Case Study on Planning and Designing Social Innovation Projects: Insights into Students' Learning Experiences, Challenges, and Aspirations through Reflective Practice

Intan Azura Mokhtar[1]

[1] Ph.D, MPA, MSc., PGDE, BSc., Singapore Institute of Technology, Singapore

Correspondence: Intan Azura Mokhtar, Ph.D, MPA, MSc., PGDE, BSc., Singapore Institute of Technology, Singapore. Email: Intan.Mokhtar@singaporetech.edu.sg ORCID: https://orcid.org/0000-0002-9131-8254

Received: October 22, 2024 Accepted: November 21, 2024 Online Published: November 22, 2024

doi:10.5430/ijhe.v13n6p12 URL: https://doi.org/10.5430/ijhe.v13n6p12

Abstract

Service learning or social innovation projects in higher education institutions (HEIs) have become more mainstream and are no longer optional endeavors done by students only when they have time to do so. Such initiatives have become a critical part of learning and character development for young people keen to lead change and find meaning in what they do. As HEIs strive to offer more relevant and authentic learning opportunities for their students, service learning or social innovation projects have become common in HEI curricula. Other than the opportunity to work with others on projects that aim to address social issues and challenges, students get to carry out self-retrospection and introspection on what they experienced and learned. This paper presents excerpts from written reflection entries authored by fifteen students who participated in a social innovation project module at an applied learning university in Singapore. Their written reflective practice provided rich insights into their personal development, team interactions and dynamics, challenges faced, perceptions of the social impact of their work, and areas for improvement based on what the students experienced. The paper concludes with suggestions for implementing similar modules or initiatives related to social innovation or social impact in HEI curricula.

Keywords: critical reflection, higher education, reflective practice, service learning, social innovation, Singapore

1. Introduction

Social innovation (SI) is considered one of the relevant platforms and initiatives in addressing the various 'wicked problems' that exist in our societies - social or cultural problems that are difficult to solve or address because of their complex and interdisciplinary nature. SI is also instrumental in realizing some, if not, all, of the United Nations' Sustainable Development Goals (UN SDGs) (Planells-Aleixandre et al., 2022). With the increasing complexities and multi-disciplinary nature of global challenges such as poverty, environmental sustainability, wealth and income inequalities, access to education, availability of and access to clean water, energy production, carbon emissions, and social exclusion, among others, SI provides a platform for multilateral collaboration and problem solving to take place, in designing new solutions that can better address societal, economic and global needs and challenges (Nasir & Subarib, 2017). For universities or higher education institutions (HEIs), this collaboration among various factors such as governments, industry and business partners, civil society and community groups, as well as academia, contributes to what is known as the quadruple helix (QH) model of multi-actor interactions and partnerships that are needed in addressing these 21st-century global challenges (Morawska-Jancelewicz, 2022). In this paper, an overview of social innovation initiatives in HEIs, as a form of service learning, is explored, focusing on their intents, implementation strategies, and structure. This then segues into how one applied learning university in Singapore designs and implements its social innovation initiative in its curriculum, with a particular emphasis on student learning outcomes and reflection, which is the focus of this paper. Insights and excerpts from students who participated in a social innovation project module at the university are explored, following several future recommendations.

2. Service Learning through Social Innovation Initiatives in HEI Curricula

The integration of SI in higher education includes the development and implementation of innovative ideas, practices, and co-created solutions that address social issues and create positive change, not just as a requirement of students' academic training, or within their disciplines of specialization, but also the communities in which such initiatives take place. The integration of SI in HEI curricula also paves the way for improving the overall student learning experience, enhancing student engagement, and promoting interdisciplinary collaboration among students from different degree programs. This in turn, has brought about the emergence of interdisciplinary courses or modules that tackle complex social challenges, which bring together students and faculty from different disciplines to collaborate on real-world problems, fostering creativity, critical thinking, and partnership (Bellandi, Donati, & Cataneo, 2020). Such initiatives often involve service-learning components, community-based research projects, and partnerships with non-profit organizations, with some initiatives focused on sustainability, climate action, or sustainable development issues (Planells-Aleixandre et al., 2022).

The integration of SI in HEI curricula can also involve the creation of incubators, accelerators, and entrepreneurship programs that support students in developing innovative solutions to complex social problems or issues. Such initiatives have created opportunities for more mentorship, funding, and resources from the business community and industry partners to help students turn their ideas into impactful ventures (Svennevik & Saidi, 2022). Overall, SI in higher education is about reimagining the role of universities and colleges in society and finding creative solutions to social challenges through education, research, as well as community engagement, and multi-actor partnership (Fabregat-Cabrera et al., 2020).

(Taimur & Onuki, 2022) advocated using design thinking principles in solving complex and dynamic social challenges as they aid users in framing problems specific to a community's context and needs. They added that design thinking could cultivate transformative learning because the phases promote action-oriented interdisciplinary learning and active collaboration with stakeholders. In addition, (Argyris, 1977) also supported incorporating reflective practice or reflection in transformative learning as it challenges students' assumptions and values (double-loop learning) compared to just going through the design process (single-loop learning). Its increasing use in higher education supports the importance of individual reflection-in-action and reflection-on-action (Munby, 1989). By reflecting on their own actions, students from different disciplines contribute to their interdisciplinary teams and develop the potential to solve tomorrow's challenges (Veine et al., 2019).

Research on the importance of reflection, the use of reflection, and how it contributes to the improvement in student learning and personal development, in the context of social innovation projects, have not been adequately addressed by prior literature (Daff, Tame & Sands, 2024). This paper analyses students' reflections on how they approached and addressed complex problems through five aspects:

(1) Personal development

(2) Team interactions and dynamics

(3) Challenges faced

(4) Perceptions of social impact

(5) Identified areas for improvement

3. Social Innovation Project at the Singapore Institute of Technology

The Singapore Institute of Technology (SIT) is Singapore's fifth autonomous university. It was first set up in 2009 as a partner institute for overseas universities, and its main role was to administer in Singapore the degree programs of partnering overseas universities. These degree programs were those which were popular among Singaporean students seeking to pursue bachelor's degrees in disciplines not offered by the local autonomous universities (AUs) then. Through legislative enactment in parliament, SIT was instituted as an AU in 2014, allowing the university to administer its own degree programs and confer its own certificates. Since its inception, SIT has established itself as Singapore's first university of applied learning. At the point of writing, SIT is the third-largest AU in Singapore, based on annual student enrolment.

In the academic year (AY) 2020, SIT underwent an extensive undergraduate curriculum review. Among the new initiatives implemented were five university-wide modules that were to be taken by all newly matriculated students or undergraduates. Among the five new university-wide modules is the Social Innovation Project module. The University recognized that there are "many current issues and challenges faced in our pluralistic society, such as

diversity and inclusivity, changing demographics, environmental concerns, and sustainable practices, among others" (Singapore Institute of Technology, 2023).

In SIT, the Social Innovation Project (SIP) module, which became a graduation requirement from AY2022, would "create opportunities for students to address some of these multi-faceted issues and challenges in a multi-pronged, problem-solving approach, and through inter-disciplinary collaboration" (Singapore Institute of Technology, 2023). This module required students to work in interdisciplinary teams of 3 to 5 people to address a problem statement, over a period of 4 months (1 trimester) or up to 12 months (3 trimesters, or one academic year). The module was also meant to be done as a student-led, independent learning endeavor with little to no faculty intervention and supervision, except for three checkpoint meetings that each student team had to do with their respective resource person. The resource person may come from among the ranks of the University faculty members, corporate staff, or volunteers from external community or industry organizations who were keen and able to provide some resource guidance to the students, such as pointing them to relevant resources to refer to or use, or to relevant individuals or organizations that could help the team in scoping their project or in crafting their project deliverables.

In the process of completing the module, students were expected to reach out to and engage with specific community groups, beneficiaries, or end-users related to the problem statement they were doing for their team project. Using the design thinking approach of user engagement, human-centered design, co-creation of solutions, and an iterative process of solutioning and product enhancement, students had the opportunity to learn from a ground-up problem-solving approach where they could work directly with end users and stakeholders, and apply their skills and knowledge learned from their respective technical or academic training on a specific social or community issue.

The final deliverable or solution that each student team had to submit could be in the form of a prototype, a proposed framework for implementation, a guidebook, a proposed initiative, or a mock-up of an event or community initiative, among others. In addition, each student had to submit an individual reflection journal comprising at least five entries documented throughout the duration of the module and their team project. Students were given a brief on what they could incorporate in this reflective practice including guiding questions that could help them get started in documenting their individual reflection entries.

The team project was an opportunity for students to learn in an interdisciplinary collaborative setting, which builds attributes such as communication skills, teamwork and team building, problem-solving, leadership, and negotiation skills (Singapore Institute of Technology, 2023). The individual reflection journaling allowed each student to carry out a personal introspection and retrospection of what they have learned and how they have grown throughout the module and team project.

4. Objectives and Goals of the Study

Through the qualitative research method of documentary analysis, the individually written reflection pieces that the students completed as part of the module provided rich, qualitative insights into their personal development, team dynamics, challenges faced, their perceptions of the social impact that their project engendered, and their views on possible areas of improvement – whether to their proposed solution, teamwork and collaboration, or their own personal learning journey – as they worked on and developed their project, planned and designed for social good. These insights lend themselves to better understanding students' learning experiences, constraints, and aspirations as they work in teams to plan, design, and implement their social innovation projects (Svensson & Carney, 2022). In this paper, students' reflection entries combine both the reflection-in-action and reflection-on-action approaches (Munby, 1989).

The documentary analysis carried out on the students' written reflection pieces sought to address the overarching question:

"How has the experience of being involved in a team-based social innovation project shaped students' learning experiences, perceptions of challenges, and understanding of their personal and social aspirations?"

This question is addressed through the following aspects of students' reflection entries:

(1) Personal development

(2) Team interactions and dynamics

(3) Challenges faced

(4) Perceptions of social impact

(5) Identified areas for improvement

The following section discusses the five aspects above, as distilled and elicited from students' reflection entries.

5. Reflection and Insights

In the two pilot runs of the SIP module, there were 138 students enrolled in the module. As the module leader (author) strived to refine further and improve the module contents and implementation, students' reflection entries were also looked into more deeply to gather qualitative insights into the module from students' perspectives. Thirty students (21.7%) were randomly identified to seek their consent to carry out a documentary analysis on their individual reflection journal entries submitted for the module. Fifteen of these students (10.9%) responded positively and each of them gave informed consent to allow their reflection entries to be analyzed and included in this study, on the condition of anonymity. In this section, the students will only be identified as Student 1 (S1), Student 2 (S2), and so on.

The extracts from students' reflection entries are given verbatim, except where personal identifiers are included. These personal identifiers are then anonymized in the extracts given below.

5.1 Personal Development

In reflecting on their personal development, students found that the module provided an opportunity for them to enhance their inter-personal and critical thinking skills, as well as develop an understanding of real-world issues:

"This module also helps me to put my innovation and critical thinking skills to good use as it teaches me how to apply the skills I learned in the classroom to real-world settings. I would also say that SIP (the social innovation project) has helped me to improve my interpersonal skills that would assist me for a lifetime as I have developed better social and personal skills mentioned above." (Student 1)

"In all honesty, I didn't like this module at the start. I thought that it was a module that I wouldn't really like and would just do haphazardly. But as we developed our prototype and ideated together, I really began to appreciate this module. This module forces us to think and acknowledge problems in our society that need to be fixed. When we leave (the university), as graduates, I'll be bringing along this appreciation to work and other aspects of my life. I volunteer my time a lot with Y and help in my church, but I've never really led anything and saw an idea come to life. So, I'm eternally grateful that I was able to experience this, in school." (Student 3)

"The experience I have gained through this project has given me a much deeper understanding of how significant social innovation projects can be. Through this project we were able to think about a local problem and how we can design and implement solutions for improving the welfare and well-being of individuals and the community." (Student 14)

The students also learned more about themselves, their initial perspectives and beliefs, and how they could build on their strengths or address their shortcomings:

"I had believed that I knew how a social innovation project would be like. However, as I went through the various micromodules, I realised that there were many things I had not considered or had forgotten. As such, this helped me to re-evaluate my pre-conceived notions and change my thinking towards social innovation. An example was from the Micromodule …. Before looking through the module, I believed that there were only a few vulnerable groups like the elderly or people with disabilities. I had not considered the plight of lower-income families and those that come from single-person headed households. These groups also have their own struggles, and their unmet needs require social innovation solutions that are specifically catered to these needs. Reflecting on this, I felt ashamed in the moment as my fixation on my own family's needs had clouded me from being able to think from their perspective. As such from this experience, I had realised the importance of allowing myself to be open-minded and to put aside all existing beliefs when researching the needs of a user group in a social innovation project." (Student 2)

"Throughout this entire process, I definitely learned a lot as it was my first time working on such a topic and it was definitely an eye-opening one. In terms of areas where I could have done better, I think that I could have been more creative in terms of ideating outside of the norm and just thinking out of the box as at the end of the day brainstorming sessions are meant to generate ideas that may seem wild but with some fine-tuning, it could actually be feasible." (Student 4)

"In a nutshell, the initial stage of the … module trained me to make connections by not taking problems at face value. It trained me to read between the lines because problems are usually not as simple appear to be, and more complex once interpreted and analysed. It is crucial to look at a problem from many angles." (Student 10)

"After the consultation, our group set down to collate the feedback and ideas given to us. This collation helped to better understand what our group should start with. Our group first went ahead with surveying to better understand

society and their needs regarding healthy food. In hindsight, the survey helped to set the direction of our project. It helped me to understand the need to start by doing enough research rather than working based on assumptions which could lead to misaligned solutions. After looking at the statistics of the collected results, we were able to understand (user) needs and streamline the ideas that we have. During the consult, many ideas were brought up which seems good off-hand, however when we did the survey those ideas were not very popular. It made me realise that what we think might be good might not be useful for the receivers themselves due to our differences." (Student 13)

5.2 Team Interactions and Dynamics

As the students worked on their team problem statements and developed their team project, they built on their intra-team collaboration and teamwork, overcoming some initial setbacks and challenges along the way. As they reflected on their team interactions and dynamics, interesting insights were yielded:

"If the team had better time management, we could have also created a physical version of our prototype. Originally we had to idea to integrate the online game to a physical card game which people could play with at our booth. However, due to the lack of time we could not finish the physical prototype in time. In future, we hope to have better time management. This can be implemented by creating a project timeline to keep us on track. As a team we could have also been more clear on what our specific roles were which will make us more efficient and ensure that roles do not overlap." (Student 5)

"What did not go so well was the preparation work. At the first meeting, most, if not all of us were not as prepared as we could have been. To elaborate, all of us could have gone through all the topics, individually, picked one, or a few topics we would have liked to do, and then discussed as a group regarding our choice of topic(s). This would have saved us a lot of time during the meeting to devote to other matters. Instead, we all ran through the topics, spent time choosing our preferred topic(s) and deliberated on the spot. While it did not take long to choose our topic, I felt that we all could have been better prepared for the meeting. I will take this experience as a learning point, to lay the framework for future group meetings, where groupmates make the effort to prepare for meetings. This, I believe will increase productivity in meetings, to get more work done more efficiently." (Student 6)

"Prior to this project, [another student] and I were not on good terms but I made the decision to try my best to remain professional and not let any personal feelings affect the project. However, I failed to do so when he said numerous remarks on my suggestions that did not add any value to the discussion. For example, one of my suggestions was to boycott unethically produced palm oil products, and he remarked that it is not a solution in a condescending manner while laughing to himself. This was not the first time he has done that and I felt 'attacked' in a way. This led to me feeling frustrated and I was unable to communicate with the rest of my members effectively. In hindsight, while also being the assigned leader of the group, I should have kept my cool and instead clarify what he meant by those remarks." (Student 12)

"This project has also taught me that as a team that builds on each other's strengths and weaknesses we have helped each other grow and learn faster. I knew I was good at designing in the team, hence I volunteered while the members that were confident in research asked me for what details I required and they settled those portions. In all honesty at the start of SIP I did not think I would enjoy it. But as the team continuously did research, work together to come up with solutions we found would be useful if we were the end consumer, I started to enjoy it compared to my other classes which definitely came as a surprise to me. Although SIP was not too time-consuming, it was a fulfilling module that gave me an opportunity to think out of the box and work together and bond with my teammates." (Student 15)

5.3 Challenges Faced

Working in teams, the students faced several challenges as they worked on their problem statements and ensuing project. Among the insights revealed in their reflection entries are:

"As we approached the next meeting date with our professor, we decided to try our best to justify our ideas and product. We had numerous meetings and tried our best to provide information by scouring the (inter)net for articles, research articles, and sites to support our idea. Despite the multiple setbacks, I am proud of my team members as we were never once disheartened by it. Even with multiple submissions to juggle with, we were able to positively stand up from the setbacks and embrace this learning curve." (Student 7)

"To our dismay, we only found out that the challenge statement has been taken off the list, implying that three groups had already chosen it before us…. It was a shock for us as we never expected a challenge statement to be so popular when there are multiple statements to choose from ….Looking back, I realised it was something that we should have

expected. We had only started discussing a day before the deadline. I was reminded of the importance of time management so that we won't struggle with last-minute submissions in future assignments. By preparing early and setting time aside in the future, we can also ensure our work is of the highest quality." (Student 8)

"Once we had a rough idea, we immediately set up a virtual meeting with our client …to share our ideas with them and seek feedback… things went badly in the meeting as the client was dissatisfied with our idea and even realised that there was a disparity in their expectations and what we could deliver with the knowledge and technicalities we could offer …Though it was a huge setback and further delayed our progress, my team and I persevered and relooked into our problem statement. Upon developing a refined problem statement, we … shared our ideas with our professors during the next consultation session. We were then recommended to reach out to industry players with relevant experience to seek advice on the feasibility of our ideas…Unfortunately, this also did not go well as we were unable to obtain any contacts …As we brought this up during the following consult, our professor helped us out by referring us to an experienced industry player …. My team and I were exhilarated and quickly reached out to them for a virtual meeting. Through this experience, I learned how to manage my emotions better when I encounter several setbacks and to never give up easily because when there is a will, there is a way." (Student 9)

"Meanwhile, we were corresponding with W via email. … However, W did not respond to our request and we had to send her another email to remind her of the demographics, which she did not end up sending. … We were advised by our school advisor to email her once again, but to no avail. It was at this point we learnt that in the working world, everyone is busy, and even badgering someone may not get us what we want. We were dejected and confused, but we decided to continue with our survey nevertheless. …. We had expected at least 50 responses so that we could lower chances of having skewed data, however, we could not get past 29 responses, …. However, I would say that this form of rejection, both in terms of the lack of response from W and from not having enough respondents made me wonder if I was being entitled in expecting that others had to do what I wanted them to do. I had to remind myself that others really had no obligation to help us out, and it was not fair to them if we were to sulk and be upset about them not doing our survey. Accepting the rejection and moving on with whatever I had in hand seemed like a more mature and productive route of doing things." (Student 11)

"Before the first consultation session, our group felt that we have already curated a well-thought-out proposal. However, when we went for the consultation, we realised that our age group was too large, and our ideas were based more on our assumptions than on what was needed by society…. However, when we wanted to develop the products into a prototype, we realised that we find it hard to develop the idea into a physical product feature. We struggled with trying to communicate the benefits of using the product …. We felt that the prototypes that we make are not interactive enough and lack attractiveness." (Student 13)

5.4 Perceptions of Social Impact

As students worked in their teams and developed their projects based on the problem statements their teams were doing, they began to see the impact that their proposed solutions could have on specific communities or society in general:

"To conclude this whole reflection journal as a whole, working on this social innovation project has been a fruitful journey despite the gruelling moments. I got to practise more empathy in my thinking and to consider different perspectives such that the solution we develop will be user-centric and add value to the lives of others. Overall, it was a fulfilling experience to understand more about the needs of different groups of people in Singapore's society and to also create a prototype of an app that could possibly benefit them." (Student 8)

"An area of improvement would be to look into providing a resource hub that provides caregivers with links to get additional support be it financial, physical or emotional. In my opinion, the current app is geared towards ensuring that caregivers can carry out their caregiving responsibilities better. However, I think we can emphasise more on connecting the beneficiary group with the right resources so that we can bridge their knowledge gap about the existing help in Singapore; This, I believe can act as a source of support, so that caregivers are less lonely in their journeys in a space with no judgement." (Student 10)

"In my opinion, this project provided me with an avenue to awaken by civic engagement. I was able to explore issues in the community that I have missed out on while going along with life. On top of that apply the soft skills and knowledge that I have learned in school to develop ideas to engage society to lead a better lifestyle. From this experience, I have come to believe that when we are engaged by society and engaging them that is when society moves forward." (Student 13)

5.5 Areas for Improvement

As students developed their project ideas and proposed solutions to address their team's problem statements, there were areas in which they managed to identify as those where improvements could be made, if they could re-do the project; if they had more time; or if they could further develop their ideas or solutions.

"However, one area where we could have done better was the user testing stage. As our proposed solution involves an application, it would have been great to engage our peers who were not part of (our) group to conduct user experience testing. This would be beneficial in terms of helping us identify any loopholes or flaws with our user interface which we can then use to improve our application. Nevertheless, due to the tight timeline and constraints we were unable to conduct user testing for this project and were limited to testing it within our own group." (Student 4)

"After the consult ended, both me and Q expressed sighs of reliefs. Despite missing two other members, we managed to present our idea smoothly. With no pressing changes that had to rectified, we decided to see what other areas that can be improved. I felt that without this consult, we might not know areas to improve. We would not have known that lighter colours are harder to be seen by the (elderly). We agreed that this was a shortcoming on our side. This could have been avoided if we did more research to understand our users better." (Student 7)

"This experience taught me to be clear about my assignments, especially their respective requirements, … I believe that this will also help me better understand my assignments and complete them more effectively. To add on, I also learned that it is not always better to do the work together, as delegating tasks can be more efficient in group projects, especially when everyone has differing schedules. Apart from checking the assignment requirements, an area that I could have done better was having confidence in myself as well as my team members in terms of managing the tasks on our own. In light of this learning, the implication that I am able to identify and relate to is civic values as I realised the importance of self-discipline through having to manage multiple tasks within a defined time period." (Student 9)

"Overall from this entire project, there were many times that I felt unprepared, in terms of research that I should have done, or not knowing how to progress, or not knowing how to answer questions. I also realised that I was too focused on one thing in particular, and in a field like this, where there is tremendous room for creativity, I tend to look for the safe-zone, which ends up narrowing my perspective." (Student 11)

6. Discussion

Drawing from the various documented reflection entries and insights from the fifteen students, five distinct observations were made.

First, as the SIP module was designed in a way that was meant to be a student-led module that deliberately included little guidance and prescribed content from the university faculty, students completing the module had to figuratively 'jump into the deep end' and explore the various possibilities of what their chosen problem statement would entail, and what their proposed project or solution could be like as they worked in teams to do so. In other words, students went through a journey of exploration and had to go through a very steep learning curve in understanding and defining the scope of the problem statement, the context of social issues or challenges related to the problem statement, who the various stakeholders of the problem statement were, who the end-users of the proposed solution could be and what their needs and expectations were, and what the various possibilities and trade-offs could be in relation to the proposed solution, among others. That learning curve helped them to better understand their personal development and interpersonal relationships (Sec 5.1: S1, S3 & S14), as well as their personal approach to problem-solving, personal biases and shortcomings, and the dissonance among their personal assumptions, diverse team composition, team perspectives, and the actual social context (Sec 5.1: S2, S4, S10 & S13). This experience is important in developing their interpersonal relationships in future team-based settings, whether at work or in social circles, as well as building structural connections on knowledge learned, or social connections with others (Chang, 2019).

Second, since the problem statements to be addressed required students to work in teams as well as with various external partners and collaborators, students had to learn to deal with various uncertainties and changes. In addition, because students had to work in interdisciplinary teams, as part of the module requirements, this meant that they had to work with team members whom they were not familiar with. Thus, in working with unfamiliar or new team members, and in navigating their own team interactions and dynamics, the students had to learn to quickly put aside their differences and focus on the task at hand and what their priorities were as a team (Sec 5.2: S5, S6, S12 & S15). In working with external partners and collaborators, the students learned that their personal expectations may not be

aligned with the expectations from others, and vice versa (Sec 5.3: S7, S9, S11 & S13), and that managing their personal expectations is critical to surmounting setbacks and not be weighed down or immobilized by obstacles faced. This experience sets the foundation for transformative learning as students learn to grapple with new and unfamiliar challenges and is particularly important in preparing them to better manage uncertainties in the future. As (Formenti & Hoggan-Kloubert, 2023) expounded, "uncertainty, unpredictability, and the contestability of the known push us to question dominant ideas and patterns of knowledge transmission and to praise the shared construction of knowledge", linking back to the first point above.

Third, as students went through the process of personal reflection and documenting their experiences in doing their social innovation project as a team, they had the opportunity to articulate their emotions and learning. This process of retrospection and introspection helped them put things in perspective and look back at what they did, how they handled the challenges or setbacks faced, and what were the lessons learned (Sec 5.3: S7, S8 & S9). As the students articulated in their reflection entries, even though it seemed daunting when it happened, in retrospect and after having lived through the 'tribulation', there were moments of realization and epiphany that helped to put things in perspective, and where some of these instances seem to uphold the cliché of 'what does not kill you makes you stronger'. As (Cheng, M. et al., 2023) found, this is particularly important in helping students manage and develop realistic expectations, which in turn facilitate their coping strategies and overall well-being.

Fourth, the various problem statements that students attempted in teams as part of their social innovation project module, created substantial opportunities for the students to develop a greater awareness and deeper understanding of social issues and challenges, beyond what they may have been used to – such as those related to seniors and their caregivers, the use of assistive technologies in helping underserved or underprivileged groups, or the role of civic engagement and civic society in pushing for social change. In addition, there seemed to be a consensus that the opportunity to engage the different community groups and stakeholders allowed students to better appreciate different perspectives; in addition, there also seemed to be an overall sense of satisfaction and conviction that the project they did and the solutions they proposed had, to some extent, a positive impact on a specific user or community group, or society at large (Sec 5.4: S8, S10 & S13). This experience helped develop empathy in the students where they learned to "put themselves in the shoes of the other person" (Everhart, 2016), and develop greater self-awareness towards others (Glaister & Gold, 2022).

Finally, the individual reflection entries and documentation of their experiences and encounters helped the students identify areas in which they could have done better in the process of doing their project as a team member, or as they attempted to design and co-create the desired solution to address the problem at hand. This established the realization that there is always room for improvement, learning, and growth (Sec 5.5: S4, S7, S9 & S11). The articulation that led to this realization, and the means of coming to this realization, are facilitated by the process of documenting their individual reflection entries. Ofttimes, in the hustle and bustle of doing their work, completing tasks, and trying to get things done, students may overlook the need to take a step back, ponder on what they are experiencing, and realize and be able to accept that it is all right if not everything was done perfectly or if the final deliverable was not ideal or as initially expected. Students must learn to recognize that in completing any project or task, there is always room for improvement, learning, and growth. This is crucial in helping students build capacity for self-improvement, where students can rethink their experience to improve practice, modify their perspectives, and enhance the cohesiveness and overall quality of their work (Chang, 2019), especially in similar future settings.

7. Limitations and Conclusion

The observations made above represent only about 10% of the students who went through the pilot runs of the module and may not be highly representative of the entire cohort of students who have gone through or will go through this social innovation project module. Nevertheless, the insights and learning points drawn from these observations are useful in further refining and improving the module contents and administration, such as the better coordination between the project teams and their external partners; and the duration provided (i.e. more than one trimester or four months) for students to complete such a considerable task of carrying out a social innovation project focused on a real-world social issue or challenge.

In addition, it was found that the reflective practice or the documentation of individual reflection entries seems to be valuable to students in helping them articulate their learning journey and thought processes as they carry out their projects in teams, as can be seen from the excerpts of their documented entries above. Hence, this exercise will continue to be a central feature of this social innovation project module.

However, the guiding questions in the brief for this reflective practice could include aspects of reflection-for-action (Hartmann, A. et al., 2023) that students could also think about as they articulate and document their experiences and

thought processes. This would be useful in helping students think about and define their next steps and explore possibilities for further action, rather than just focusing on what had already happened. Reflection-for-action involves active experimentation where the meanings of ideas, concepts, and experiences are analyzed more deeply, as well as the types of problems or challenges, which were hoped to have been solved more effectively than in the past, are considered. This type of reflective practice, which identifies the needs, objectives, and goals of past experiences, and extrapolates them to help determine priorities for future learning, tends to remain etched in the minds of a learner for a longer period (Bubnys & Žydžiūnaitė, 2010).

While this paper has been useful in further refining and improving the planning, implementation, and administration of this particular social innovation project module for a specific university, it is hoped that the insights generated and discussed in this paper can be constructively and meaningfully used in planning, implementing, and administering similar initiatives in other higher education institutions.

The author has no conflicts of interest to disclose.

References

Argyris, C. (1977). *Double loop learning in organizations*. Harvard Business Review. Retrieved from https://hbr.org/1977/09/double-loop-learning-in-organizations

Bellandi, M., Donati, L., & Cataneo, A. (2020). Social innovation governance and the role of universities: Cases of quadruple helix partnerships in Italy. *Technological Forecasting & Social Change, 164*. https://doi.org/10.1016/j.techfore.2020.120518

Bubnys, R., & Žydžiūnaitė, V. (2010). Reflective learning models in the context of higher education: Concept analysis. *Problems of Education in the 21st Century, 20*, 58-70.

Chang, B. (2019). Reflection in learning. *Online Learning, 23*(1), 95-110. https://doi.org/10.24059/olj.v23i1.1447

Cheng, M., Barnes, G. P., Edwards, C., Valyrakis, M., & Corduneanu, R. (2023). *Transition Skills and Strategies: Critical Self-reflection*. Glasgow, Scotland: Quality Assurance Agency for Higher Education. Retrieved from https://www.enhancementthemes.ac.uk/docs/ethemes/student-transitions/critical-self-reflection.pdf

Daff, L., Tame, C., & Sands, J. (2024). A course design approach that encourages reflective practice habits. *The International Journal of Management Education, 22*(2). https://doi.org/10.1016/j.ijme.2024.100990

Everhart, R. S. (2016). Teaching Tools to Improve the Development of Empathy in Service-Learning Students. *Journal of Higher Education Outreach and Engagement, 20*(2), 129-154.

Fabregat-Cabrera, M. E., Carratalá-Puertas, L., Jareño-Ruiz, D., de-Gracia-Soriano, P., & Ruiz-Callado, R. (2020). Chapter 3 - Social innovation in the framework of higher education: How to teach to transform society. In *Shaping Futures: South East Asian Social Innovation Network* (p. 280). Erasmus+ Programme of the European Union.

Formenti, L., & Hoggan-Kloubert, T. (2023). Transformative learning as societal learning. *New Directions for Adult and Continuing Education,* 105-118. https://doi.org/10.1002/ace.20482

Glaister, C., & Gold, J. (2022). Bridging the Gap between Reflective Learning and Reflective Practice through Anticipatory Reflection. *Education + Training, 64*(8/9), 1060-1073. https://doi.org/10.1108/ET-09-2021-0345

Hartmann, A., Vinke-de Kruijf, J., & van Weesep, R. (2023). Asking the right questions: The role of reflection for learning in and between projects. *International Journal of Project Management, 41*(5). https://doi.org/10.1016/j.ijproman.2023.102494

Morawska Jancelewicz, J. (2022). The Role of Universities in Social Innovation Within Quadruple/Quintuple Helix Model: Practical Implications from Polish Experience. *Journal of the Knowledge Economy, 13*, 2230-2271. https://doi.org/10.1007/s13132-021-00804-y

Munby, H. (1989). *Reflection-in-action and Reflection-on-action*. https://doi.org/10.1353/eac.1989.a592219

Nasir, N. R., & Subarib, M. D. (2017). A Review of Social Innovation Initiatives in Malaysia. *Journal of Science, Technology and Innovation Policy (JOSTIP), 3*(1), 1-9. https://doi.org/10.11113/jostip.v3n1.17

Planells-Aleixandre, E., García-Aracil, A., & Isusi-Fagoaga, R. (2022). *Social innovation approaches at higher education institutions*. EDULEARN22 Conference. Palma, Mallorca, Spain. https://doi.org/10.21125/edulearn.2022.0066

Singapore Institute of Technology. (2023). *USI2001 Social Innovation Project - Module Profile*. Singapore, Singapore: Singapore Institute of Technology.

Svennevik, E. M., & Saidi, T. (2022). Social innovation-as-practice: establishing a social innovation program at a university. *Management & Marketing: Challenges for the Knowledge Society, 17*(SI), 402-425. https://doi.org/10.2478/mmcks-2022-0023

Svensson, C. F., & Carney, S. (2022). Chapter 16: The promise of social change: Critical reflections on social innovation. In *Revitalising Critical Reflection in Contemporary Social Work Research, Practice and Education* (pp. 195-208). London: Routledge. https://doi.org/10.4324/9781003248057-16

Taimur, S., & Onuki, M. (2022). Design thinking as digital transformative pedagogy in higher sustainability education: Cases from Japan and Germany. *International Journal of Educational Research, 114*. https://doi.org/10.1016/j.ijer.2022.101994

Veine, S. A., Andersen, N. H., Espenes, T. C., Søyland, T. B., Wallin, P., & Reams, J. (2019). Reflection as a core student learning activity in higher education - Insights from nearly two decades of academic development. *International Journal for Academic Development, 25*(2), 147-161. https://doi.org/10.1080/1360144X.2019.1659797