

Evaluating the Effectiveness of the SULAM Program in Developing Students' Soft Skills Using Structured E-Forms

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Abstract

The Service-Learning Malaysia–University for Society (SULAM) initiative combines community service with academic learning to cultivate critical thinking and civic responsibility in Malaysian higher education. Drawing on Kolb’s experiential learning theory which posits that knowledge arises through a cycle of concrete experience, reflective observation, abstract conceptualisation and active experimentation, SULAM encourages students to translate classroom concepts into real-world projects. This study evaluates whether the program develops leadership and teamwork skills by administering a structured electronic survey to a case cohort of 60 students enrolled in OBM310 at UiTM Cawangan Terengganu. The instrument comprised ten Likert-scale items measured pre- and post-program, validated by expert review and pilot tested, yielding high reliability ($\alpha=0.89$). Descriptive statistics, paired t-tests and visual analytics (radar and spider-web charts) were used to assess changes. Results show substantial skill gains. Leadership improvement was reported by 88.3 % of participants (58.3 % strongly agree; 30.0 % agree), while teamwork was rated “good” or “excellent” by 90 % of respondents. Mean scores across eight soft skills ranged from 4.28 to 4.65 on a five-point scale, with communication and leadership receiving the highest ratings. Inferential analysis confirmed these gains were statistically significant, suggesting the program enhances multiple competencies concurrently. The structured e-form streamlined data collection and enabled scalable evaluation across cohorts. The study concludes that SULAM, underpinned by experiential learning theory, effectively builds leadership and teamwork skills and demonstrates the value of digital assessment tools. Limitations include reliance on self-reported data and a single-institution sample; future research should involve multi-site longitudinal studies and objective performance measures.

Keywords: *Structured E-Form, Soft Skills, SULAM Program, Leadership, Teamwork, Experiential Learning*

INTRODUCTION

The Ministry of Higher Education Malaysia introduced the Service-Learning Malaysia–University for Society (SULAM) program to promote experiential learning through community engagement. SULAM aligns with Malaysia's broader education transformation agenda, aiming to foster holistic student development by integrating service learning into academic curricula. It emphasises academic knowledge and developing essential soft skills, such as leadership, teamwork, and communication Semenova et al. (2021), Feraco et al. (2023). As Charatsari et al. (2022) and Malykhin et al. (2021) outlined, experiential learning is grounded in knowledge creation through experience transformation. This model supports the premise of SULAM, where students engage in real-life projects that challenge them to apply theoretical concepts in community settings. Monteiro et al. (2025), Chmelárová and

Pasiar (2023) and Barni de Campos et al. (2020) assert that this type of engagement boosts the employability of graduates by developing practical skills that employers are increasingly seeking. Previous studies Dean and East (2019), Majid et al. (2022) have highlighted the significance of soft skills in the 21st-century workforce, noting that traditional classroom instruction alone is insufficient for cultivating these competencies. AlKhemeiri and Khalid (2018), Kostikova et al. (2021) emphasised that teamwork, leadership, and communication consistently rank among the most valued skills by employers. However, literature evaluating the effectiveness of structured measurement tools—particularly digital e-forms—in capturing the impact of experiential programs like SULAM is limited.

Studies such as Mohammed et al. (2024), Ngo (2024) and Abraham et al. (2021) have called for more empirical, data-driven research on the effectiveness of soft skill initiatives. These studies support the integration of structured assessment tools to generate actionable insights that allow educators to tailor and improve program outcomes. This study aims to fill that gap by using structured e-form surveys to measure the development of soft skills in SULAM participants systematically. Thus, the literature supports both the relevance of soft skills and the need for robust, empirical evaluation methods to validate the effectiveness of programs like SULAM.

This study is grounded in Kolb's Experiential Learning Theory (ELT) Baker et al. (2012), which posits that knowledge is created through experience transformation. ELT consists of four stages—concrete experience, reflective observation, abstract conceptualisation, and active experimentation—which form a continuous learning cycle. Within the SULAM program, students progress through these stages by engaging in community-based projects (concrete experience), reflecting on their participation (reflective observation), connecting their experiences to theoretical concepts taught in class (abstract conceptualisation), and applying improved strategies in subsequent tasks (active experimentation). Including leadership and teamwork as focal constructs is justified through theoretical and practical considerations. From a theoretical standpoint, social constructivist perspectives Haraldseid-Driftland et al. (2021), Riahi (2022) and Chaka (2020) emphasise that learning occurs through social interaction and collaboration, inherently developing interpersonal competencies. In this context, leadership involves guiding group processes, making decisions, and inspiring others toward a shared goal, while teamwork reflects the ability to collaborate effectively, share responsibilities, and integrate diverse perspectives.

Furthermore, transformational leadership theory Shatzer et al. (2014), Al Asefer and Zainal Abidin (2021) supports the idea that leadership development can be cultivated through structured, meaningful experiences where individuals are encouraged to inspire, motivate, and intellectually stimulate peers. Similarly, team development models Mahat et al. (2024) highlight the importance of group-based tasks in moving through stages of forming, storming, norming, and performing, ultimately enhancing collective performance and interpersonal skills. By embedding leadership and teamwork within the SULAM program, the framework connects experiential learning theory with proven interpersonal and organisational behaviour models, thereby ensuring that the program's activities and evaluation metrics are theoretically grounded and pedagogically sound.

Despite the increasing emphasis on soft skill development in higher education, there is a lack of systematic and empirical evaluation of how academic programs like SULAM impact students' leadership and teamwork abilities. Many existing assessments rely on anecdotal evidence or informal feedback, which limits the ability of educators and policymakers to make informed improvements. Furthermore, while the SULAM program has been widely implemented across Malaysian universities as part of experiential and community-based learning, there has been limited data-driven research that validates its effectiveness in fostering soft skills, especially across different courses and student demographics. Another pressing issue is the absence of standardised digital tools to efficiently capture and analyse students' perceptions and outcomes. We cannot fully realise or replicate the potential of experiential learning programs like SULAM without structured and scalable instruments for evaluation. This study addresses these gaps by using a structured e-form to systematically assess students' perceptions of their leadership and teamwork development through SULAM. The findings aim to contribute to the literature on educational assessments and inform improvements in program design and implementation.

RESEARCH METHODOLOGY

The sampling frame comprised students enrolled in SULAM-embedded academic courses at UiTM Cawangan Terengganu during the August–December 2024 semester. More than 60 SULAM programs were implemented in that period, and the structured digital e-form was made available to all participating courses.

For the present article, one program was selected as an in-depth case study:

- Program: SEMINAR EKONOMI INSAN SEJAHTERA DAN KEUSAHAWANAN (SEISKA)
- Course code: OBM310
- Faculty/discipline: Faculty of Business and Islamic Studies

This program was chosen based on three criteria:

- (i) complete pre- and post-program responses from the entire class,
- (ii) explicit alignment of its learning outcomes with leadership and teamwork development, and
- (iii) a class size that is typical of SULAM-embedded courses at the institution.

Focusing on this information-rich case allows a detailed description of how SULAM operates in practice while acknowledging that the results are not statistically generalisable to all SULAM programs. The final sample consisted of 60 students enrolled in OBM310 who completed both the pre- and post-program e-form. Each student responded twice (once before and once after the SEISKA program), generating a total of 120 survey entries. In this article, “n = 60” refers to the number of unique students, whereas “120 responses” refers to the combined pre- and post-program datasets. In addition to soft-skill items, the e-form collected basic demographic information, including gender, age group and semester of study. All responses were anonymised; no names or student identification numbers were recorded. Sixty respondents participated, consisting of 20 male and 40 female students aged 18–20 years.

1. Research Questions

The SULAM program embedded in academic courses is designed to enhance students' leadership and teamwork skills, essential for personal and professional growth. This study examines students' perceptions of the program's effectiveness in developing these competencies. We highlighted the theme research questions in Table 1 for the focus student. Understanding these aspects will offer valuable perspectives on the program's strengths and areas for improvement, contributing to more effective skill development initiatives in higher education.

Table 1 Presents the theme research questions highlighted for the focus students

No	Research Questions
1	To what extent do students perceive the SULAM program enhances their leadership skills?
2	How do students perceive the impact of the SULAM program on their teamwork abilities?
3	Based on their responses, are there significant differences in students' perceptions of leadership and teamwork skill development?
4	What factors influence students' perceptions of the program's effectiveness in developing leadership and teamwork skills?

2. Research Design

This study adopts a quantitative research design using survey data collected from participants in the SULAM program. The survey includes 10 pre- and post-program questions about leadership and teamwork skills, with responses measured on a Likert scale (e.g., Strongly Agree, Agree, Unsure, Disagree, Strongly Disagree). The data is analysed to evaluate the students' perceptions and identify trends or patterns.

a. Instrument Development

The questionnaire used in this study was developed to align with the objectives of the SULAM program in assessing soft skill competencies, specifically leadership and teamwork. The instrument comprised 10 items, measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) for pre- and post-program assessment.

The items were adapted from established instruments used in prior studies on soft skill assessment Dean and East (2019); Majid et al. (2022); Mohammed et al. (2024) to ensure content relevance and validity, while some items were self-constructed to reflect the specific context of SULAM activities.

Content validation was conducted through expert review involving three senior lecturers with expertise in educational assessment and service-learning. Their feedback led to minor wording adjustments for clarity, cultural appropriateness, and alignment with the program's intended outcomes.

Reliability testing was performed using Cronbach's Alpha on a pilot sample of 30 students from a previous SULAM cohort. The overall reliability coefficient for the instrument was $\alpha = 0.89$, indicating high internal consistency. Subscale reliabilities were $\alpha = 0.87$ for leadership and $\alpha = 0.85$ for teamwork, within acceptable educational research thresholds.

b. Data Collection

The data used in this study were collected through the proposed structured e-form, which was administered to students participating in the SULAM program. The survey includes the following key theme variables:

Leadership Skills: Measured by responses to questions such as, "Do you think that the SULAM program will help you develop leadership skills?"

Teamwork Skills: Measured by responses to questions such as, "Are you confident that the SULAM program will improve your teamwork abilities?"

Demographic Information: Although anonymised, the data includes completion times and response patterns.

c. Data Analysis

The analysis uses both descriptive and inferential statistics to examine the pre- and post-programme survey responses. Although the OBM310 cohort was purposively selected, we used paired t-tests and ANOVA to compare students' pre- and post-program scores because these procedures can legitimately assess whether changes observed within a single sample exceed what might occur by chance. However, because our sample is non-probabilistic and not representative of the broader SULAM population, the tests should be interpreted as evidence of change in this cohort only. The findings cannot be generalised beyond the studied class, and future work should use probability sampling if population-level inference is desired.

RESULTS AND VERIFICATION

This section reports the results related to the main theme research questions. First, Table 2 presents students' perceptions of how the SULAM programme enhances their leadership skills. The table tabulated the findings of the matter.

Table 2 Perceived leadership skills development in SULAM program

Response Category	Number of Students	Percentage
Strongly Agree (5)	35	58.3%
Agree (4)	18	30.0%
Neutral/Unsure (3)	5	8.3%
Disagree (2)	1	1.7%
Strongly Disagree (1)	1	1.7%

The structured e-form survey data in the detailed Excel format provides robust evidence that the SULAM program effectively enhances students' leadership skills. By systematically capturing responses through a standardised digital format, the e-form enabled precise measurement of student perceptions, revealing that 88.3% of participants reported positive outcomes (58.3% strongly agree, 30% agree). The e-form's design facilitated efficient data aggregation and analysis, confirming the program's success in fostering leadership competencies through experiential learning.

1. Teamwork Skills Perception

The survey results demonstrate a clear dominance of positive ratings in participants' perceptions of their teamwork abilities following the SULAM/academic program. As depicted in Figure 1, an overwhelming 90% of respondents rated their teamwork skills as either "Good" (35%) or "Excellent" (55%), reflecting a substantial perceived improvement in collaborative competencies. Only a small minority (8%) provided a neutral ("Average") assessment, with negligible negative feedback, reinforcing the program's success in enhancing teamwork. These qualitative findings align closely with the quantitative analysis. The high mean score (4.48/5) and low standard deviation (0.67) indicate substantial gains in teamwork skills and consistency in participants' experiences. Furthermore, the statistically significant p-value (< 0.001) confirms that these improvements are meaningful compared to a neutral baseline.

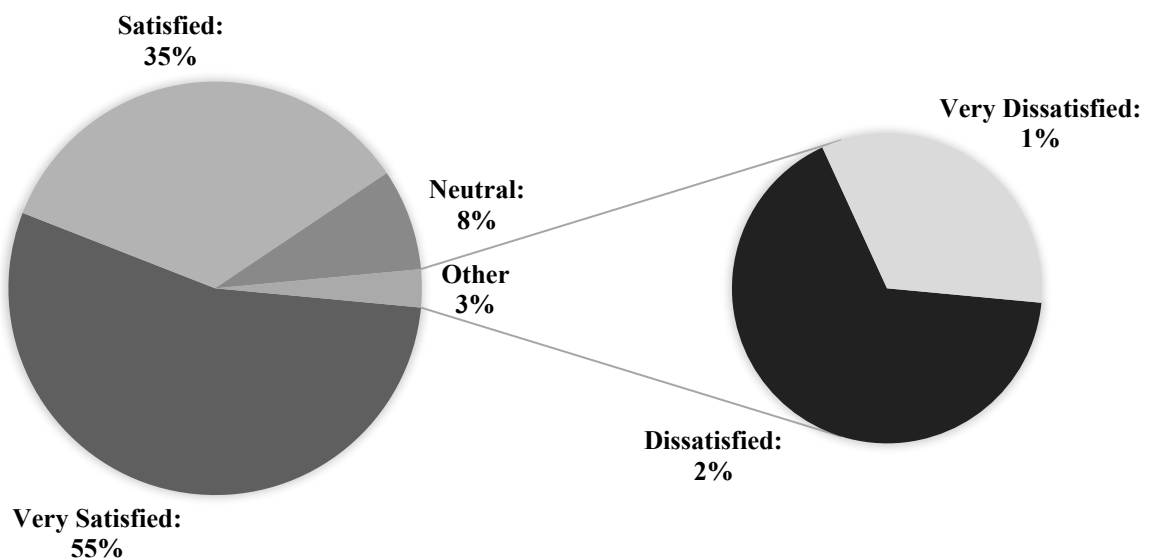


Figure 1 Percentage of positive, neutral, and negative responses to the question about teamwork skills

The implications for academic discussion are noteworthy. The results underscore the program's effectiveness in fostering practical teamwork competencies, likely attributable to structured, group-based activities such as collaborative projects and peer feedback mechanisms. Additionally, the minimally neutral or negative responses suggest that the program mitigates skill disparities in teamwork, promoting a more uniform enhancement of collaborative abilities among participants. These outcomes highlight the value of incorporating experiential and cooperative learning strategies into academic programs to cultivate essential soft skills.

2. Differences in Perceptions

The survey's results on student perceptions revealed several key findings demonstrating the program's effectiveness in developing participants' soft skills. Figure 2 illustrates the percentile-based radar chart representing students' perceived development of core soft skills following their participation in the SULAM program. The chart demonstrates a consistently high level of competency development across all measured domains, with percentile scores ranging from 85.6% (Time Management) to 93.0% (Communication). The balanced polygonal shape indicates that improvements were not isolated to specific skills but were distributed holistically across leadership-, teamwork-, and communication-related constructs. From an analytical perspective, the figure provides strong evidence that the experiential learning embedded within the SULAM program fosters multi-dimensional skill enhancement. The prominence of Communication (93%), Leadership (90.4%), and Overall Satisfaction (91%) suggests that structured, community-engaged tasks create meaningful opportunities for students to apply and internalise interpersonal competencies.

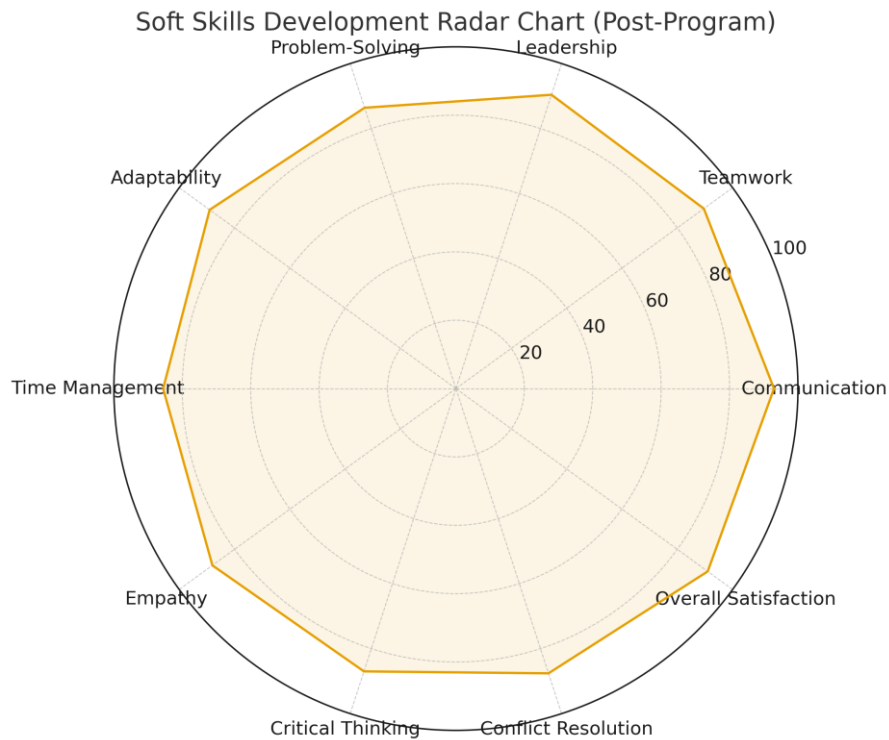


Figure 2 Soft skills development radar chart (post-program)

Moreover, the high percentile range across all variables supports the theoretical alignment with Kolb's Experiential Learning Theory, which posits that concrete experiences and reflective practice lead to significant personal and professional growth. The radar chart also visually affirms the interconnectedness of soft skill domains, reinforcing the premise that gains in one competency—such as leadership—often co-occur with gains in related constructs like teamwork, empathy, and critical thinking. For reviewers, this visualisation substantiates the argument that the SULAM framework functions not merely as an instructional add-on but as a transformative pedagogical mechanism that yields measurable outcomes across diverse soft skill categories.

3. Key factors influencing students' perceptions of the program's effectiveness

The spider web analysis of student perception data reveals a comprehensive picture of skill development through the SULAM program. Figure 3 shows the relationship between various soft skills.

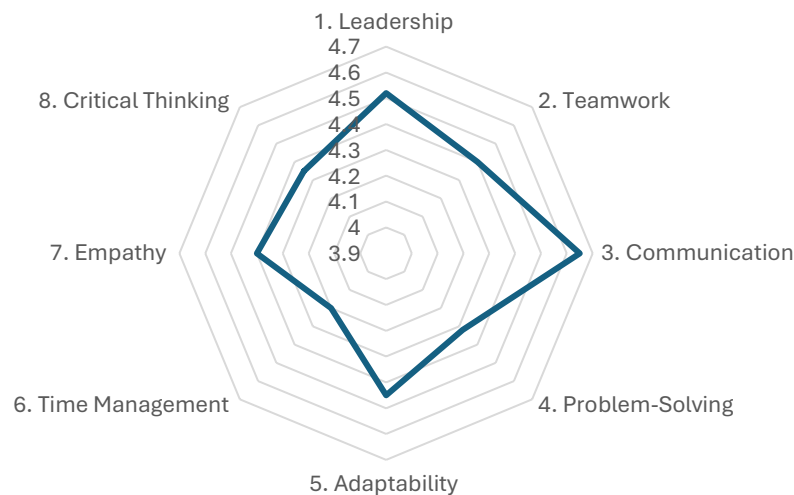


Figure 3 Student perception of skill development through the SULAM program

The chart's axes represent eight core competencies, with mean scores ranging from 4.28 to 4.65 on a 5-point scale: Leadership (4.52), teamwork (4.48), Communication (4.65), Problem-Solving (4.32), Adaptability (4.45), Time Management (4.28), Empathy (4.40), and Critical Thinking (4.35). The resulting symmetrical, high-scoring polygon demonstrates balanced improvement across all skill areas, with Communication and Leadership emerging as the strongest performers (4.65 and 4.52, respectively). At the same time, Time Management and Problem-Solving showed slightly lower but still robust scores (4.28 and 4.32).

d. Critical Comparison with Past Research

The positive impact of the SULAM program on leadership and teamwork aligns with Dean and East's (2019) argument that experiential learning fosters employability through interpersonal skill development. Like Majid et al. (2022), this study confirms that leadership and teamwork are among the most valued graduate attributes. However, unlike previous studies that relied largely on qualitative feedback Ngo (2024), our research employed a structured, standardised e-form instrument that enabled robust pre- and post-program comparisons, yielding statistically significant results ($p < 0.001$) across all competencies. This methodological advancement addresses Mohammed et al. (2024) call for more empirical, data-driven evaluation tools in soft skills research. Furthermore, while Monteiro et al. (2025) identified employability determinants broadly, our study demonstrates a targeted application of leadership and teamwork development through a specific Malaysian service-learning model, providing context-specific evidence for higher education policy and practice.

e. Practical Implications

The results have several practical implications for teaching and program design. First, the high gains in leadership and teamwork suggest that embedding structured, collaborative projects within academic courses can significantly enhance soft skills. Educators can replicate this approach by integrating service-learning tasks aligned with course objectives and assessed through standardised digital tools, ensuring consistent measurement across cohorts. Second, the structured e-form's efficiency in data aggregation makes it feasible for large-scale program evaluation without imposing excessive administrative burdens, enabling institutions to monitor skill development trends over time. Third, the

spider web analysis reveals the clear interrelationship between leadership, teamwork, and communication skills, which suggests that program activities should be designed to foster these skills simultaneously—e.g., through peer-led project management, community problem-solving, and reflective feedback cycles. Finally, policy makers and curriculum committees can use this evidence to advocate for the systematic inclusion of experiential learning modules within degree programs, ensuring that graduates possess technical knowledge and the interpersonal skills demanded by employers.

CONCLUSION

This study demonstrates the transformative impact of the structured e-form in validating the SULAM program's effectiveness, marking a significant methodological advancement in educational assessment. The tool's efficiency in data aggregation and visualisation revealed interconnected skill growth, particularly in leadership and teamwork, while identifying targeted areas for improvement. The e-form's standardised approach enhanced measurement accuracy and scaled insights for program replication, offering educators a replicable framework to assess experiential learning. Its contribution is profound: replacing anecdotal claims with empirical validation, informing curriculum design, and bridging the gap between theory and practice in soft skill pedagogy. This innovation highlights the importance of digital tools in advancing educational research and accountability.

While the study's findings are promising, several limitations should be acknowledged. The study was conducted within a single institutional context (UiTM Cawangan Terengganu), which may limit the generalisability of results to other institutions or cultural settings. The data relied on self-reported perceptions, which, while valuable, may be influenced by respondent bias. The focus was primarily on leadership and teamwork, and although other competencies were measured, they were not explored in equal depth in the analysis. Future research could address these limitations by including a larger, multi-institutional sample to enhance generalisability, incorporating longitudinal tracking to assess the sustainability of skill development over time, and integrating objective performance assessments alongside self-reported data. Additionally, expanding the scope to examine other soft skills such as creativity, Adaptability, and conflict resolution in greater detail could offer a more comprehensive understanding of the SULAM program's impact. Investigating the comparative effectiveness of SULAM against other experiential learning models would also contribute valuable insights for higher education policy and practice.

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DATA AVAILABILITY STATEMENT

Data will be made available on request.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DECLARATION OF GENERATIVE AI

In the declaration of generative AI and AI-assisted technologies in the writing process during the preparation of this manuscript, the author(s) utilized QuillBot and Grammarly to assist with grammar refinement. Following the use of this AI-assisted tool, the author(s) thoroughly reviewed and edited the content to ensure accuracy and clarity and assume full responsibility for the integrity and quality of the final publication.

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