

Beyond Exams: Recognising Holistic Student Development Through iSTAR's Evidence-Based Co-Curricular Credit System

(Melangkaui Peperiksaan: Pengiktirafan Pembangunan Pelajar Holistik melalui Sistem Kredit Kokurikulum Berasaskan Bukti iSTAR)

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ABSTRACT

Traditional exam-oriented evaluation methods in higher education often overlook the full spectrum of soft skills essential for graduate employability. Skills such as communication, leadership, problem-solving, civic responsibility, and digital fluency are more effectively nurtured through authentic co-curricular experiences than through written assessments alone. However, these transformative experiences frequently remain undocumented or unofficial, limiting their visibility and value within academic records. To address this gap, Universiti Kebangsaan Malaysia (UKM) introduced *Sistem Integrasi Bakat, Aktiviti dan Resume Pelajar* (iSTAR), the university's official system for registering and evaluating student co-curricular activities using an evidence-based alternative assessment model. Through this mechanism, iSTAR awards *Kemahiran Insaniah* (KI), or soft skills credits, based on cumulative notional hours and verifiable documentation, aligning firmly with Outcome-Based Education (OBE) principles and the aspirations of Malaysia MADANI. Drawing on secondary data from 2021 to 2025, this study analyses 989 approved credit-bearing activities selected from an annual average of 2,500 student programmes. Eight domains were identified, with Leadership (26.8%), Volunteerism (15.7%), and Innovation (13.4%) standing out as the most represented. The trend indicates a rise in activities from 197 in 2022 to a peak of 294 in 2023, followed by a decline after the compulsory KI requirement in 2024. These patterns signal evolving student engagement behaviours and an increasing institutional reliance on structured recognition mechanisms. The distinctiveness of iSTAR lies in its verifiable digital audit trail, which requires authentic evidence such as proposals, reports, photographs, attendance lists, and adviser verification and in its alignment with Kolb's Experiential Learning Cycle, enabling students to progress through concrete experience, reflection, conceptualisation, and active experimentation. By formally embedding soft skills within academic transcripts, iSTAR strengthens graduate employability and elevates co-curricular learning as a legitimate, auditable component of holistic student development.

Keywords: Alternative Assessment, Soft Skills, Co-Curricular Learning, Academic Recognition, Universiti Kebangsaan Malaysia (UKM).

ABSTRAK

Kaedah penilaian berorientasikan peperiksaan yang lazim digunakan dalam pendidikan tinggi sering mengabaikan spektrum penuh kemahiran insaniah yang penting untuk kebolehpasaran graduan. Kemahiran seperti komunikasi, kepimpinan, penyelesaian masalah, tanggungjawab sivik, dan literasi digital lebih berkesan dipupuk melalui pengalaman kokurikulum yang autentik berbanding penilaian bertulis semata-mata. Namun, pengalaman transformatif ini selalunya tidak didokumentasikan atau tidak diiktiraf secara rasmi, sekali gus menghadkan keterlihatan dan nilainya dalam rekod akademik pelajar. Bagi menangani jurang ini, Universiti Kebangsaan Malaysia (UKM) memperkenalkan *Sistem Integrasi Bakat, Aktiviti dan Resume Pelajar* (iSTAR), iaitu sistem rasmi universiti untuk mendaftarkan dan menilai aktiviti kokurikulum pelajar melalui model pentaksiran alternatif berasaskan bukti. Melalui mekanisme ini, iSTAR menganugerahkan kredit Kemahiran Insaniah (KI) berdasarkan jam notional kumulatif dan bukti yang boleh disahkan, selaras dengan prinsip Outcome-Based Education (OBE) dan aspirasi Malaysia MADANI. Berdasarkan data sekunder bagi tahun 2021 hingga 2025,

kajian ini menganalisis 989 aktiviti berkredit yang diluluskan daripada purata 2,500 program pelajar yang dilaksanakan setiap tahun. Lapan domain dikenal pasti, dengan Kepimpinan (26.8%), Kesukarelawanan (15.7%) dan Inovasi (13.4%) muncul sebagai kategori paling dominan. Trend menunjukkan peningkatan aktiviti daripada 197 pada tahun 2022 kepada kemuncak 294 pada tahun 2023, diikuti penurunan selepas pemansuhan keperluan wajib KI pada tahun 2024. Corak ini mencerminkan perubahan tingkah laku penglibatan pelajar dan peningkatan kebergantungan institusi kepada mekanisme pengiktirafan yang lebih tersusun. Keunikan iSTAR terletak pada jejak audit digital yang boleh disahkan, yang memerlukan bukti autentik seperti kertas kerja, laporan, foto, rekod kehadiran dan pengesahan penasihat, serta keselarasan eratnyanya dengan Kitar Pembelajaran Berpengalaman Kolb. Reka bentuk ini membolehkan pelajar melalui fasa pengalaman konkrit, refleksi, konseptualisasi dan aplikasi aktif. Dengan memasukkan kemahiran insaniah secara rasmi dalam transkrip akademik, iSTAR meningkatkan kebolehpasaran graduan dan mengangkat pembelajaran kokurikulum sebagai komponen sah dan boleh diaudit dalam pembangunan pelajar secara holistik.

Kata Kunci: Pentaksiran Alternatif, Kemahiran Insaniah, Ekstra kurikulum, Pengiktirafan Akademik, UKM.

INTRODUCTION

Traditional academic evaluation in universities has historically centred on written examinations and coursework as the primary indicators of student achievement. While these methods effectively assess theoretical understanding, they place limited emphasis on the soft skills increasingly recognised as vital to graduate employability. Global studies reveal a persistent gap between employer expectations and graduates' actual competencies, particularly in communication, leadership, adaptability, and creative problem-solving (Succi & Canovi, 2020; Jackson & Bridgstock, 2021). In Malaysia, Tee et al. (2024) report similar findings, noting that employers now anticipate graduates to exhibit a balanced integration of academic knowledge and interpersonal skills.

In this context, co-curricular activities such as program management, innovation competitions, and community engagement have emerged as significant platforms for authentic learning experiences that cannot be replicated through traditional classroom instruction. These lived experiences enable students to organically develop soft skills while contributing to both campus and society. Nevertheless, such experiences are often documented informally or recognized only through certificates, which limits their formal value within academic records. Data from the *Sistem Integrasi Bakat, Aktiviti dan Resume Pelajar* (iSTAR) system, covering 2021 to 2025, indicate that, on average, 2,500 student-led activities were registered each year, but

only 989 sought recognition for Kemahiran Insaniah (KI) credit. This suggests a pressing need for a more robust and formalised mechanism to acknowledge experiential learning.

Policy directives from the Ministry of Higher Education (MOHE) prioritise holistic student development through Student-Centred Learning (SCL), Work-Based Learning (WBL), and Outcome-Based Education (OBE). These priorities align with the educational principles of Malaysia MADANI, which emphasise comprehensive human development, ethical citizenship, and values-based education (Radzi et al., 2025). As a premier research university, Universiti Kebangsaan Malaysia (UKM) implements these principles through iSTAR, a system designed to effectively manage, assess, and recognise student co-curricular engagement in a transparent, standardised, and auditable manner.

A fundamental theoretical foundation of iSTAR is Kolb's Experiential Learning Theory (ELT), which asserts that meaningful learning occurs through a four-stage cyclical process: concrete experience, reflective observation, abstract conceptualisation, and active experimentation (Rahmi, 2024). iSTAR integrates this cycle by requiring students to submit structured documentation, such as proposals, reflective reports, attendance records, photographs, and adviser verification, ensuring that learning is both experiential and reflective rather than solely participatory (Kay & Sahin, 2022).

The focus on verifiable evidence significantly

bolsters academic integrity, as every KI credit application must undergo a digital audit to ensure authenticity and accuracy. This approach aligns with international trends in lifelong learning and micro-credentialing, in which student achievements are documented in a structured, traceable, and portable format (OECD, 2021). By converting co-curricular engagement into official credit-bearing records, iSTAR effectively bridges the divide between academic and non-academic accomplishments, thereby enhancing graduates' comprehensive profiles and increasing their competitiveness in the job market.

Overall, iSTAR fills a critical gap in the higher education ecosystem by offering a standardised, evidence-based alternative assessment framework that recognises experiential learning as a vital component of student development. This study, therefore, investigates trends in KI credit applications, examines the predominant domains of student engagement, and explores the broader implications of the iSTAR system for employability, experiential learning, and holistic education in the context of digital transformation.

LITERATURE REVIEW

The development of soft skills has increasingly become a focal point in higher education, as universities have come to realise that academic performance alone does not encompass the full range of abilities necessary for success in the workplace. According to Succi and Canovi (2020), employers consistently report that graduates often lack crucial competencies such as communication, teamwork, leadership, and adaptability. This disconnect between university education and workplace demands underscores the need to integrate comprehensive skill development into the student learning experience. In Malaysia, research by Tee et al. (2024) indicates that skill gaps, particularly in digital and interpersonal competencies, remain a significant hurdle affecting graduate employability.

Experiential learning frameworks offer a robust foundation for understanding how participation in co-curricular activities enhances student development. Stirling and Kerr (2015), in their exploration of meaningful co-curricular experiences, emphasise that learning outside the classroom becomes truly impactful when students engage in reflection, skill recognition, and active experimentation. Their analysis aligns with Kolb's Experiential Learning Theory, which posits that students learn through cycles of concrete experience, reflective observation, conceptual understanding, and practice. This further supports the rationale for systems

like iSTAR, which encourage students to document their activities and demonstrate the associated learning outcomes.

In parallel with experiential approaches, transformative learning theories also emphasise the significance of student-centred assessment practices. Chan and Sidhu (2013) assert that formative and transformative assessments promote deeper engagement, foster metacognitive development, and enhance student agency. Their research illustrates that authentic assessments, including project-based tasks, community engagement, and reflective writing, are more effective in cultivating values, competencies, and leadership qualities than traditional examinations. This perspective shifts the discussion toward assessment models that prioritise real-world performance over memory-based evaluations.

The digital transformation in higher education has concurrently accelerated the adoption of digital credentialing and verified learning records. According to Wolz, Gottlieb, and Pongratz (2021), digital credentials enhance transparency and trust in the recognition of learning by enabling institutions to systematically document evidence of student participation, skill acquisition, and achievements. Their review highlights the growing importance of secure, auditable, and portable learning records, which closely align with iSTAR's focus on documented evidence, such as proposals, reports, attendance lists, and advisor verification.

Moreover, the development of soft skills is intricately linked to the formation of professional identity. Tomlinson and Jackson (2019) demonstrate that students who actively engage in co-curricular and experiential learning activities tend to develop stronger self-efficacy, clearer career identities, and improved employability outcomes. Their findings indicate that institutions must transcend content-based curricula and create environments in which students can connect experiences, reflect meaningfully, and articulate their competencies, precisely the shift enabled by structured systems like iSTAR.

Discussions surrounding assessment reform in higher education increasingly underscore the need to redesign assessment practices to be more meaningful, developmental, and aligned with future learning needs. Elkington and Evans (2017), through the Higher Education Academy's initiative "Transforming Assessment in Higher Education," emphasise the need for assessment to transition towards greater transparency, enhanced use of technology, and practices that foster student engagement and autonomy in learning. Their research highlights three strategic

priorities: assessment literacy, technology-enhanced assessment, and student engagement, all of which resonate with the principles that underpin the iSTAR system. By integrating evidence-based evaluation, reflective practices, and structured recognition, iSTAR exemplifies these contemporary directions in assessment transformation.

METHODOLOGY

Figure 1 outlines the methodological workflow of this study, which employed a descriptive quantitative

design to examine trends, domain distribution, and participation frequencies within the iSTAR system from 2021 to 2025. The dataset was exclusively sourced from UKM's iSTAR digital platform and comprised (i) activity registration logs, (ii) verified alternative assessment submissions, and (iii) records of soft-skill domain classification. Over the five years, an annual average of 2,500 to 2,800 student-led programs was documented, resulting in the extraction of 989 applications for KI credits.

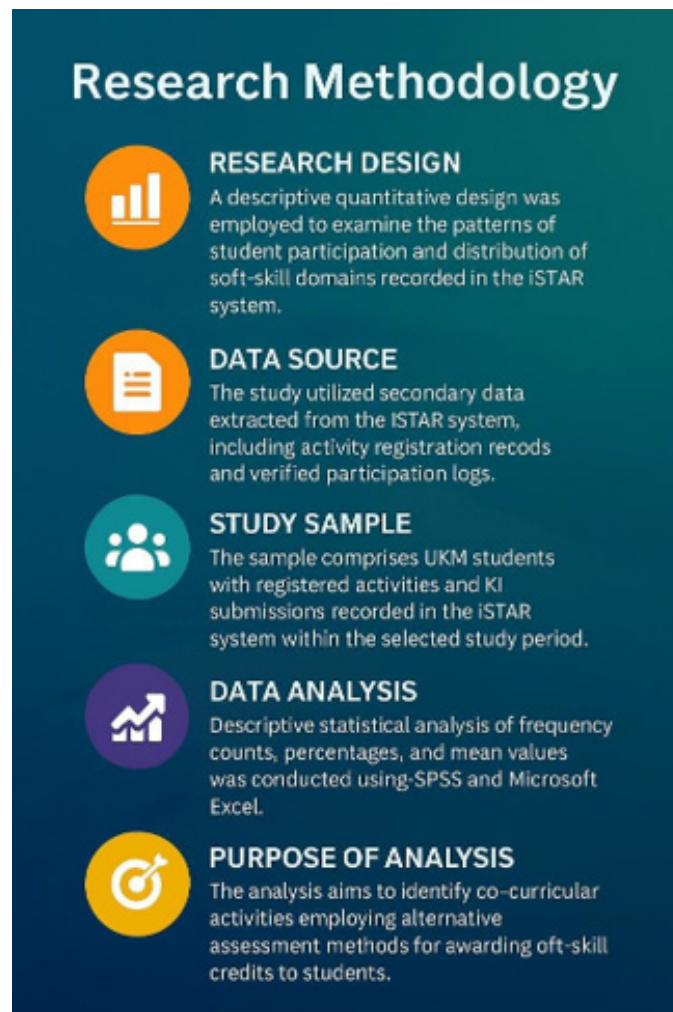


FIGURE 1. iSTAR Research Methodology Flow summarising the design, data source, dataset composition, processing steps, and analytical outcomes.

The data processing involved cleaning, deduplication, domain categorisation, and verification through the system's digital audit trail, which includes proposals, final reports, attendance sheets, photographic evidence, and adviser authentication. Statistical analyses were conducted using SPSS and

Excel, emphasising frequency distributions, percentage analysis, cross-domain comparisons, and year-on-year visualisations. The workflow depicted in Figure 1 illustrates the progression from data extraction to analysis and interpretation.

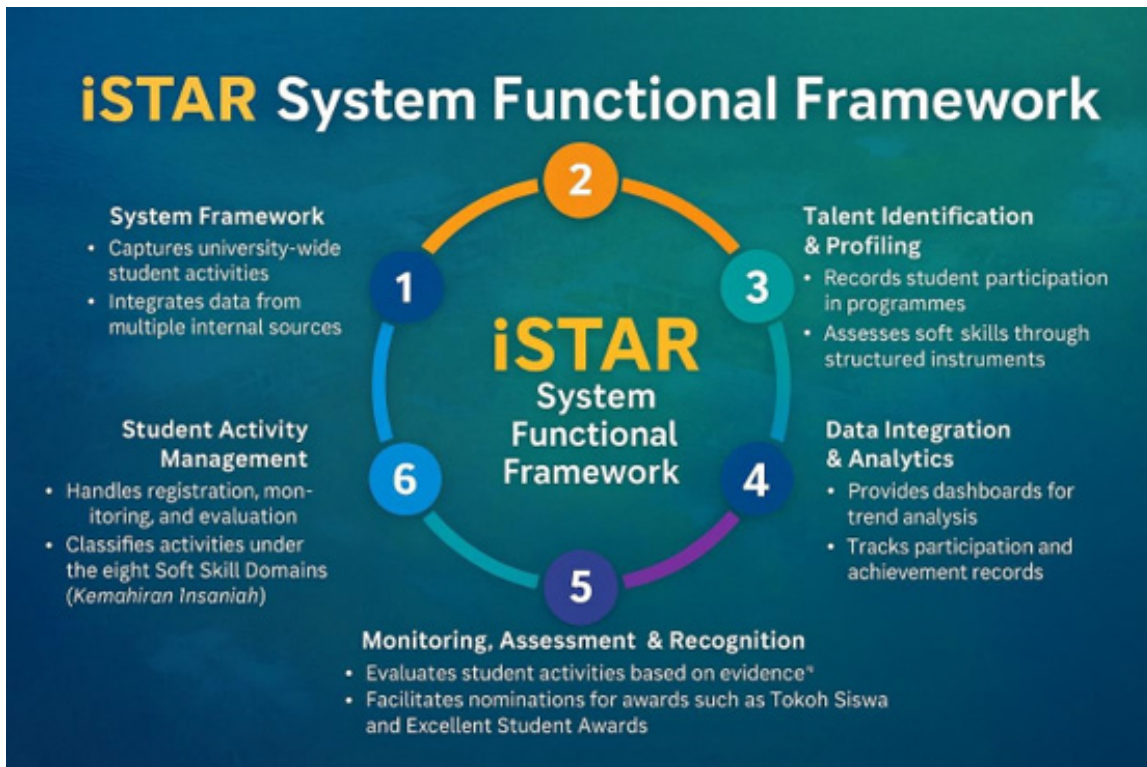


FIGURE 2. Functional components of the iSTAR system supporting registration, activity management, analytics, monitoring, and evidence-based recognition of student co-curricular achievement.

Figure 2 illustrates the structural features of the iSTAR system that underpin the methodological approach. These six components: system framework, talent profiling, activity management, data analytics, monitoring and assessment, and digital recognition ensure that all student activities are systematically recorded and categorised according to the eight soft-skill domains: Leadership, Volunteerism, Innovation, Entrepreneurship, Communication, Personal Development, Professional Skills, and Community Engagement.

Only activities that are supported by complete, verifiable evidence are included in the KI credit dataset. This systematic classification of domains facilitates the precise identification of participation patterns and the dominant skill categories over time. The visualisations presented in the findings are generated directly from the iSTAR internal dashboard, which offers real-time, evidence-based analytics. This methodological approach is aligned with the study's objective of mapping student engagement trends rather than exploring causal relationships.

RESULTS AND DISCUSSION

The analysis of 989 approved credit-bearing iSTAR activities conducted from 2021 to 2025 reveals consistent engagement across various soft-skill domains, despite fluctuations in annual participation. Out of an average of 2,500 registered student programs per year, only those activities that were structured and evidence-verified qualified for KI credit recognition. Notably, the volume of activities increased significantly from 197 in 2022 to 294 in 2023, before moderating to 269 in 2024 and 203 in 2025 (refer to Figure 3). The peak in 2023 likely reflects heightened awareness of KI's value and proactive institutional promotion. In contrast, the decline post-2024 aligns with the removal of the compulsory KI requirement at the faculty level. Importantly, this reduction does not signal a decrease in student interest; rather, it indicates a shift in motivational drivers - a trend also observed in international participation linked to employability in co-curricular activities (Succi & Canovi, 2018).

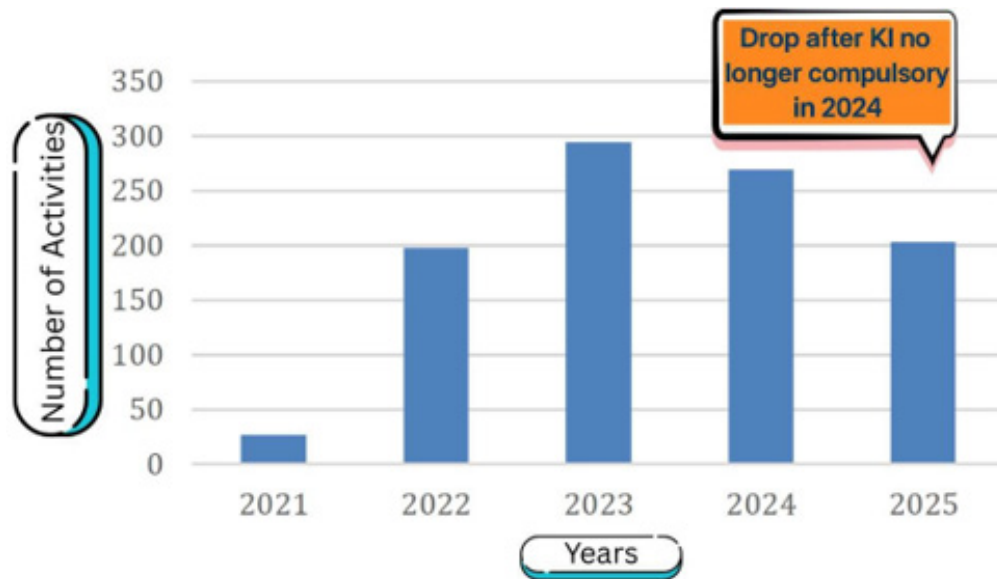


FIGURE 3. Trend of iSTAR-Verified Credit-Bearing Activities that Fulfil Kemahiran Insaniah (KI) Requirements (2021–2025).

A domain-level distribution analysis underscores Leadership as the most prevalent area (26.8%), followed by Volunteerism (15.7%), Innovation (13.4%), Culture (11.5%), Entrepreneurship (7.9%), Sustainability (5.9%), and Sports (4.9%), among other sub-domains (refer to Figure 4). These findings reinforce Clarke's (2017) assertion that graduate employability is strongly influenced by various forms

of “human” and “social capital,” which are cultivated through leadership, teamwork, communication, and civic engagement. Additionally, the robust performance of innovation-related activities highlights the growing institutional emphasis on developing creative problem-solving skills, aligning with global calls to foster innovative thinking among university students (Kholikova, 2021).

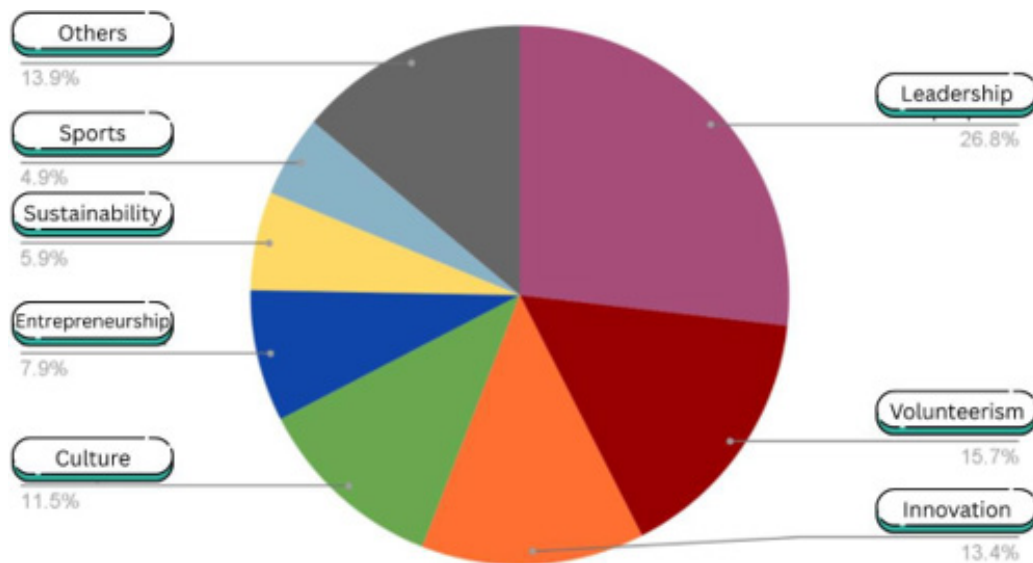


FIGURE 4. Soft Skills Distribution by Domain, 2021–2025

The diverse array of activities within the iSTAR framework reflects the sustainability competencies increasingly integrated into higher education systems. Sá, Lourenço, and Carlos (2022) highlight that sustainability-oriented participation fosters holistic skill sets, including environmental responsibility, ethical reasoning, and community awareness. These competencies align with iSTAR's domains of Sustainability, Volunteerism, and Culture. This connection indicates that iSTAR not only recognises participation but also maps student development to future-oriented competencies that are increasingly valued in contemporary labour markets.

A notable strength of iSTAR lies in its evidence-based assessment model, which necessitates activity proposals, attendance verification, reports, reflective writing, and advisor authentication. This digital audit trail supports transparency and integrity, meeting the criteria outlined by Harvey and Williams (2010) for modern quality assurance frameworks, which require robust quality assurance systems to be evidence-driven, traceable, and independently verifiable. The iSTAR system effectively meets these expectations, positioning it ahead of the traditional co-curricular transcripts used at many universities.

The analysis further demonstrates that students progress systematically through Kolb's Experiential Learning Cycle, moving from concrete experience (participation in programs) to reflective observation (written reports), abstract conceptualisation (identifying soft skills), and active experimentation (applying skills in subsequent activities). This progression is closely aligned with the experiential learning principles articulated by Yardley, Teunissen, and Dornan (2012), who underscore the transformative power of structured reflection and iterative skill development. iSTAR operationalises these principles by incorporating assessment rubrics and mandating explicit reflection on learning outcomes.

From an employability perspective, the recognition of soft skills on official academic transcripts gives Malaysian graduates a competitive edge in an increasingly crowded job market. Research indicates that employers place significant value on behavioural and interpersonal skills, in addition to technical qualifications (Clarke, 2017; Succi & Canovi, 2018). By documenting soft skills through a verified, auditable system, iSTAR enhances graduate profiles and aligns with Malaysia's MADANI initiative, which emphasises character, responsibility, and holistic well-being.

Finally, the results indicate strong potential for improving institutional policy. The decline in credit-bearing activities after 2024 highlights the need for

renewed strategies to encourage voluntary engagement, such as faculty-level incentives, micro-credential linkages, or integration with e-portfolio systems. These implications echo international findings that structured participation, institutional support, and recognition mechanisms significantly influence student engagement (Kholikova, 2021; Sá et al., 2022; Succi & Canovi, 2018). Given its scalability and digital reliability, iSTAR is well-positioned to serve as a national model for alternative assessment in Malaysian universities.

While this study offers valuable insights into student engagement and alternative assessment models, two primary limitations related to data reliance and institutional context must be considered. The study relies exclusively on secondary datasets extracted from UKM's internal iSTAR digital platform. While these records provide a comprehensive, audited digital trace (e.g., proposals, reports, attendance lists, and adviser verifications), secondary data inherits inherent constraints. The analysis is limited to captured metadata and pre-defined administrative metrics, preventing a deeper exploration of qualitative nuances - such as individual student motivations, perceived barriers to participation, or personal reflections beyond standard submission forms. Additionally, shifts in administrative tracking or mandatory reporting criteria (e.g., the policy change removing mandatory KI credit requirements in 2024) can introduce confounding variables that influence longitudinal trend interpretation.

Findings regarding participation volumes, trend spikes (such as the peak in 2023), and soft-skill domain dominance (e.g., Leadership at 26.8%) reflect the specific institutional culture, administrative structures, and policy directives of Universiti Kebangsaan Malaysia. Consequently, caution must be exercised when extrapolating these specific empirical trends to other higher education institutions within or outside Malaysia. Differences in institutional size, co-curricular infrastructure, digital readiness, student demographics, and credit-allocation policies across universities could lead to varying levels of student engagement and soft-skill domain distributions.

CONCLUSION

This study demonstrates that iSTAR serves as a robust, evidence-based alternative assessment system rooted in authentic experiential learning. By evaluating and recognising 989 credit-bearing activities between 2021 and 2025, iSTAR not only delineates patterns of student engagement across eight essential soft-skill domains but also illustrates how competencies such as leadership,

volunteerism, innovation, and sustainability are fostered through structured co-curricular experiences. Its integrated digital audit trail, which includes proposals, reports, participation evidence, and adviser verification, enhances transparency and builds trust in the recognition process. This positions iSTAR ahead of traditional co-curricular transcript systems utilised by many universities, elevating the significance of soft-skill achievements to a level comparable to academic performance. The findings also indicate that iSTAR aligns with the aspirations of Malaysia MADANI and the principles of Outcome-Based Education by linking student activities to measurable, verifiable learning outcomes. Beyond enhancing student usability and graduate employability, iSTAR promotes a culture of lifelong learning, self-reflection, and holistic character development. The shift in participation trends observed after 2024 underscores the need for policy recalibration - not to reinstate compulsory credit requirements, but to introduce new strategies that encourage intrinsic engagement and leverage data analytics to understand student behaviour better. With its strong design, scalability, and commitment to data integrity, iSTAR holds significant potential to serve as a national model for evidence-based recognition of student competencies. Ultimately, iSTAR transcends the notion of a mere system; it embodies a comprehensive ecosystem for student development, capable of transforming how universities assess, document, and value holistic learning for future generations.

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