FACULTY OF COMPUTING
SEMESTER I - SESI 2023/2024

SECP 1513 - S07 - G08
TECHNOLOGY AND INFORMATION SYSTEM

GROUP ASSIGNMENT - REPORT ON NALI 2023 VISITATION

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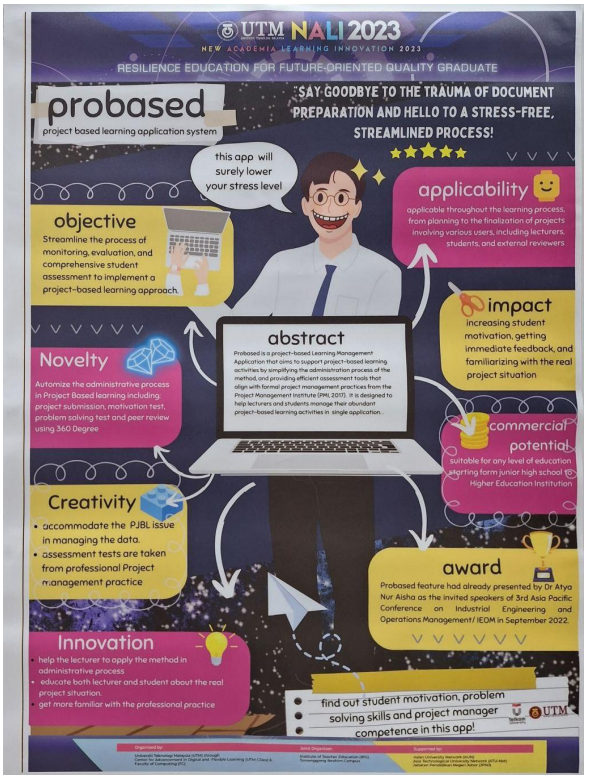
1.0 INTRODUCTION

On the 7th and 8th of November 2023, our group has visited NALI 2023 to broaden our knowledge about Information and Communication Technology (ICT) and ways it may be utilized in educational institutions to improve learning outcomes and establish a course for the future to come. Throughout this beneficial event, we hoped to acquire useful and appropriate materials as well as ideas that we might potentially apply in our own educational settings, advancing the improvement of creative, successful, along with sustainable teaching and learning practices. It should be mentioned that NALI is an annual knowledge sharing event held by Universiti Teknologi Malaysia (UTM), through Center for Advancement in Digital and Flexible Learning (UTM CDex) and Faculty of Computing (FC). New Academia Learning Innovation is what NALI stands for, which is a framework for promoting innovative teaching and learning approaches in education. It includes tools for achieving entrepreneurial academia, a blended learning philosophy that is focused on the needs of the learner, and a variety of learning modalities. As a sidenote, 2018 saw the organization of NALI's inaugural edition. The theme for NALI 2023 is Resilience Education for Future-Oriented Quality Graduate. Resilience is defined as an individual's capacity to recover from circumstances, adjust to changes and manage stress and hardship. Through resilience education, individuals are taught about skills and strategies to develop resilience, such as problem-solving, positive thinking, emotional regulation, social skills, and coping mechanisms. It attempts to give individuals the confidence to handle challenging situations and overcome barriers, rather than feeling overwhelmed or helpless. It is possible to teach resilience education in a variety of contexts, such as workplaces, community organizations, and schools. Additionally. it is confidential that it can be incorporated into already-existing curricula, like psychology courses, health education programs, as well as social and emotional learning initiatives. As a result, individuals can better navigate life's challenges and realize their full potential by cultivating resilience through education. During our short sojourn to this event, we have interviewed five booths including Probased: Project Based Learning Application System, Experiential Learning Through Gamification, UTM ECO Mobile App: Biodiversity Geo-tagged Ecotourism Experience on UTM Campus, Mini Industry NXT-PRIME: Burger Factory, Archvision VR: Empowering Next-Gen Architects Through Immersive Design Pedagogy.

2.0 REFLECTIONS

2.1 Probased (Project Based Learning Application System)

Reflection by : Sou Chong Jie



In this NALI 2023, there are many eye-catching program for us. One of the programs is PROBASED. The name of PROBASED, come from Project Based Learning Application System. It is a great tool that helps to solve tons of problem for lecturers and student when carrying out study.

Motivations and Objectives:

The creator of PROBASED found that the needs for a more efficient and effective approach to project-based learning. Students have a lot of challenges in documentation and time-consuming tasks associated with old education method. This situation become the key point for PROBASED become true. PROBASED's creator wants to make university lectures easier and more efficient to maximize the amount of time available for quality studying.

Impact on students:

In the interview with PROBASED's developer, we understand that PROBASED has many positive impacts to student. One of the benefits is acceleration of assessment progressing. PROBASED provide immediate feedback environment for students. With PROBASED, they

can discuss the difficulties of projects with teachers and other students. This become a good way to enhance students' problem solving skills besides increasing relationships between students and teachers.

Inspiration Amidst Challenges:

The inspiration behind PROBASED's creation is rooted in the challenges posed by the COVID-19 pandemic. In the pandemic, creator noticed that students' problem-solving skills were decreasing. To overcome this situation, a more creative teaching method is required. Through research and experimentation, it was discovered that project-based learning generated positive results when facilitated in the form of application. This flexible approach to challenges shows a strong dedication to making sure students do well in their education.

Familiarizing Students with PROBASED:

The creator emphasized the importance of including PROBASED into their projects to ensure students become familiar with the application. By combining PROBASED into coursework and real-world problem-solving tasks, students not only learn about the application's benefits but also gain practical experience using it. In this way, students could easily understand the ability of PROBASED.

Suggestion for improvement

1. More user-friendly interface

Developer can enhance user interface to maximize the effectiveness of PROBASED. A good user interface could let every user to familiarize the application easily and this is one of the most important key points to make users more likely to use the application.

2. Continuous updates and supports

Developer should always be ready to update the application as soon as possible from users' feedback so that the application is could smoothly running with the least number of problems.

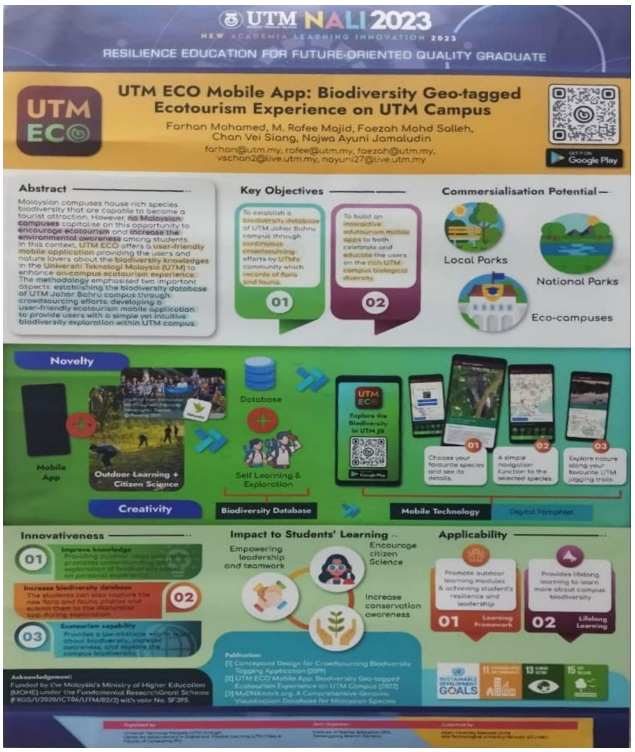
2.2 Experiential Learning Through Gamification

Reflection by : Jason Joel Johnny

This project is intended for Urban and Regional Planning students and is being carried out at the Faculty of Built Environment and Surveying's studio. The goal of this project is to create proposed design alternatives based on the site study and planning requirements. This project introduces the combination of SimCity and LEGO Bricks simulation games. Gamification is used to improve students' learning experiences. A comparison of both simulation games platforms and the combination complements each other to strengthen experiential learning of the students. SimCity, for example, is an individual game in which students may test theoretical ideas in a secure setting on their own. Students may study and experience the impact and necessity of constructing in certain locations by playing SimCity. However, for LEGO Bricks, it is a multiplayer game, but control is given to the educator, who is responsible for developing various situations in the game. As a result, students are more likely to work in groups. Every semester, students are allocated a 150-200-acre property and are required to offer a design plan. So, this project might assist them in better understanding their work. This project impacted students as they enjoy themselves throughout the learning sessions, which increase relationships between students and lecturers, and designs made by students become more creative because of students having a better grasp of their work. On the other hand, despite the support of instructors, the present obstacle in ensuring the success of this initiative is students' lack of engagement. My recommendations for improving this initiative include assigning points for work completion and developing a reward system where learners may redeem points for virtual badges, certificates, or other incentives. Additionally, educators should divide the learning content into levels, with each level getting progressively more difficult. This sense of progress might help the students stay motivated.

2.3 UTM ECO Mobile App: Biodiversity Geo-tagged Ecotourism Experience on UTM Campus

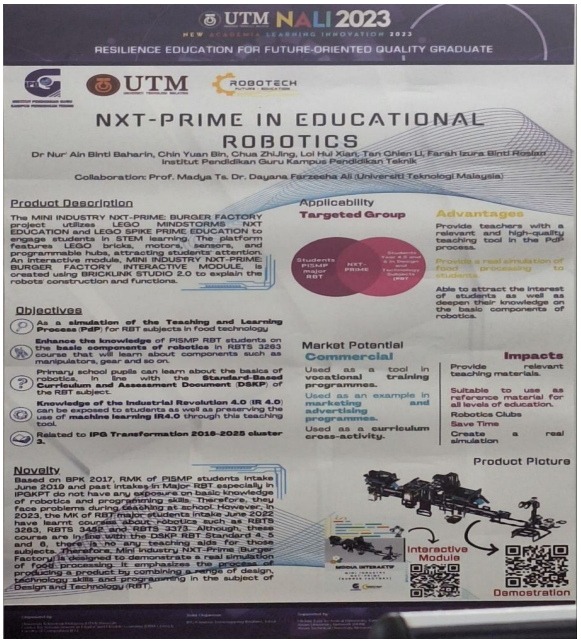
Reflection by : Liew Choon Pang



It is a digital database for biodiversity exploration. This application can make the students such as from faculty of built environment and surveying which the lecturers allow the students to go out and explore about the site. So, at the same time they are also doing their outdoor learning. So, they can conduct outdoor learning and collects data at the same time. The data they collected by our UTM ECO users can be used as a digital platform for our other students or visitors. This application is called a citizen science platform which used to collect data and give it to the scientific company. So this process will encourage student to continue participating in this activity and then lastly to contribute to the science and development. Lastly, this project require a large database in order to collect and store the data, then it will provide open source to the public to use these data.

2.4 Mini Industry NXT-PRIME: Burger Factory

Reflection by : Mohammad Zakwan Zuhairie bin Mohd Zain



This project is about combination of 2 LEGO which is LEGO MINDSTORM NXT and LEGO SPIKE PRIME.This project has been expected to help increase the people understanding in food technology which is taught through subject design and technology(RBT) by show a real simulation of food processing.Other than that,their product also expose student to knowledge of industrial 4.0(IR 4.0) as preserving the use of machine learning IR 4.0 through their product. This innovation is supposed to be the most effective way of teaching and learning process(PDP) because it also engages students in STEM learning. According to presenter RBT course is not famous as other course that inspired him to create this project.One of the impact in education is provide exposure to basic robotic system knowledge to people.Based on BPK 2017, the past intakes in RBT major that do not have any exposure to basic knowledge of robotic and programming have face problem in learning.So they planned to provide relevant teaching material that can be used during PDP that should able to attract the student interest and give basic of robotic.They also state that the material that provided is suitable to use as reference material for all level of education.By doing that they have easier the teacher to find the learning material.More over source of RBT reference material is quite limited.In the beginning they will guide the teacher and student how to handle their product so that teacher and student familiar with their product. From that people can learn about their and get to know the advantage that product provided in learning process.By doing this they can attract people to get their product.So in my point of view they should make a workshop as improvement of their project, they could get people attention about their product.This action should help people to learn more about their product and can also convincing teachers that their product have a lot of benefit to act as learning material.Even though they state that their target are student but I think teachers are the most important part in order to make their project success.

2.5 Archvision VR: Empowering Next-Gen Architects Through Immersive Design Pedagogy

Reflection by : Ennis Lam Si Hoong

This project is about implementing virtual reality (VR) into daily studies. The primary purpose of this project is to enhance the pedagogical approach in architectural education by introducing immersive VR experiences. By implementing this project to our daily life, architectural students will be well prepared towards the Industrial Revolution 4.0 and demands of global economy with 21st century and teaching. This project can also improve spatial understanding and creates a better visualization for the students. This practical application is able to bridge the gap between theory and real-world practice. VR which fully immersive with headgear and semi-immersive enables detailed exploration of spatial design, facades, materials, and construction methods, enhancing their understanding of specific building type effetely. Unfortunately, which such a perfect project it comes will a critical challenge which is the high costs. In order to develop a VR class for each student, it takes a lot of budget and money. In my point of view, this challenge can be easily solved if the university or school provides an amount of budget to give develop this project. Beside that, faculty can collect monthly payment from the students for the maintenance fees. The project basically brings a lot of benefits to the user who is not only students and even lecturers. It eases the learning and teaching process of the course, making it to feel more interesting and more enjoyable. As conclusion, the project is very useful and helpful for all educator. Although the challenge is quite an issue but if the challenge can be solve, it will be very effective towards the education.

3.0 Conclusion

Our visit to NALI 2023 revealed a kaleidoscope of new ideas and programs with the potential to transform educational landscapes. The event featured a wide range of initiatives, each tackling a different set of difficulties in the field of Information and Communication Technology (ICT) integration into education.

PROBASED emerged as a prominent solution, overcoming the challenges given by traditional schooling techniques, which were compounded further by the COVID-19 pandemic. The creator's foresight into pupils' dwindling problem-solving skills throughout the epidemic resulted in the creation of a project based learning application system. Its influence on students, which encourages instant feedback and collaborative problem-solving, demonstrates its ability to transform the learning experience.

The incorporation of gamification into Urban and Regional Planning projects, integrating SimCity with LEGO Bricks, demonstrates an innovative approach to experiential learning. The ability to engage students in both individual and group simulations opens up new options for comprehension and creativity. Suggestions for increasing student engagement through a reward system and tiered learning content are innovative ways to assure long-term motivation.

The incorporation of the UTM ECO Mobile App into biodiversity exploration offers a layer of real-world application to students' outdoor learning experiences. A citizen science platform, in which students provide significant data to scientific initiatives, not only enriches their education but also fosters a sense of responsibility and participation in the larger scientific community.

The project involving LEGO Mindstorm NXT and LEGO Spike Prime in teaching food technology and industrial 4.0 concepts stands out for its potential to fill a gap in robotic system knowledge. The creators' commitment to providing relevant teaching materials for various education levels is a commendable effort to enhance accessibility and ease the learning curve for both students and teachers.

The use of virtual reality (VR) into architectural education is a bold step forward in educating students for the challenges of the twenty-first century. VR's immersive experience can bridge the gap between theory and practice, allowing for a more in-depth understanding of spatial design and building procedures. While the issue of excessive expenses is acknowledged, practical solutions for budget distribution and maintenance fees provide a route forward.

In conclusion, NALI 2023 showcased a mosaic of innovative projects, each contributing to the advancement of educational practices. From the immediate impact of PROBASED to the forward-thinking gamification in Urban and Regional Planning and the real-world applications of UTM ECO Mobile App, these initiatives collectively represent a significant step in cultivating resilient, creative and successful learning environments. As technology continues to shape the future of education, these projects serve as beacons of inspiration for educators and institutions seeking to embrace the transformative power of ICT in the pursuit of quality education.