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Shaping Values and Perspectives: Impact of community projects on student learning

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Abstract
Community engagement is vital in urban design and education. This study explores its role in UCSI University's Diploma in Architecture program, assessing student participation in community projects and alignment with Sustainable Development Goal 4 (SDG 4: Quality Education). A case study surveyed 46 students on their involvement in design, construction, and documentation. Findings show strong participation, skill development, and collaboration with communities and industry partners. Despite limitations, the study underscores community engagement's impact on learning, fostering social responsibility, and preparing architects for sustainable practices, reinforcing its importance in designing curricula for transformative education.

Keywords: Community Architecture; Learning Experience; Teaching Pedagogy; Higher Education.

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1.0 Introduction

Globally, education holds a pivotal role in cultivating a proficient workforce. Despite the longstanding reliance on textbooks as the conventional instructional approach, the introduction of assessment techniques for teaching effectiveness has uncovered that a significant number of students do not grasp the course content to the anticipated degree. The twin factors of "information explosion" and the surge in technological advancement are instigating transformations in both developed and developing nations. To effectively address these challenges, it is imperative to employ educational technology encompassing diverse mass communication media, appropriate learning methodologies, and contemporary testing and evaluation techniques. Conventional teaching involves educators explaining topics from textbooks, with minimal student participation. In contrast, new teaching methods emphasize active student involvement to stimulate curiosity and creativity. McCarthy and Anderson (2000) conducted research comparing traditional methods with active learning, finding that students engaged in active learning achieved higher quiz scores. Ongoing studies and experimental methods aim to enhance student productivity, and various techniques are being introduced and applied to measure the effectiveness of educational methods.

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2.0 Literature Review

2.1 Transformative Learning

Transformative learning, introduced by Jack Mezirow, is a process where individuals critically assess and modify their assumptions and beliefs through meaningful experiences. Mezirow (2009) defines it as "the process through which we modify problematic frames of reference (mindsets, habits of mind, meaning perspectives) — sets of assumptions and expectations — to make them more inclusive, discerning, open, reflective, and emotionally capable of change." Unlike informational learning, which enhances existing skills, transformative learning challenges individuals to reconsider perspectives, leading to cognitive, emotional, and behavioural shifts (Transformative Learning Centre, cited in Kitchenham, 2008, p.104; Mathis, 2010; Mezirow, 2011). It encourages critical reflection, prompting students to question prior knowledge and integrate new perspectives. Transformative learning fosters adaptability, problem-solving, and ethical decision-making, making it essential in fields requiring innovation and critical thinking (Mezirow, 2011).

Recent years have seen growing concerns about student engagement in higher education, as increasing numbers of students enrol in university. The term "student engagement" has gained attention in research and debates due to its crucial role in academic success. Defined as the time, effort, and resources students commit to learning, engagement involves participation in meaningful activities inside and outside the classroom (Krause & Coates, 2008; Kuh, 2003). Assessing student engagement provides valuable insights into teaching effectiveness and course design (Nasir et al., 2020). It is a key metric for evaluating instructional success and the overall learning experience (Butler, 2011; Garrett, 2011; Mandernach, Donnelli-Sallee & Dailey-Hebert, 2011; Fredricks & McColskey, 2013).

Student engagement also encompasses institutional efforts to enhance learning experiences, improve student development, and elevate academic performance (Trowler, 2010). A clear understanding of engagement is crucial, as it serves as a proxy for educational quality (Kuh, 2009). However, engagement is a complex, multifaceted concept integrating various research perspectives on student success (Fredricks et al., 2004). Trow (2006) highlights challenges in ensuring meaningful engagement, especially as attendance becomes compulsory. Higher education programs require students to allocate study time effectively and choose learning methods that best support their development.

Various tools assess student engagement, including the Student Course Engagement Questionnaire (SCEQ) by Handelsman et al. (2005), designed for online learning. This was later refined by Nasir et al. (2020), making it applicable to on-campus, online, and hybrid courses. These assessments help educators create more effective, engaging learning environments that support student success.

2.2 Student Engagement Assessment

Student engagement assessment can be categorized into two distinct levels: institutional and course-specific. However, for this paper's purposes, the focus will be on the course level. Evaluating student engagement at the course level offers valuable insights into the effectiveness of course structure, pedagogy, and instructional design. In addition, analyzing course-level data can reveal the impact of learner-centred teaching approaches on student achievement (Butler, 2011). Student engagement is a multifaceted construct encompassing behavioural, cognitive, and affective aspects of students in the learning process (Handelsman et al., 2005). According to Chapman's (2003) comprehensive analysis, the scope of student engagement comprises a diverse array of characteristics such as the following:

1. Cognitive criteria, which index the extent to which students are attending to and expanding mental effort in the learning tasks encountered;
2. Behavioural standards, which index the area to which students are making active responses to the learning tasks presented; and
3. Affective measures index the level of students' investment in and their emotional reactions to the learning tasks.

The significance of student engagement has garnered increasing attention in tertiary education, especially within architecture programs. Data gathering for this research is based on Nasir et al. (2020) refined version of the Student Course Engagement Questionnaire (SCEQ) created by Handelsman et al. (2005) in evaluating various teaching settings (on-campus or online or hybrid courses). Four (4) factors of student engagement were suggested in the questionnaire modification, which significantly reflects the learning method:

1. Factor 1: Applied Engagement - Students acquire learning experiences that are relevant and applicable to their personal lives. It reflects the effective criteria.
2. Factor 2: Goal-Oriented Engagement – The student demonstrates diligence and determination in completing assignments and striving for academic excellence. It reflects the cognitive criteria.
3. Factor 3: Self-Disciplined Engagement – The student adheres strictly to the assigned procedures and guidelines for completing tasks. It reflects the cognitive, behavioural, and affective criteria.
4. Factor 4: Interactive Engagement – The student demonstrates active involvement in group work and tutorial sessions. It reflects the behavioural criteria.

Transformative learning and student engagement in community architecture projects are mutually beneficial, each contributing to the overall success of the learning environment. Transformative learning empowers students to cultivate the skills and knowledge necessary to excel as community architects. The four (4) factors stated above will be the fundamentals of this study questionnaire survey.

2.3 Community Architecture

Community architecture and project-based teaching are increasingly popular in Malaysian architectural education for their emphasis on community engagement, hands-on experience, and real-world problem-solving (Azhar et al., 2019; Chong et al., 2018). Community architecture prioritizes designs that reflect the needs and identity of the local community through close collaboration (Lee et al., 2016; Azhar et al., 2019). These approaches help bridge the gap between theory and practice, a common challenge among architecture graduates (Mazlan et al., 2023; Karimi & Farivarsadri, 2024), while also supporting SDG 11: Sustainable Cities and Communities.

Community-based participatory research and civic engagement offer students diverse, skill-building opportunities but can be demanding due to the dynamic, unpredictable nature of community settings. Despite the risks, the benefits—such as enhanced self-awareness and social responsibility—make these methods widely valued in higher education.

Grounded in Mezirow's (2009) transformative learning theory and student engagement frameworks (Handelsman et al., 2005; Nasir et al., 2020), such approaches promote critical reflection, ethical practice, and applied learning. Community architecture projects serve as powerful tools for transformative education, equipping students with both practical and interpersonal competencies essential for sustainable development (Azhar et al., 2019).

3.0 Methodology

This study analyzes student feedback on a collaborative learning experience with NGOs and industry experts for the Community Architecture course at UCSI University, Kuala Lumpur. A modified version of the Student Course Engagement Questionnaire (SCEQ) by Nasir et al. (2020) was used to assess engagement across cognitive, behavioral, and emotional dimensions. The survey measured participation levels and the effectiveness of theoretical and practical learning phases. Similarly, Zulkeply et al. (2021) utilized a questionnaire survey in Teaching Architecture for Tertiary Students during Covid-19 to evaluate student responses to teaching methods in architecture courses at UCSI University's School of Architecture and Built Environment.

This project aims to build a sustainable playground for underprivileged children at Yayasan Chow Kit. It is part of the Community Architecture course and involves Diploma in Architecture students in the planning and construction process. The initiative is a collaborative effort between OTCQ Architect, Yayasan Chow Kit, Malayan Cabinet, and Metal Steel Sdn. Bhd., providing both industry insight and practical support. To assess student engagement and the impact of the project, a survey was conducted using a modified version of the Student Course Engagement Questionnaire (SCEQ), with responses measured on a 5-point Likert scale—5 being 'highly participated' and 1 being 'low participation'. The result was discussed in Table 1 - that comprises all levels of engagement.

Fig.1 shows the UCSI University's four-stage curriculum structure enhances community engagement, equipping students with the skills to contribute meaningfully to their profession and society. By integrating theory and practice, the course prepares students for architectural challenges while instilling a commitment to community service. This study highlights how structured engagement enhances learning outcomes and professional development.

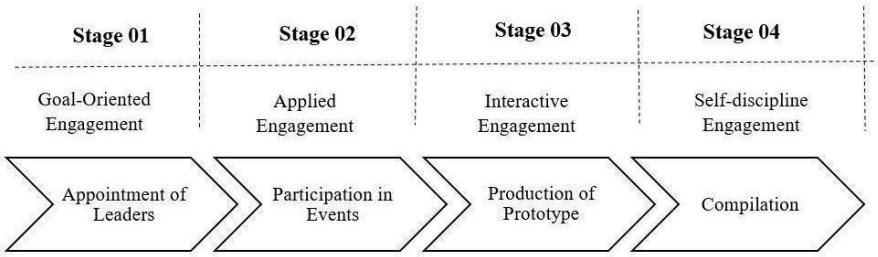

Fig. 1 : Stages involved in Community Architecture course, Diploma in Architecture, UCSI University
(Source : Author, 2023)

Survey data highlights strong student engagement, particularly during Stage 2: Participation in events, where interactive, hands-on activities proved more stimulating than passive learning. By integrating theoretical concepts with practical applications, the course fosters teamwork, collaboration, and a deeper understanding of architecture's social impact. While the study confirms the course's effectiveness, it **acknowledges limitations**, including its focus on a single university and restricted direct interaction with the target community due to privacy concerns. Despite these challenges, the course successfully connects students with professionals and community members, enriching their education and promoting civic responsibility. Its model of community engagement could be adapted by other institutions to encourage meaningful contributions to society.

4.0 Finding

The Community Architecture course at UCSI University effectively integrates theoretical and practical learning, significantly enhancing student engagement. Through collaboration with NGOs and industry experts, students develop leadership and management skills, becoming proactive change agents. Despite some limitations, the study highlights the course's role in fostering community engagement and enriching architectural education. Future research should explore similar courses at other institutions to validate these findings.

The study included 46 respondents, with 65% engagement in event participation due to interactive, real-time activities. These events bridged theory and practice, fostering critical thinking through exposure to community members, NGOs, and industry experts. Observations and student feedback highlighted significant skill growth, emphasizing the impact of experiential learning (Mazlan et al.,

2024). Embedding community engagement in architecture curricula enhances understanding of urban development, sustainability, and resource management, better preparing students for real-world challenges. Additionally, community interaction during events enhances networking opportunities and career insights while fostering teamwork and camaraderie. This shared experience builds a strong sense of community, increasing motivation and collaboration. The practical application of knowledge in real-world settings not only reinforces learning but also prepares students for professional challenges.

By incorporating interactive, community-based activities, educators can maximize engagement and create an impactful learning environment. These insights emphasize the importance of applied learning experiences in shaping well-rounded architecture students ready to address real-world challenges. Refer table 1 below.

Table 1 : Level and factors of engagement involved in Community Architecture course

		Level of Engagement				
Section A	**Level of Involvement**	**5**	**4**	**3**	**2**	**1**
Stages	Appointment of Leader	59%	15%	17%	4%	4%
	Participation in Events	65%	17%	15%	2%	0%
	Production of Prototype	61%	35%	4%	0%	0%
	Compilation	59%	30%	11%	0%	0%
Section B	**Factors of Engagement**					
Stage 1	Self – Disciplined Engagement	48%	39%	11%	2%	0%
	Interactive Engagement	52%	32%	13%	2%	0%
	Applied Engagement	57%	35%	8%	2%	0%
	Goal Oriented Engagement	61%	26%	11%	2%	0%
Stage 2	Self – Disciplined Engagement	54%	28%	15%	2%	0%
	Interactive Engagement	57%	28%	11%	4%	0%
	Applied Engagement	59%	26%	15%	0%	0%
	Goal Oriented Engagement	57%	26%	13%	4%	0%
Stage 3	Self – Disciplined Engagement	48%	30%	22%	0%	0%
	Interactive Engagement	59%	26%	11%	4%	0%
	Applied Engagement	57%	28%	13%	2%	0%
	Goal Oriented Engagement	59%	26%	13%	2%	0%
Stage 4	Self – Disciplined Engagement	67%	16%	17%	2%	0%
	Interactive Engagement	57%	24%	15%	4%	0%
	Applied Engagement	57%	24%	20%	0%	0%
	Goal Oriented Engagement	57%	22%	20%	2%	0%

(Source : Author, 2023)

The survey revealed that sixty-one (61%) percent of students were engaged in Stage 1: Appointment of Leaders, a stage closely linked to Goal-Oriented Engagement as illustrated in Fig. 3. This stage significantly benefits students by involving them in a democratic process where they select a leader to spearhead the project. This democratic approach ensures that the chosen leader represents the group's collective interests and strengths, fostering active participation and a sense of ownership among the students.

5.0 Discussion

In Stage 1, the democratic selection of a leader empowered students and significantly boosted their commitment to the project. **All students (100%) participated in the voting process**, with **61% rating their engagement at the highest level (5/5)**—demonstrating their strong belief in the importance of leadership and the power of their vote in shaping the project's direction.

This process not only fostered a sense of responsibility and ownership but also deepened students' appreciation for the role of effective leadership in meeting deadlines and ensuring quality outcomes. The act of voting created a sense of accountability, as students understood that their choice would directly influence the project's flow and success.

Beyond leadership selection, this stage offered practical opportunities for students to develop real-world competencies. Through discussions, strategic planning, and team coordination, students naturally built skills in leadership, decision-making, and collaboration—skills that are essential for thriving in future professional environments.

In summary, the Appointment of Leaders stage is a foundational component that significantly benefits students by engaging them in a democratic decision-making process. This stage not only contributes to the success of the current academic project but also prepares students for future professional roles. By developing key skills and fostering a sense of responsibility, Stage 1 ensures that students are well-equipped for both academic achievements and long-term career success.

Fig. 2 : Goal-Oriented Engagement (a) The leaders chosen via election to carry the work tasks
(b) Empowerment of the students to lead the project for the semester.
(Source : Authors, 2024)

Students gained a well-rounded learning experience through targeted activities beyond the classroom. Participation data shows that **59% of students rated their involvement at the highest level (5/5)**, and **36% scored it at 4/5**, reflecting strong engagement from those directly involved—mainly the event team responsible for organizing outreach efforts. This selective participation was by design, as only certain groups were assigned to lead activities such as fundraising and visits. **Less than 15% of students remained neutral or uninvolved**, typically those without a direct role.

Despite this, the impact extended across the cohort. Sharing sessions with peers and guest speakers promoted reflective thinking and exposed students to diverse architectural and social perspectives. Meanwhile, the toy-making crowdfunding project (see Fig. 3) offered practical learning in design, creativity, marketing, and resource management.

Visits to kindergartens and orphanages deepened students' empathy and understanding of real community needs. These engagements helped them see the societal role of architecture, encouraging purpose-driven design. The activities collectively embodied **Applied Engagement**, fostering accountability, organizational skills, and real-world readiness—while reinforcing a commitment to social impact.

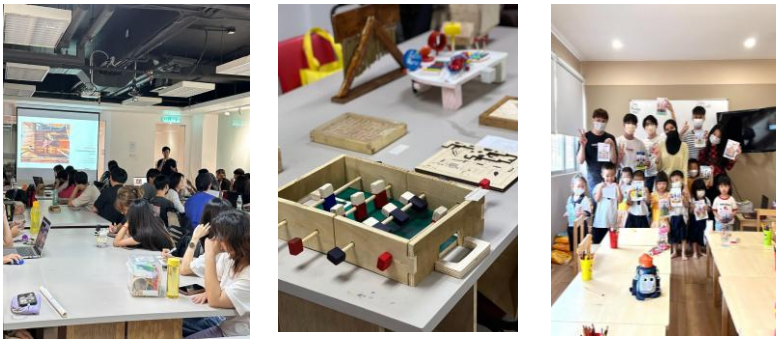

Fig.3 : Event Participation by the students (a) Sharing session of playscape by Collab, NGOs organization (b) Toy making for the crowdfunding event (c) Visitation to the kindergarten.
(Source : Authors, 2024)

The Interactive Engagement component in the Production stage highlights meaningful student involvement through design, prototyping, and real-world collaboration. While **59% of students rated their participation at the highest level (5/5)** and **26% at 4/5**, the data suggests that engagement was concentrated among students who were directly involved in industry visits or assigned leadership roles. This stage required students to actively consult with professionals—architects, suppliers, and material experts—to evaluate the feasibility of their designs. These interactions enriched the learning process, offering insights into material selection, cost considerations, and construction limitations. Students reported gaining a deeper understanding of industry practices and felt more confident applying technical knowledge in practical contexts. However, the level of engagement varied. Due to the limited number of site visits and constraints in accommodating all students for direct professional interaction, participation was uneven. In many cases, only group leaders attended external meetings and visits, which affected the broader class's exposure and full involvement. Despite these limitations, students involved in these tasks reflected positively on the value of expert feedback and appreciated the opportunity to network and communicate with industry professionals.

As illustrated in Fig. 4, these professional consultations helped students refine their designs and develop more innovative, industry-relevant solutions. The experience not only enhanced technical and problem-solving skills but also instilled a greater sense of confidence, professionalism, and readiness for future architectural challenges.

Fig. 4 : Interactive Engagement with an industrial specialist (a) Tutorial session with Ar. Oscar Tan, OTCQ Architect (b) Materials selection with Mr. Zul, Malayan Cabinet (c) Stainless steel construction, Ms. Mok, Metal Steel Sdn. Bhd.
(Source : Authors, 2024)

In the final stage, students exhibited **Self-Discipline Engagement**, with **67% rating their participation at 5/5**, **16% at 4/5**, and **11% at 3/4**. However, **4% rated their participation at 2/5**, reflecting lower engagement. This stage required strong time management and commitment, with students installing prototypes, preparing reports, and presenting their work. Participation was affected by **exam schedules for lower-semester students** and **limited public turnout** at the university-based exhibition. This reduced opportunities for interaction and feedback, lowering the overall engagement. Despite this, reflective sharing sessions allowed students to deepen their learning by discussing challenges and solutions, reinforcing their knowledge.

Ultimately, the exhibition still demonstrated students' ability to manage tasks independently and connect emotionally with their work, underscoring the importance of self-discipline in completing complex projects.

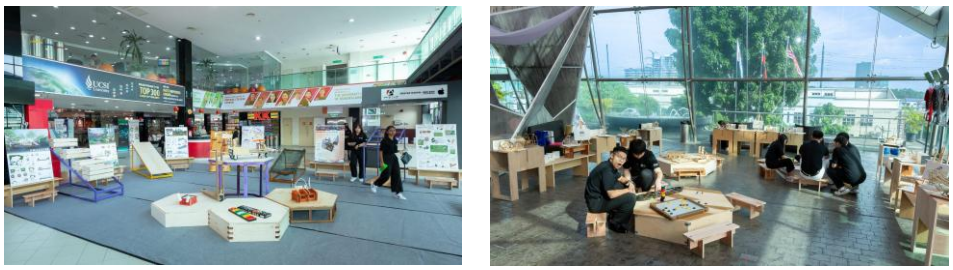

Fig. 6 : Self-discipline Engagement (a) Final exhibition setup for the playscape (b) The furniture display to attract the visitors to the exhibition.
(Source : Authors, 2024)

6.0 Conclusion & Recommendations

UCSI University's Diploma in Architecture program demonstrates the transformative potential of integrating community engagement into architectural education, aligning with Sustainable Development Goals (SDG 4: Quality Education and SDG 9: Industry, Innovation, and Infrastructure). By embedding real-world, collaborative projects into the curriculum, the program bridges the gap between theory and practice, allowing students to address pressing societal and environmental challenges while gaining valuable technical and interpersonal skills.

The findings of this study affirm the program's effectiveness. Based on a 5-point linked observation scale, Stage 4 (prototype production) recorded the highest level of student participation, with 67% scoring 5/5, indicating strong engagement in the hands-on construction phase. Earlier stages—Stage 1 (leadership appointment) at 61%, and Stages 2 and 3 (planning and coordination) at 59%—also demonstrated substantial participation, though with slightly lower engagement. Notably, Stage 1 was the only stage where a small group (4%) scored at the lower end (1/5 or 2/5), attributed to the grouping of students from different semesters, which led to limited familiarity and initial hesitation in leadership roles.

Despite variations in commitment across stages, over 50% of students scored 5/5 in all activities, indicating strong interest and motivation toward community-based learning. This suggests that while full commitment may still be developing, the approach has successfully sparked student engagement and represents a solid foundation for deeper experiential learning in future cohorts.

Collaborations with NGOs and industry experts throughout the project exposed students to real-world constraints and multidisciplinary teamwork. This structured experience enhanced their problem-solving abilities, tool proficiency, teamwork, and leadership skills, equipping them for socially responsible architectural practice. Furthermore, the integration of diverse cultural and community contexts strengthened students' adaptability and empathy—qualities essential for sustainable development initiatives. Looking ahead, future research may investigate the long-term impact of early community engagement on career trajectories and ethical commitment. Incorporating these practices more deeply into theoretical courses could further balance academic rigor with practical relevance.

In summary, UCSI University's community-driven, practice-based learning model provides a robust platform for nurturing innovation, sustainability, and civic responsibility. By fostering critical reflection and real-world engagement, the program not only prepares students

to meet modern architectural challenges but also empowers them to shape resilient, inclusive, and sustainable communities, directly contributing to the goals of SDG 4 and SDG 9.

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Paper Contribution to Related Field of Study

The research offers several contributions, with its findings enhancing the understanding of students' social and self-development in higher education, particularly in shaping and contributing to social welfare needs. The study also aligns with the achievement of SDG 4 (Quality Education) and SDG 11 (Sustainable Cities and Communities), focusing on fostering equal education opportunities and building sustainable communities.

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