

## Integrating Service-Learning Pedagogy to Cultivate 4C's and Quadruple Helix Partnership

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### Abstract

This thorough study exhibits the seamless integration of service-learning pedagogy, expertly stimulating the growth of the 4C's — critical thinking, creativity, cooperation, and communication — while also encouraging partnerships that support the Quadruple Helix. It embodies a comprehensive approach that not only improves people's cognitive and social skills but also encourages collaborative engagements that go beyond conventional bounds. The ADDIE model, a recognised instructional design framework, skilfully directs the systematic development of the study. This guarantees that every stage of the study, from analysis and design to execution and assessment, is painstakingly planned and carried out, finally resulting in a highly effective programme. This programme emphasises the value of an organised approach in attaining its educational and partnership goals by adhering to the ADDIE model, making it a shining example of best practises. The skills of the 4Cs are developed to their greatest extent as a result of this creative initiative. The development of critical thinking skills helps individuals analyse difficult problems, make wise decisions, and adjust to changing obstacles. Individuals are encouraged to use their creativity to investigate novel solutions and concepts. Participants are taught the significance of collaborating across disciplines and sectors as part of a promotion of collaboration. Sharpening communication abilities ensures that thoughts and ideas are successfully communicated. Sustainable development is based on the Quadruple Helix Partnerships, which bring together academia, government, industry, and the community. This extensive partnership closely reflects important Sustainable Development Goals. The study gives people useful skills and knowledge by improving education (SDG 4). By helping small firms to succeed in the digital era, it supports economic growth (SDG 8). Additionally, this programme emphasises the value of partnerships in reaching the Sustainable Development Goal (SDG) 17 and advancing society as a whole.

**Keywords:** Addie Model, Pedagogy, Service Learning, Quadruple Helix Partnership, 4C's

## **Introduction**

The landscape of research and innovation is changing at a pace that is unprecedented in a time of quick technology developments, shifting societal needs, and an increasing emphasis on multidisciplinary collaboration. This study explores the dynamic interplay of these forces and their impact on the realms of academia, industry, community and government. One crucial difficulty shines out as we negotiate the intricacies of the twenty-first century: the requirement for developing long-lasting and mutually beneficial collaborations between academia, industry, government, and the community (Hasche et al., 2020). In-depth discussion of the approaches and models developed to meet this challenge and maximise its potential to spur innovation and socioeconomic advancement is provided in this article.

The Quadruple Helix model, which is an expansion of the well-known Triple Helix model, has gained popularity as a thorough framework for cooperation in the contemporary knowledge-based economy. The study strives to clarify how it promotes societal engagement, fosters innovation, and advances the common good. It is crucial to comprehend the subtle nuances of the Quadruple Helix model's impact on knowledge transfer, innovation, and community growth (Morawska-Jancelewicz, 2022). The goal of this article is to provide the ideas that can help academics, policymakers, and practitioners work together to alter our global society. In order to do this, this study looks at the theories and methods underlying the service-learning pedagogy as well as how the 4Cs (critical thinking, creativity, collaboration, and communication) are developed within Quadruple Helix partnerships. It is intended to advance the continuing.

The study discussed in this context focuses on how service-learning pedagogy is incorporated into project management courses. Its main goal is to improve students' project management abilities while also encouraging the growth of the 4C's (Critical thinking, Creativity, Collaboration, and Communication) skills and Quadruple Helix Partnerships through the Digital Entrepreneur Programme, which helps Hawkers improve their businesses and income by educating them about digital competencies. The project's scope encompasses academic learning as well as community involvement, illustrative of a comprehensive approach to education. This idea was inspired by the realisation that graduates in the twenty-first century face changing expectations (Watson, 2008). The traditional educational approach must change to provide students with abilities that go beyond textbook knowledge as industries become more complicated and linked. The four 21st-century talents Cs have become essential competences for success in this changing environment (Thornhill-Miller et al., 2023).

## **Literature Review**

The focus of the literature is to discover the integration of the 4Cs—critical thinking, creativity, collaboration, and communication—into service-learning pedagogy within the context of quadruple helix partnerships. Service-learning boosts student engagement and societal awareness by fusing classroom instruction with volunteer work. In the contemporary employment market, the 4Cs skills are essential for developing critical thinkers, boosting creativity, encouraging teamwork, and improving communication. The possible synergy between service-learning and the Quadruple Helix model will be discussed in this chapter. This relationship is still under investigation but has the potential to positively impact

education, social development, and sustainable goals. To determine its effectiveness, in-depth research is required. These topics, which have the potential to revolutionise education, innovation, and societal well-being, essentially reflect critical facets of modern education and collaboration.

### Service-Learning Pedagogy

Service-learning is gaining popularity as a teaching strategy because to its potential to close the knowledge gap between the classroom and real-world application. It encourages student engagement and a greater awareness of societal issues, according to researchers (Kaumba, 2023). Students' critical thinking, problem-solving abilities, and civic involvement are all improved by this experiential learning paradigm, which combines community service with academic education (De Beer, 2023).

The digital entrepreneur initiative's incorporation of service-learning pedagogy is the study's apex. This programme, which is run by the Faculty of Management at Universiti Teknologi Malaysia (UTM), intends to help small businesses in Bazar Jalan Pendidikan 3 and Taman Universiti Skudai.

### C's Skills (Critical Thinking, Creativity, Collaboration, Communication)

Critical thinking, creativity, teamwork, and communication are recognised as being essential for students' future success in the ever-changing educational context. Particular emphasis is placed on critical thinking due to its importance in making wise decision (Thornhill-Miller et al., 2023). According to Astuti et al., (2019), creativity is viewed as a skill that can be developed through education to promote inventive thinking. In a globalised environment where interpersonal contacts and teamwork are crucial, collaboration and communication skills are crucial.

### Quadruple Helix Partnership

The Triple Helix model, which includes government, business, and academia, is expanded upon by the Quadruple Helix model, which includes the community as a significant participant. According to Bellandi et al (2021), this enlarged approach has the ability to spur innovation, address difficult societal issues, and advance sustainable development. Collaborations inside the Quadruple Helix are viewed as a way to promote economic growth and information sharing (Hasche et al., 2020).

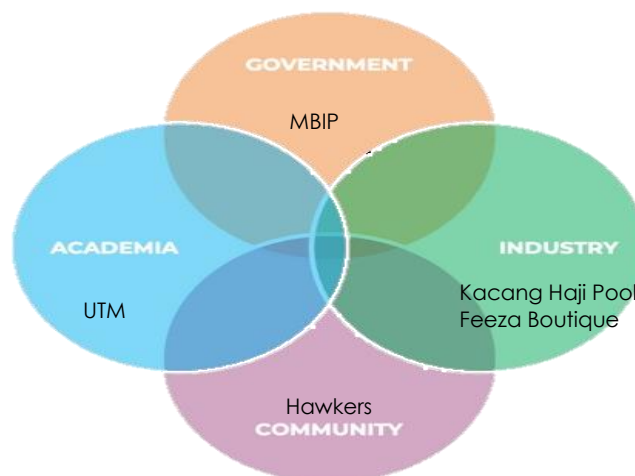


Figure 2.1: Quadruple Helix Partnership

Partnerships based on the Quadruple Helix model are important because collaboration is a major element. This ground-breaking framework involves the public sector (MBIP, Iskandar Puteri City Council), business (Kacang Haji Pool, FEEZA Boutique), and the general public (hawkers). The purpose of academia is to promote the spread of knowledge. To create a successful learning environment, UTM makes use of its pedagogical and project management capabilities. Faculty members keep an eye on the program's organisation and make sure that it adheres to educational goals.

A crucial layer of support is added by the government's involvement through MBIP.

This partnership gives the programme credibility and guarantees the availability of materials and logistical support for smooth programme execution. Industry collaborators provide useful insights that fill the knowledge gap between theory and practise (Hasche et al., 2020). Kacang Haji Pool and FEEZA Boutique discuss how they have used internet channels to grow their businesses. This first-hand experience enhances learning by presenting problems and answers that can be found in the actual world (Morawska-Jancelewicz, 2022). In actuality, the project's core is the hawker community. They actively participate and learn useful knowledge that helps them run their firms more effectively in the digital age.

### **Integration of Service-Learning and the Quadruple Helix Model**

In essence, this study develops students' fundamental skills and aids in the development of the neighbourhood by fusing theoretical knowledge with practical application and encouraging Quadruple Helix collaborations (Bellandi et al., 2021). The digital entrepreneur programme paves the path for a more linked and effective approach to education by demonstrating the value of collaboration between academia, government, industry, and the community.

Thus, this endeavour indirectly addresses the important Sustainable Development Goals (SDGs). It first supports quality education (SDG 4), economic growth, and sustainable livelihoods while promoting digital literacy and hawking income, which is in line with the Sustainable Development Goal 8 (SDG 8) on decent work and economic growth. This is accomplished by tying theory and practise together and giving both students and hawkers useful skills. The formation of quadruple helix alliances then draws attention to alliances for the Goals (SDG 17), emphasising collaborative efforts across academia, government, industry, and the community that are crucial for attaining sustainable development

### **Research Methodology**

In carrying out this study, the ADDIE model was used. The successful accomplishment of this study's objectives and the efficient coordination of components linked to education and community participation were made possible by the use of the ADDIE model. One of the teaching models that is widely used as the basis for different approaches to instructional design is this one (Stapa & Mohammad, 2019).

### **ADDIE Model**

The iterative architecture of ADDIE allowed for modifications to be made in response to evaluation findings, allowing for continual improvement of the project's methodology (Widyastuti & Susiana, 2019). The ADDIE model's fundamental methodology is composed of the following five steps: analysis, design, development, implementation, and evaluation.

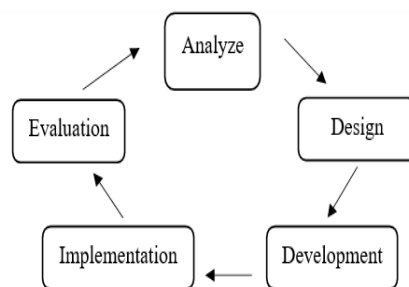


Figure 3.1: Model of Teaching ADDIE

### i. Analysis

To determine particular difficulties and knowledge gaps, a needs assessment of the hawkers and the neighbourhood was carried out. The existing skill levels, business procedures, and digital literacy of the hawkers were simultaneously understood. The goals for incorporating service-learning pedagogy and 21st-century skills into the project management curriculum were established using the evaluation as the basis.



Figure 3.2: Analysis Phase

### ii. Design

The programme structure and learning objectives were created based on the analysis. The events, modules, and assessments that matched the project's goals were organised in a certain order. The 4Cs (Critical thinking, Creativity, Collaboration, and Communication) integration into various project phases was also established.



Figure 3.3: Design Phase

### iii. Development

For the purpose of identifying particular difficulties and knowledge gaps, an evaluation of the requirements of the hawkers and the community was carried out. The existing skill levels, business procedures, and digital literacy of the hawkers were also understood simultaneously. This evaluation served as the basis for establishing the goals for incorporating service-learning pedagogy and 21st-century skills into the project management curriculum.



Figure 3.4: Development Phase

iv. **Implementation**

A clear plan for delivering the curriculum was followed during the execution of the Digital Entrepreneur Programme. For both students and hawkers, workshops, training sessions, and practical exercises were held. To promote cooperation and communication, interactions between students, hawkers, and other stakeholders were facilitated.



Figure 3.5: Implementation Phase

v. **Evaluation**

Students' skill development and the program's effect on participating firms were both regularly evaluated. For hawkers, improvements in revenue, online visibility, and client involvement were assessed. To pinpoint areas that needed improvement, feedback was obtained from students, hawkers, and collaborators.



Figure 3.6: Evaluation Phase

**Conclusion**

As a result, the service-learning methodology has been successfully incorporated into project management courses, demonstrating its many advantages. This initiative has successfully closed the knowledge gap between classroom theory and practical application by adopting the ADDIE paradigm and concentrating on the 4C's (Critical thinking, Creativity, Collaboration, and Communication). The creation of Quadruple Helix partnerships including

the public and private sectors as well as the community has demonstrated the effectiveness of teamwork in promoting holistic development.

The success of the initiative is demonstrated by the real advancements that participating companies have noticed, which are reflected in rising sales, improved online visibility, and consumer engagement. The project's influence on regional economies and enterprises is highlighted by the good community view and the sharing of success stories. Additionally, both students and hawkers have seen personal improvement because to the program's holistic approach. In order to be sustainable over time, hawkers have improved their digital skills while students have obtained real-world experience. The joint relationships have also helped to advance community engagement strategies and instructional approaches. There are options for extension as this project develops, including the creation of online courses, the investigation of other partnerships, and the potential for research-based initiatives. This initiative stands as a testament to the transformative potential of integrated education, community engagement, and partnership-based approaches by adopting the ADDIE model's guiding principles, continuing assessment, and cooperation.

This study also resonates with important Sustainable Development Goals (SDGs). Firstly, it contributes to Quality Education (SDG 4) by bridging theory and practice, equipping both students and hawkers with practical skills. Secondly, it aligns with Decent Work and Economic Growth (SDG 8) by enhancing digital literacy and hawker revenue, fostering economic development and sustainable livelihoods. Lastly, the establishment of Quadruple Helix partnerships underscores Partnerships for the Goals (SDG 17), showcasing collaborative efforts among academia, government, industry, and the community, vital for achieving sustainable development.

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