

TVET-Driven Social Entrepreneurship Education: An Outcome-Based, SULAM-Anchored Curriculum Case Study from a Malaysian Technical University

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Abstract

Technical and Vocational Education and Training (TVET) programmes are under mounting pressure to prove that graduates leave with more than a transcript; they need to leave with community-tested competence. Social entrepreneurship modules are one of the few places in a technopreneurship degree where that proof can actually be generated, yet published accounts rarely show, in enough operational detail, how a TVET-based course turns a stack of curriculum documents into hours of real fieldwork with vulnerable communities. This paper works through that gap using a single, closely documented case: BTMT 3383 Social Entrepreneurship, a compulsory course inside the Bachelor of Technopreneurship with Honours (BTEC) programme at a Malaysian technical university. Drawing on the institution's official Summary of Course Information, its approved Service-Learning Malaysia-University for

Society (SULAM) working paper, and its full assessment documentation, the study traces how three Course Learning Outcomes spanning Knowledge, Skill, and Attitude domains are carried through a fourteen-week teaching plan, a competency-weighted assessment scheme, and a Table of Test Specifications built on Bloom's Revised Taxonomy. In the semester examined, 159 Year-3 TVET students, were placed with 67 community beneficiaries across five sites in Melaka Tengah, ranging from women micro-entrepreneurs to persons with disabilities and special-needs learners. They were trained to deliver practical digital-marketing coaching using tools such as Canva, CapCut, TikTok, Facebook, and WhatsApp Business. Sixty percent of the final course grade rests on this fieldwork or on reflective assessment of it, a considerably heavier weighting toward authentic performance than examination recall receives. The paper offers a transferable, TVET-relevant template for building Sustainable Development Goal (SDG)-aligned, community-facing capstone assessment into technopreneurship curricula, and it argues that vocational programmes are well placed, perhaps better placed than conventional business schools, to make service-learning count toward a real grade rather than toward a certificate of participation.

Keywords: Technical and Vocational Education and Training (TVET), Social Entrepreneurship Education, Service-Learning, Sulam, Outcome-Based, Education, Competency-Based, Assessment, Digital Marketing Skills, Social Business Model Canvas, Sustainable Development Goals

Introduction

Ask a TVET graduate what they actually did in their final year, and the honest answer is often "assignments." Social Entrepreneurship and Social Innovation (SESI) education was meant to change that answer: students were supposed to build ventures that balance financial survival against measurable social or environmental impact, not just read case studies about someone else doing it (Roslan et al., 2022; Portales, 2019; Weaver, 2022). Universities are under pressure to show graduate readiness for real problems, and they have leaned on social entrepreneurship courses as a vehicle for smuggling the Sustainable Development Goals (SDGs), Environmental, Social, and Governance (ESG) thinking, and circular-economy logic into otherwise conventional business curricula (Roslan et al., 2022; Magraner et al., 2025). However, lecture-based delivery alone rarely produces the empathy, ethical judgement, or stakeholder-management stamina that social entrepreneurship in practice actually demands (Ministry of Education Malaysia, 2019; Hallinger & Kongpiwatana Narong, 2024). That shortfall is what has pushed curriculum designers toward outcome-based structures paired with sustained, community-embedded learning instead of classroom simulation.

Malaysia has its own mechanism for forcing this pairing: the Service-Learning Malaysia-University for Society (SULAM) policy, which requires public and private higher education institutions to build sustained, credit-bearing community engagement into selected courses (Ministry of Education Malaysia, 2019). Evaluations of SULAM in practice are admittedly a mixed bag. They generally report gains in experiential learning, civic attitude, and knowledge transfer to community partners, but they also flag resourcing and sustainability headaches that fall squarely on the lecturer running the course (Corrêa et al., 2022; González García et al., 2020; Sharipah Ruzaina et al., 2025). What most of these evaluations do not do is show SULAM fieldwork wired into the actual mechanics of a course, including its Student Learning Time allocation, its weekly teaching plan, and its Table of Test Specifications. It tends to sit alongside the course as an add-on activity instead.

That gap matters more, not less, in TVET settings, where the entire premise of the qualification is that competence gets demonstrated, not merely described. TVET systems worldwide are being asked to widen their notion of competence beyond employer-facing technical skill to include graduate attributes, adaptability, ethical reasoning, and digital fluency, none of which was ever designed to be certified by a purely occupational curriculum (Halik Bassah et al., 2025; Zahedi et al., 2023; Yusop et al., 2022). Malaysian TVET research in particular has begun documenting how technical and vocational learners experience entrepreneurship education, and it often finds that students value the hands-on components far more than the theory components. Digital-economy competencies are also becoming as important to TVET employability as the traditional trade skill itself (Zahedi et al., 2023; Rosdi & Adnan, 2025). A social entrepreneurship course sitting inside a Bachelor of Technopreneurship programme is, in that sense, a useful test case: it shows whether TVET curricula can operationalise "soft" graduate outcomes with the same rigour they apply to technical ones.

Outcome-based education (OBE) theory supplies the underlying grammar for that rigour. Curriculum content, teaching method, and assessment instrument should all trace back, explicitly and checkably, to a small set of intended learning outcomes across Knowledge, Skill, and Attitude (KSA) domains (Gruppen, 2012). Inside TVET systems specifically, competency-based reform has been shown to sharpen the transparency of assessment once learning outcomes are mapped against teaching methods, mark weightings, and the cognitive-process levels of Bloom's Revised Taxonomy (Yusop et al., 2022; Magraner et al., 2025). What case studies in this space rarely disclose, though, is the underlying arithmetic: how Student Learning Time (SLT) hours actually convert into percentage weightings, and how a Table of Test Specifications gets built to balance lower-order and higher-order cognitive demand across an examination.

This paper works through that arithmetic using BTMT 3383 Social Entrepreneurship, a compulsory course in the Bachelor of Technopreneurship with Honours (BTEC) programme at Universiti Teknikal Malaysia Melaka (UTeM). The course was chosen because its paper trail is unusually complete: an approved Summary of Course Information, a Curriculum Design Plan, a fourteen-week Teaching Plan, a full assessment package, and a Table of Test Specifications. Newly available for this analysis is the official approval working paper for its Semester 2, Session 2025/2026 SULAM component, which lays out the programme's exact budget, beneficiary counts, and delivery model. Together these documents make it possible to trace, without guesswork, how intended learning outcomes become enacted teaching, continuous assessment, and a final examination. The paper also looks closely at the course's flagship performance task, the Social Business Model Canvas (S-BMC) paired with a SULAM Implementation Journal, which serves as a worked example of authentic assessment design for social entrepreneurship competencies within a TVET degree.

Significance of the Study

This study matters because the stakes attached to TVET credentials in Malaysia are no longer abstract. National figures put TVET graduate employability at 95.1 percent, with more than 430,000 students enrolled nationwide and 53.56 percent of 2024 secondary-school leavers choosing a TVET pathway as their first option (Bernama, 2025). That headline number sits alongside a persistent skills-mismatch problem: national labour-force data show 2.06 million

skill-related underemployed persons in 2024, a 36.1 percent underemployment rate among tertiary-educated workers, and a youth unemployment rate of 10.3 percent for those aged 15 to 24 (Department of Statistics Malaysia, 2025). Graduates increasingly hold a qualification that the labour market accepts on paper but does not always reward with work that matches their training. A curriculum that can demonstrate, with auditable detail, exactly how it converts classroom design into community-tested competence is therefore not a narrow institutional exercise. It speaks directly to a national policy problem.

The study is significant for four distinct audiences, each of whom stands to gain something specific and usable from it. For curriculum committees and quality-assurance panels, the paper supplies a template for demonstrating constructive alignment with auditable arithmetic instead of narrative assertion. This is precisely the kind of evidence accreditation review increasingly demands (Derouich, 2025). For TVET and technopreneurship lecturers designing their own service-learning components, it offers a worked example of how Student Learning Time can be converted into percentage weighting and how a Table of Test Specifications can be built around Bloom's Revised Taxonomy. This removes much of the guesswork that currently surrounds this kind of design. For the community partners themselves, including the disability and special-needs sites documented in this case, the paper makes visible a mechanism by which their inclusion in higher-education service-learning is structural rather than incidental. That distinction carries real consequences for how consistently such partnerships are resourced and sustained. For policymakers overseeing SULAM and similar service-learning mandates nationally, the case offers a rare worked example of how a compliance requirement can be embedded into a course's actual grading architecture, rather than layered on top of it as a reporting obligation.

The need for this specific inquiry follows from a gap the wider literature has left open. Existing scholarship on TVET employability and social entrepreneurship education establishes, at a policy level, that experiential and community-embedded learning improves outcomes (Halik Bassah et al., 2025; Al Issa et al., 2025). What that literature has not supplied is the operational detail a lecturer, curriculum designer, or accreditation panel could actually replicate: the exact arithmetic connecting budget, beneficiary count, contact hours, and grade weighting. Absent that detail, calls to adopt service-learning risk remaining aspirational. This paper addresses that need directly by documenting one course's complete design record rather than summarising its outcomes from a distance.

Research Objectives

- To describe how the three Course Learning Outcomes (CLO1–CLO3) of a TVET-based social entrepreneurship course are operationalised across curriculum design, weekly teaching plan, and assessment architecture.
- To examine how Service-Learning Malaysia-University for Society (SULAM) fieldwork, including its approved budget, beneficiary profile, and digital-skills training content, is structurally embedded within the course's Student Learning Time (SLT) allocation and percentage assessment weighting.
- To analyse the cognitive-process distribution of the Final Examination through a Table of Test Specifications mapped to Bloom's Revised Taxonomy.

- To evaluate the design rationale of the Social Business Model Canvas and SULAM Implementation Journal as an authentic performance-assessment instrument for social entrepreneurship competencies within a TVET curriculum.

Literature Review

Social Entrepreneurship and Social Innovation in Higher Education

Social entrepreneurship education asks learners to do three things at once. They must diagnose a genuine community problem and design a venture that holds People, Planet, and Profit in some kind of balance, and they must then convince sceptical stakeholders the idea will actually work (Roslan et al., 2022; Magraner et al., 2025; Portales, 2019; Weaver, 2022). Portales (2019) treats social innovation and social entrepreneurship as two sides of the same coin: the novel idea sits on one side, and the organisational vehicle, non-profit, hybrid, or socially responsible for-profit, that carries it forward sits on the other. Weaver (2022) pushes this further, arguing that curricula which only teach the non-profit model or only teach the for-profit model shortchange students. Real practitioners, Weaver (2022) notes, move fluidly across the whole spectrum of social business forms. A foundational critical review by Peredo and McLean (2006) traces how the concept of social entrepreneurship itself has been stretched across disciplines and definitions. Curricula that skip a clear conceptual grounding, they argue, end up teaching a moving target instead of a coherent field, which is a large part of why the curriculum examined here starts from an explicit conceptual framework before it moves to practice. A curriculum analysis of university-based social innovation and entrepreneurship education in Hong Kong by Wang and Horta (2025) reaches a comparable conclusion from a different higher-education system: it finds that programmes anchored in authentic, university-community partnerships produce more coherent curricula than those where social entrepreneurship content is scattered across unrelated electives. Two more recent studies sharpen this picture further. Al Issa, Thai, and Nguyen (2024), mapping the field systematically, call for tighter research frameworks and clearer ethical grounding in how social entrepreneurship education is taught and evaluated. Al Issa, Thai, and Saad (2025) show that experiential, field-based learning strengthens students' social-entrepreneurial self-efficacy far more reliably than classroom instruction alone. Shahid and Alarifi (2021) corroborate this finding in their own conceptual review of the field.

TVET, Employability, and the Case for Community-Embedded Learning

TVET research has long wrestled with a credibility problem. Employers say they want graduates with initiative, communication, and problem-solving skills, but conventional TVET assessment is built to certify technical competence, not those broader attributes. A systematic review by Halik Bassah, Mohd Noor, and Ahmad (2025) concludes that Malaysian TVET providers still lack a consistent, holistic mechanism for developing and verifying the employability skills employers actually ask for. This gap persists despite years of policy language calling for exactly that. A related review of the Malaysian TVET sustainability framework, using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol, by Che Rus and colleagues (2023) reaches a similar verdict: it finds that graduate marketability still hinges on employability attributes that current TVET frameworks describe in policy but rarely operationalise into assessable curriculum design. Zahedi, Jaffer, Bryant, and Bada (2023) examine a service-learning programme in India. They find that sustained community placement measurably strengthens students' civic engagement and sense of connection to the community they serve. This pattern maps neatly onto why a

fieldwork-heavy course design might succeed where a lecture-only one would not. At the curriculum-architecture level, Rosdi and Adnan (2025) argue that TVET programmes need an integrated framework that deliberately aligns competency-based design with digital-economy demands, rather than treating digital skills as an afterthought bolted onto a traditional trade syllabus. This is an argument this paper's findings on digital-marketing SULAM content speak to directly. Yusop and colleagues (2022) review assessment approaches across TVET systems through a PRISMA methodology. They similarly note that authentic, performance-based assessment is still the exception in vocational education, not the rule. That is the gap a community-embedded capstone project is well placed to close.

Service-Learning and the SULAM Framework in Malaysian Higher Education

SULAM was introduced by Malaysia's Ministry of Higher Education as a structured way of forcing sustained, credit-bearing community engagement into existing courses; the alternative, leaving it to extracurricular goodwill, was judged too unreliable (Ministry of Education Malaysia, 2019). Corrêa, Brito, Lima, and Queiroz (2022) synthesise a decade of research on female entrepreneurship in emerging and developing economies. They find that women entrepreneurs consistently face compounded structural barriers, particularly financing, networks, and skills gaps. A SULAM curriculum that wants to serve women-led micro-enterprises well needs to design for those specific constraints; a one-size-fits-all community-engagement format simply will not do. González García, Colomo Magaña, and Cívico Ariza (2020) offer a bibliometric analysis of SDG 4 (Quality Education) research within the 2030 Agenda. They show that quality-education scholarship increasingly foregrounds community-linked, experiential models of delivery over classroom-only instruction, which lends broader empirical weight to framing SULAM implementation as a direct institutional contribution toward that same goal. Sharipah Ruzaina and colleagues (2025), working from the lecturer's side of the desk, find that the long-term durability of SULAM projects depends heavily on institutional support and the stability of community partnerships. This finding has obvious relevance to a course running multi-site attachments across successive semesters. Outside Malaysia, Compare and Albanesi (2023) review service-learning literature more broadly. They find that programmes genuinely built around social-justice engagement produce measurably stronger shifts in student belief and critical understanding than a token community visit ever could, which reinforces the case for depth over breadth in fieldwork design. A broader systematic review of service-learning in higher education by Salam and colleagues (2019) situates these Malaysian findings within a wider evidence base. It concludes that the strongest programmes consistently pair structured community placement with credit-bearing assessment instead of leaving engagement voluntary.

Outcome-Based Education and Competency-Based Curriculum Design

The basic requirement of outcome-based education is easy to state and hard to actually deliver. Curriculum content, teaching method, and assessment instrument all have to trace back explicitly to a defined set of intended learning outcomes (Gruppen, 2012). Gruppen (2012) makes this point from medical education, but it travels well beyond that field. Gruppen (2012) argues that outcome-based curricula shift the whole locus of design from covering content to certifying competency. Assessment instruments then have to test authentic performance, and declarative recall alone will not do. Applied to sustainability specifically, Magraner, Gil-Garcia, and Fernandez-Guillamon (2025) propose a tool for mapping SDGs, competencies, and learning outcomes together, so that sustainability content stops feeling

bolted onto an otherwise unrelated curriculum. Dutta, Moganti, and Kundu (2026) echo this caution in their broader review of how higher-education institutions handle the Sustainable Development Goals: SDG content works best folded into existing learning outcomes, not added as a stand-alone module. There is also a resourcing angle here. Goyal, Gupta, and Gupta (2022) use a fuzzy-inference meta-analytic approach and find that project-based learning outcomes correlate positively with programme-level outcome attainment. This correlation mainly holds when assessment weighting is proportionate to the instructional time actually invested in a competency. That is the same principle this paper's Student-Learning-Time-derived weighting returns to later. Derouch (2025) takes a slightly different angle, arguing that outcome-based curricula only really hold together when Course Learning Outcomes and Programme Learning Outcomes stay aligned through iterative feedback loops. A one-off mapping exercise done at curriculum-approval stage and then forgotten will not sustain that alignment. And on the assessment side, Shvets and colleagues (2026) show that tagging assessment questions explicitly against Bloom's Revised Taxonomy levels supports more targeted, level-appropriate feedback than an untagged question bank ever could, much as this course's Table of Test Specifications does.

Authentic and Reflective Assessment in Competency-Based Training

Sluijsmans, Straetmans, and van Merrienboer (2008) were among the earlier voices arguing that vocational education needs assessment instruments capable of scoring authentic performance across an entire competency portfolio, not just a single graded artefact. This protocol-portfolio approach anticipates much of what current TVET competency frameworks now require. More recent systematic work by Huerta Rosales, Taramona Ruiz, and Camones Bazan (2026) confirms that authentic assessment strategies in competency-based training remain unevenly implemented. Reflective and portfolio-style instruments are still the exception in many programmes despite strong evidence of their value. Reflective writing specifically has its own evidence base: Alt, Raichel, and Naamati-Schneider (2022) find that structured reflective journaling meaningfully strengthens lifelong-learning skills among higher-education students. This finding is directly relevant to the implementation-journal component examined later in this paper.

Digital Marketing, Community Knowledge Transfer, and Inclusive Beneficiary Groups

A recurring theme in Malaysian social-enterprise and rural-entrepreneurship literature is that beneficiary groups, including rural women, persons with disabilities, and special-needs learners, are usually the ones with the least access to the digital marketing skills that would actually grow their income. Aggarwal and Johal (2021) offer a systematic review of rural women's entrepreneurship. They find that basic digital and marketing literacy gaps, not lack of product quality, are consistently the binding constraint on rural women entrepreneurs' income growth. Noorhaslinda Kulub Abd Rashid and colleagues (2024), studying a Terengganu fishing community, show that structured knowledge-transfer programmes from universities can measurably improve community-level social innovation outcomes, provided the transfer is sustained rather than a single workshop. Mastam and Zaharudin (2024) turn attention specifically to learners with disabilities inside vocational special-education schools. They propose a conceptual framework for work-readiness skills that stresses hands-on, mentored exposure; classroom instruction on its own, in their framing, does not get learners there. This matches closely with how the present case study's special-needs community sites were approached. This concern is echoed at policy level: a recent International Labour Organization

brief (2024) finds that TVET and skills systems remain inconsistently inclusive of persons with disabilities worldwide. This situates the present course's deliberate placement of students at disability-serving community sites as a practical response to a gap the literature keeps flagging in principle, but rarely addresses in delivered curriculum. On the digital-marketing side specifically, Kamarapu and colleagues (2025) review empowerment strategies for rural women entrepreneurs. They similarly conclude that generic business training does little for this beneficiary group; what actually converts into income gains is targeted, mentored digital-marketing coaching.

The Social Business Model Canvas as an Authentic Assessment Instrument

The Social Business Model Canvas (S-BMC) adapts the commercial Business Model Canvas. It explicitly folds in beneficiary segments and social-impact metrics alongside the usual value-proposition and revenue-stream boxes (Sparviero, 2019). Sparviero (2019) argues that a socially oriented canvas format resolves what he calls the mission-measurement paradox. Beneficiary segments and impact metrics become explicit design boxes, not afterthoughts, and the tool forces entrepreneurs to keep reconciling commercial viability against social mission as new stakeholder information comes in. Feor, Clarke, and Dougherty (2023) review social-impact measurement approaches more broadly. They note a persistent problem with static planning artefacts: these capture intent well but rarely capture whether anything was actually tested against reality. Pairing the canvas with a sustained implementation journal, as examined later in this paper, is one direct response to that limitation. It converts a desk-based planning exercise into a longitudinal record of iteration.

Methodology

Research Design

This study is a single-case, document-based curriculum analysis. It treats BTMT 3383 Social Entrepreneurship as an information-rich, bounded case of outcome-based curriculum design integrated with TVET-anchored service-learning pedagogy. The unit of analysis is the complete curriculum documentation package for Semester 2, Session 2025/2026, made up of five primary artefacts. The first is the official Summary of Course Information, approved by the Faculty of Technology Management and Technopreneurship (FPTT). The second is the Curriculum Design Plan, specifying the course's core competency, work and learning activities, and KSA domains. The third is the fourteen-week Teaching Plan, mapping weekly topics to Course Learning Outcomes, teaching methods, and learning activities. The fourth is the full assessment package. It comprises the weekly competency assessment plan, the course assessment plan, the justification tables for assessment method and percentage weighting, and the Table of Test Specifications for the Final Examination. The fifth is the official SULAM programme approval working paper, which documents the programme's approved budget, community-site allocation, beneficiary counts, and implementation committee.

Institutional and Programme Context

BTMT 3383 Social Entrepreneurship is a compulsory, three-credit-hour course (120 notional Student Learning Time hours) offered in Year 3 of the Bachelor of Technopreneurship with Honours (BTEC) programme. This is a TVET-classified qualification within the Department of Technopreneurship, Faculty of Technology Management and Technopreneurship (FPTT), Universiti Teknikal Malaysia Melaka (UTeM). The course carries no pre-requisite or co-requisite and is taught by a Course Coordinator and a co-lecturer. Its main reference text is

the Social Innovation and Social Entrepreneurship Trainer Certification Module (Ministry of Higher Education Malaysia, 2021), jointly developed by the Ministry of Higher Education Malaysia, the Centre for Entrepreneurship and SME Development (CESMED) at Universiti Kebangsaan Malaysia, and the Malaysian Global Innovation and Creativity Centre (MaGIC). Content partners were the Lien Centre for Social Innovation (Singapore Management University) and the Social Enterprise Academy Malaysia Chapter. This is supplemented by Portales (2019), Weaver (2022), Zhao and Mao (2021), Guha and Majumdar (2021), and Findikli and Acar Erdur (2020). The course coordinator holds Jurulatih Utama (Master Trainer) certification for the SULAM Training of Trainers module, awarded by the Academy of Higher Education Leadership (Akademi Kepimpinan Pendidikan Tinggi, AKEPT) under the Ministry of Higher Education Malaysia. This certification supported a "Direct SULAM" delivery approach: students interact with community beneficiaries under close, trainer-qualified supervision, with no intermediary agency in between.

Curriculum Analysis Procedure

The analysis itself unfolded in five stages, though not always in a straight line. It started with the three Course Learning Outcomes (CLOs), which were pulled out and classified by KSA domain. These were then mapped against Programme Learning Outcomes (PLOs) and the relevant Malaysian Qualifications Framework (MQF) learning-outcome clusters. From there, the fourteen-week Teaching Plan was coded week by week, noting which CLO each week addressed, which teaching method was used, and what the students were actually asked to do. This essentially traced the course's pedagogical arc from environmental scanning through venture design to the fieldwork weeks and the final storytelling pitch. The weekly competency assessment plan and course assessment plan were then cross-tabulated so the percentage weighting attached to each CLO could be quantified. This also showed how much of the final grade sits in knowledge-based versus performance-based work, and in group versus individual submissions. Next, the Table of Test Specifications for both examination sections was broken down to see how marks distribute across the six cognitive processes of Bloom's Revised Taxonomy and the four knowledge dimensions. Finally, the SULAM approval working paper was checked against the teaching plan itself. This was mainly to confirm that the approved scope, budget, and beneficiary profile actually match what the curriculum documents claim.

The SULAM Fieldwork Component: Scope, Budget, and Delivery Model

In the Semester 2, Session 2025/2026 offering under analysis, 159 Year-3 BTEC students were involved, organised by class section (Seksyen 1, 2, and 3). Student sub-committees covered documentation, promotion and social media, technical support, and special tasks. They were attached to five authentic community sites in Melaka Tengah under the "Program Bimbingan Digitalisasi Pemasaran Keusahawanan untuk Komuniti," approved under reference UTEM.600-1/1 (5f) and endorsed by the Vice Chancellor. The programme ran across seven teaching weeks for a combined twenty-one contact hours. The five sites collectively hosted 67 community beneficiaries. These were 20 women micro-entrepreneurs and single mothers across Pusat Komuniti Desa (PKD) Paya Ikan and PKD Pengkalan Rama Pantai, plus 10 persons with disabilities and 2 accompanying teachers at Pertubuhan Pemulihan Dalam Komuniti (PPDK) Seri Utama. They also included special-needs culinary and bakery students together with their teachers at the Program Pendidikan Khas Integrasi (PPKI), a special-education integration unit hosted at Sekolah Menengah Kebangsaan (SMK, national secondary school) Ayer Keroh. A further 10 residents plus 2 welfare staff were based at Pertubuhan Kebajikan

Villa Harapan. The programme was explicitly aligned to two of the course's three Course Learning Outcomes: CLO1 (demonstrating SESI concepts and challenges) and CLO3 (professional and reflective readiness). It was also aligned to national policy instruments, including the Rangka Tindakan Keusahawanan Sosial Malaysia 2030 (SEMy2030) and the SULAM Playbook (Ministry of Education Malaysia, 2019). Student teams delivered structured digital-marketing coaching to their assigned beneficiaries. This covered content creation using Canva and CapCut, softselling and hardselling technique, digital storytelling, and channel-specific management of TikTok, Facebook, and WhatsApp Business. This directly addressed the digital-literacy gap identified in the rural and community-entrepreneurship literature (Aggarwal & Johal, 2021; Noorhaslinda Kulub Abd Rashid et al., 2024).

Findings

The four analytical themes developed below are read through two complementary theoretical lenses. The first is constructive alignment theory (Gruppen, 2012; Biggs, 1996), which supplies the criterion for judging whether curriculum, pedagogy, and assessment cohere around stated outcomes. The second is Kolb's experiential learning cycle (Tomkins & Ulus, 2016). This supplies the criterion for judging whether the sequencing of activities actually produces the concrete-experience, reflection, conceptualisation, and re-application loop that experiential pedagogy claims to deliver. Reading the same five documentary artefacts introduced in Section 3 through both lenses surfaces four patterns. A purely descriptive account of the curriculum would leave these implicit. Two are a closed alignment loop running from competency to grade, and a resourcing logic that converts instructional time directly into epistemic weight. It would also leave implicit a fieldwork architecture whose inclusion focus is deliberate, not accidental, and an assessment design whose authenticity is built in, not merely claimed.

Figure 1. Conceptual Framework Linking Theoretical Lenses to Analytical Themes

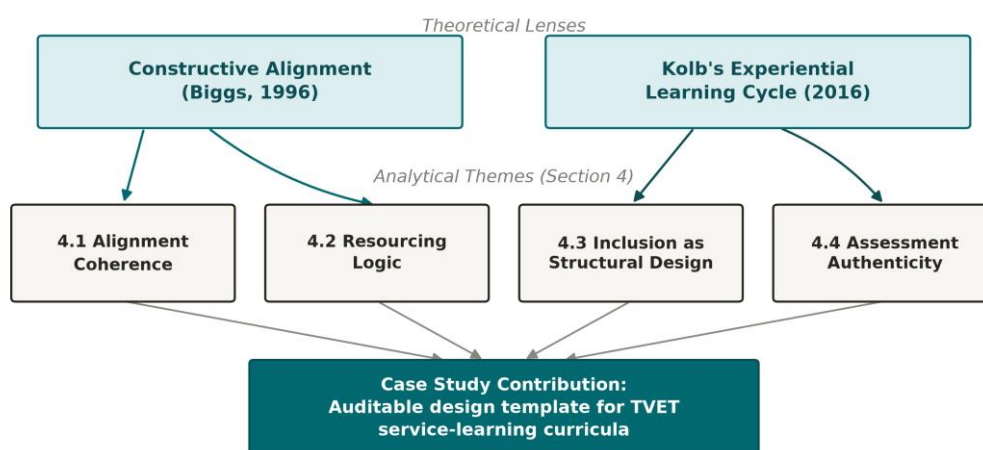


Figure 1. Conceptual framework linking the two theoretical lenses to the four analytical themes developed in Section 4.

Alignment Coherence: Closing the Loop from Competency to Grade

What stands out first is a fully closed constructive-alignment loop, not a partial one. Constructive alignment holds that intended learning outcomes, teaching and learning activities, and assessment tasks must be deliberately and demonstrably matched to one another, not simply co-located in the same course document (Gruppen, 2012; Biggs, 1996). The curriculum design plan makes this traceable end to end. One overarching core competency equips students to design, develop, and pitch a venture that is both financially viable and socially useful. This is decomposed into three Course Learning Outcomes spanning the Knowledge, Skill, and Attitude domains (Table 1). Each of these CLOs is in turn mapped to a specific Programme Learning Outcome and MQF cluster.

Table 1

Course Learning Outcomes (CLOs) of BTMT 3383 Social Entrepreneurship, mapped to KSA domain and Programme Learning Outcome (PLO).

LO	Statement	Domain / PLO Mapping
CLO1	Explain the concept, opportunities and challenges of Social Entrepreneurship and Social Innovation (SESI) for social entrepreneurs and social enterprises.	Knowledge (K); PLO2, C6, C1
CLO2	Collaborate effectively in a team-based Community-based Learning and Community-based Project learning process to design and implement a SESI solution addressing a real community need.	Skill (S); PLO6, A5, C3F
CLO3	Demonstrate professional and ethical conduct when engaging with communities, reflecting on the challenges faced by SESI entrepreneurs and social enterprises.	Attitude (A); PLO7, P7, C5

What makes this more than a mapping exercise on paper is that every subsequent design layer inherits the same three-way split without drift. The work and learning activities mirror what a practising social entrepreneur does week to week: environmental scanning (Task 1), evidence-based problem framing (Task 2), and venture design through a Nine-Step Process Template (Task 3). They continue with impact planning anchored in Theory of Change logic (Task 4) and business modelling through a Social Business Model Canvas (Task 5), before moving into a supervised SULAM fieldwork attachment and a final storytelling pitch. Each task is followed by a group critique session before the next stage opens. That critique structure is the alignment mechanism made procedural: assumptions, feasibility, and ethical implications get interrogated against the stated CLOs before the class is allowed to move on. None of it is left to surface, unexamined, only at final grading (Roslan et al., 2022; Peredo & McLean, 2006; Portales, 2019). The same three-way split persists in the assessment plan (30:30:40 across CLO1, CLO2, and CLO3, detailed in 4.2) and in the examination blueprint (4.3). This is the empirical signature of constructive alignment holding across an entire course, and not just at the syllabus-design stage.

Resourcing Logic: Student Learning Time as the Currency of Assessment Weight

Assessment weighting in this course is also not a negotiated or conventionally inherited split, but a direct function of instructional time invested. The course assessment plan rolls six graded components into the overview in Table 2, each carrying the course's own internal

component code: TG for Tugasan (the two coursework assignments, Task 1 through Task 4), SCL for the two Student-Centred Learning components built on SULAM fieldwork, and PA for Peperiksaan Akhir (the two Final Examination sections). It splits marks 30:30:40 across CLO1, CLO2, and CLO3, an even 50:50 between knowledge-based and performance-based assessment, and 60:40 in favour of group over individual work.

Table 2

Course assessment plan for BTMT 3383 Social Entrepreneurship, Semester 2, Session 2025/2026 (K = Knowledge, P = Performance).

Assessment Component	CLO1	CLO2	CLO3	Type	Weighting
TG-1: Local/Global SE Research & Problem Identification	10	–	–	Knowledge / Group	10%
TG-2: Nine-Step Process Template & Impact Management Guide	–	10	–	Performance / Group	10%
SCL-1: Social Business Model Canvas + SULAM Implementation Journal	–	20	–	Performance / Group	20%
SCL-2: SULAM Final Reporting & Reflection	–	–	20	Performance / Group	20%
PA-1: Final Examination Section A (Case Study)	20	–	–	Knowledge / Individual	20%
PA-2: Final Examination Section B (Structured Questions)	–	–	20	Knowledge / Individual	20%
Total	30	30	40	50% K / 50% P	100%

The percentage weighting justification shows that each of these figures is derived proportionally from its share of the course's 120-hour Student Learning Time allocation. For instance, SCL-1's 20% weighting corresponds exactly to 24 of 120 SLT hours. Nothing here is set by convention or negotiated after the fact. This SLT-proportional logic is the mechanism, not merely the justification, behind why SULAM-anchored components collectively carry 60% of the final grade. The two Student-Centred Learning components built on SULAM fieldwork (SCL-1 and SCL-2) carry 40% between them, and a further 20% sits in the SULAM-anchored Section B of the Final Examination (PA-2), where candidates reason from their own team's project instead of a printed case. The weighting is auditable back to a documented time allocation and not merely asserted. Because of that, the course closes a gap that sound competency-based curriculum design is supposed to close but frequently does not:

proportionality between instructional investment and grade consequence (Goyal et al., 2022; Yusop et al., 2022). Of the 120 notional SLT hours, roughly 61% is delivered face-to-face, and a dedicated 28 hours is reserved purely for continuous SULAM-based assessment. The weighting pattern and the time-allocation pattern therefore move together; one is not merely rationalising the other after the fact.

Inclusion as Structural Design, Not Incidental Outcome

A less obvious pattern only becomes visible once the fieldwork's scale, budget, and beneficiary composition are read together, not separately. The official SULAM approval working paper was endorsed by the Dean of FPTT and approved by the Vice Chancellor under reference UTEM.600-1/1 (5f). It places all 159 enrolled students across five community sites in Melaka Tengah for twenty-one contact hours over the seven-week Weeks 8 to 14 window. The programme operates under an approved budget of RM5,925.00 drawn from Vote 42000. Table 3 sets out the resulting beneficiary profile.

Table 3

Community beneficiary profile of the SULAM fieldwork component, by site, Semester 2, Session 2025/2026.

Community Site	Beneficiary Profile	Beneficiaries (n)
PKD Paya Ikan & PKD Pengkalan Rama Pantai	Women micro-entrepreneurs and single mothers, urban-fringe communities	20
PPDK Seri Utama	Youth with disabilities, plus accompanying teachers	12
PPKI, SMK Ayer Keroh	Special-needs culinary and bakery students, plus teachers	23
Pertubuhan Kebajikan Villa Harapan	Welfare-home residents, plus welfare staff	12
Total	Five community sites, Melaka Tengah	67

The analytically significant feature of Table 3 is not simply that 67 beneficiaries were served. Rather, three of the five sites, PPDK Seri Utama, the PPKI at SMK Ayer Keroh, and Villa Harapan, serve persons with disabilities or special-needs learners. That is a majority of placements, not a token one. Disability-inclusive practice functioned here as a site-selection criterion built into the programme's approval paper. It was not simply an incidental characteristic of whichever community partners happened to be available. Layered onto that site profile is a second observation: the same digital-marketing syllabus, spanning content creation, softselling and hardselling technique, and social-channel management, was delivered without site-by-site tailoring. As a result, identical coaching reached both conventional micro-entrepreneur beneficiaries and disability-serving sites without a differentiated curriculum. Research identifies basic digital and marketing literacy as the binding constraint on beneficiary income growth in under-served communities (Aggarwal & Johal, 2021; Noorhaslinda Kulub Abd Rashid et al., 2024). Read against that research, the finding is that this course's fieldwork design converts a generic employability skill, digital

marketing, into an inclusion-facing intervention. This occurs purely through deliberate site selection, and not through any additional disability-specific curriculum content.

Assessment Authenticity by Construction: The Canvas-Journal Pairing and the Examination Blueprint

Finally, the course manufactures assessment authenticity instead of simply asserting it. Task 5 (SCL-1), the Social Business Model Canvas paired with the SULAM Implementation Journal, requires project teams to complete a canvas covering Beneficiary Segments, Value Proposition, Revenue Streams, and Social Impact Metrics. Critically, teams must also begin on-site implementation of at least one canvas component during the fieldwork window. They must also keep a group journal with a minimum of three dated, substantive entries. The achievement standard separates a pass-level submission, internally consistent and evidencing genuine engagement, from a distinction-level submission, which additionally evidences iteration in response to real site feedback. The analytic point is that this pairing closes a gap a canvas alone cannot close. A canvas completed at a desk demonstrates planning competence. Only a dated journal showing revision after field contact can demonstrate that the plan was actually tested against reality, and not merely well written (Sparviero, 2019; Feor et al., 2023).

The Table of Test Specifications extends the same authenticity logic into the summative examination. Section A (PA-1, 50 marks, five compulsory ten-mark questions) measures CLO1 through a case study on the Autism Cafe Project. Section B (PA-2, 50 graded marks drawn from a 75-mark set of three twenty-five-mark questions, of which candidates answer two) measures CLO3. It does this by requiring students to reason from their own team's SULAM project. Table 4 summarises the resulting cognitive-process distribution.

Table 4

Distribution of Final Examination marks by cognitive process (Bloom's Revised Taxonomy), Sections A (PA-1) and B (PA-2).

Cognitive Process (Bloom's Taxonomy)	Section A – PA-1 (of 50 marks)	Section B – PA-2 (of 75-mark set)	Combined Emphasis
C1 – Remembering	0	0	None
C2 – Understanding	10	0	Low
C3 – Applying	10	14	Moderate
C4 – Analysing	20	41	Dominant
C5 – Evaluating	10	20	High
C6 – Creating	0	0	None
Total	50	75	–

Both sections allocate zero marks to Remembering, and Section B allocates zero marks to Understanding as well. Marks are concentrated instead in Analysing (40% of Section A; 55% of the Section B question set) and Evaluating. Read alongside the canvas-journal finding above, this is the same authenticity principle expressed in a different assessment mode. Just as a canvas alone cannot verify sustained practice, a recall-based examination question cannot verify that seven weeks of embedded fieldwork actually transferred into professional

judgement. Concentrating marks in Analysing and Evaluating is therefore not simply "making the exam harder." It is instead a deliberate attempt to test whether field-acquired judgement generalises to a novel case. This is the specific cognitive claim that outcome-based, competency-oriented assessment design is meant to verify (Yusop et al., 2022; Magraner et al., 2025).

Figure 2. Dual-Layer Assessment Architecture for Authenticity by Construction

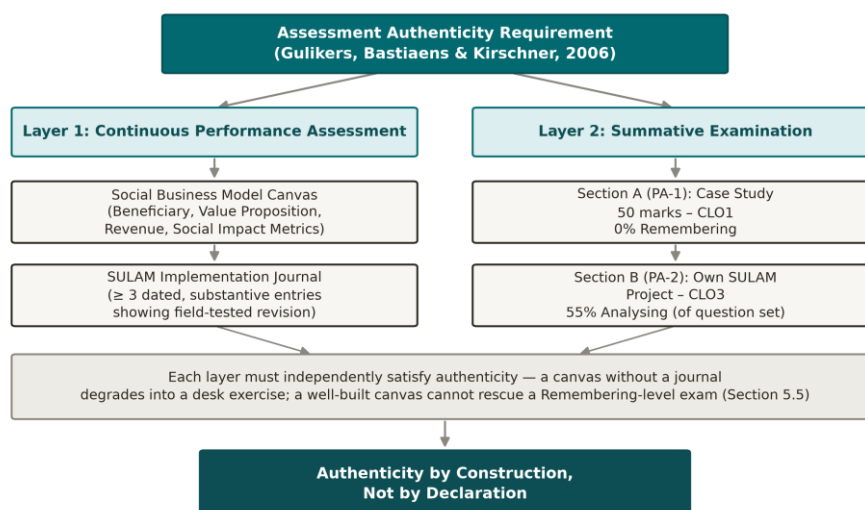


Figure 2. Dual-layer assessment architecture showing how the continuous performance layer (canvas plus journal) and the summative examination layer independently satisfy the authenticity requirement of Gulikers, Bastiaens, and Kirschner (2006).

Discussion

Constructive Alignment: Coherence as a Design Achievement, Not a Default

The alignment coherence documented in Section 4.1 deserves interrogation, not just confirmation. Constructive alignment is frequently invoked in curriculum papers as a checklist item and rarely demonstrated as an achieved property of a working system (Gruppen, 2012; Biggs, 1996). Biggs's original formulation is explicit that alignment fails whenever any one of the three elements, outcome, activity, or assessment, is designed in isolation from the other two. That is exactly the failure mode the wider literature keeps documenting in TVET and social-entrepreneurship curricula. One example is Programme Learning Outcomes stated at approval stage but never operationalised into assessment weighting (Che Rus et al., 2023; Halik Bassah et al., 2025). Another is sustainability content folded on top of an unrelated syllabus instead of integrated into it (Magraner et al., 2025; Dutta et al., 2026). What distinguishes the present case is not that alignment was intended, since most curricula intend it, but that it is auditable. The CLO-to-PLO mapping in Table 1, the SLT-derived weighting in Table 2, and the cognitive-process blueprint in Table 4 are all traceable to the same three-way split, and there is no single point where a design layer breaks from the outcomes above it. That audibility is the practical difference between alignment as rhetoric and alignment as an engineering property of a curriculum. It is also the reason the finding in 4.1 travels beyond this one course. Any programme that wants to claim constructive alignment should be able to produce the equivalent of Tables 1, 2, and 4, rather than simply asserting that its assessment "maps to" its outcomes.

Experiential Sequencing and the Limits of a Linear Reading of Kolb

The fourteen-week structure documented in this course, three weeks of CLO1 theory, four weeks of CLO2 prototyping, and seven weeks of CLO3 fieldwork, maps at first glance onto Kolb's experiential learning cycle. That cycle comprises concrete experience, reflective observation, abstract conceptualisation, and active experimentation, cycling students from theory through structured practice into unsupervised real-world judgement (Tomkins & Ulus, 2016). Read that way, the design simply operationalises a well-established model, and the fit is genuinely close. But a more critical reading, consistent with recent re-examinations of Kolb's cycle, complicates that fit, and the complication is worth stating plainly. Kolb's model is a cycle, not a sequence: it assumes repeated, iterative passes through all four modes, not a single linear pass from classroom exposure to graded fieldwork (Tomkins & Ulus, 2016). The fourteen-week plan analysed here largely delivers a single pass instead. Theory runs in Weeks 1 to 3, structured practice in Weeks 4 to 7, and unsupervised fieldwork in Weeks 8 to 14. Reflection is concentrated at the end (the SULAM Implementation Journal and final reporting) instead of distributed as a recurring checkpoint across the semester. That is not so much a design flaw as a design trade-off the findings make visible. A fourteen-week, credit-bearing course cannot realistically run several full Kolb cycles without either compressing fieldwork depth or extending the course beyond one semester. This course therefore opts for depth over cyclical repetition. The theoretical contribution here is therefore not that the course "implements experiential learning" in the abstract. Rather, it shows, with documentary specificity, where a single-semester TVET capstone must depart from the fully iterative form of Kolb's cycle. That departure is a defensible response to a fixed credit-hour constraint, and not an oversight.

Figure 3. Fourteen-Week Course Sequence Mapped to Kolb's Experiential Learning Cycle

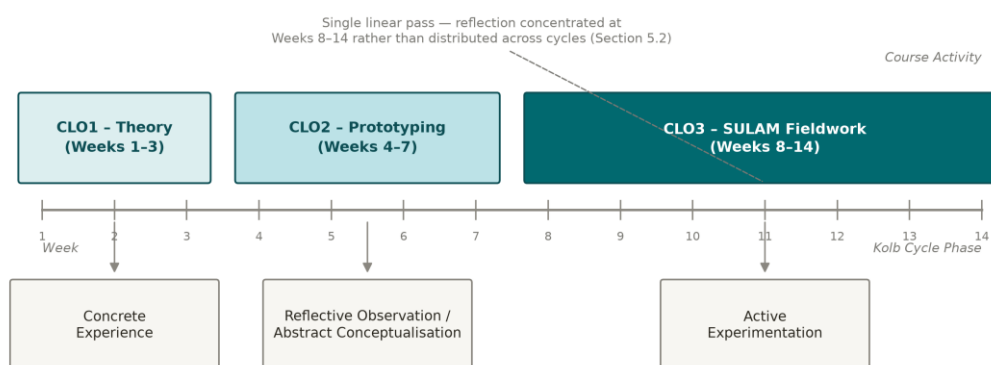


Figure 3. Fourteen-week course sequence mapped to Kolb's experiential learning cycle, showing the single linear pass identified in Section 5.2.

Resourcing Transparency as an Answer to a Specific Literature Gap

The SLT-proportional weighting finding (4.2) speaks directly and specifically to a gap in the literature, not to a general point about good practice. Goyal, Gupta, and Gupta (2022) link stronger programme-level attainment to weighting schemes that track instructional time investment. Yusop and colleagues (2022) separately note that authentic, performance-based assessment remains the exception, not the rule, in vocational education. Neither study, nor the wider competency-based-design literature reviewed in Section 2.4, shows the arithmetic

of that proportionality in a real course. The present case does: SCL-1's 20% weighting corresponds to an exact, documented 24 of 120 SLT hours, not an approximated or rounded figure. That specificity matters because it converts a principle the literature endorses in the abstract, weight assessment proportionally to time invested, into a checkable design procedure. Other programme committees could replicate this procedure when justifying weighting decisions to accreditation panels. That is a materially stronger contribution than restating the principle would be.

Inclusion by Site Selection: A Structural Answer, Not a Programmatic One

The inclusion pattern identified in 4.3, three of five community sites serving persons with disabilities or special-needs learners, deserves a more pointed reading than the simple observation that the course "includes" disability-serving partners. The disability-inclusive TVET literature, including a 2024 International Labour Organization brief, consistently finds that skills systems remain inconsistently inclusive of persons with disabilities in principle, even where policy language commits to inclusion (International Labour Organization, 2024). What this course demonstrates is a structural route around that policy-practice gap. Inclusion was achieved through site selection written into the SULAM approval paper itself, not through a bolt-on disability module, differentiated curriculum, or additional teaching hours. That is a materially different, and arguably more scalable, mechanism than the curriculum-level interventions the literature typically proposes. It does not require redesigning course content at all, only redesigning which community partners a service-learning course chooses to work with. The same standardised digital-marketing syllabus was delivered without adaptation across both disability-serving and conventional sites. This finding suggests the mechanism has a boundary condition worth naming honestly: site-selection inclusion secures access and contact hours, but it does not, by itself, verify that the content delivered was pedagogically appropriate for participants with additional support needs. No differentiated instructional adaptation is documented in the curriculum package. Site-selection inclusion and content-level inclusion are therefore separable design choices, and this course has demonstrably achieved the first without yet demonstrating the second.

Authenticity by Construction: Extending the Canvas-Journal Logic to Examination Design

The fourth finding is that this course manufactures assessment authenticity through paired instruments, canvas plus journal, examination blueprint concentrated in Analysing and Evaluating, instead of asserting it through a single artefact. This is where the paper's clearest theoretical contribution sits. Gulikers, Bastiaens, and Kirschner's five-dimensional authenticity framework specifies that assessment authenticity requires alignment across task, physical context, social context, form, and criteria. It is not enough for a task to merely resemble real-world work on the surface (Gulikers et al., 2006). Sluijsmans, Straetmans, and van Merriënboer (2008) anticipated part of this, arguing that vocational assessment needs portfolio-style, protocol-driven scoring instead of a single graded artefact. Sparviero (2019) shows canvas-based tools force continuous reconciliation between planning assumptions and field-generated evidence. The present case adds a worked demonstration to that lineage. Authenticity has to be engineered at two separate assessment layers simultaneously: the continuous performance layer (canvas plus dated journal) and the summative examination layer (a Table of Test Specifications concentrated in Analysing and Evaluating). Each layer can independently fail to be authentic even if the other succeeds. A canvas without a journal degrades into a desk exercise regardless of how well the examination is designed. Conversely,

a well-designed canvas-journal pairing cannot rescue an examination that tests Remembering-level recall of case-study facts. Authenticity has to be secured at every assessment layer independently, not just at the level of the course as a whole, and that is a more demanding and more useful standard than the literature has generally applied. It is also the standard this course's documentary record shows being met at both layers (Yusop et al., 2022; Magraner et al., 2025).

Implications for TVET and Technopreneurship Curriculum Design

Four transferable principles follow from the analysis above, each pitched at the level of a design procedure and not a general recommendation. First, service-learning components should carry a percentage weighting derived arithmetically from their documented share of Student Learning Time, with the derivation kept auditable for accreditation review, instead of assigned by convention and justified narratively after the fact. Second, curriculum designers claiming experiential-learning grounding should state explicitly whether their course design delivers a single linear pass through Kolb's cycle or genuine iterative repetition. The two carry different pedagogical claims, and a single-semester capstone will typically only be able to defend the former. Third, authenticity should be engineered independently at the continuous-assessment layer, a structured tool plus longitudinal, dated evidence of revision, and at the summative-examination layer, a cognitive-process blueprint that shifts weight to Analysing and Evaluating once foundational knowledge has already been assessed. Securing authenticity at one layer simply does not transfer to the other. Fourth, where a service-learning course serves community partners with additional support needs, designers should distinguish, and separately document, structural inclusion achieved through site selection from content-level inclusion achieved through curriculum adaptation. The present case demonstrates the former without yet demonstrating the latter, and conflating the two overstates what site selection alone can guarantee. A fifth, more exploratory, implication follows from the digital-marketing content documented here. TVET programmes built on technical or vocational competencies appear well positioned to fold basic digital-marketing literacy into service-learning components, precisely because that skill set addresses a digital divide affecting rural, disabled, and special-needs communities directly. This remains a design opportunity this case illustrates, though, and not a causal claim this case can support (Halik Bassah et al., 2025; Rosdi & Adnan, 2025; Aggarwal & Johal, 2021).

Limitations

Three limitations bound what these findings can support, and each maps onto a specific claim made above, not the study in general. This is a single-case document analysis. The alignment-coherence finding (5.1) therefore describes designed coherence, not verified coherence, since no student learning-outcome attainment data are analysed here to confirm that CLO-aligned design actually produced CLO-level competence. The inclusion finding (5.4) is bounded in the same way. What is demonstrated is structural access, meaning site selection, contact hours, and standardised content delivery, not community-partner satisfaction or beneficiary-reported outcome data. Claims about the quality or adequacy of the coaching received by disability-serving sites specifically therefore remain untested by this analysis. The Kolb-cycle reading (5.2) is bounded by genre: a single-semester, single-pass course design cannot be judged against a fully iterative implementation of experiential learning theory. This paper's claim is accordingly limited to showing where and why a single pass departs from the full cycle, not to evaluating whether that departure costs students measurable learning. Future

research should therefore triangulate this curriculum-design analysis against quantitative CLO attainment data and qualitative interviews with SULAM community partners at the disability and special-needs sites specifically. Ideally, it should also include a comparative document analysis against at least one other Malaysian TVET social-entrepreneurship course, to test whether the SLT-proportional weighting and site-selection-inclusion mechanisms identified here generalise beyond this single case.

Conclusion

This paper set out to answer a narrower question than "does service-learning work in TVET," a question the literature has already answered in the affirmative many times over. It asked instead how a single Malaysian TVET course converts outcome-based curriculum theory into an auditable set of design decisions. These are decisions a curriculum committee, an accreditation panel, or another lecturer could actually inspect and replicate. The answer, demonstrated through documentary analysis and not merely asserted, is that BTMT 3383 closes the constructive-alignment loop from competency to grade without a single traceable break (Section 5.1). It derives its SULAM-anchored 60% grade weighting from an exact, auditable Student Learning Time calculation instead of convention (5.3). It achieves disability and special-needs inclusion as a structural property of community-site selection instead of as a curriculum add-on (5.4). And it secures assessment authenticity independently at both the continuous-performance layer and the summative-examination layer instead of at only one (5.5).

The paper's original contribution to the literature is threefold. First, it supplies the empirical arithmetic: SLT hours to percentage weighting, site count to beneficiary profile, and cognitive-process marks to examination blueprint. Constructive-alignment and competency-based-design scholarship generally recommends this kind of arithmetic, but rarely documents it at this level of operational detail (Gruppen, 2012; Goyal et al., 2022; Yusop et al., 2022). Second, it identifies a boundary condition in the application of Kolb's experiential learning cycle to single-semester TVET capstones. Such courses can defend a single, deep linear pass through concrete experience, reflection, and re-application, but not the fully iterative cycle Kolb's theory assumes. Curriculum designers claiming experiential grounding should therefore say explicitly which version of the model they are implementing (5.2). Third, it demonstrates that authentic assessment, per Gulikers, Bastiaens, and Kirschner's five-dimensional framework, has to be engineered separately at the performance-task layer and the examination layer. Neither layer's authenticity substitutes for the other. This is a distinction the assessment-authenticity literature has not previously stated this explicitly (5.5) (Gulikers et al., 2006; Sparviero, 2019; Sluijsmans et al., 2008). Taken together, these three contributions reposition the Social Business Model Canvas and SULAM Implementation Journal pairing, and the course's wider design, as a transferable engineering template for TVET and technopreneurship programmes. They are not to be read as a single successful case to admire. Two specific, testable directions for future research follow directly from the limitations named in 5.7, and neither is a generic call for "more research." The first is a quasi-experimental or matched-comparison study. It would track whether courses that adopt SLT-proportional weighting and paired canvas-journal assessment show measurably different CLO attainment than courses using conventional, non-derived weighting schemes. This would test whether the audibility documented here actually improves learning outcomes and not merely design transparency. The second is a qualitative study, conducted directly with the

disability and special-needs community partners named in this paper's SULAM sites. It would examine whether the standardised digital-marketing curriculum these beneficiaries received was pedagogically adequate for their support needs. This would test the boundary condition this paper identified but could not itself resolve, namely that structural inclusion through site selection is not yet evidence of content-level inclusion. Answering either question would move this line of inquiry from documenting a well-designed curriculum to demonstrating that its design choices causally matter.

Author Contributions

Conceptualization, A.F.I. and M.A.M.; methodology, A.F.I.; formal analysis, A.F.I. and M.A.M.; investigation, A.F.I., M.M., M.M.A., N.K., N.N., S.F.S.Z.A. and M.A.A.; resources, M.M., N.K., N.N. and S.F.S.Z.A.; writing—original draft preparation, A.F.I.; writing—review and editing, M.A.M. and M.M.; supervision, M.A.M.; project administration, A.F.I. and M.A.M. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement

Not applicable. This study is a curriculum design document analysis based on official course administration records (Summary of Course Information, Curriculum Design Plan, Teaching Plan, assessment documentation, and the approved SULAM working paper). It did not involve primary data collection from human or animal subjects requiring ethics committee review.

Informed Consent Statement

Not applicable, as this study did not involve human subjects beyond the analysis of institutional curriculum and programme-administration documents.

Data Availability Statement

The curriculum documents analysed in this study (Summary of Course Information, Curriculum Design Plan, Teaching Plan, assessment documentation, and the SULAM working paper) are institutional records of Universiti Teknikal Malaysia Melaka (UTeM) and are not publicly archived due to institutional policy. Reasonable requests for access to de-identified excerpts may be directed to the corresponding author.

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Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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