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Experiential Learning Through Impact Projects: A Framework for Implementation

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Abstract

While the literature has recognised the benefits of experiential learning in the field, there still exists a lack of a pragmatic implementation framework to ensure its effective implementation. This paper reports on the design and development of an experiential learning practical implementation project in a university. Using design-based research, the framework was developed and improved through two cycles of implementation over one year, involving academics and students from nine science and social science disciplines. Central to the framework are Impact Projects that leverage the three design elements of authenticity, structure, and agency. Data were drawn from academic (qualitative) interviews and reflections, supplemented by a student survey; these were analysed to develop the implementation framework. Based on staff insights, a three-stage framework was developed consisting of a) Conceptualisation of Impact Projects, b) Integration of Impact Projects into Curriculum, and c) Implementation of Impact Projects. Findings highlight the challenges faced during implementation and the strategies to tackle those challenges. The proposed framework highlights the importance of proper conceptualisation of the Impact Projects involving the partners, beneficiaries and academics to ensure alignment. The framework has expanded knowledge of implementing experiential learning in the field by offering more detailed, practical steps to ensure it achieves the intended learning outcomes.

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Introduction

Experiential learning, such as service learning, project-based learning, study abroad, and internships, offers students the opportunity to learn and apply discipline-specific knowledge and skills in a real-world setting, leading to good integration of theoretical knowledge with practical experiences (Duchatelet et al., 2023; Kolb & Kolb, 2017). Literature has acknowledged the benefits of experiential learning for the development of generic learning outcomes within the context of disciplinary learning in higher education (Celio et al., 2011; Chan, 2012; Duchatelet et al., 2023).

Experiential learning is considered one of the high-impact pedagogical practices, allowing students to experience deep learning and supportive of the development of graduate capabilities such as critical thinking, communication and self-regulation, (Celio et al., 2011; Chan, 2012; Duchatelet et al., 2023; Painter & Howell, 2020; Roberts, 2018). The demand to bridge the gap between higher education and the workplace has drawn more effort to implement experiential learning that allows students to apply what they have learned in real-world scenarios, as expected by the workplace (Duchatelet et al., 2023).

Experiential learning is highly encouraged by the Ministry of Higher Education Malaysia, through an initiative called SULAM, which stands for “Service Learning Malaysia – University for Society” (Ministry of Education Malaysia, 2019). SULAM is an “educational experience in which the student participates in a structured service activity that meets identified community needs, reflects on the service activity and experiences to achieve desired learning outcomes, in such a way as to gain a deeper understanding of course content, a broader appreciation of the discipline, enhanced sense of personal values and civic responsibility” (Ministry of Education Malaysia, 2019). In summary, SULAM integrates the learning outcomes of a degree course with community services so that students acquire the learning outcomes while carrying out a service in the community.

While the concept of experiential learning is not new, and various efforts have been made to integrate it as part of students’ learning, implementing experiential learning remains a challenge requiring specific strategies (Aggarwal & Wu, 2019; Austin & Rust, 2015; Ng, 2018; Ng et al., 2025; Radović et al., 2021; Yusof et al., 2020). A commonly referred to model for experiential learning is Kolbs’ Experiential Learning Theory, leveraging on the work of Dewey, Piaget, and Lewin, focusing on learning through the transformation of experience (Radović et al., 2021; Radović et al., 2021; Kolb & Kolb, 2017). Kolb’s experiential learning model conceives learning as a continual process of four cyclic steps: concrete experience, reflective observation, abstract conceptualisation and active experimentation (Kolb & Kolb, 2017).

However, there have been critiques of Kolbs’s model. According to Morris (2019), a main concern in interpreting the Kolb model is what is meant precisely by a “concrete experience”. Morris (2019) argued that the “concrete experience” must involve hands-on participation, be situated in a real-world context and involve risk as the experience is new to the students. Hence, this study aims to propose an implementation framework for the “concrete experience” step in Kolb’s model, focusing on experiential learning in the field. In addition, the literature has also highlighted that many faced challenges during the implementation of the “concrete experience” of experiential learning in the field, which will be discussed further in the following section.

This study aims to propose a practical implementation framework to tackle the challenges faced in implementing experiential learning in the field through two phases of study: the Design Phase and the Pilot Implementation Phase. The research objectives of the Design Phase (objective 1-3) and Pilot Implementation Phase (objective 4) are:

Objective 1. To identify the key challenges in institutionalising experiential learning in the field through Impact Projects

Objective 2. To identify strategies to overcome the key challenges

Objective 3. To propose an implementation framework to implement experiential learning in the field systematically.

Objective 4. To identify the necessary refinements to enhance the proposed experiential learning implementation framework.

Literature

Implementation Framework

The literature highlights that the three most important design elements of experiential learning environments for effective implementation are related to authenticity, structure, and agency (Duchatelet et al., 2023). Out of the three design elements, authenticity is considered the core feature of experiential learning (Duchatelet et al., 2023; Radović et al., 2021). The literature refers to authenticity as a "real context" or a context that is "similar" to the workplace. The three design elements of authenticity are related to the task (content), the physical context (the environment in which students perform the task), and the social context (interaction possibilities when performing the task).

The literature (Duchatelet et al., 2023) further articulated that structure refers to six design elements that are more stable in the long term, including the teacher role, duration of the activity, preparation, reflection, activities, and feedback. Agency is a design element relating to the extent to which students are actively involved in learning, including the opportunity to make choices, act upon ideas and plans, and learn in collaboration with other students. The opportunities may include pre-activity involvement, such as the selection of the project and team members and preparations, during-activity involvement, such as keeping a journal and discussions among team members, and post-activity involvement, such as a reflection report and presentation.

The literature highlighted that the structure of the learning environment confines students' agency in terms of choices and actions, and hence, there is an interplay between the two elements (Duchatelet et al., 2023). Among the different types of experiential learning, project-based learning offers high agency with a relatively low structure. This important feature of project-based learning is a critical consideration for this study. While the literature has discussed the design elements for implementation, various challenges have been reported in effectively implementing experiential learning in the field.

Challenges Faced and Strategies

The literature has highlighted the following key challenges faced during the implementation of "concrete experience" in the field and the strategies needed (Aggarwal & Wu, 2019; Austin & Rust, 2015; Radović et al., 2021; Yusof et al., 2020). The first challenge is that the design and implementation of experiential learning in the field is resource-consuming, requiring management's commitment to providing the time and budget needed for implementation. For example, designing authentic tasks in the field in collaboration with partners and the community is more time-consuming than delivering a lecture.

In addition to the commitment and support from the management, the literature highlighted that experiential learning requires commitment and support from the faculty as well. Faculty with different experiences and preferences may have different levels of commitment and capability to implement experiential learning in the field. In addition, faculty need to learn to manage the risk and uncertainty of a new real-world environment beyond the classroom setup. The risks include the change in the level of commitment from the partners and beneficiaries and potential miscommunication with external stakeholders, leading to poor implementation. This challenge to manage faculty's commitment and capability could be common for any major learning transformation that redefines the roles and responsibilities of faculty (Thian et al., 2022).

Last but not least, different students with different prior experiences, personalities, approaches to learning, and perceptions of the environment may not respond positively to the experiential learning design in the field, requiring conscious effort from the academics to engage the students progressively throughout the journey. In summary, while the literature has recognised the benefits of experiential learning and discussed the design framework for implementation, various challenges are still being faced while implementing experiential learning in the field. Hence, there is still a lack of a practical implementation framework to ensure the effective implementation of experiential learning in the field (Aggarwal & Wu, 2019; Duchatelet et al., 2019; Johnson & Jordan, 2019; Radović et al., 2021a; Radović et al., 2021b; Roberts, 2018).

Method

Study context

The context of this study is at a private university in Malaysia. Supporting the nation's strategic direction and the institution's Learning 2030 strategic plan, the institution has embarked on a 2-year learning transformation initiative to institutionalise experiential learning through Impact Projects at all of its bachelor's degree programmes. To support this, eleven Impact Labs supporting specific United Nations Sustainable Development Goals (UN SDGs), which consist of an interdisciplinary team of academics, professional staff, students, and practitioners, were established. The Impact Labs have primary accountability to conceptualise Impact Projects and ensure the Impact Projects are implemented through courses by academics and students with external partners and beneficiaries to deliver the intended benefits or impact to the beneficiaries. Impact Projects are projects to tackle the real-world challenges supporting UN SDGs, conceptualised and implemented together with external partners and targeted beneficiaries, in the real-world context, leading to a positive impact on the beneficiaries. The Impact Projects resemble the ideal "concrete experience" mentioned by Morris (2019).

The objective of the learning transformation initiative is to systematically institutionalise Impact Projects to nurture graduates who are empathetic, with a strong sense of agency, and able to solve complex problems in real-world contexts, working with external partners and beneficiaries. The Impact Projects must be assessed and contribute to the students' grades to ensure reasonable and consistent commitment among students. The transformation initiative leverages the three design elements of experiential learning, namely authenticity, structure, and agency, since the three elements are highly relevant to the implementation of the Impact Projects. This paper intends to report the outcome of a study conducted under the institution's learning transformation initiative.

Research Design

Literature affirms that design-based research is increasingly used to enhance learning through practical interventions (Anderson & Shattuck, 2012; Pugh et al., 2023; Zheng, 2015). Design-based research that uses an iterative process to solve a problem through experimenting with a practical intervention while advancing theoretical understanding (McKenney & Reeves, 2019) is the most relevant research approach to respond to the research objectives. The Design Phase covers the analysis and exploration stage and the design and construction stage of design-based research in education (McKenney & Reeves, 2019). The Pilot Implementation Phase covers the evaluation and reflection stage of design-based research (McKenney & Reeves, 2019). Guided by the principle of design-based research, the researchers of this study are directly involved in the design and pilot implementation of the implementation framework for experiential learning in the field using Impact Projects.

Design Phase Research Procedure

Informed by the objectives of the Design Phase, the most suitable approach is to trial run experiential learning with Impact Projects at a small scale in a normal semester, leading to the development of an implementation framework. This phase lasted for five months. During the trial run, students implemented the following two Impact Projects from two Impact Labs, integrated into the courses of the following disciplines. First, Impact Project A from Impact Lab 1, integrated into a course of an architecture degree. Second, Impact Project B from Impact Lab 2, integrated into a course of a business degree, a psychology degree, a culinary arts degree, and a media and communication degree, respectively.

This trial run phase comprises the following activities. First of all, the researchers obtained consent from the two Impact Lab Directors to participate in this trial run, with their experience being recorded and analysed under this study. Then, an Impact Project was conceptualised by the two Impact Lab Directors, respectively, to tackle a real-world challenge supporting a UN SDG. External partners and beneficiaries were approached to be part of the Impact Projects. Before the semester commencement, the Impact Lab Directors obtained consent from related heads of schools to integrate the Impact Projects into the curricula as part of the assessment tasks for implementation.

During the trial run, monthly discussions with the two Impact Lab Directors were carried out to identify the main challenges and strategies to tackle those challenges. Specifically, the researchers collect data through group interviews with the two Impact Lab directors. Guided by

the research objectives, the questions asked during data collection and analysis of the group interview are: What are the key challenges in institutionalising experiential learning in the field through Impact Projects? What are the strategies to overcome the key challenges? What are the key phases and questions to be considered as part of the implementation framework to implement experiential learning in the field systematically, considering the three design elements of authenticity, structure and agency?

Data on students' experiences were also collected through student surveys at the end of the semester; these data are considered supplementary and intended to support a better understanding of the interview findings. Participation is voluntary. The student survey asks: How satisfied are you with your Impact Project experience? A 5-point Likert scale from 1 to 5 is used, where 1 indicates very unsatisfied, and 5 indicates very satisfied. The data collected were analysed using simple arithmetic to calculate the average satisfaction rate.

The data collected from the two Impact Lab Directors from the monthly group discussion sessions were analysed through thematic analysis, supported by continual reflection, and triangulated with student satisfaction survey data by the researchers to identify the main themes. A final overall reflective discussion with the two Impact Lab Directors was conducted towards the end of the semester to conclude on the key challenges and strategies to inform the development of the framework for implementation. Based on the data collected, the researchers drafted the key stages of the implementation framework, followed by the specific questions and considerations to guide the design and implementation of experiential learning through the Impact Project, taking into consideration the three elements of authenticity, structure, and agency.

Pilot Implementation Phase Research Procedure

A larger-scale pilot implementation of the proposed implementation framework developed from the Design Phase was conducted for one semester and lasted for five months, guided by the objectives of the second phase. This phase helps the university learn and refine the proposed framework before full implementation across all faculties. The two Impact Projects and courses from the first phase continue to participate in the second phase, along with two additional Impact Projects from two other Impact Labs involving different disciplines and courses. Courses from different disciplines were chosen to validate the proposed framework as suitable for all faculties and to maximise the potential variations. First, Impact Project C from Impact Lab 3, integrated into two courses of an electrical and electronic engineering degree, and a course of a computer science degree. Second, Impact Project D from Impact Lab 4, integrated into a course of a bioscience degree, a design degree, and a computer science degree, respectively.

Consistent with the Design Phase, this phase started with obtaining consent from the two additional Impact Lab Directors to participate in this pilot implementation, with their experience recorded and analysed under this study. Then, the researchers explained the proposal from the Design Phase to the Impact Lab Directors. Following that, an Impact Project was conceptualised by the additional two Impact Lab Directors. Before the semester commenced, the Impact Lab directors obtained consent from relevant heads of schools to embed the Impact Projects into the curricula as part of the assessment tasks for implementation.

Guided by the proposed implementation framework, the Impact Lab Directors and course leaders established weekly learning and teaching activities involving the students, Impact Lab representative, partners and beneficiaries to ensure proper alignment and commitment. The Pilot Implementation began with the course leader and the Impact Lab representative explaining the nature of the projects to the students. Subsequently, the partners and beneficiaries of the projects are introduced to the students at the appropriate time to ensure all collaborating partners are aligned. Consistent with the Design Phase, the researchers and four Impact Lab Directors met monthly for around an hour to discuss the challenges faced and refinements needed for the proposed framework.

Specifically, the researchers collect data through interviews with the four participating Impact Lab Directors. Similar data on participating students' experiences were collected through surveys at the end of the semester. Course information was also reviewed, specifically the weekly learning and teaching activities among the collaborating parties. However, the data collected from students and through reviewing course information are considered complementary to provide a better understanding of the findings through interviews. Guided by the research objective, the key question asked during data collection and analysis of the group interview is: What are the refinements needed for the proposed implementation framework to implement experiential learning in the field systematically?

Data collected from different Impact Lab Directors from the monthly group discussion sessions were analysed through thematic analysis, supported by continual reflection, and triangulated with the student satisfaction survey data by the researchers to identify the key refinements needed. A final reflective discussion was carried out to conclude on the refinements needed to the framework for implementation, together with the Heads of Schools involved. The researchers refined and finalised the implementation framework for the "concrete experience" of experiential learning based on the information collected.

Results

Design Phase: Key Challenges, Strategies and Proposed Framework

Sixty students who experienced the Impact Projects responded to the satisfaction survey, with a favourable rating of 4.5 out of 5. Based on the interview data of the trial implementation, the following are the key challenges faced, proposed strategies, and proposed implementation framework for experiential learning in the field, corresponding with the three research objectives of the Design Phase.

Responding to the first research objective, the key challenges that emerged relate to a) project conceptualisation, b) curriculum integration, and c) project implementation. The first challenge in project conceptualisation is for Impact Lab to ensure a consistent supply of Impact Projects that tackle a real-world challenge in a real-world context, together with external partners and beneficiaries, leading to a positive outcome and impact on the beneficiaries. This challenge arises due to the time and resources needed to conceptualise the projects. This is a critical challenge affecting the long-term sustainability of experiential learning as the Impact Projects are integrated into the curriculum.

> *Due to the integrated nature of impact projects within the curriculum modules, one significant challenge is ensuring a consistent and sufficient supply of projects to support the students' learning within the courses. Within a course, various Impact Projects could be undertaken by different groups of students. Hence, there is also a need to ensure that the different projects are aligned with the learning outcome of a course with a comparable level of difficulty. The challenge is compounded by fluctuating student numbers across different semesters, requiring different numbers of projects*. (Impact Lab Director 1)

The second challenge is for academics to embrace and integrate experiential learning in the field via the Impact Project into the curriculum. This change requires the academics to transform the learning from classroom-based learning within a university semester system to experiential learning within a real-world context. Within the context of this study, this effort requires the collaboration between the school's course leader and the Impact Project leader of an Impact Lab. The following is an example of the challenge faced by the course leader.

> *The alignment of the impact project to the module saw a perceived increase in student learning time due to the workload of students. The challenges are due to integrating community engagement time into the teaching and learning activities, the project set-up or event, and the desire to ensure the quality of outcomes delivered by students in the real-world context.* (Impact Lab Director 1)

The third challenge is for academics to adjust their role from lecturer to project manager to manage the implementation of Impact Projects via their curriculum in a real-world context. The challenge of the course leader is to mitigate potential risks involving external context, partners, and beneficiaries who may not be within the direct control of the course leader.

> *One of the most challenging risks is related to external factors such as delay in exhibition date due to extenuating circumstances beyond the control of the academic or university, for example, repair works on site by respective authorities, change of leadership, change of event date by the organiser*. (Impact Lab Director 1)

In response to the second research objective, three key strategies emerged.

Long-term commitment from the university

The finding shows that the long-term sustainability of experiential learning in the field through the Impact Project requires a long-term commitment from the university due to the time and resources involved. It is noted that this initiative is part of the university's strategic plan and has been approved by the university's highest governance and academic authorities. While the learning transformation project faced multiple challenges, the senior academic leaders appeared to provide a strong commitment and structural support to tackle the various challenges. For example, a steering committee led by the deputy vice-chancellor, involving the executive deans and pro vice-chancellors, was established with regular meetings to monitor the project's progress, make important decisions, and provide the necessary support, "*The fortnightly updates to the Steering Committee were stressful but yet necessary to ensure the project made progress and was well supported"* (Impact Lab Director 2).

Capacity building for academics

The finding also shows that the success of this initiative requires academics to embrace experiential learning in the field through Impact Projects philosophically and technically.

> *One of the central challenges evolved around redefining the typical "lecturer" role of the module leader or academic to more diversified roles. The academic is required to engage with external stakeholders, who are the partners and targeted beneficiaries, to be part of the learning activities within a specific timeframe of the module. … The alignment of the student assessment to the impact project further extends the role of the academics to be project managers who are responsible for ensuring students have a meaningful learning experience and the successful delivery of the impact project with the partner for the beneficiary.* (Impact Lab Director 1)

Capacity building for academics is absolutely needed to ensure they are willing and able to integrate the Impact Projects into the curriculum and implement them. Through capacity building, the intended outcomes are to ensure the academics are committed to experiential learning in the field, willing to learn and make the necessary adjustments to redesign the learning and assessment, and able to implement experiential learning by working with multiple stakeholders in a real-world context. The following is an example of a new capability expected from the academics.

> *A balance needs to be achieved between a) managing students' workload, timelines and their satisfaction with the experiential learning experience, as well as b) the expectations of the partners and beneficiaries, and the actual outcomes (of the project).* (Impact Lab Director 1)

Supporting ecosystem

Lastly, the finding shows the importance of aligning the ecosystem to support this initiative. For example, the establishment of eleven Impact Labs accountable for Impact Project conceptualisation and an Impact Office that provides institutional-level project management are critical supporting structures to ensure the success of this initiative. Other examples include the alignment of the university's budget and performance appraisal of the academics to ensure sufficient financial and academic support. Another example is the annual town hall, which communicates the progress of this initiative to all the stakeholders involved, especially the academics, to ensure the alignment and commitment of all stakeholders involved. In summary, by tackling the key challenges through the proposed strategies, academics are better supported to design and implement experiential learning in the field.

Proposed Implementation Framework

In response to the third research objective, an implementation framework for experiential learning in the field via the Impact Project was proposed by reflecting on the Design Phase experience, especially the challenges faced. The proposed framework consists of the following three stages.

Conceptualisation of Impact Project by the Impact Lab, supported by the School

This first stage ensures that the Impact Project conceptualisation considers the authenticity (in terms of task, physical context, and social context) and agency of the design elements without being overly bound by the current curriculum structure. Hence, Impact Project should emerge

from a real need of an organisation or society, where the beneficiaries are identified. This stage also addresses the first challenge mentioned earlier, with the support from Impact Lab, where Impact Lab functions as an Impact Project designer or 'supplier'.

Integration of the Impact Project into the Curriculum by the School and the Impact Lab

This second stage ensures the authenticity of the Impact Project is preserved while balancing the structure and agency design elements for implementation. When the Impact Project is integrated into the curriculum, practical considerations become the focus, such as the scope of the student activities, what kind of support will be provided to students, and the autonomy and choices to be provided to students.

> (Authenticity and Agency) In the teaching and learning aspect, the academic will need to review the pedagogical shift towards impact-driven outcomes through an experiential learning model. A review of the module learning outcome(s) and their associated assessment task is imperative to ensure alignment with the desired impact of the project. The alignment of the course outcomes to the Impact Project also meant that the related assessment(s) should be project-based so that students have opportunities for knowledge application to address real-world challenges and experience the impact it brings to the beneficiary. The weekly schedule must be reviewed to integrate teaching and learning activities related to the Impact Project to ensure meaningful engagement with the external stakeholders. (Impact Lab Director 1)
>
> (Structure) The three pillars of a successful project – quality, cost, and time – become significant considerations of the Impact Project and course. Specifically, this includes managing risks associated with the quality of student outcomes and their relation to the desired impact; managing risks associated with budgetary requirements by setting limitations on projects; and managing risks associated with the delivery of projects in a timely manner. (Impact Lab Director 1)

This stage also addresses the second challenge of curriculum integration mentioned earlier, with the active collaboration between the School and Impact Lab.

Impact Project Implementation by the School, supported by the Impact Lab

This final stage ensures all the stakeholders involved play their roles to ensure the authenticity, structure, and agency design elements of experiential learning in the field are implemented accordingly to positively impact the students' learning experience and the beneficiaries. This stage also addresses the third challenge mentioned earlier. With the support of the Impact Lab during project implementation, the implementation of experiential learning in the field may become less daunting to the less experienced course leader. The intentions of the three stages of the implementation framework can be achieved through a list of questions and considerations mentioned in the following Table 1. It is important to note that refinements proposed from the second phase of Pilot Implementation have been included in Table 1 for ease of reference.

Table 1

Experiential Learning's Project Conceptualisation, Curriculum Integration and Project Implementation: Key Questions and Considerations

	Questions	Considerations
	A. Conceptualisation of Impact Project	
1	Which real-world challenge will the project tackle?	The real-world challenge to be tackled should emerge from a real need of an individual, organisation, or community; while it may be aligned with the UN SDGs and the challenges to be tackled by the Impact Labs.
2	Who is the targeted beneficiary? What is the real need of the beneficiaries? What is the project site involved in? **Refinement:** Are the beneficiaries committed to participating in the impact project implementation, including adopting the solution proposed by students? If not, are there alternative beneficiaries who may be willing to be part of the Impact Project?	The beneficiaries could be an individual, organisation or community.
3	Who are the external partners that could support this project?	The nature of support could include a) access to context or beneficiary, b) expertise in terms of the challenge or potential solution, c) other resources needed.
4	What are the intended outputs of the projects from the students for the beneficiaries?	Output refers to what the students produce for the beneficiaries as a result of the learning activities.
5	What are the short-term outcomes and long-term impacts of the project?	Outcome refers to the short-term change in beneficiaries such as knowledge, skill, attitude and aspiration. Impact refers to the long-term change in the beneficiaries such as a consistent increased in revenue, consistent increased in well-being, and reduced carbon footprint.
6	What are the academics and students supposed to do (learning activities) as part of the project to tackle the challenge?	Identifying the learning activities helps to ensure there are relevant disciplines of academics and students with the necessary knowledge and skills to contribute to the Impact Project.
7	What is the project timeline and expected budget needed?	If the project involves different activities across different semesters, the timeline needs to include activities by semester. If there is insufficient funding from within the institution, external funding sources need to be identified.
	B. Integrating the Impact Project into the Curriculum	
1	Students of which academic programme could contribute to the Impact Project based on the project activities?	The tasks involved in the Impact Project may require students from a single or multiple disciplines.
2	Which courses of the related programmes could potentially be suitable to support this project?	Ideally, the project outputs should be consistent with the learning outcomes of the courses chosen.
	Should the courses be from year-level one, two, or three, based on the project's difficulty level?	If needed, the tasks of an Impact Project could be tiered into a few tasks at different difficulty levels and integrated accordingly to the different levels of courses.
3	Are the courses' learning outcomes aligned with the Impact Project?	It is important to ensure that the learning activities under the Impact Project align with the module's learning outcome.

	If not, can the courses' learning outcomes be adjusted to be aligned with the impact project?	
4	Do the courses have suitable assessment tasks for implementing the project? If not, can any of the assessment tasks of the courses be adjusted to embed the impact project?	It is important that the project is part of the assessment to recognise students' attainment of learning outcomes and to ensure consistent commitment of all participating students.
5	What is the number of students in the courses? How can the students be organised to work on the impact projects? Refinement: Does the project have sufficient beneficiaries to ensure students have meaningful interaction?	This is important to ensure all students are engaged and can actively participate in the project to learn from the experience.
6	How will the Impact Project be implemented within a semester? What are the key activities throughout a semester? What choices do students have to make, and what support will students receive? How will different key stakeholders be involved across the semester?	This planning is critical to ensure alignment for implementation purposes.
7	Refinement: For factors not within the control of the module leader, are there reasonable risk mitigation and backup plans to ensure effective project implementation?	
	C. Impact Project Implementation	
1	Before semester commencement, are the external parties briefed and aligned in terms of their roles and responsibilities, as well as the project activities and timeline over the semester?	This is important to ensure the commitment and alignment of the stakeholders.
2	Are the students briefed and aligned on the Impact Project and assessment arrangement, as well as on the interaction with partners and beneficiaries over the semester? Refinement: Are the students aware of and appreciative of the structure and agency elements of the Impact Project?	It is important to help students appreciate the differences between experiential learning, which allows students to learn in a real-world context, and classroom learning.
3	When faced with changing external factors, is the module leader well supported to make timely adjustments to ensure students' learning is not affected, and the intended outcomes for beneficiaries are achieved?	The support mechanism could be more critical when the module leader adjusts to the different challenges of implementing experiential learning.
4	Are there sufficient supports and opportunities for students to exercise agency and interact with beneficiaries for meaningful learning?	An important intended outcome for students is an increased sense of agency through participating in experiential learning.
5	Are there sufficient opportunities for students to reflect and learn from the Impact Project experience?	Students do not learn from their experiences; they learn from the experiences that they reflect on. Reflection opportunities are critical to facilitating deep learning through the Impact Project.

Pilot Implementation Phase

One hundred twenty-two students responded to the satisfaction survey, with a 4.3 out of 5 rating, affirming the effectiveness of the proposed implementation framework through pilot implementation. Responding to the research objective and informed by interview data collected, the proposed experiential learning implementation framework is refined to enhance the authenticity of the learning experience while making reasonable compromises for factors beyond the university's control.

The first refinement relates to the overall authenticity of experiential learning, which is to be addressed during project conceptualisation. It is critical to involve the beneficiaries from the onset of project conceptualisation to increase their commitment to adopt the solution proposed by the students. By doing so, the Impact Project offers students more meaningful and authentic learning experiences by impacting the beneficiaries, increasing the students' sense of agency. The second refinement relates to the social context of the authenticity element, to be addressed during curriculum integration, where there is a need to ensure meaningful interaction between students and beneficiaries. This refinement is especially important for courses with large numbers of students. To achieve this, sufficiently committed beneficiaries should interact with students as part of the learning process. In addition, a risk mitigation plan could be needed to manage the situation when certain beneficiaries unexpectedly could not participate in the project. The third refinement relates to making conscious decisions about reasonable authenticity compromises for external factors that are not within the university's control. The following is an example.

> *Based on the execution experience, one of the most challenging risks is related to external factors beyond the control of the academics or the university. To tackle this issue, it is important to separate the milestones for a) the student assessment submission and b) Impact Project delivery to beneficiaries and partners. Ideally, they should collide within the same timeframe for students to experience the optimised impact on the beneficiaries. However, considering the risks beyond the control of the university, there is a need to disengage activities within and not within the control of the university during the project formulation phase*. (Impact Lab Director 1)

Discussion

In response to the first research objective of the Design Phase, the key challenges found in this study are consistent with the literature, directly or indirectly. The challenge to ensure a consistent supply of Impact Project to support experiential learning in the field is indirectly consistent with the literature that mentions experiential learning is resource-consuming (Aggarwal & Wu, 2019; Austin & Rust, 2015). However, this study has no direct findings relating to resource constraints, possibly due to the management's commitment to implementing experiential learning in the field. The challenge to integrate experiential learning into the curriculum is directly consistent with the literature that different faculties may have different preferences and levels of capabilities to design and implement experiential learning (Aggarwal & Wu, 2019; Austin & Rust, 2015). This challenge could be more apparent in the context of this study since the initiative is still new to the faculty. Similarly, the challenge of managing the implementation of experiential learning in the field is directly consistent with the literature that there is a need to manage the risk and uncertainty

involved with a new real-world environment (Aggarwal & Wu, 2019; Austin & Rust, 2015), especially when the faculties lack experience in managing such experiential learning. However, the concern of students not appreciating experiential learning is not apparent in this study. This could be due to the proper integration of Impact Project into the curriculum and the Impact Lab's support in engaging the students during implementation.

In response to the second research objective of the Pilot Implementation Phase, most of the strategies mentioned in this study are consistent with the literature. The importance of a) long-term commitment from the university and b) capacity building for academics is consistent with literature that argues for the commitment from the management and faculty (Aggarwal & Wu, 2019; Austin & Rust, 2015). However, the literature has not extensively mentioned the importance of a supporting ecosystem. It could be due to most of the efforts to implement experiential learning being limited to individual or faculty-level initiatives instead of institutional-level initiatives.

Responding to the third research objective of the Design Phase and the objective of the Pilot Implementation Phase, the proposed implementation framework provides more comprehensive and practical steps and considerations to guide academics in the implementation of experiential learning in the field through the Impact Project. The framework covers the three stages of project conceptualisation, curriculum integration, and project implementation. It also provides practical considerations around the three key design elements of authenticity (covering the task, physical context, and social context), structure, and agency (Duchatelet et al., 2023; Radović et al., 2021b). The framework contributes to an important gap in the literature to tackle the challenges faced by academics when implementing the “concrete experience” of experiential learning in the field. This proposed framework could be adapted by other institutions aiming to offer experiential learning in the field through their curricula. The management's commitment to grant resources for institutional-level implementation could affect the adaptation.

Limitations

The findings of this study are based on two phases of experiential learning in the field involving four Impact Projects supported by nine disciplines from both the sciences and social sciences. Data collection and analysis are mainly based on reflection and discussion among the three researchers and the four Impact Lab Directors. Arguably, more structured and detailed data analysis may enhance the validity of the findings. In addition, an additional round of pilot implementation may bring further refinement to the implementation framework, especially the considerations needed to scale up the courses and students involved, and to enhance the robustness of the findings. Hence, it is suggested that a subsequent study can be carried out to validate the effectiveness of the framework before the institutionalisation of experiential learning. A focused study on student reflection is also recommended to ensure the framework fully engages the students to learn from experiential learning in the field.

Conclusion

To conclude, all the research objectives of this study have been addressed. This study has affirmed the challenges and strategies to implement “concrete experience” of experiential learning in the field while highlighting the importance of management commitment and alignment of the supporting ecosystem. The proposed implementation framework offers practical considerations

for academics, covering the three design elements of authenticity, structure and agency, throughout the three stages of project conceptualisation, curriculum integration and project implementation of experiential learning in the field. The proposed framework has expanded the practical knowledge of implementing “concrete experience” of experiential learning in the field, contributing to the gap in the literature mentioned earlier. The proposed framework could benefit institutions looking for ways to effectively institutionalise experiential learning in the field to enhance students’ engagement and attainment of learning outcomes while positively impacting the industry or society.

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