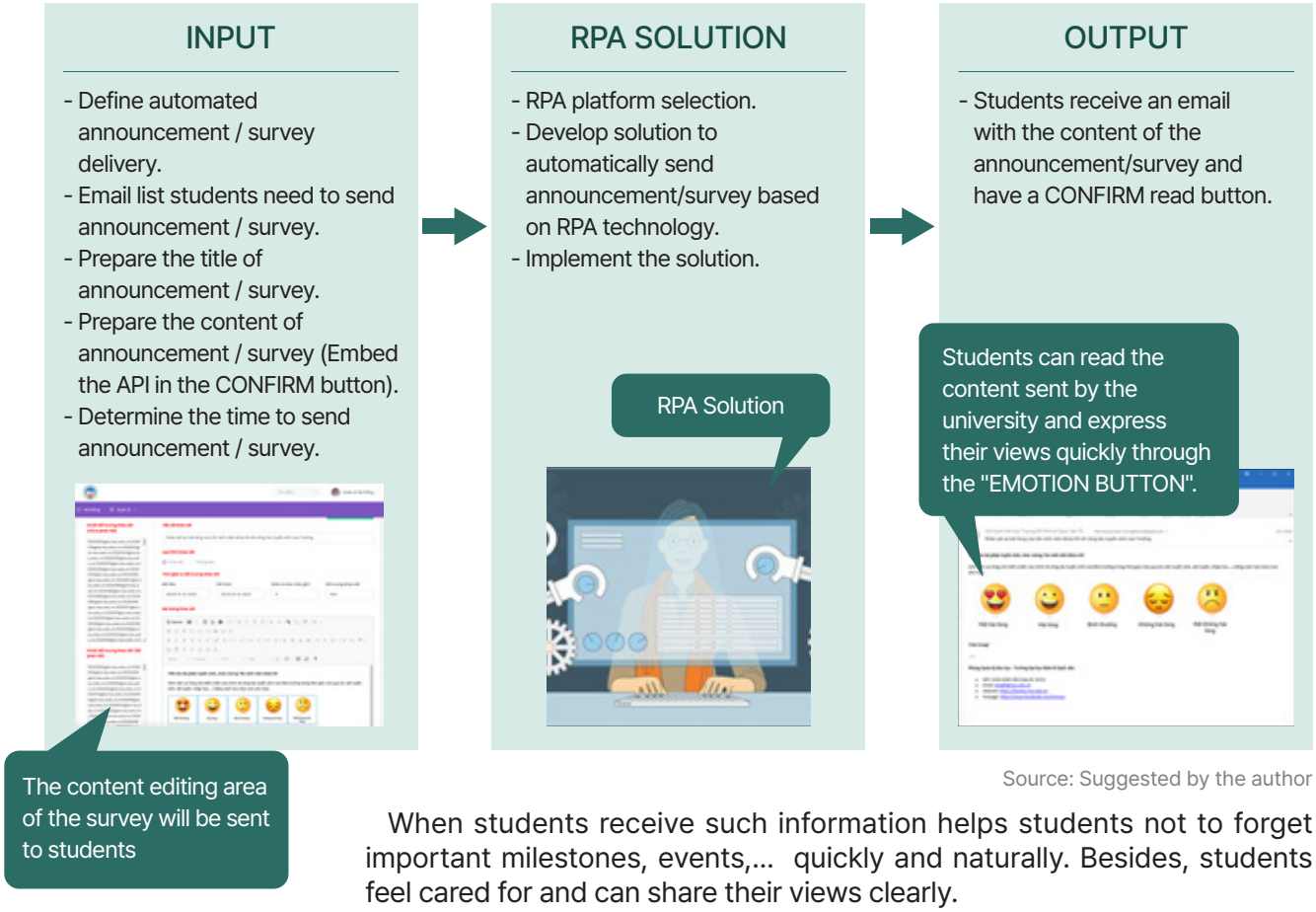
Source: Statistics compiled by the author

To be able to apply RPA technology to support university administration, below are two ideas that I would like to suggest. These ideas have been tested in several cases at some universities in Vietnam [1], [2], [3].

▶ Idea 1: Use RPA to automatically send announcements/ surveys to each relevant student via Email

Sending announcements/surveys to individual students or groups of students often takes a lot of time and effort of the units in the university (Figure 2). Therefore, an RPA solution can be established that allows staff and lecturers to enter some clear input data. Then the RPA solution will automatically send the information to the students via Email. Finally, the students read and confirm that they have read it. This is really meaningful to help schools communicate, monitor and understand the student's interactive status.

Figure 2. Proposing RPA solution in sending announcements/surveys to each relevant student via Email



Source: Suggested by the author

When students receive such information helps students not to forget important milestones, events,... quickly and naturally. Besides, students feel cared for and can share their views clearly.

If the above can be done, complaints about the units in the university not providing enough information for students will be minimized. In addition, the obtained survey results will help the leaders of the units evaluate whether the services that they provide to students are good? Are there any improvements to the products or services offered to students? As a result, student satisfaction and engagement with the university improved significantly.

▶ Idea 2: Use RPA to automatically collect student feedback through Email announcements/surveys

One of the common problems is that unit leaders do not accurately measure the effectiveness of student announcements and feedback in communication. As a result, policies are not promptly adjusted to the reasonable expectations of students. Therefore, one possible idea to measure university-student interaction is to use CONFIRM BUTTON in the body of Emails sent to students. Specifically:

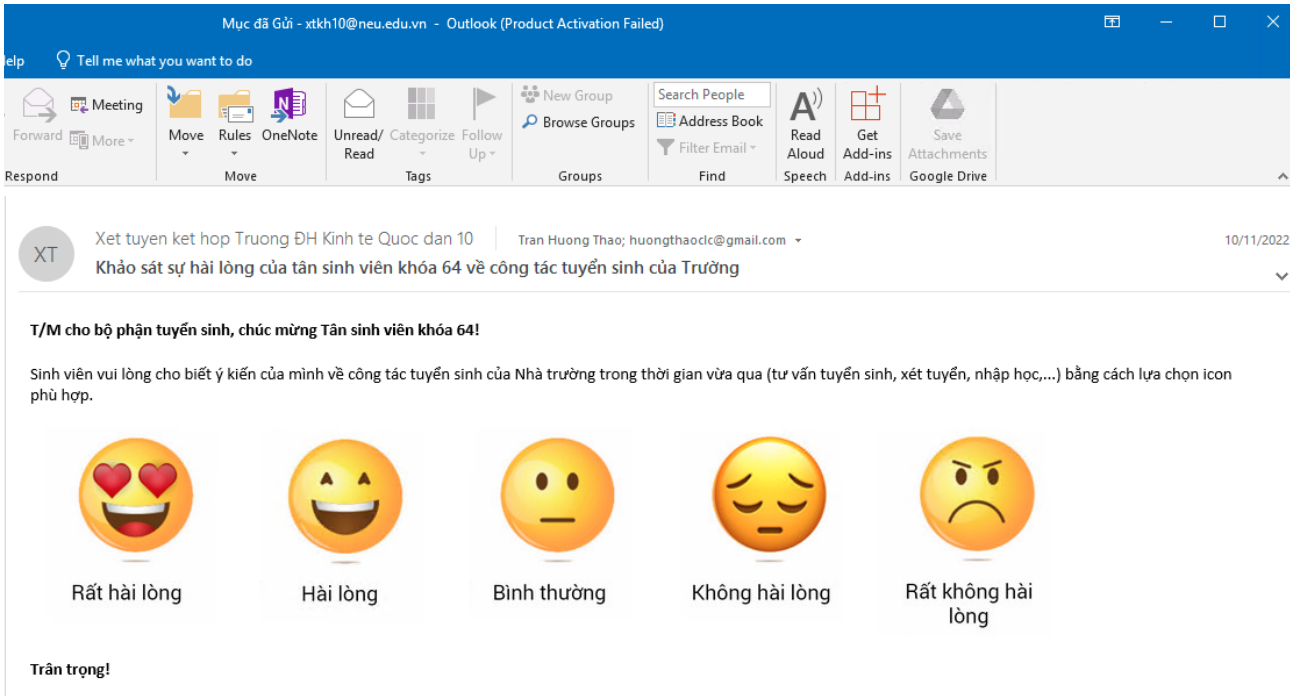
1. The unit in the university should set up a CONFIRM BUTTON, in which the button will embed an API to collect satisfaction (with survey) or read status (with announcement) of each student.

2. When a student clicks on the CONFIRM BUTTON, the API will be executed and the student's feedback will be recorded.

3. For non-interactive students, the university may resend the EMAIL to these students after a certain period of time. If the student is still not interacting, the academic advisor will find the reason. Thereby, bringing students back to focus on learning.

The idea above helps the university understand students throughout the learning process. It can help make timely adjustments to improve student satisfaction. In this context, RPA fills in the information in the APIs embedded in the CONFIRM BUTTON, including (1) SURVEY_ID (with survey) or ANNOUNCEMENTS_ID (with announcement), (2) STUDENT_ID (with all), (3) SATISFATION_LEVEL_ID (with survey) for each student (Figure 3). From there, it helps to record the feedback of each student if they CLICK the CONFIRM BUTTON. The process of collecting, synthesizing and analyzing data becomes much simpler than the usual methods of sending announcements and surveys.

Figure 3. Ideas for collecting student feedback data via EMAIL CONFIRM BUTTONS



Source: Experiment by the author [2]

In order to record student feedback effectively, the school should make a policy and agree with all students when they enter the university. Besides, it is necessary to have a synchronous implementation plan in the units and anticipate some challenges to overcome in the process of implementing the RPA solution [4]. In addition, it is also necessary to calculate the appropriate frequency of announcements/surveys throughout the university, to avoid annoying students.

Implications

It is very important to send announcements/surveys to students in order to keep a constant connection between the university and students. The above work becomes easier with the support of RPA technology to connect input data sources, transfer information to each relevant student. Thereby, the collection, statistics, and analysis of student feedback data becomes faster. As a result, university leaders can make real-time decisions, helping to solve governance problems in the current fierce competition.

Summary

Higher education has many administrative challenges such as how to collect, understand and provide the best products and services to students. To solve the above problem, it is necessary to find innovative solutions to improve management processes and enhance student satisfaction. RPA emerged as a tool to help fulfill the expectations mentioned above. RPA helps to realize the idea of automating tasks related to sending, communicating and collecting feedback for students with promising results. Using RPA can automate tasks, improve communication channels, easily collect feedback, make better decisions for university administration. However, to be able to implement an RPA solution successfully, higher education institutions need to carefully plan, test thoroughly before expanding, prepare financial and human resources, especially the commitment and support of many stakeholders.



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