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TRANSFORMING EDUCATION, DRIVING INNOVATION AND
ADVANCING LIFELONG LEARNING FOR EMPOWERED WORLD

TEACHING FOR TOMORROW: TRANSFORMING ASSESSMENT FOR SUSTAINABILITY

Nooraslinda Abdul Aris*, Normahiran Yatim & Siti Syaqilah Hambali, Norli Ali

Faculty of Accountancy, UiTM Shah Alam*

nooraslinda@uitm.edu.my*

ABSTRACT

Teaching and learning (T&L) assessment is critical to aligning higher education with the growing demands of sustainability and professional relevance. In professional programs such as accounting, traditional assessments often emphasize technical proficiency while neglecting broader competencies such as ethical reasoning, systems thinking, and critical reflection. This study explores the transformation of T&L assessment through the lens of Education for Sustainability (EfS), aiming to empower learners with the competencies required for a sustainable future. A three-phase structured model - Design, Delivery, and Evaluation was adopted to realign T&L assessment transformation. Using a qualitative case study approach, the project involved six lecturers, five facilitators, and 108 students enrolled in a foundation-level accounting program. Data were collected through document analysis, interviews, and classroom observations. The findings reveal a shift from content-based to competency-driven assessment, emphasizing real-world application, interdisciplinary thinking, and participatory learning. Students found the new assessment approach more relevant and engaging, while lecturers noted improved alignment with sustainability and professional values. The study underscores the importance of institutional support, continuous feedback, and educator capacity building in embedding EfS principles effectively. The study contributes to SDG 4 by fostering quality education and preparing graduates to lead sustainable change in their professions and communities.

Keywords: Teaching and Learning assessment, Sustainability, Higher education, Accounting program

INTRODUCTION

Higher education institutions (HEIs) are under increasing pressure to transform their teaching and learning (T&L) practices in response to global sustainability challenges. Education for Sustainability (EfS) emphasizes the need for curricula that cultivate not only disciplinary knowledge but also attitudes,

values, and competencies aligned with the United Nations Sustainable Development Goal 4 (SDG 4) on quality education. However, meaningful transformation remains limited in many HEIs, particularly in professional programs such as accounting, where assessment practices continue to prioritize technical proficiency over broader, sustainability-oriented capabilities.

Recent literature highlights that traditional assessment methods were dominated by summative testing and rote learning, which do not adequately foster competencies such as ethical reasoning, systems thinking, and critical reflection, all of which are essential for graduates navigating complex sustainability challenges (Tran & Herzig, 2023). In contrast, integrating authentic, case-based, and problem-based assessments has shown promise in enhancing engagement and cultivating sustainability mindsets. For instance, studies in environmental education have demonstrated how formative assessment embedded within real-world learning scenarios can foster student ownership and critical action.

Accounting education plays a vital role in shaping future professionals' capability in making informed, ethical, and sustainable decisions. Yet, many programs retain siloed content and lack integrated assessment systems that embed sustainability and professionalism as core outcomes. Addressing this gap requires a holistic, values-based pedagogical shift—one that is supported by faculty commitment, top management leadership, and stakeholder collaboration (Powell & McGuigan, 2024).

Education for Sustainability (EfS) offers a transformative framework to guide such change. Rooted in competencies such as systems thinking, ethical decision-making, and participatory learning (David, 2025; Wamsler, 2020), EfS provides a foundation for redesigning T&L assessment practices toward more authentic, learner-centered approaches. In this context, assessment becomes a tool not only for measuring performance but also for empowering learners to engage with real-world complexity and contribute to societal well-being.

This study aims to transform assessment practices in a foundation-level accounting program by adopting an EfS-informed, three-phase model: Design, Delivery, and Evaluation. The project explores how deliberately structured assessment transformation grounded in stakeholder perspectives and faculty innovation can embed authenticity, civic responsibility, and professional relevance within accounting education.

METHODOLOGY

This study employed a qualitative case study approach to explore the transformation of T&L assessment practices in a foundation-level accounting program, guided by the principles of Education for Sustainability (EfS). The intervention focused on revising learning outcomes and assessment tasks to embed sustainability competencies such as systems thinking, ethical reasoning, and real-world application. The transformation process and its brief explanation were conceptualized using a three-stage model as illustrated in Figure 1 below.

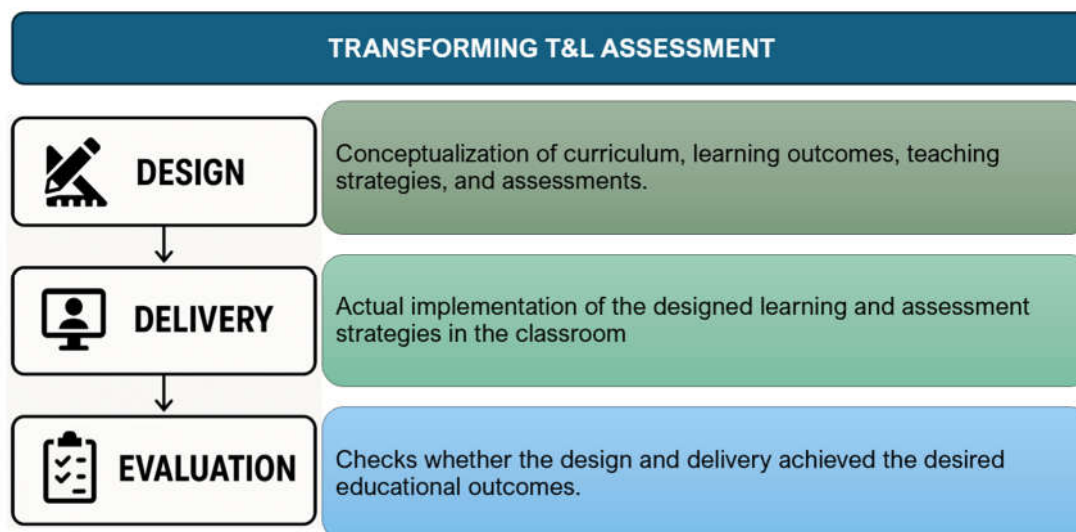


Figure 1.: Three stages of the T&L assessment transformation process

Data collection methods included document analysis of redesigned course materials and rubrics, semi-structured interviews with lecturers and facilitators, and classroom observations during the delivery phase. To evaluate the impact, three different sets of structured questionnaires were developed and administered to each group (students, lecturers, and facilitators) to capture their perspectives on the quality and effectiveness of the transformed T&L experiences. The student questionnaire assessed perceived relevance, engagement, and the extent to which sustainability and professional values were embedded in learning and assessments. The lecturer questionnaire explored changes in assessment design, instructional strategies, and challenges encountered during implementation. The external facilitator questionnaire, targeted at academic peers, provides an external validation of the learning outcomes concerning sustainability and professional standards.

Data were analyzed thematically to identify patterns related to engagement, relevance, and alignment with EfS principles. Triangulation across multiple data sources enhanced the validity of findings, while researcher reflexivity ensured interpretive rigor. This methodology allowed for an in-depth understanding of how assessment innovation can promote sustainability-aligned competencies in professional education contexts.

RESULTS AND DISCUSSION

The transformation of T&L assessment in this study demonstrates a deliberate and structured shift toward more sustainable and future-oriented education practices. Grounded in the three-stage processes, the intervention aimed to align assessment strategies with the core competencies of Education for

Sustainability (EfS), such as systems thinking, ethical reasoning, and problem-solving. The components involved in the transformation process are summarized in Table 1 below.

In the design stage, the learning outcomes and assessment tasks were redefined for three key subjects: Financial Accounting, Business & Technology, and Management Accounting. A collaborative process was undertaken by six lecturers and five external facilitators, who co-designed new assessment formats aimed at aligning content with sustainability competencies such as ethical reasoning, problem-solving, and systems thinking. Learning outcomes were revised to encourage deeper conceptual understanding and application to real-world contexts, while assessment tasks were shifted toward project-based assignments, case analyses, and reflective components. These changes align with EfS principles, emphasizing learning for sustainability rather than merely about content (Lozano et al., 2019).

Among the five facilitators, three were teaching lecturers who had been appointed as subject matter experts. Their experience extended beyond the foundation level, as they had also taught the relevant subjects at higher levels. This enabled them to better understand the roles and responsibilities of teaching lecturers in guiding learners. The remaining two facilitators were independent experts specializing in pedagogy. Their observations of the teaching lecturers provided valuable opportunities for reflection on teaching practices, ensuring alignment with current professional and pedagogical standards. The collaboration and openness of the lecturers signaled a positive shift in mindset, fostering a more reflective and student-centred teaching approach. This transformation was not only intended to strengthen learners' understanding but also to advance the adoption of transformative and interactive pedagogies.

Table 1.: Component involved and its description

Component	Description
Program level	Foundation Stage - Professional Accounting Program
Subjects	Three - Financial Accounting, Business & Technology, Management Accounting
Participants	Six classrooms (108 students) Six teaching lecturers Five external subject matter experts/facilitators
Assessment Intervention	Redesign of learning outcomes and assessment tasks
Evaluation Tools	Three structured questionnaires (Students, Lecturers, Facilitators)

The new assessments were tested across six classrooms involving 108 students. Lecturers facilitated the delivery using more interactive and participatory pedagogies. Methods included group-based problem-solving, simulations, and sustainability-themed business cases. Students were encouraged to explore cross-functional impacts (e.g., how accounting decisions affect social and environmental outcomes), promoting systems thinking. The use of formative feedback and scaffolded guidance reflected EfS's emphasis on iterative, reflective learning (Kandiko Howson & Kingsbury, 2023). Delivery was also enriched by external facilitators who provided industry and sustainability insights, bridging academic theory and practice.

The evaluation served to measure learning outcomes and reflected on the transformation effectiveness. Three structured questionnaires were tailored to students, lecturers, and facilitators. The positive feedback from both students and educators points to increased awareness, deeper critical thinking, and a broader understanding of sustainability concepts. Importantly, evaluation data also illuminated the ongoing need for professional development, institutional support, and a culture of reflection to sustain transformation efforts.

CONCLUSION

This study set out to transform teaching and learning (T&L) assessment within a foundation-level accounting program by aligning it with the principles of Education for Sustainability (EfS). Through a structured three-phase model, the intervention proved that assessment could serve as a powerful tool not only to measure learning outcomes but also to cultivate sustainability-related competencies such as systems thinking, ethical reasoning, and real-world problem-solving (Lozano et al., 2019; Wamsler, 2020).

The collaborative redesign of assessment tasks, supported by active pedagogies and industry engagement, led to more meaningful learning experiences and improved alignment with both professional standards and societal expectations (Azaiki & Shotte, 2020; Tran & Herzig, 2023). Feedback from students, lecturers, and facilitators confirmed increased engagement, relevance, and critical awareness among learners. These findings affirm the potential of EfS-informed assessment to contribute meaningfully to SDG 4: Quality Education and to prepare graduates for the demands of a rapidly evolving, sustainability-conscious world.

This study contributes to the growing body of knowledge on sustainability education by providing a practical, replicable model for assessment transformation. It also supports the call for integrating SDG 4 into the heart of educational design and practice. It underscores the need to reconceptualize assessment not merely as a grading mechanism, but as a strategic tool for nurturing competent, ethical, and sustainability-conscious graduates prepared to contribute meaningfully to society and their professions.

Future research should explore the long-term impact of such assessment transformations on graduate employability, ethical decision-making, and civic responsibility. Comparative studies across disciplines and institutional contexts could yield broader insights into the scalability and adaptability of EfS-based

assessment models. Additionally, longitudinal research may help track how sustainability-integrated assessment influences lifelong learning and professional practice.

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