

Service-Learning Processes and Student Learning Outcomes: Evidence from Malaysian Higher Education

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DOI: <https://doi.org/10.47772/IJRISS.2026.100800979>

Received: 05 September 2026; Accepted: 10 September 2026; Published: 22 September 2026

ABSTRACT

Higher education institutions have started to use Service-learning as a teaching method which unites academic studies with purposeful community service work (Saeed & Ahmed, 2021). The Service-Learning Malaysia–University for Society program operates in Malaysia through its Service-Learning Malaysia–University for Society program which merges organized community work with academic studies and student evaluation (Yusof et al., 2021). Service-learning programs generate positive results according to past studies but researchers have not studied how service-learning process quality affects different aspects of student learning results in Malaysian universities (Yusof et al., 2020). The research investigates how service-learning activities affect student achievement in Malaysian universities through their participation in the SULAM project. A quantitative cross-sectional survey was conducted with 115 undergraduate students. The research team gathered data through a modified five-point scale version of the Process and Outcomes from Service-Learning questionnaire which features 18 items to assess service-learning activities and 14 items to evaluate student learning results. The research team applied descriptive statistics and reliability analysis and Pearson's correlation and multiple regression to process the collected data. The research team discovered that students recognized both service-learning activities and their academic achievement at elevated levels. The two scales demonstrated excellent internal consistency, with Cronbach's alpha coefficients of .957 and .958, respectively. Service-learning processes established a powerful positive connection with all learning outcomes which students achieved. The research team used multiple regression analysis to show that the six service-learning process dimensions explained 69.9% of the total learning outcome variability. The research identified goals and objectives together with reflective activities as main positive predictors but preparation and support reached the level of statistical significance. The research shows that students who achieve success in SULAM need to complete community service work while following well-developed projects which work together with academic programs and reflective practice activities. The study presents data which proves Malaysian universities require better SULAM program development and assessment methods for their higher education institutions.

Keywords: Service-Learning; SULAM; Student Learning Outcomes; Service-Learning Process; Reflection; Higher Education; Malaysia; POSL

INTRODUCTION

Higher education now utilizes service-learning as an effective educational method which combines academic work with community service activities. The program operates under specific educational goals which let students use their subject knowledge to solve real problems that affect their local community. The process requires students to perform reflection work which helps them establish connections between their volunteer activities and their academic learning and individual development. The Process and Outcomes from Service-Learning development study shows service-learning as a course-based educational experience which lets students learn through community service activities and develop critical thinking abilities about their service work. The Service-Learning Malaysia–University for Society initiative operates this framework in Malaysia through its program which connects academic programs to the national higher education reform to develop

student civic awareness and social duty (Govindaraju, 2025). A substantial body of research has demonstrated that service-learning can contribute to multiple dimensions of student development. For example, a meta-analysis of 62 studies involving 11,837 students found positive effects on attitudes toward self, attitudes toward school and learning, civic engagement, social skills, and academic performance (Celio et al., 2011). The analysis further showed that recommended service-learning practices—including curriculum linkage, student voice, community involvement, and reflection—were associated with more favourable outcomes and similarly reported positive effects on social understanding, personal insight, and cognitive development among college and university students.

The research findings show that service activities do not directly determine the academic results which students achieve. The educational value of service-learning experiences depends on how well the program delivers its content and which elements it includes. Service-learning requires more than student community participation for it to achieve its educational goals. The learning experience in this project depends on its design elements and its connection to academic materials and students' reflection opportunities and their readiness for support and their exposure to different viewpoints. The POSL development study demonstrates that service-learning outcomes depend on students who experience valuable service-learning activities.

The Malaysian higher education sector faces this particular problem which affects its entire educational system. Service-Learning Malaysia–University for Society (SULAM) operates as an academic program which students can complete for credit while they apply their academic knowledge and abilities to help local communities. SULAM explicitly requires students to perform organized service work while they learn through reflection to reach their specified educational targets. The SULAM program provides an ideal setting to study service-learning methods which lead to better student learning achievements.

The current research studies in Malaysia have started to show evidence about how SULAM benefits the nation. The study about Malaysian university students demonstrated that SULAM produces beneficial results which enhance students' knowledge and understanding together with their development of functional work abilities and their professional ethical conduct. Research studies have investigated how students learn and participate in their communities while developing civic competencies and public opinions about what makes SULAM projects succeed. The qualitative research demonstrates that Malaysian students experience service-learning as an active learning method which unites their academic work with their mandatory course activities and their volunteer work in the community.

The research needs to solve its main empirical challenge about which service-learning process elements create the most impact on student learning results. The current body of Malaysian SULAM research focuses on three main areas which include program success evaluation and student learning outcomes and implementation process assessment. The relationship between various service-learning components and student learning results needs more research when researchers apply an established service-learning assessment system.

The POSL questionnaire developed by G et al. (2025) functions as the primary instrument for the current research to resolve this particular problem. The POSL assessment tool exists to evaluate student learning results through their service-learning activities together with their educational achievements. The final version of this document includes 18 process items together with 14 outcome items, which divide the outcome section into four main areas: intellectual, social, civic and intrapersonal dimensions.

The research analyzes how service-learning activities affect the academic achievements of undergraduate students who join SULAM. The research has three main goals which guide its overall direction. The research needs to find out what students believe about the service-learning activities which took place during the SULAM project. The next goal is to find out what students learned through their participation in the SULAM project. Last goal is the research needs to find out how different elements of service-learning activities affect student learning achievements.

The research will identify the connections between these elements to generate proof which will enhance teaching methods and develop SULAM in Malaysian universities (Mohamad et al., 2024; Yusof et al., 2020). The research findings enable policymakers to develop better implementation rules which will support uniform

quality standards for all SULAM operations (Wahab, 2024). The research study adds value to academic resources through its exploration of how national execution rules affect the teaching methods which students need to build their development and community sustainability. The study evaluates how particular service-learning elements affect student development in four areas, which include intellectual, social, civic and intrapersonal growth. The research findings will enable universities to create systematic quality evaluation methods which will help them build better SULAM programs and develop stronger ties with their local communities.

LITERATURE REVIEW

Service-Learning and Student Learning

Service-learning combines community engagement with academic instruction and is distinguished from conventional community service by its explicit pedagogical objectives. It requires students to apply disciplinary knowledge to authentic community-based contexts while critically reflecting on their experiences. Accordingly, its educational value derives not from service activities alone, but from the purposeful integration of community engagement, academic content and structured reflection.

Evidence from previous research generally supports the educational value of service-learning. For example, the meta-analysis by Celio et al. 2011) demonstrated positive effects across academic, social, civic and personal domains, while also indicating that adherence to established service-learning practices was associated with stronger outcomes. Similarly, Yorio & Ye 2012) identified positive effects on cognitive development, personal insight and understanding of social issues. These findings provide an important basis for examining not merely whether service-learning produces positive outcomes, but whether specific features of the service-learning experience are associated with those outcomes.

Service-Learning Processes

The POSL framework provides a particularly relevant approach for examining service-learning processes. During its development, the authors reviewed research on good service-learning practices and identified process characteristics considered important for achieving intended outcomes. These included linking service to curriculum, meaningful service, exposure to diversity, reflection, preparation and support, instructor commitment and other aspects of the service-learning experience. The final 18-item process component was empirically supported through exploratory and confirmatory factor analyses. The validated structure included Goals and Objectives, Meaningful Service, Challenge and Interest, Exposure to Diversity, Reflective Activities, and Preparation and Support. This structure is particularly appropriate for the present study because it shifts attention from participation alone toward how students experience the service-learning project.

Linking Service-Learning to the Curriculum

Curricular integration is a central characteristic of effective service-learning. Students should be able to recognise connections between the community activity and the academic goals of their course. Evidence from the service-learning literature indicates that linking service experiences with curriculum is associated with stronger student outcomes. Within SULAM, this principle is particularly important because SULAM is explicitly positioned as a course-based and credit-bearing educational experience. Its implementation is intended to enable students to apply knowledge and skills from their academic discipline to community problems.

Meaningful Service and Authentic Engagement

Meaningful service requires students to perceive that their activities have genuine value for the community rather than simply fulfilling an academic requirement. Authentic engagement can create opportunities for students to apply knowledge, understand community needs and recognise the relevance of their disciplinary learning. The POSL framework therefore includes meaningful service as a distinct process dimension.

Malaysian SULAM research similarly emphasises the integration of academic knowledge with community needs and real-world application.

Challenge, Interest and Higher-Order Thinking

Service-learning is distinct from conventional classroom learning in that it requires students to engage with authentic situations and address community needs that may lack predetermined solutions. These experiences expose students to problems necessitating the application of academic knowledge, decision-making, and responses to circumstances outside the classroom environment. Within the POSL framework, Challenge and Interest constitute a significant dimension of the service-learning process, as meaningful service experiences should offer activities that are sufficiently challenging, stimulating, and engaging (Ngai et al., 2024). Including this dimension acknowledges that the quality of student engagement with service activities can influence the extent to which meaningful learning is achieved.

The challenging aspects of service-learning are closely linked to opportunities for higher-order thinking. When students encounter unfamiliar community situations, they must analyze problems, evaluate alternative approaches, apply knowledge in new contexts, and develop appropriate solutions. These processes require students to move beyond passive information acquisition or recall, instead utilizing knowledge in ways that respond to authentic situations. Previous research has identified positive associations between service-learning and students' cognitive and personal development, indicating that well-designed service experiences can facilitate the integration of academic knowledge with practical and social experiences (Yorio & Ye, 2012). Additionally, meta-analytic evidence demonstrates that service-learning can enhance academic and learning-related outcomes when the experience is meaningfully connected to students' educational objectives (Celio et al., 2011).

The importance of challenge and intellectual engagement is particularly relevant in the context of SULAM. As a Malaysian higher education initiative, SULAM connects academic learning with community engagement and requires students to apply knowledge and skills in addressing identified community needs. Recent Malaysian research indicates that students perceive service-learning as an experiential learning approach that combines academic learning with serving the community (Diong et al., 2025). This connection between academic content and authentic community contexts may create learning situations in which students are required to adapt what they have learned to specific problems, consider different perspectives and determine appropriate responses. Consequently, the community context of SULAM can provide opportunities for students to develop analytical, evaluative and problem-solving capabilities alongside their disciplinary knowledge.

However, challenge should not be interpreted simply as making service activities more difficult. Rather, an effective service-learning experience should provide an appropriate level of intellectual and practical challenge while maintaining students' interest and engagement. Activities that are meaningful, relevant and sufficiently challenging may encourage students to become more actively involved in identifying problems, considering possible solutions and reflecting on the consequences of their actions. This is consistent with the POSL conceptualisation, in which Challenge and Interest is treated as one of the dimensions through which the quality of students' service-learning experiences can be assessed (Ngai et al., 2024).

Therefore, examining Challenge and Interest is important when investigating the relationship between service-learning processes and student learning outcomes. The dimension captures an aspect of service-learning that extends beyond participation itself by considering whether students perceive their service activities as intellectually stimulating and sufficiently challenging. In the present study, Challenge and Interest is consequently examined as one of the six dimensions of the service-learning process, alongside Goals and Objectives, Meaningful Service, Exposure to Diversity, Reflective Activities, and Preparation and Support. Its inclusion allows the study to examine whether the quality of students' perceived service-learning experiences is associated with their intellectual, social, civic and intrapersonal learning outcomes.

Exposure to Diversity

Interaction with individuals from different backgrounds can broaden students' perspectives and contribute to

social understanding. The POSL framework specifically assesses whether service-learning enables students to interact with people from different backgrounds and encounter diverse views and perspectives. This dimension is particularly relevant to the civic and social objectives of SULAM because university students work directly with communities rather than learning exclusively within the university environment.

Reflection

Reflection is one of the most important mechanisms through which service experiences may become learning experiences. Students need opportunities to reconsider their assumptions, interpret their experiences and connect practical situations with academic and personal knowledge. Previous meta-analytic evidence indicates that reflection is among the recommended service-learning practices associated with better student outcomes. Research specifically examining reflection in university service-learning has also identified it as an important component of service-learning quality and student educational performance. The POSL instrument therefore assesses whether students were required to reflect regularly, received guidance on the practice and experienced it as a process that enabled them to reconsider their assumptions and values.

Preparation and Support

Students may require appropriate preparation, guidance, feedback and support to engage effectively with community-based activities. Without adequate preparation, students may struggle to translate academic knowledge into appropriate community action. The POSL framework incorporates preparation and support as a process dimension because these conditions can influence students' ability to carry out service-learning activities effectively.

Student Learning Outcomes

The POSL outcome component was developed to capture a broad range of intended service-learning outcomes. Four higher-order dimensions are identified: intellectual, social, civic and intrapersonal outcomes. The intellectual dimension includes applying knowledge, problem-solving, creativity, reflection and analysing multiple perspectives. Social outcomes include interpersonal relationships, teamwork and respect for different perspectives. Civic outcomes include understanding community needs, empathy and commitment to improving society. Intrapersonal outcomes include self-confidence, self-understanding and commitment to self-improvement. This multidimensional approach is consistent with previous evidence showing that service-learning affects more than academic achievement. Meta-analytic evidence has identified social, personal, civic and cognitive outcomes associated with service-learning.

METHODOLOGY

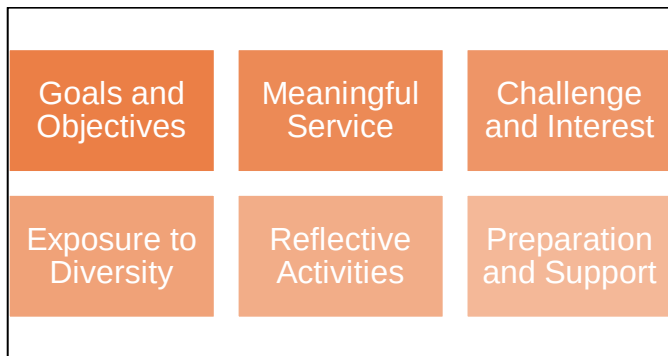
Research Design

A quantitative cross-sectional survey design was adopted to examine students' perceptions of the service-learning process and their learning outcomes following participation in a SULAM project. The study focuses on students who had participated in a SULAM project within a Malaysian higher education setting. A total of 115 undergraduate students participated in the study. The sample comprised 88 female students (76.5%) and 27 male students (23.5%). Most respondents were aged between 20 and 25 years (80.0%). The majority were enrolled in the Bachelor of Technology Management programme (74.8%), while the remaining respondents were from the Bachelor of Office System Management programme (25.2%). Most respondents were Year 2 students (64.3%), followed by Year 4 (24.3%) and Year 3 (10.4%). One respondent was recorded as being in Year 6. Seventy-three respondents (63.5%) reported having participated in SULAM before the current project, while 42 (36.5%) had no previous SULAM experience. The same distribution was reported for prior participation in volunteer or community service activities outside SULAM.

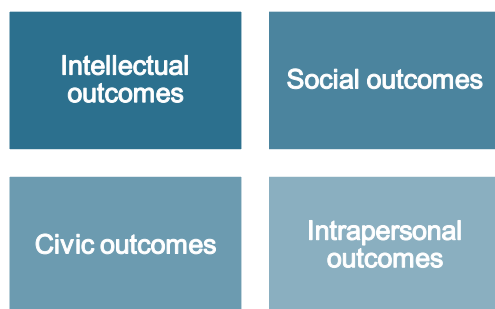
Data were collected using the Process and Outcomes from Service-Learning (POSL) questionnaire developed and validated by (G et al., 2025). The original POSL consists of two components. The first contains 18 items measuring students' service-learning experiences, while the second contains 14 items measuring learning

outcomes. The original instrument was developed through literature-based domain identification, expert content validation, cognitive pretesting, exploratory factor analysis, confirmatory factor analysis and reliability testing. For the present study, the questionnaire was adapted from the original 10-point response format to a five-point Likert scale. The process items were rated from 1 (strongly disagree) to 5 (strongly agree). Outcome items were rated according to the extent of perceived learning improvement using the five-point format adopted in the study.

The 18 process items were grouped according to the validated POSL structure



The 14 outcome items were grouped into:



Data were analysed using descriptive statistics, Cronbach's alpha, Pearson product-moment correlation and multiple linear regression. Descriptive statistics were used to determine the mean and standard deviation of the process and outcome dimensions. Cronbach's alpha was used to assess internal consistency. Pearson correlation was used to examine associations between service-learning process dimensions and learning outcomes. Multiple regression was subsequently conducted to determine the extent to which the six process dimensions predicted overall learning outcomes.

Ethical Considerations

The service-learning programme was conducted with the approval of the Faculty's Student Affairs unit. This approval covered the implementation of the programme and the students' participation in the related service-learning activities. Participation in the questionnaire survey was voluntary. Respondents were informed about the purpose of the study and the use of the collected information for research purposes before completing the questionnaire. They were also informed that participation was not compulsory and that choosing not to participate would not affect their academic standing or involvement in the programme. Informed consent was obtained from respondents before data collection.

To protect respondents' privacy, the questionnaire responses were handled confidentially and analysed in aggregate. Personally identifiable information, such as respondents' names or email addresses, was excluded from the statistical analysis and was not reported in the manuscript. The collected data were used only for this study and were accessed by the researchers involved in the analysis. The study involved minimal risk because the questionnaire focused on students' perceptions of the service-learning process and their learning outcomes. No individual responses were disclosed, and the findings were presented in a manner that did not allow individual respondents to be identified.

RESULTS AND DISCUSSION

Reliability Analysis

The adapted POSL demonstrated excellent internal consistency. The 18-item service-learning process scale yielded a Cronbach's alpha of .957, while the 14-item learning outcome scale yielded a Cronbach's alpha of .958. These values are comparable to the strong reliability reported in the original POSL validation study, where the overall process component had an alpha of .97, and the outcome component had an alpha of .96.

Scale	Items	Cronbach's α
Service-learning process	18	.957
Student learning outcomes	14	.958

Table I. Reliability of the Posl Scales

Descriptive Statistics

Overall, students reported very positive perceptions of both the service-learning process and their learning outcomes. The overall process score was $M = 4.66$ ($SD = 0.39$), while the overall learning outcome score was $M = 4.65$ ($SD = 0.41$).

Dimension		Items	M	SD	α
Learning Process	Goals and Objectives	3	4.72	0.42	.906
	Meaningful Service	2	4.70	0.47	.940
	Challenge and Interest	3	4.67	0.44	.815
	Exposure to Diversity	2	4.68	0.46	.764
	Reflective Activities	3	4.61	0.49	.891
	Preparation and Support	5	4.61	0.49	.859
	Overall Process	18	4.66	0.39	.957
Learning Outcomes	Intellectual Outcomes	5	4.64	0.44	.918
	Social Outcomes	3	4.70	0.44	.851
	Civic Outcomes	3	4.62	0.48	.821
	Intrapersonal Outcomes	3	4.65	0.45	.852
	Overall Outcomes	14	4.65	0.41	.958

TABLE II. Descriptive Statistics And Reliability Of Posl Dimensions

Among the process dimensions, Goals and Objectives recorded the highest mean ($M = 4.72$), followed by Meaningful Service ($M = 4.70$), Exposure to Diversity ($M = 4.68$) and Challenge and Interest ($M = 4.67$). Reflective Activities and Preparation and Support recorded the lowest means, although both remained high ($M = 4.61$). For learning outcomes, Social Outcomes recorded the highest mean ($M = 4.70$), followed by Intrapersonal Outcomes ($M = 4.65$), Intellectual Outcomes ($M = 4.64$) and Civic Outcomes ($M = 4.62$). The consistently high scores indicate that respondents generally perceived the SULAM project as well structured and beneficial across multiple dimensions of student development.

Correlation Between Service-Learning Processes and Learning Outcomes

A strong positive relationship was observed between the overall service-learning process score and overall learning outcomes: $r = .812$, $p < .001$. This indicates that students who reported more positive service-learning

experiences also tended to report stronger learning outcomes. The relationships remained positive when individual process and outcome dimensions were examined.

Process dimension	Intellectual	Social	Civic	Intrapersonal
Goals and Objectives	.743***	.701***	.754***	.684***
Meaningful Service	.584***	.539***	.598***	.538***
Challenge and Interest	.645***	.645***	.636***	.595***
Exposure to Diversity	.592***	.623***	.590***	.587***
Reflective Activities	.707***	.679***	.670***	.723***
Preparation and Support	.732***	.607***	.655***	.673***

TABLE III. Correlations Between Service-Learning Process Dimensions And Learning Outcomes

*** $p < .001$.

The strongest bivariate relationship was between Goals and Objectives and Civic Outcomes ($r = .754$). Goals and Objectives were also strongly related to Intellectual Outcomes ($r = .743$). Reflective Activities showed particularly strong relationships with Intrapersonal Outcomes ($r = .723$) and Intellectual Outcomes ($r = .707$). Preparation and Support was strongly associated with Intellectual Outcomes ($r = .732$). Overall, the findings indicate that all six service-learning process dimensions were positively associated with all four categories of student learning outcomes.

Multiple Regression

Multiple regression was conducted to determine whether the six process dimensions collectively predicted overall student learning outcomes. The model was statistically significant and explained approximately 69.9% of the variance in overall learning outcomes ($R^2 = .699$; adjusted $R^2 = .682$).

Predictor	β	p
Goals and Objectives	.466	< .001
Meaningful Service	-.004	.963
Challenge and Interest	-.010	.911
Exposure to Diversity	-.046	.609
Reflective Activities	.283	.004
Preparation and Support	.148	.075

TABLE IV. Multiple Regression Predicting Overall Student Learning Outcomes

The results show that Goals and Objectives was the strongest significant predictor of overall learning outcomes ($\beta = .466$, $p < .001$), followed by Reflective Activities ($\beta = .283$, $p = .004$). Preparation and Support showed a positive but statistically non-significant relationship at the .05 level ($\beta = .148$, $p = .075$). Meaningful Service, Challenge and Interest, and Exposure to Diversity were not significant independent predictors after the overlap among the six process dimensions was controlled. The variance inflation factors ranged from 2.60 to 4.53, indicating that multicollinearity did not reach a level that would normally be considered problematic.

DISCUSSION

The findings provide empirical evidence that the quality of students' service-learning experiences is strongly associated with their perceived learning outcomes in a Malaysian SULAM context. The overall service-learning process score was very high, as was the overall learning outcome score. More importantly, the

correlation between the two constructs was strong ($r = .812$, $p < .001$). This finding supports the broader service-learning literature, which suggests that student outcomes are influenced not simply by participation in service activities but by the characteristics and quality of the service-learning experience. The findings are consistent with meta-analytic evidence showing positive effects of service-learning across academic, social, civic and personal domains and identifying curriculum linkage and reflection among practices associated with stronger outcomes.

Curriculum Alignment as the Strongest Predictor

The most important finding from the regression analysis was the significant contribution of Goals and Objectives to overall learning outcomes ($\beta = .466$, $p < .001$). This result is particularly meaningful in the SULAM context. SULAM is designed as a course-based and credit-bearing educational experience in which students apply knowledge and competencies from their academic discipline to community needs. Therefore, students are more likely to perceive learning benefits when they understand why the service activity is being conducted and how it connects to the objectives of their academic course. This finding also aligns with previous service-learning evidence. ([Celio et al., 2011](#)) identified curriculum linkage as one of the recommended service-learning practices associated with better outcomes. The implication is important for SULAM implementation: community engagement should not be treated as an activity added to a course; it should be deliberately aligned with the academic objectives of the course.

Reflection as a Significant Predictor

The second significant predictor was Reflective Activities ($\beta = .283$, $p = .004$). This finding reinforces the importance of reflection as the mechanism through which students interpret their service experiences. Reflection may allow students to reconsider assumptions, connect practical experiences with academic knowledge and derive meaning from interactions with communities. The correlation analysis further showed that reflective activities were particularly strongly related to intrapersonal outcomes ($r = .723$) and intellectual outcomes ($r = .707$). This suggests that reflection may be especially relevant to students' development of self-understanding and their ability to interpret and learn from real-world experiences. This finding is consistent with previous evidence identifying reflection as an important service-learning practice associated with improved outcomes. It also corresponds closely with the conceptualisation of SULAM as a structured educational experience involving reflection on service activities.

Why Other Process Dimensions Were Not Significant Predictors

An important distinction emerges between correlation and regression. Meaningful Service, Challenge and Interest, Exposure to Diversity and Preparation and Support were all significantly correlated with learning outcomes. However, after the six process dimensions were entered simultaneously into the regression model, these dimensions did not make statistically significant unique contributions to overall outcomes. This does not mean that these dimensions are unimportant. Instead, it suggests that the dimensions overlap in students' overall perception of a quality service-learning experience. For example, students who perceive their project as meaningful may also perceive it as well organised, relevant, challenging and well supported. The regression results therefore identify the process characteristics that appear to make the strongest unique contribution after the shared variance among the dimensions is taken into account. The findings reinforce the value of examining service-learning processes as a multidimensional phenomenon rather than treating participation as a simple binary experience.

Learning Outcomes Across Multiple Domains

The four outcome dimensions all recorded high means. Social outcomes were the highest ($M = 4.70$), followed by intrapersonal, intellectual and civic outcomes. This multidimensional pattern supports the broader literature showing that service-learning can generate academic, social, personal and civic benefits rather than merely improving disciplinary knowledge. The results are also consistent with emerging Malaysian SULAM evidence. Previous Malaysian studies have reported improvements in knowledge, functional work skills, ethics, professionalism, civic attitudes and community engagement. The present study extends these findings

by demonstrating that these outcomes can be examined together using the four-domain POSL outcome structure.

CONCLUSION AND IMPLICATIONS

Implications for SULAM Practice

The findings suggest three practical priorities for SULAM implementation. First, curriculum alignment should be made explicit. Students should understand the relationship between their academic course objectives and the community project. Second, reflection should be deliberately designed rather than treated as an administrative requirement. Students should be provided with structured opportunities and guidance to reflect on their experiences. Third, assessment of SULAM should examine both process and outcomes. Measuring only whether students completed the service activity does not provide sufficient information about the educational quality of the experience. The POSL framework provides a useful structure for such assessment because it captures both students' experiences and multiple categories of learning outcomes.

Implications for Higher Education Policy

The findings support continued integration of service-learning into higher education curricula. However, implementation should focus on the quality of pedagogical design, rather than simply increasing the number of SULAM activities. For Malaysian higher education institutions, this means that SULAM evaluation should consider whether projects have clearly stated academic objectives, provide meaningful community engagement, expose students to different perspectives, require structured reflection, provide adequate preparation and support and generate measurable student learning outcomes. Such an approach would strengthen SULAM as a high-impact educational practice rather than treating it primarily as a community-service activity.

CONCLUSION

This study examined the relationship between service-learning processes and student learning outcomes among undergraduate students participating in SULAM in Malaysian higher education. The findings demonstrate that students reported highly positive service-learning experiences and high levels of perceived learning across intellectual, social, civic and intrapersonal domains. Most importantly, service-learning processes demonstrated a strong positive relationship with student learning outcomes. The six process dimensions collectively explained approximately 69.9% of the variance in overall perceived learning outcomes. Among these dimensions, Goals and Objectives and Reflective Activities emerged as significant predictors. The findings therefore suggest that the educational value of SULAM lies not merely in students' participation in community service but in the quality of the learning process surrounding that service. Clear curricular alignment helps students understand the academic purpose of their engagement, while structured reflection enables them to interpret and learn from their experiences. For Malaysian higher education, these findings reinforce the importance of designing SULAM as an integrated educational experience in which community engagement, academic learning and reflection are deliberately connected. The study also demonstrates the potential usefulness of POSL as a structured framework for assessing both the process and outcomes of SULAM. Future research using larger, multi-institutional and longitudinal samples would provide stronger evidence regarding the generalisability and causal mechanisms underlying these relationships.

Limitations and Future Research

Several limitations should be acknowledged. First, the study employed a relatively small sample of 115 students drawn from two undergraduate programmes. Therefore, the findings should not be generalised to all Malaysian university students. Second, the study used a cross-sectional, post-project self-report design. Consequently, the findings demonstrate associations between service-learning processes and perceived outcomes but cannot establish causal relationships. Third, the questionnaire was adapted from the original POSL 10-point response format to a five-point scale. Although the adapted scales demonstrated excellent internal consistency in this sample, future research should conduct more extensive validation of the adapted

version, particularly confirmatory factor analysis with a larger sample. Fourth, the present study examined students' perceptions of learning outcomes rather than objective pre-post changes. Future studies could combine POSL with pre-post measurements, reflective journals, performance assessments or community-partner evaluations.

Finally, future SULAM research could examine whether previous SULAM experience, project duration, disciplinary background or community characteristics influence the relationship between service-learning processes and student outcomes.

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