

Pedagogical Approach To Esulam@Apbuitm Using Experiential Learning: A Case Study

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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i11/19485> DOI:10.6007/IJARBSS/v13-i11/19485

Published Date: 22 November, 2023

Abstract

SULAM is a form of service learning defined as an experiential learning pedagogy. This credit-bearing educational experience integrates classroom instructions or assessments with community service activities to provide a practical, progressive learning experience while meeting societal needs. In parallel with the challenges and needs of the digital future, EIC552 (Company Website Design) aims to equip students with the knowledge, self-confidence and 21st-century skills, in line with the aspiration of Shift 1 of the Malaysia Education Blueprint 2015-2025 (Higher Education) to (i) enhance students' learning experience (ii) produce well-rounded and holistic graduates and (iii) expand collaboration between industries, government agencies and communities. Therefore, this paper presents a case study of a pedagogical approach that integrates teaching technical skills, and knowledge, for a successful implementation of a service-learning program, within an academic course whilst taking into the needs of the specific community.

Keywords: Technology Learner Engagement, 21st-Century Learning, Experiential Learning, Project-based Learning, SULAM

Introduction

The challenge of producing highly employable graduates is a problematic task for institutions of higher learning as graduates are expected to possess technical and soft skills and work ethics. The Ministry of Higher Education (MoHE) in 2006 identified seven soft skills, outlined in the Module for the development of Soft Skills for Higher Learning Institution (HLI) Malaysia, that graduates should have, including critical thinking, communication, lifelong learning, team working, professional ethics and morality, entrepreneurship, and leadership skills. The Malaysian Education Blueprint 2015-2025 Shift 1 focuses on producing holistic,

entrepreneurial, and balanced graduates (Ministry of Education Malaysia, 2015). SULAM, also known as Service-Learning Malaysia – University for Society, was launched on 13th April 2019 by the Ministry of Education Malaysia. SULAM aims to provide students with real-world experiences that connect their learning to their community and help them to develop a sense of civic responsibility. The focus of SULAM is to provide a platform for students to contribute their knowledge, skills, and competencies towards helping the communities around them. According to Rosenkranz (2012), service-learning (SL) is a type of experiential teaching and learning approach that combines classroom instruction and meaningful community service as part of a student's academic coursework. This approach to learning emphasises the importance of hands-on, real-world experiences that connect academic knowledge and skills with community service. While also promoting critical reflection and deep learning. SL fits into several learning theories, such as Lewin's iterative action learning model and constructivist learning theory. This theory explains that the learning process starts with prior knowledge and reconstructs through reflective pieces that affect future actions (Norlaile Salleh Hudin et.al, 2018). SULAM approaches service learning by emphasising integrating academic knowledge and skills with community service and the importance of critical reflection in the process.

Similarly, SULAM@UiTM, a Universiti Teknologi MARA (UiTM) program, integrates community service with academic instructions to develop students' critical thinking, problem-solving, leadership, communication, and teamwork skills. The program aligns with UiTM's mission to produce graduates with high moral and ethical values who can contribute positively to society. The EXCEL program, introduced by the Ministry of Higher Education in 2021, aims to shift traditional teaching methods to a more hands-on and practical approach, promoting flexible and adaptive learning in the curriculum. Although EXCEL does not explicitly promote service learning, it aligns with its principles by emphasising real-world, hands-on learning opportunities that connect academic knowledge and skills with community services while prioritising reflection and critical thinking in the learning process.

Literature Review

Experiential learning theory (ELT) is an approach to learning that emphasises hands-on experience and reflection. ELT is a learner-centred approach that allows learners to manage their learning. They are encouraged to engage with materials, interact with others and create their own experiences to learn the material. When students go through the EL process, they learn through real-world experience first-hand and in multiple forms, either inside or outside of the classroom settings. Dewey (1938) mentioned that for authentic learning to occur, learners must be involved in real-world activities and solve real-world problems. Kolb (1984) defined EL as "...a process in which knowledge is created through the transformation of experiences. Knowledge results from the combination of grasping and transforming the experience". This transformative type of learning process, the act of learning through doing, makes learners more likely to be motivated to learn and retain what they have learned, primarily when they are actively engaged in a learning experience (Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt, Wenderoth, 2014 & Springer, Stanne & Donovan, 1999). The purpose of EL is to take what the learners have studied in their classrooms and enhance that knowledge or skills through real-world exercises or experience, such as field trips, internships, service learning or community activism, where ideally, learners apply this knowledge or skills in action.

According to Wolfe and Byrne (1975), there are four main tasks involved in experiential learning; design, conduct, evaluation, and feedback. The design task entails establishing learning objectives, creating student activities, and identifying factors impacting student learning. It is essential to control the design through the conduct of tasks to ensure a structured and favourable learning environment. Evaluation is crucial as it allows participants to express the benefits they have gained from the learning experience. Feedback is an ongoing process that aims to improve the learning approach further. Additionally, the feedback can help identify and create abstract concepts, which can be incorporated into concrete experiences. It is important to note that the learning process through EL is effective only when learners go through and complete all four stages. In addition, Kolb's experiential learning cycle and basic learning style promote that experiential approaches to learning are better at accommodating learners with different styles than conventional learning approaches such as classroom-based teachings. Kolb's four-stage model; (1) Concrete Experiences, (2) Reflective Observation, (3) Abstract Conceptualisation, and (4) Active Experimentation, shows how learners' experience of doing something and the knowledge is transformed through reflection in the form of new ideas and concepts, then they act upon that new understanding (McCarthy, 2010; Cone & Harris, 1996; Kolb, 1984). Furthermore, according to Cone and Harris (1996), this flexible and alternative learning approach allows learners with different learning styles and abilities to develop and integrate their skills. Moreover, learners engaged in service learning may become motivated as they experience how their participation increases in value as they progress from being newcomers towards the centre of the community of practice.

There are many advantages of implementing EL in the curriculum. The knowledge and skills gained allow for a certain level of depth and go beyond what is taught in the classroom, as EL offers first-hand experience which aids in retaining new concepts. EL also accelerates learners' learning process because EL promotes active learning through various teaching approaches such as independent learning, learning-by-doing, work-based learning and problem-based learning. Learners use critical thinking, problem-solving and decision-making skills to solve real-world problems in their community. In addition, EL increases learners' level of engagement as they take ownership of their learning through having first-hand involvement in solving problems or executing activities within the community they are working with.

Technology Learner Engagement theory is a framework that is meant for technology-based teaching and learning (Kearsley & Schneiderman, 1999). It is based on the idea that teaching is better and more effective in electronic and distance learning environments (see Kearsley, 1997; Shneiderman, 1994; Shneiderman et al., 1995). This theory, which in some respects is similar to adult learning theories, focuses primarily on using technology to facilitate experiential and autonomous learning. Thus, the inherent principle of this theory believes that students should be immersed in learning through collaboration while doing meaningful tasks. This is further supported by O'Brien and Toms (2008), who states that engagement is a result of technology which creates quality user experiences such as "challenge, aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control and time, awareness, motivation, interest and affect". Thus, this theory has become the basis with which educators use it as a point of reference to understand the role of technology, which affects student educational experience.

According to this framework, Kearsley and Schneiderman (1998) state that there are three (3) components, namely: (1) Relate, (2) Create, and (3) Donate. 'Relate' emphasises

collaborative work such as management, communication, social skills, and planning. While 'Create' focuses on creating purposeful and creative learning experiences. This component adopts Problem-Based Learning (PBL) approaches to help students control their learning. The last component is 'Donate', highlighting the importance of contributing to the project's outcome. This component helps to improve students' general motivation and satisfaction as they are usually told that each project is meant for an outside "customer" who expects their completed project. Overall, this is a good yardstick for curriculum developers to measure and ensure that their current syllabus pays attention to current technology-based teaching and learning expectations.

The topic of learner engagement using technology in the classroom has been much discussed for the past 20 years due to the growing prominence of the internet in our lives. Consequently, the technology (hardware and software) has also improved tremendously ever since to cater for this demand. For instance, over the years, we have quickly transitioned from using a personal computer (PC) or desktop in the classroom to facilitate learning to a laptop or notebook to a smartphone. This accessibility to technology allows instructors and educators to flexibly incorporate it into everyday lessons, after-class activities, assignments and even assessment methods.

Authors and researchers have extensively researched using technology in the classroom to improve teaching and learning in foreign and Malaysian contexts. In the foreign context, for example, Carle, Jaffee and Miller (2009) found that using technology in the classroom enhanced students' overall academic achievement. Specifically, students who used technology (such as lecture recordings and podcasts) to learn academic content outperformed their peers who did not use technology in their learning. Next, Al-Said (2015), who investigated using a learning management system (LMS) called 'Edmodo' in the classroom, stated that students' perceptions towards the LMS were incredibly positive because it provides a user-friendly platform for effective interaction and learning between students and instructors. Lim et al. (2014) examined using social media to enhance student engagement in the Malaysian context. They specifically examined the perception, acceptance, accessibility, and social media usage among tertiary students. They found that students were optimistic about using social media sites such as Facebook, YouTube, Wikipedia, and Dropbox to assist their learning activities. This finding is consistent with the study conducted by Alshuaibi et al. (2018), where they state that social media has been proven to promote student cognitive engagement in the classroom and improve their overall academic results.

Project-based learning (PBL) is a student-centred pedagogical approach to instruction that teaches curriculum concepts through projects (Bell, 2010). In PBL, students work together in teams and solve open-ended projects, which helps them develop critical thinking skills, interpersonal communication skills and project management skills (Helle, Tynjälä & Olkinuora, 2006; Powell & Week, 2003) and apply those concepts in order to solve real-world problems (Michaelsen, Knight & Fink, 2004). PBL is aligned with Dewey's educational philosophy (1916) of learning by doing, which emphasises the importance of students being at the centre of the learning process, guiding the students to develop as an independent learners and ultimately develop skills that prepare them for the future (Fernandes et al., 2014; Stoller, 2002). This approach is based on four main principles, including learner-centred teaching (Stoller, 2002), autonomous and collaborative learning (Richards, 2015; Gokhale, 1995) and learning through tasks (Richards & Schmidt, 2010). PBL is designed within five main phrases, highlighting the importance of student participation, including selecting a topic,

planning for the project, finding information, developing and implementing plans, and presenting and evaluating the project (Dooly & Masats, 2008). In addition, PBL has been recommended as a highly effective method for promoting language (Bell, 2010; Guo, 2006) and content learning in EFL classrooms. It empowers students to gain a better understanding of a subject, boosts their language motivation and encourages them to delve deeper into a topic, primarily when the project replicates real-world situations as it offers students an opportunity to work collaboratively in small groups (Merlot Pedagogy, 2016), exchanging ideas and resources as they complete their project.

PBL benefits students in terms of life skills for higher education. A study conducted by Fernandes (2014) aims to investigate how PBL prepares students for professional practice. Findings highlight the benefits and challenges of implementing PBL in higher education by showing that students appreciated the interdisciplinary nature of PBL, which allowed them to work with people of different skills and perspectives; however, they also identified the heavy workload and issues with the course assessment method. A study by Herold (2019) identified important factors influencing how much students feel they learn through PBL and what barriers the faculty face in using the PBL approach. The study found that barriers, such as administrative support, time to develop PBL, lack of technology, development of projects, and years of experience teaching, are closely related to the deployment and sustainability of PBL. In addition, faculty members consider PBL to positively impact student learning, with research, decision-making, reflection, and group work particularly beneficial.

Content of the Study

The goal of the service learning project was to design and publish a website for cottage industry owners (FELCRA) and small business enterprises (SMEs) (PKNS). By utilising Wolfe and Byrne (1975); four stages of experiential learning, instructors can structure their courses effectively to facilitate experiential learning. Wolfe and Byrne (1975) introduced four experiential learning stages that seek to promote effective learning through experiential activities and practices. The four phases of applied experiential learning: are design, conduct, evaluation, and feedback. The design phase involves setting the stage for the experience by specifying learning objectives, creating or selecting activities, and identifying factors affecting student learning. The conduct phase involves maintaining and controlling the design and adjusting activities to ensure a favourable learning environment. Evaluation is conducted by the instructor, emphasising opportunities for students to evaluate the experience. The participants must demonstrate evidence of learning experience. Feedback is an ongoing process from the pre-experience introduction through the final debriefing. It includes monitoring the process by the instructor to foster positive aspects and eliminate negative features. One possible concern in this phase is whether students should have the opportunity to fail.

Figure 1 illustrates process-oriented learning.

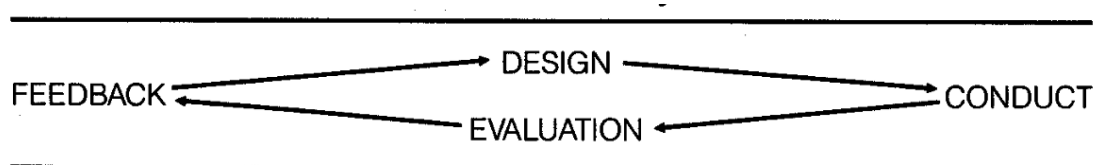


Figure 1. Process-oriented learning (Wolfe & Byrne, 1975)

In addition to Wolfe and Byrne's four stages of experiential learning, this study utilised the ADDIE models to design and implement the experiential learning project. The ADDIE model, which stands for analysis, design, development, implementation and evaluation, is a widely used model for instructional design that helps to ensure the effectiveness of a training program or learning experience. In this study, the ADDIE model involved gathering information on the needs and requirements of the target audience and the website's purpose. The design phase involved creating a plan for the website's structure, layout, and content and determining the technology and tools needed to build it. The development phase involved building the website using the chosen technology and tools, while the implementation phase involved launching the website and ensuring its functionality and accessibility. Finally, the evaluation phase involved assessing the website's effectiveness and making necessary adjustments or improvements. The use of the ADDIE model in this project helped ensure that the website was designed and built efficiently and effectively to meet the needs of real-world clients.

Methodology

The present study describes the implementation of experiential learning and development of the course project eSULAM@APBUiTM. One of the most substantial values of this project is the opportunity for the students to have robust engagement with real-world clients. The next chapter describes the students' active involvement with real-world clients through actual projects and putting their training into practice. The students involved in the study were in their fourth semester and were enrolled in a course (EIC552; Company website design) offered by Akademi Pengajian Bahasa, University Teknologi MARA (UiTM). Approximately thirty-eight (38) students attended the course for 14 weeks during the October 2020 - February 2021 session. Within the course, the experiential learning unit (eSULAM@APBUiTM) was embedded as an assessment component of the project. This unit required students to design and build commercial websites for owners of cottage industries affiliated with the Federal Land Consolidation and Rehabilitation (FELCRA). Students were grouped in sets of three(3) to work collaboratively on their eSULAM@APBUiTM project, which consisted of two sections; the portfolio assessment and the commercial website. It is important to note that the eSULAM@APBUiTM project was not compensated monetarily and required students to devote 30 hours to consulting, preparing and building these websites. Clear guidelines and expectations for the eSULAM@APBUiTM project were provided to ensure students' success. This includes information about the goals and assessment requirements of the project as well as information regarding the clients for whom the students were designing the websites.

eSULAM@APBUiTM Case Analysis

This study utilised the ADDIE model to design and develop the eSULAM@APBUiTM projects. The ADDIE model consists of five core phases; analysis, design, development, implementation and evaluation (Branch & Kopcha, 2014; Chevalier, 2011). As a result, the ADDIE model assists designers with a simple and easy-to-use framework during product design (Branch, 2010). Most ADDIE models are used to design and develop instructional projects or materials. Therefore, more research needs to be done where ISD models complement a non-instructional project. A recent study by Hassan, Mohamad & Tawil (2021) implemented ADDIE to design and develop an official and informative website for the Dana

Hana mosque to disseminate information, services and activities regarding the activities for the community of Kuching, Sarawak.

Utilising ADDIE as a problem-solving framework, learners, in consultation with the business owners, identified and addressed a gap and focused on the accomplishment with five basic steps: Analysis, Design, Development, Implementation and Evaluation. Figure 2 illustrates the complete phases of the ADDIE model utilised in this eSULAM@APBUiTM project.

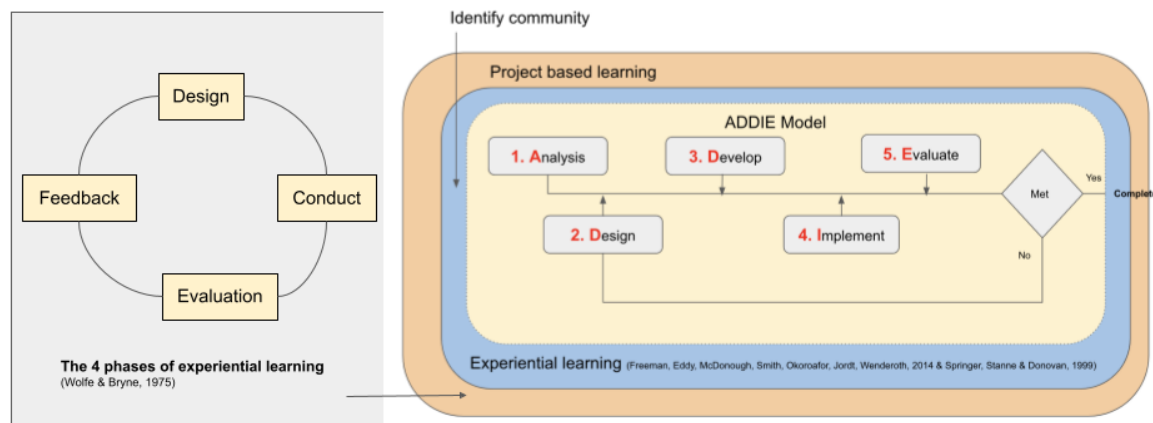


Figure 2. The complete phase of eSULAM@APBUiTM

The students must gather information in the analysis, such as the website goals and the client's needs. The students must identify the website's purpose, goals, target audience, and suitable content. This information will be written in the *Website Requirement book*, which will act as an artefact to the designers' learning process. The analysis phase is crucial in two ways. First, this process helps develop the website, and second, it helps determine the suitable layout for the proposed website. Third, this step is also crucial as it helps the designers engage with the target community. Successful partnership building happens when both parties; the target community and the designers (the university); understand and agree on the benefits of the service learning; (1) provide the target community access to faculty experts and contribute to the visibility of the target community and (2) enhance students understanding of course content through practical and real-world application and develop civic conscious (Musa, Abang Ibrahim, Abdullah, Saeed, Ramli, Mat, Ahmad Khiri, 2010). The resource person in charge of the course collaborated with the Malaysian Academy of SME & Entrepreneurship Development (MASMED) coordinator, University MARA, to identify the target community. The resource person and the coordinator agreed to select a few small medium enterprises (SME) owners under FELCRA, primarily located east of peninsular Malaysia. These SME owners were the target community and acted as the (web) designers' clients. The criteria the faculty sought in the eSULAM@APBUiTM project were that these SME owners (1) must own a business registered under FELCRA and (2) need an existing website to promote their business. Once the community has been identified, the students (web designers) will begin phase one of the ADDIE model. The eSULAM@APBUiTM project aimed to facilitate the target community by designing and developing a website and promoting the clients' businesses online. This is also in line with the Malaysian Digital Economy Blueprint; to

have more business in an online platform so that these businesses can expand their "market reach domestically and globally" (Malaysian Digital Economy Blueprint, 2018).

In the design phase, the information collected through the analysis phase will be used to create a website mock-up (a blueprint), to help the web designers solidify the design process. The web designers will also need to include multimedia elements, such as the company's logo, promotional posters (graphics), website content (texts), promotional videos and product animations (videos and animations), that are suitable for the website's purpose and goals. The web designers designed the proposed website through a website mock-up, implementing all the design theories and website principles learned in class before the project. It is important to note here that this phase goes through a few sessions where the designers will conduct multiple consultation sessions (a maximum of 5 hours throughout the whole project) with their clients to get the correct information for developing the website.

The development phase consists of two stages. In the first stage, the web designers develop the multimedia elements that the clients have agreed on. Web designers will need to use their knowledge of design principles to develop multimedia elements such as the company's logo, promotional posters (graphics), website content (texts), promotional videos and product animations (videos and animations), suitable for the website's goals and purpose. The second stage of the development phase was creating and organising the information, content, multimedia materials and relevant web pages that will be uploaded to the website. The designers will need to apply the website design principles they have learned before the project. The designers were given the freedom of choice on the website hosting platform they wished to use for their client's website. However, the researcher noticed that most designers prefer Wix.com, an easy-to-use web hosting platform requiring little to no coding knowledge.

The fourth phase is the implementation phase. This phase involves deploying the project for the ADDIE model that aims to develop instructional materials (Smith & Ragan, 2005). Delivery and distribution of the instructional materials are done in this phase. However, for projects that are non-instructional such as this eSULAM@APBUiTM project, the implementation phase involves publishing the developed website to the public. This allowed all the components in the website to be tested; for usability and accessibility, such as links, typography, colour scheme, and web page layout - which is the fifth phase of the ADDIE model; evaluation. This phase aims to ensure that the developed website for the SME clients achieves the goals and purpose set earlier in the ADDIE phase. The developed website was evaluated through a usability testing survey. Usability testing is testing the "ease of use" of an object. According to the International Standards Organisation (1999), usability evaluation is one way of "ensuring that interactive systems are adapted to the users, their tasks and that there are no negative outcomes of their usage". The goal of usability testing is to evaluate the degree to which the operation or system is effective and efficient and favours positive responses from the intended users. Usability testing feedback was collected, and the results determined if the designers needed to improve their website regarding content, usability, or accessibility. The completed websites were handed over to the clients together with the website admin manual. The purpose of the admin manual was to assist SME clients in maintaining their websites. Table 1 illustrates the application of the ADDIE model to the eSULAM@APBUiTM project.

Table 1.
The application of ADDIE in eSULAM@APBUiTM

ADDIE	Description	Activities	Deliverables
Analysis	Gather information on the website goals, clients needs, target audience and suitable content	Identify website purpose and goals, target audience, and suitable content; write in <i>Website Requirement book</i>	Website requirement book
Design	Use information from Analysis phase to create website mock-up and include multimedia elements	Create website mock-up, include multimedia elements such as company logo, promotional posters, website content, promotional videos and product animations	Website mock-up with multimedia elements
Development	Develop multimedia elements and organise information, content and multimedia materials for relevant web pages	Develop multimedia elements such as company logo, promotional posters, website content, promotional videos and product animations; create and organise information, content, multimedia and relevant web pages	Develop multimedia elements and organise content and multimedia materials
Implementation	Publish the website to the public for testing and evaluation	Deploy and publish the developed website to the public for usability and accessibility testing	Publish website for testing and evaluation
Evaluation	Evaluate the effectiveness and efficiency of the website through usability testing and feedback	Collect usability testing feedback and determine if the website needs improvements in terms of content, usability or accessibility	Usability testing feedback and improvement and recommendations, website admin manual

Discussion

The ADDIE model can promote 21st-century skills and improve student engagement when utilised effectively. The utilisation of the ADDIE model in the eSULAM@APBUiTM project promotes 21st-century skills. It emphasises the importance of collaboration, communication and planning, essential skills for success in today's interconnected and rapidly changing world. The '*relate*' component of the model encourages students to work together to manage projects, share ideas and solve problems, which helps students develop social and team-building skills necessary in the 21st-century workplace. The '*create*' component of the model promotes creativity and innovation by encouraging students to design and develop purposeful and engaging learning experiences, which allows students to take control of their learning and develop critical thinking skills and problem-solving skills (Baker et al., 2005; Kayes et al., 2005), highly valued 21st-century skills. In addition, the '*donate*' component emphasises the importance of contributing to the project's outcome. The component helps students develop a sense of responsibility and ownership for their work through working on projects meant for an outside "customer" (Schalake, 2015). In addition, students gain real-world experience and develop a sense of purpose and motivation (Huang & Jiang, 2020; Kalyuga et al., 2010; Guo et al., 2016).

In addition, using technology in ADDIE can significantly improve student engagement. The Technology Learner Engagement theory suggests that engagement results from technology, which creates a quality user experience. This can be achieved through various means such as challenge, aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control and time, awareness, motivation, and interest. Utilising technology in ADDIE, educators can create engaging and interactive learning experiences that capture students' attention and motivate them to learn.

eSULAM@APBUIiTM Project Feedback and Students' Reflections

This project-based learning that incorporates experiential learning requires the students to spend more than 30 hours completing their project. Towards the end of the eSULAM@APBUIiTM project, the SMEs clients were asked to give feedback on two aspects; (1) the eSULAM@APBUIiTM project and (2) the students. The students were also asked to reflect on the development of their communicative and technical skills or other skills they have learned throughout the project. Students were also required to submit their work (Portfolio and website) for the lecturers to evaluate. Below are the feedbacks and students' reflections from this project:

Feedback on eSULAM@APBUIiTM project

Rudy Hashim (client):

Students can discuss with the customers to understand the workings of business and how products are made.

"Student boleh berjumpa dengan customer untuk memahami cara business dijalankan dan melihat sendiri product yang dihasilkan / dijual."

Noraini Md Isa (client):

...(the project) enhances the creativity for product improvements...

"Menambahkan seni kreatif untuk mendapatkan hasil yang baik"

Feedback on students

Syaifullah Ghani (client):

...(the website) was developed well for the university level. Although the website can be improved, I am satisfied with the group's work, effort, and communication (teamwork)."

"Dihasilkan dengan baik untuk tahap Universiti. Walaupun boleh ditambahbaik lagi, namun saya amat berpuas hati dengan komunikasi yang diberikan dan effort yang ada oleh kumpulan."

Mohamad Zabidi (client):

"... the initiative should be a continued so SMEs like us could learn online business"

"...boleh di terus kan program sebegini bagi menambah kan lagi ilmu kpd kami di dlm bidang perniagaan on line"

Students' Reflection

MN Aliff M Nasir:

"Web designing and video editing are important, even if I aim to work as a government servant. Based on my past experiences and part-time in the government sector, some projects acquired us to handle social media and produce corporate video and photo editing under the publicity and multimedia"

department. Even nowadays, in interviews, we use video format as a part of the resume. So, this class equipped me with the necessary skills for the future.”

Nur Syafiqah Amanie:

“Throughout the project, I’ve learned a lot of things on the digital side, enhancing my digital skills even more. ... I am glad that I managed to experience the fun once again. I feel like these kinds of classes are as crucial as others as it prepares the students for the real world. We are surrounded by technology and the world is actually progressing faster to the digital side. So classes like this help students to discover their digital talent for it to be used in the near future.”

Nurul Azmira Azhari:

“I learnt multiple ways of website organisation, detailed analysis towards website design, and ways to create a website that is catchy. Procedures of creating a website require stages before creating one such as; planning pre layout draft, website requirement book, the importance of website survey & et al are some of them.”

Siti Nur Raihan Mohd Mahlil:

“I’ve learnt a lot especially in designing the website. This could be a benefit if I have my own company and business. At least if I need to pay a designer to create my website, I know the rules and the basic things that a bombastic website should have.”

eSULAM@APBUiTM is an example of how experiential learning, problem-based learning approach and technology learner engagement can be integrated to provide students with a meaningful and engaging learning experience. Furthermore, the project allows students to develop critical thinking, problem-solving, and decision-making skills essential for 21st-century learners.

Conclusion

The eSULAM@APBUiTM project has shown to be a valuable tool for enhancing technology learner engagement through project-based learning, service learning and experiential learning in universities and their surrounding communities. By combining academic instruction with community service, SL allows students to apply the knowledge and skills they have learned in the classroom to real-world problems. This approach can enhance technology learner engagement in several ways, improve students' motivation and engagement in learning by allowing them to work on projects that are relevant and meaningful to them, and help students develop a sense of civic responsibility and empathy towards the community. Additionally, the eSULAM@APBUiTM activities help students develop critical thinking, problem-solving, and collaboration skills through the project-based learning (PBL) approach by working on real-world problems. It can also enhance students' understanding of the importance of civic engagement and the impact of their actions on the community.

Furthermore, the eSULAM@APBUiTM activities can also support students' experiential learning (EL) by providing hands-on experiences relevant to their field of study. Through EL, students can better understand and connect with real-world issues. Overall, service learning can enhance technology learner engagement by providing students with opportunities to work on projects that are relevant and meaningful to them, developing critical thinking, problem-solving, and collaboration skills, and providing hands-on

experiences that are relevant to their field of study. The approach can also benefit the community by addressing critical social issues and promoting civic engagement.

Experiential learning offers several benefits for students. One of the main benefits is the opportunity for students to apply classroom knowledge to real-world situations (Huang & Jiang, 2020; Kalyuga et al., 2010; Guo et al., 2016), which can deepen their understanding of the issues (Baker et al., 2005; Kayes et al., 2005) and challenges facing their community. This can also help them to develop critical thinking and problem-solving skills, as well as leadership, communication and teamwork abilities. SL programs can also help students develop a sense of civic responsibility and a desire to impact their community positively. SL also provides benefits to the community. Community organisations can benefit from students' expertise, and the program can enhance the relationship between the university and the community (Schalake, 2015). Additionally, SULAM allows students to better understand the community's social, economic and cultural issues, enabling them to become more culturally sensitive and develop the ability to work effectively with people from diverse backgrounds.

Furthermore, experiential learning programs, such as eSULAM@APBUiTM, also help to enhance the student's employability by providing them with valuable skills and experiences that will benefit their future careers. It can also help to prepare them to be responsible and productive citizens in the future. All in all, eSULAM@APBUiTM effectively provides students with an academically rigorous and socially responsible education.

Research Contribution

The efficacy of eSULAM@APBUiTM has been demonstrated as a valuable tool for enhancing learner engagement in technology education, as described in the ADDIE model. This is achieved through the implementation of project-based learning, service learning, and experiential learning approaches within university settings and their respective communities. Moreover, it facilitates students in embracing experiential learning by their active participation and engagement in real-life scenarios, encompassing activities such as communication, negotiation, and reporting. These contributions will assist educators at the tertiary level in designing purposeful and captivating learning experiences for their students. This will also assist pupils in further cultivating their comprehension of topic knowledge, in addition to augmenting their social abilities.

Recommendation for Future Research

This study mainly outlines the implementation of service learning using the ADDIE model in the eSULAM@APBUiTM project. It is recommended that further research be carried out on a bigger scope. For instance, a longitudinal study can be carried out to measure the long-term impact of SULAM on university students' academic performance and professional success. A cohort of students who have undergone SULAM can be tracked and compared to a control group of students who did not receive SULAM to determine the long-term impact on their academic performance and professional success. This study would provide insight into the sustained impact of the SULAM program beyond the immediate period of participation and help determine the program's effectiveness in preparing students for success in their careers and future academic pursuits.

Another potential area of research is to analyse the cost-effectiveness of SULAM compared to traditional classroom-based learning and other online learning platforms. A comparative study can be conducted between SULAM and traditional classroom-based

learning, as well as other online learning platforms, considering factors such as implementation costs, student engagement and learning outcomes; to analyse the effectiveness. This study could help institutions make informed decisions about investing in SULAM or other learning methods.

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