Nurturing Digital Leadership Among Student Leaders in ASEAN Higher Education
(Memupuk Kepimpinan Digital Dalam Kalangan Pemimpin Pelajar di Pengajian Tinggi ASEAN)

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ABSTRACT

Digital leadership is a rapidly emerging transformation that has profoundly reshaped the landscape of higher education. The surge of Artificial Intelligence in late 2022 has impacted the structure and mechanism of educational systems operated in ASEAN countries and the global arena. The competitive edge for student leaders has transcended the realm of traditional knowledge and conventional study methods. It pivots on their aptitude and agility in comprehending, adapting, and embracing the swiftly evolving learning landscape and digital-driven leadership environment. This paper proposes a conceptual framework for the complete integration of the latent potential of digital leadership to drive positive enhancements within the tertiary institutional and organisational paradigm. Focusing on the ASEAN landscape, this paper lays out the methodologies with their potential importance to be leveraged in nurturing student leaders towards the path of "Resilience and Reinvention." The multidimensional collaboration involving different stakeholders in the education landscape is framed to build a technology-centric and collaboration-oriented ecosystem. The ensuing appraisal provides the essential stepping stones and initial thrusts required to equip student leaders from a bottom-up approach to enable them to advance their leadership skills.

Keywords: Digital Transformation, Leadership, Higher Education, Framework

ABSTRAK

Kepimpinan digital ialah transformasi yang pesat membangun yang telah membentuk semula landskap pendidikan tinggi secara mendalam. Lonjakan Kepintaran Buatan pada akhir 2022 telah memberi kesan kepada struktur dan mekanisme sistem pendidikan yang dikendalikan di negara ASEAN dan arena global. Kelebihan daya saing untuk pemimpin pelajar telah melangkaui bidang pengetahuan tradisional dan kaedah pengajian konvensional. Ia berpaksi pada kebolehan dan ketangkasan mereka dalam memahami, menyesuaikan diri dan menerima landskap pembelajaran yang berkembang pesat dan persekitaran kepimpinan yang dipacu digital. Kertas kerja ini mencadangkan rangka kerja konsep untuk penyepaduan lengkap potensi terpendam kepimpinan digital untuk memacu peningkatan positif dalam paradigma institusi pengajian tinggi dan organisasi. Dengan memberi tumpuan kepada landskap ASEAN, kertas kerja ini membentangkan metodologi dengan potensi kepentingannya untuk dimanfaatkan dalam memupuk pemimpin pelajar ke arah laluan "Ketahanan dan Penciptaan Semula." Kerjasama multidimensi yang melibatkan pihak berkepentingan yang berbeza dalam landskap pendidikan dirangka untuk membina ekosistem berteraskan teknologi dan berorientasikan kerjasama. Penilaian seterusnya menyediakan batu loncatan penting dan teras awal yang diperlukan untuk melengkapkan pemimpin pelajar dari pendekatan bawah ke atas untuk membolehkan mereka memajukan kemahiran kepimpinan mereka.

Kata kunci: Transformasi Digital, Kepimpinan, Pendidikan Tinggi, Rangka Kerja

BACKGROUND OF THE PROGRAM

The higher education landscape is undergoing a rapid transformation driven by the integration of digital technologies. This shift necessitates thoroughly re-evaluating the skill sets required for student leaders. There is a notable gap in existing knowledge regarding integrating digital leadership into higher education curricula in the current status quo.

In alignment with the visionary objectives set forth by the Malaysia Ministry of Higher Education, under the umbrella of "Student Empowerment" initiatives, this paper lays out the intricate correlation between the depth of students' digital literacy and the tangible impacts generated by leaders, both qualitatively and quantitatively. As we steer our efforts toward attaining Sustainable Development Goal 4, which centres on Quality Education, this study unveils the gaps between our education system's structural mechanics and framework- essentially the bedrock of digital transformation.

UNICEF East Asia and Pacific Regional Office defined digital literacy as a person's ability to use digital platforms for finding, consuming, evaluating, creating and communicating digital content. This skill set is perceived as a prerequisite for talents to participate in a modern labour force and make well-informed decisions. The recent AI bloom is a piece of evidence that the structural framework of our education system must adapt to the demands of digital transformation. A significant number do not appear to use or possess the skills we expect digital natives to have (Bennett et al., 2008). The spike in graduates' job mismatch and unemployment highlights the need to revise the skill sets moulded by our tertiary education system in public and private institutions. Educators in Malaysia have a high tendency to assume that most students today are digital natives (Prensky, 2001).

DEMOGRAPHICS

The program will be implemented across various universities in ASEAN countries, ensuring a diverse and representative participant pool. These universities will be chosen for their commitment to innovation in education and their willingness to integrate digital leadership development into their curricula.

A stratified random sampling method will be implemented to ensure inclusivity, considering factors such as university size, location, and focused disciplines. There would be a minimum of 3 universities selected from each category.

The student leaders were selected based on the criteria laid out in Section 2.1.

Selection Criteria

The selected student leaders should only be full-time undergraduates. They must be associated with an on-campus student organisation actively running at least two programs per academic year. The pool of participants should be an equal combination of:

Criteria 1: STEM and non-STEM background

Criteria 2: Male and Female

Criteria 3: Racial and Ethnicities

Criteria 4: Place of Residence (Urban and Rural)

As a proof of concept, the students are separated into treatment and control groups to showcase the disparity between digital and conventional leadership. Both the treatment and control groups will be tasked to execute similar projects during the execution phase.

Treatment Group: Student leaders are involved in the digital leadership hands-on workshops on the scope of digital innovation, problem-solving, collaboration, communication, ethics and responsibility.

Control Group: Student leaders are excluded from the boot camps.

MODULES

In the context of higher education's evolving digital landscape, developing digital leadership skills among student leaders is paramount. The module aims to address the existing gaps and limitations in traditional leadership and equip the student leaders with the necessary digital knowledge and support to organise their projects by leveraging digital tools. The module comprises four pillars covering the practical implementations and prerequisites of digital leadership.

Primary Problem

The digital literacy deficiency or the lack of digital comprehension will be the key focus of the entire module. In addition, the traditional leadership models that do not adequately prepare student leaders for the challenges posed by digital transformation will be

revised.

The conflicts between the conventional leadership paradigms and the demands of digital requirements in the module will be reflected as a key advantage of having a universal and integrated approach to digital leadership development.

Hypotheses

A guided and mixed-methods approach will be employed to address the complex and multi-faceted nature of nurturing digital leadership among student leaders in ASEAN higher education. This inclusive methodology encompasses quantitative and qualitative data collection and analysis, ensuring a comprehensive understanding of the program's impact.

By effectively integrating digital leadership modules into the curriculum and improving leadership with a specific focus, it is presumed that the student leaders will exhibit improved leadership capabilities.

TABLE 1. Overview of the ASEAN Tertiary Education Digital Leadership Framework

End-to-end Integrated Ecosystem			
Knowledge Base	Execution Tracks	Mentorship	Peer-To-Peer
Digital Tools • Storage • Documentation • Communication • Management Industry Partners • Microsoft (MLSA) • Google (GDSC)	• Innovations • Sports/Recreation • Community Service • Entrepreneurship • Cultural	• Industrial Collaboration • Weekly Sync • Rotation System	• Support Group • Tips and Tricks

Methodology

Quantitative Phase

Checkpoint 1: A cross-sectional survey design will be used to assess student leaders' digital leadership skills and digital literacy levels. This survey will be designed to capture quantitative data related to their skills, knowledge, and experiences.

Checkpoint 2: Primary data will be collected through surveys of selected student leaders. The surveys will include questions on their digital literacy, leadership experiences, and perceptions of the program's effectiveness.

Checkpoint 3: Descriptive statistics, including percentage distribution, mean, and frequency counts, will be used to analyse the quantitative data. Regression analysis will examine the relationships between independent and dependent variables.

Weightage Mechanism

Assign weights to each element based on their relative importance, in relevance to other quantifying factors from the attributes, utilising a 10-point scale:

TABLE 2. Weightage Mechanism for Quantitative Survey

Critical Elements	10
Important Elements	7
Moderately Important Elements	5
Less Important Elements	3
Least Important Elements	1

Qualitative Phase

Checkpoint 1: Qualitative data will be collected through in-depth interviews and focus group discussions with a subset of student leaders from both treatment and control groups. These interviews will explore their experiences, challenges, and perceptions more deeply.

Checkpoint 2: Recorded interviews and focus group discussions will be transcribed verbatim for sentiment analysis.

Checkpoint 3: Qualitative data will be analysed thematically to identify recurring patterns and sub-themes. This approach will provide rich insights into the ASEAN Tertiary Education Digital Leadership framework from the perspective of the student leaders.

The quantitative and qualitative findings will be integrated during the analysis phase to provide a holistic understanding of the program's outcomes. Triangulation of data sources will be employed to validate and strengthen the overall conclusions.
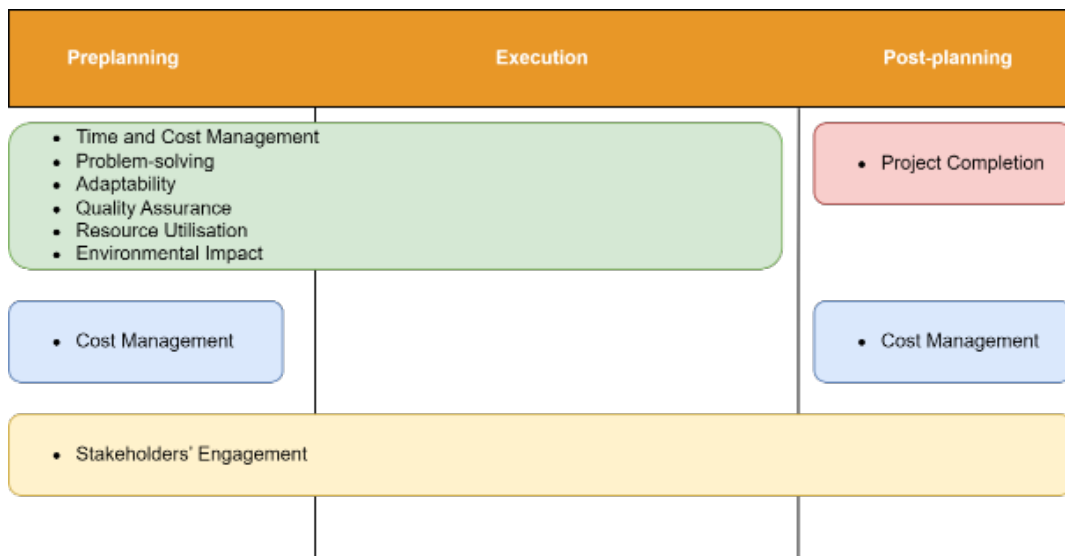

IMAGE 1. Overview of the Quantitative and Qualitative Analysis

TABLE 3. Pre-Planning (For Pre-Planning And Preparation)

Element	Quantitative Metrics	Qualitative Metrics
Time Management	Measure task completion rates and schedule adherence during pre-planning to ensure timely preparations.	Collect feedback through surveys and interviews to assess stakeholders' perceptions of time management during pre-planning.
Problem-solving	Quantify the time taken to identify and resolve potential pre-planning obstacles and challenges during the pre-planning phase.	Analyse the quality and efficiency of problem-solving efforts through surveys and problem-resolution timelines in the pre-planning stage.

Adaptability	Assess the number of deviations from the initial pre-planning framework and the ability to adapt to changing circumstances during the pre-planning phase.	Evaluate adaptability through surveys, pre-planning audits, and feedback regarding adjustments made during the pre-planning stage.
Cost Management	Track budget deviations and cost variances during pre-planning to ensure resource allocation aligns with financial constraints.	Assess the effectiveness of cost control measures based on budgetary adherence and financial reports in the pre-planning phase.

TABLE 4. Execution (For Program Flow And Execution)

Element	Quantitative Metrics (Description for Execution)	Qualitative Metrics (Description for Execution)
Time Management	Measure *task completion rates and schedule adherence* during program execution to ensure timely progress.	Collect feedback through *surveys and interviews to assess stakeholders' perceptions* of time management during execution.
Problem-solving	Quantify the *time to identify and resolve problems and obstacles* during program execution.	Analyse *the quality and efficiency of problem-solving efforts* through surveys and problem-resolution timelines during execution.
Adaptability	Assess the *number of deviations* from the initial execution plan and the ability to adapt to changing circumstances during program execution.	Evaluate adaptability *through surveys, post-execution audits, and feedback regarding adjustments* made during execution.
Quality Assurance	Measure the *number of quality control checks* conducted during execution and their outcomes in terms of deliverable quality.	Analyse the *quality of program deliverables, reviews, and stakeholder feedback* to determine the effectiveness of quality assurance efforts.
Stakeholder Engagement	Quantify *stakeholder interactions* and responses to program execution activities and communication efforts.	Collect *feedback from stakeholders regarding their level of engagement, collaboration, and satisfaction* with program execution engagement activities.

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Resource Utilisation	Track resource *allocation and utilisation rates* during program execution to optimise resource deployment.	Assess *resource efficiency and utilisation effectiveness* through reports and surveys during execution.
Environmental Impact	Calculate *environmental impact indicators* such as carbon footprint and resource consumption associated with program execution activities.	Evaluate the *effectiveness of environmental initiatives* by considering the reduction in environmental impact achieved during program execution.

TABLE 5. Post-Planning (For Reviews And Post-Stakeholder Engagement)

Element	Quantitative Metrics	Qualitative Metrics
Project Completion	Assess the number of deviations from the initial post-planning framework and the ability to adapt to post-implementation dynamics during the post-planning phase.	Evaluate adaptability through surveys, post-implementation audits, and feedback regarding adjustments made during post-planning.
Cost Management	Track budget deviations and cost variances in the post-implementation phase.	Assess the effectiveness of cost control measures based on budgetary adherence and financial reports in the post-planning phase.
Stakeholder Engagement	Quantify stakeholder interactions and responses to post-implementation activities and communication efforts.	Collect feedback from stakeholders regarding their level of engagement, collaboration, and satisfaction with post-implementation engagement activities.

IMPLEMENTATION TIMELINE

The project is expected to be completed in one year, with the following timeline in Table 6.

This timeline serves as an inclusive research approach, ensuring that quantitative and qualitative aspects are thoroughly explored to assess the impact of nurturing digital leadership among student leaders in ASEAN higher education.

ACTIVITIES

Project Implementation (Workshops And Executions)

A series of intensive boot camps will be held to facilitate the development of digital leadership skills among

TABLE 6. Implementation Timeline

Phase 1	Review and Framework Development	Two months	• Finalise the framework implementation settings. • Prepare the execution tracks.
Phase 2	Project Implementation (Workshops and Executions)	Four months	• Intensive Bootcamps • Focus-group support • Attached mentorships
Phase 3	Data Collection Analysis (Quantitative)	Three months	• Reports and transparent-box analysis • Weightage inputs
Phase 4	Interviews and Focus Groups (Qualitative)	Two months	• Immersive and integrated scrutinisation • Stakeholders' engagement • Weightage comparison
Phase 5	Proposal and In-depth Integrations	One month	• Roundtable discussions with management • Retrospective

student leaders. These workshops were held over a month, with each workshop ending with a take-away task for them to utilise the skill set in project planning. The composition of each program organising committee includes a mix of students of various backgrounds, localities, and studies.

The workshops are skewed towards actual case studies, requiring intensive hands-on exercises. The experimental design for this research incorporates the control group as well.

The measured variables included the participants' digital literacy levels, leadership skills, and their perceived ability to apply these skills effectively.

Workshops Coverage	Track of Executions
In collaboration with Google Developer Student Club and Microsoft Learn Student Ambassadors. • Collaboration • Documentation • Communication • Management	A student leader under the ASEAN Digital Leadership Framework leads each project. • Innovations • Sports (or Recreation) • Community Service • Entrepreneurship • Cultural

Mentorship Initiative

Concurrently with the workshops, a mentorship program is initiated for the treatment group whereby each student leader from the treatment group is assigned a mentor in the digital field. The mentorship program will extend throughout the 12 months until the completion of their assigned project execution. The composition of this program involved one-on-one mentoring sessions and monthly group meetings for retrospective purposes.

The measured variables include students' performance in digital leadership modules, ability to apply digital leadership concepts in practical situations, and execution success. The framework's success is assessed with the immediate and gradual effects shown in the execution and adoption by the student leaders.

CONCLUSION

With the implementation of the ASEAN Digital Leadership Framework in this concept paper, the significance of digital literacy among student leaders and our tertiary education system will be a testimonial to make ASEAN on par with technological advancement across the region.

Student leaders must be equipped with digital skill sets to level up the impact of all the initiatives they take in and out of campus. The end-to-end mentorship and curriculum integration through the proposed digital measure strives to create a safe environment for nurturing changemakers.

The success of the digital leadership framework should be a supporting factor in amplifying the opportunity and involvement of every tertiary education student in the latter journey. This framework challenges traditional leadership to be more adaptable and innovative.

By the end of implementation, the measurable impacts shown both qualitatively and quantitatively would contribute to the significant growth of the digital leadership landscape, driving positive transformations in our ASEAN tertiary education landscape.

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