

Transforming Education Through Digital Minds: A Systematic Review on The Role of Educational Management in Building Social Entrepreneurial Competencies Among Public University Students

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Abstract –The rapid digital transformation in higher education has fundamentally changed educational management, especially in preparing students for the challenges of social entrepreneurship. Public universities, as vital institutions in shaping future leaders, are now tasked with integrating these digital practices within their management and leadership development to foster social entrepreneurial competencies among students. Nevertheless, existing research remains fragmented, with most studies concentrating separately on either digital education or entrepreneurial competencies, and only a handful exploring the intersection between the two. This study aims to systematically review recent literature published between 2020 and 2025 on the role of educational management in fostering social entrepreneurial competencies among university students, with a focus on the integration of digital practices. Following PRISMA guidelines, relevant articles were retrieved from Scopus, Web of Science, and Google Scholar using keywords such as “digital educational management,” “social entrepreneurship,” “student competencies,” and “higher education.” Articles were included on higher education contexts, addressed digital educational management in relation to social entrepreneurship, and were published in peer-reviewed journals between 2020 and 2025. Studies were excluded if they did not address digital components or lacked direct relevance to competency development. The review identifies three emerging themes: (i) the role of digital leadership and policy frameworks in supporting entrepreneurial learning, (ii) pedagogical and curricular integration of social entrepreneurship through digital tools, and (iii) gaps in empirical evidence, particularly within Malaysian public universities. The findings highlight that digital educational management holds transformative potential, there is insufficient research addressing how structured management practices directly influence students’ social entrepreneurial competencies. The proposed framework delineates key dimensions such as digital leadership strategies, curricular integration models, and assessment mechanisms for social entrepreneurial competencies, offering a comprehensive approach to linking digital educational management with student competency development. Implications are for policymakers, higher education administrators, and future research directions.

Keywords – Educational Management, Digital Transformation, Social Entrepreneurship, Student Competencies, Public Universities

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I. INTRODUCTION

Digital transformation is now a defining characteristic of higher education, with universities increasingly adopting technologies such as artificial intelligence (AI), big data analytics, cloud systems, and online learning platforms for teaching, research, and governance (Bond et al., 2021). These innovations are reshaping institutions into digitally connected ecosystems that extend beyond traditional classrooms. To meet global demands, universities must prepare graduates with hybrid competencies such as technical proficiency, adaptability, problem-solving, and social responsibility, to address challenges like climate change, inequality, and economic uncertainty (Kopp et al., 2021; Mishra et al., 2022).

The COVID-19 pandemic accelerated this shift, highlighting both opportunities and weaknesses. While online and hybrid learning ensured continuity, the rapid transition exposed gaps in infrastructure, institutional readiness, and leadership capacity (Flores et al., 2022). Sustainable digital transformation requires more than technology; it depends on cultural adaptation, organisational alignment, and strategic digital leadership (Kohnke & Giesemann, 2022).

Concurrently, social entrepreneurship has emerged as a key framework for equipping students with competencies such as empathy, creativity, ethical reasoning, and community-focused problem-solving, skills aligned with the United Nations Sustainable Development Goals (García-González et al., 2024; Ismail et al., 2023). Across ASEAN, policies like Malaysia’s Higher Education Blueprint, the Entrepreneurship Action Plan (2021–2025), and the MyDIGITAL Blueprint emphasise integrating digital literacy with entrepreneurial thinking to produce graduates capable of driving societal impact (MOHE, 2021; Government of Malaysia, 2021).

Despite these policy efforts, research remains fragmented. Studies on digital education often focus on technology adoption or online pedagogy, while social entrepreneurship research tends to examine student attitudes rather than competency development or managerial strategies (Dwivedi et al., 2021; Sahid et al., 2024). This gap underscores the need for systematic synthesis to understand how digital educational management supports the development of social entrepreneurial competencies in higher education.

To address this, the present study conducts a Systematic Literature Review (SLR) of publications from 2020–2025, examining how educational management particularly through digital approaches to shapes the

development of social entrepreneurial competencies among public university students.

II. PROBLEM STATEMENT

Although universities worldwide are embracing digital technologies, research reveals a persistent gap between digital transformation efforts and the development of social entrepreneurial competencies. Most studies on digital education focus narrowly on technology adoption or online teaching, with limited attention to the leadership and management processes needed to translate these initiatives into meaningful competency outcomes (Bond et al., 2021; Kohnke & Giesemann, 2022). Similarly, scholarship on social entrepreneurship in higher education often examines student intentions or participation rather than institutional strategies for cultivating skills such as empathy, creativity, and ethical reasoning (Dwivedi et al., 2021).

Despite strong policy commitments such as Malaysia's Higher Education Blueprint, the Entrepreneurship Action Plan 2021–2025, and MyDIGITA, empirical evidence on how universities operationalise these frameworks through digital educational management remains scarce, particularly in ASEAN. This gap creates challenges for institutions seeking to align digitalisation with social responsibility and innovation. Without a clear understanding of how leadership and governance integrate these priorities, universities risk implementing technologically advanced initiatives that lack pedagogical and strategic coherence.

To address this fragmentation, a systematic review is essential to synthesise existing research, identify inconsistencies, and clarify how educational management and leadership can effectively support the development of social entrepreneurial competencies through digital approaches.

III. LITERATURE REVIEW

Digital Transformation in Higher Education

The digital evolution of higher education stands as one of the most transformative developments of the 21st century. Although universities had begun integrating digital technologies prior to the COVID-19 outbreak, the pandemic served as a critical accelerant, compelling institutions to rapidly adopt online learning platforms, virtual classrooms, and hybrid teaching models (Bond et al., 2021). This abrupt shift revealed both the potential and the limitations of digital transformation by offering new avenues for accessibility, flexibility, and personalized learning, while simultaneously exposing structural weaknesses in infrastructure, leadership, and equity.

Recent academic discourse has moved beyond the initial focus on technology adoption, delving into how digitalisation is reshaping pedagogical approaches, institutional governance, and the cultivation of student competencies (Chen et al., 2023). One of the most profound changes lies in the redefinition of the student learning experience. Technologies such as Learning

Management Systems (LMS), artificial intelligence (AI), and immersive tools like augmented and virtual reality are increasingly employed to foster engagement, interactivity, and skill acquisition (Yin et al., 2024). These tools have transitioned from supplementary resources to foundational elements of modern education, forming the backbone of how universities prepare students for a dynamic, tech-driven workforce.

Globally, institutions have adopted varied strategies to embed digital transformation within their systems, resulting in a wide array of practices and insights. For instance, the Erasmus and Virtual Exchange initiative in Europe exemplifies how digital platforms can facilitate cross-border collaboration, enabling students to participate in multicultural and interdisciplinary learning experiences without the need for physical mobility (Jansen & Schuwer, 2022). This model illustrates the democratizing potential of digital education, breaking down barriers traditionally imposed by geography and financial constraints.

In the United States, the emergence of micro-credentials and stackable degree programs reflects a distinct pathway in the digital evolution of higher education. Leveraging online platforms, universities now offer modular, competency-based courses that can be accumulated toward full qualifications. This model enhances flexibility and better aligns academic offerings with the dynamic needs of the labor market (García-Peñalvo, 2023). Meanwhile, Australian institutions have been at the forefront of implementing adaptive learning technologies, which personalize educational content based on individual progress and learning preferences. These innovations promote inclusivity and cater to a diverse student population (Selwyn et al., 2022). Such developments illustrate that digital transformation encompasses far more than the shift to online instruction. It includes reimagining credentialing systems, utilizing data-driven personalization, and expanding global connectivity through virtual platforms.

From a theoretical standpoint, these global shifts align with Rogers' Diffusion of Innovation theory (2003), which categorizes adopters into innovators, early adopters, majority users, and laggards. The pace and success of digital adoption in higher education vary widely, shaped by factors such as institutional leadership, technological infrastructure, and organizational culture. Additionally, socio-technical systems theory emphasizes that effective digital transformation is not solely dependent on technological tools but also on their integration with human capabilities, institutional structures, and cultural norms (Bostrom & Heinen, 2022). These frameworks underscore that digitalisation is a multifaceted process involving strategic management and cultural adaptation.

While high-income nations offer valuable models, the context of digital transformation in developing regions particularly ASEAN warrants focused attention. Persistent challenges such as uneven access to infrastructure, affordability issues, and gaps in digital literacy continue to hinder progress (Aboagye et al., 2021). Nonetheless, ASEAN countries have demonstrated strong commitment to digital advancement, often embedding it within broader national development agendas.

In Malaysia, for example, the Digital Economy Blueprint (MyDIGITAL) positions digitalisation as a cornerstone of socio-economic progress. It outlines strategies to embed digital literacy, innovation, and entrepreneurship within the higher education sector (Government of Malaysia, 2021). Complementing this, the Entrepreneurship Action Plan for Higher Education Institutions (2021–2025) mandates the integration of entrepreneurial education across universities, signaling a clear policy alignment between digital transformation and competency development. Together, these initiatives encourage institutions to move beyond traditional teaching models toward producing graduates equipped with both digital fluency and entrepreneurial agility.

Across Southeast Asia, countries are embedding digital transformation into national education strategies in diverse and innovative ways. In Indonesia, the *Kampus Merdeka* (Freedom Campus) initiative integrates digital learning with entrepreneurship education as part of broader higher education reforms. Thailand, meanwhile, has aligned its digital education efforts with the Sustainable Development Goals (SDGs), encouraging students to use digital platforms to co-create community-driven innovations (Suyanto & Indriani, 2023; Chantarasombat, 2023). At the regional level, the ASEAN Digital Masterplan 2025 outlines ambitious goals to nurture digital talent, foster cross-border collaboration, and position universities as key drivers of human capital development (ASEAN, 2021). These initiatives reflect a growing recognition that digital transformation is not merely about technological upgrades, but it is a strategic lever for enhancing employability, innovation, and social impact.

However, despite these progressive efforts, several challenges remain unresolved. Chief among them is the persistent digital divide, which continues to deepen inequalities across socioeconomic groups. Students from rural or underprivileged backgrounds often face limited access to reliable internet, digital devices, and online learning resources, restricting their ability to fully participate in the digital shift within higher education (Aboagye et al., 2021). This disparity raises critical questions about whether digitalisation is truly democratizing education or inadvertently reinforcing existing inequities.

Another pressing issue is the narrow scope of much of the current literature, which tends to focus on the adoption of digital tools such as Learning Management Systems (LMS) and online platforms without adequately addressing the institutional and managerial frameworks that ensure these technologies lead to meaningful learning outcomes. As García-Morales et al. (2022) argue, digital transformation should be understood as a comprehensive organizational change process. It involves not only the deployment of technological solutions but also shifts in institutional culture, leadership strategies, governance models, and resource allocation. Without this holistic alignment, digital initiatives risk becoming fragmented and unsustainable.

A notable gap in existing scholarship concerns the role of educational management and leadership in steering

digital transformation. While technological adoption is essential, it must be supported by leadership practices that connect digital tools to broader institutional goals and competency frameworks. For example, digital platforms can facilitate experiential learning, but without strategic curricular integration and assessment mechanisms, their impact remains marginal. Similarly, investments in AI-powered learning analytics will not translate into improved student outcomes unless supported by robust management systems that enable data-informed decision-making across academic departments.

This perspective is reinforced by Bandura's Social Cognitive Theory (1977), which highlights the importance of self-efficacy in learning. In digitally mediated environments, students' confidence and skill development depend on institutional support structures, mentorship, and enabling policies. Likewise, Ajzen's Theory of Planned Behaviour (1991) suggests that digital ecosystems can shape attitudes, norms, and perceived behavioural control but only when educational leadership actively cultivates environments where such competencies are recognized and rewarded.

In conclusion, digital transformation in higher education presents both opportunities and challenges. Globally, universities have embraced diverse models from virtual exchanges and micro-credentials to adaptive learning systems by demonstrating the potential of digital tools to enhance personalization, inclusivity, and global engagement. In Malaysia and across ASEAN, policy frameworks such as *MyDIGITAL* and *Kampus Merdeka* reflect regional aspirations to align digital literacy with entrepreneurship and sustainable development. Yet, significant barriers persist, including infrastructural limitations, digital inequality, and institutional inertia.

Most critically, the literature reveals a persistent oversight: while much attention has been given to digital tools and pedagogical innovations, fewer studies have examined how educational management and leadership translate digital transformation into the development of competencies, particularly those related to social entrepreneurship. Addressing this gap is essential for ensuring that digitalisation in higher education leads not only to technological advancement but also to the cultivation of socially responsible, future-ready graduates.

Educational Management and Leadership

In the context of rapid digital transformation, educational management and leadership have become central to shaping the trajectory of higher education. Universities today function not only as centers of knowledge dissemination but also as multifaceted institutions responsible for nurturing graduates with hybrid skill sets that blending technical proficiency, creativity, social awareness, and entrepreneurial capability. Within this evolving landscape, educational management extends beyond operational efficiency; it encompasses the strategic alignment of institutional vision, governance, policy, and leadership practices with the competencies required in a globalized, digital economy (Bush & Glover, 2021).

The digital age has fundamentally altered the expectations placed on higher education leaders. Traditional models that prioritized authority and hierarchical control are increasingly being replaced by leadership paradigms that emphasize flexibility, inclusivity, and innovation. Leaders are now expected to not only oversee the implementation of digital technologies but also foster a culture of adaptability, collaboration, and continuous learning among faculty and students (Anderson & van Wyk, 2022). This dual mandate is balancing technological integration with human development that represents a significant shift in the scope and nature of educational leadership.

In practical terms, this transformation requires leaders to build environments that support digital innovation while ensuring equitable access and participation. The COVID-19 pandemic exemplified this challenge, as institutional leaders were compelled to rapidly redesign curricula, reconfigure assessment methods, and invest in digital infrastructure with all while safeguarding student wellbeing and academic standards (Flores et al., 2022). These experiences highlight the critical role of leadership in both crisis response and long-term strategic planning.

At the policy level, educational management serves as the structural backbone for competency development. In Malaysia, the Malaysia Education Blueprint 2015–2025 (Higher Education) identifies digital literacy, innovation, and entrepreneurship as key graduate outcomes (Kementerian Pendidikan Malaysia, 2015). This national vision places responsibility on institutional leaders to translate broad policy goals into actionable strategies such as embedding entrepreneurship across academic programs, allocating resources for digital infrastructure, and supporting initiatives that foster both economic and social entrepreneurial skills.

Similar policy directions are evident globally. The European Union's Digital Education Action Plan 2021–2027 emphasizes not only the adoption of digital tools but also the leadership capacity required to integrate digital competencies and entrepreneurial thinking into higher education systems (European Commission, 2021). In the United States, the rise of micro-credentials and competency-based education has prompted university leaders to align institutional strategies with evolving labor market demands (García-Peñalvo, 2023). These international examples underscore a common theme: policy frameworks must be operationalized by educational leaders to ensure that institutions produce graduates equipped with relevant, future-ready competencies.

A range of leadership theories offer valuable perspectives for understanding how educational management adapts to the demands of digital transformation:

- Transformational Leadership centers on the ability to craft and communicate a compelling institutional vision, stimulate intellectual engagement, and provide personalized support to stakeholders (Nguyen et al., 2023). Within higher education, transformational leaders play a crucial role in motivating faculty to view digital tools not as administrative burdens but as

catalysts for pedagogical innovation and the development of future-ready competencies.

- Distributed Leadership emphasizes shared decision-making and collaborative governance across different levels of an institution (Harris, 2021). This approach is particularly effective in scaling digital initiatives, as successful implementation often requires coordinated efforts among academic staff, IT professionals, administrators, and students.
- Digital Leadership also referred to as e-leadership that has emerged as a contemporary framework focused on the strategic integration of digital technologies into institutional operations and educational practices (Elrehail et al., 2022). Leaders in this domain must combine technological literacy with strategic insight, ensuring that digital tools are embedded within the organizational culture and aligned with long-term educational goals, rather than being treated as temporary solutions.

Together, these frameworks suggest that effective leadership in the digital age requires a multifaceted skill set: the ability to articulate vision, foster collaboration, and navigate technological change. Without this blend of capabilities, digital transformation efforts risk becoming fragmented, short-lived, and disconnected from broader institutional objectives.

While the promise of digital transformation in higher education is widely acknowledged, many institutional leaders encounter substantial challenges in implementing it effectively. Common constraints include limited financial resources, underdeveloped digital infrastructure, resistance to change among academic staff, and varying levels of digital literacy across the institution (Al-Hunaiyyan et al., 2023). In the Malaysian context, public university leaders face additional complexities such as rigid bureaucratic systems, regulatory limitations, and the need to balance global competitiveness with national development priorities (Zainal et al., 2022).

For example, although national policies like the *Entrepreneurship Action Plan 2021–2025* advocate for the integration of entrepreneurial education across higher education, many universities struggle with aligning curricula to policy goals, training staff adequately, and securing the necessary resources. Leadership must also address equity concerns, ensuring that digital transformation does not widen existing gaps in access and opportunity among students from different socioeconomic backgrounds.

Globally, some universities have demonstrated innovative leadership approaches in navigating these challenges. In Finland, institutions employ collaborative governance models that actively involve faculty and student representatives in shaping digital strategies (Moilanen, 2022). In Australia, the expansion of adaptive learning technologies has been driven by leadership that prioritizes inclusivity and personalized learning experiences (Selwyn et al., 2022). These examples suggest that successful digital leadership requires both strategic vision and participatory decision-making.

For Malaysia and the broader ASEAN region, such international practices offer valuable insights. Developing leadership models that are not only digitally competent but also culturally attuned is essential. The ASEAN Digital Masterplan 2025 outlines regional ambitions to foster digital talent and innovation-led growth, but its success hinges on university leaders' ability to translate high-level strategies into actionable institutional plans. This includes fostering inclusive digital ecosystems, aligning institutional goals with national priorities, and cultivating leadership that can navigate both technological and human dimensions of transformation.

An often overlooked yet essential aspect of educational management is its influence on shaping social entrepreneurial competencies among students. While existing research on leadership in higher education tends to focus on pedagogy, curriculum design, or institutional efficiency, there is limited exploration of how leadership practices contribute to the cultivation of attributes such as ethical awareness, empathy, creativity, and problem-solving particularly within digitally mediated learning environments. This gap is especially relevant in Malaysia and across ASEAN, where universities are increasingly expected to serve as platforms for nurturing socially conscious innovators.

Leadership that prioritizes digital innovation can play a direct role in competency development by facilitating student engagement in virtual simulations, international collaborations, and community-oriented digital projects. Similarly, institutional policies that support digital mentorship programs or entrepreneurship incubators can expose students to real-world challenges and foster entrepreneurial thinking. However, without deliberate alignment between leadership strategies and competency frameworks, digital transformation risks becoming overly focused on technology rather than on meaningful learning outcomes.

In essence, although educational leadership has been extensively studied in relation to teaching practices, organizational culture, and technology integration, there remains a notable lack of research examining how management and leadership actively shape social entrepreneurial competencies through digital initiatives. Much of the existing literature treats digital leadership, entrepreneurship education, and competency development as separate domains. Bridging these areas is critical to understanding how universities can fulfill their transformative role in society.

For Malaysia and the ASEAN region, this is not only a theoretical gap but also a practical concern. While national and regional policies increasingly emphasize entrepreneurship and digital literacy, there is a shortage of empirical studies investigating how university leaders implement these policies to produce graduates who are both socially responsible and digitally proficient. Addressing this gap is essential to ensure that strategic ambitions translate into tangible, student-centered outcomes that benefit both local communities and broader societal development.

Social Entrepreneurship in Higher Education

Social entrepreneurship is becoming a key part of higher education, offering new ways to solve social problems. Unlike regular business ventures that focus mainly on profit, social entrepreneurship aims to create social impact while staying financially sustainable. It involves finding creative and lasting solutions to issues in communities or globally, and requires skills like empathy, ethics, creativity, and resilience (Dwivedi & Weerawardena, 2023).

In universities, social entrepreneurship helps students become not just job-ready but also responsible global citizens. It improves their chances of employment and builds leadership and civic values. By working on real-world problems, students learn to balance business thinking with ethical responsibility, boosting their confidence, problem-solving, and adaptability. According to Rahman et al. (2024), this kind of education encourages students to lead change in their communities and supports global goals like SDG 4 (Quality Education), SDG 8 (Decent Work), and SDG 10 (Reduced Inequalities).

Around the world, universities are supporting social entrepreneurship. For example, Ashoka U's Changemaker Campuses show how institutions can include social innovation in teaching, research, and campus life (Rae et al., 2022). Top universities like Stanford and MIT offer labs and events that connect tech innovation with social needs, helping students develop empathy and creativity.

In Europe, combining service learning with entrepreneurship has shown clear benefits. Bacq and Alt (2023) found that hands-on courses improve students' confidence and teamwork. This shows the value of practical learning over theory. In Africa and Latin America, universities use social entrepreneurship to tackle issues like poverty and health. Kenyan agricultural schools focus on food security, while Brazilian universities offer programs in community health (Mwangi & Kuria, 2023). These examples show how social entrepreneurship can be adapted to local needs while teaching skills that matter globally.

In Malaysia and the wider ASEAN region, social entrepreneurship is becoming part of higher education through national policies. Malaysia's National Entrepreneurship Policy 2030 (NEP 2030) sees universities as key players in shaping graduates who are both productive and socially responsible (MEDAC, 2021). The *Dasar Keusahawanan IPT 2021–2025* supports this by encouraging universities to include entrepreneurship in teaching and student activities, focusing on solving community issues. Public universities have responded by setting up entrepreneurship centres, incubators, and working with NGOs and industries to give students real-world experience (Ismail et al., 2022). For instance, *Universiti Kebangsaan Malaysia* runs innovation labs where students create solutions for poverty, climate change, and other challenges.

Other ASEAN countries are also making progress. Indonesia's *Kampus Merdeka* policy lets students earn credits for joining entrepreneurial or community projects, taking learning beyond the classroom (Suyanto & Indriani,

2023). Thailand links social entrepreneurship education to the UN's Sustainable Development Goals, encouraging students to tackle poverty, climate issues, and social inclusion (Chantarasombat, 2023). These efforts show that universities in ASEAN are expected to help meet national and regional goals by developing socially aware graduates.

However, there are still challenges. One issue is that many programs focus more on students' interest in entrepreneurship than on building actual skills. In Malaysia, students are keen but often lack abilities like spotting opportunities, managing finances, and making ethical decisions (Norazmi et al., 2022). This gap makes it hard for them to turn ideas into lasting ventures.

Another problem is that social entrepreneurship is not fully part of the main curriculum. It's often limited to optional activities like workshops or competitions, which means not all students benefit equally (Hassan et al., 2023). Public universities also face funding and resource limits, which affect their ability to offer hands-on learning and mentorship.

Policy implementation is also uneven. While NEP 2030 and *Dasar Keusahawanan* IPT provide clear direction, not all universities follow through. Some embrace the changes, but others face internal challenges like bureaucracy or lack of leadership (Hamzah et al., 2023). This shows a wider issue in ASEAN's education systems, where national plans don't always match what institutions can do.

Lastly, digital tools are not used enough in social entrepreneurship education. Technologies like online incubators, virtual mentoring, and AI-based learning could improve how students learn and engage, but there's little research on this in ASEAN (Gupta et al., 2024). Without proper strategies, digitalisation may remain underused.

In summary, social entrepreneurship is gaining ground in higher education and helps prepare students for future challenges. Global examples show how universities can teach skills like empathy, innovation, and ethics. In ASEAN, strong policies support this shift, but more needs to be done to turn interest into real skills. Digital tools and better management strategies are key to making social entrepreneurship a core part of education, not just an add-on.

Digital Management and Social Entrepreneurship Competencies

The link between digital management and social entrepreneurship skills is still developing but holds great potential for improving higher education. While digital tools are often studied in teaching, and social entrepreneurship is seen to promote civic engagement, few studies combine both within education leadership. This connection is important because universities need more than just tech systems and entrepreneurship courses—they also need strong leadership to align digital efforts with skill-building goals.

Several theories help explain this link. Shapero and Sokol's Entrepreneurial Event Theory (1982) suggests that people act entrepreneurially when they feel ready and supported with something digital platforms and leadership

can enhance. Bandura's Social Cognitive Theory (1977) highlights self-belief, which can grow through digital tools like simulations and online incubators. Ajzen's Theory of Planned Behaviour (1991) shows how digital environments shape attitudes and confidence, influencing students' actions. Spencer and Spencer's Competency Theory (1993) outline the skills needed for social entrepreneurship, which can be developed through digital learning.

In practice, digital platforms offer new ways to build these skills. Students can learn through online simulations, gamified challenges, and virtual internships (Turan & Kara, 2023). Digital mentoring connects them with global changemakers (Gupta et al., 2024), while analytics tools help teachers track progress in areas like empathy and creativity (Wang & Zhao, 2023). Cross-border digital projects also build intercultural skills, preparing students for global leadership.

Still, research in this area is limited. Studies on digital leadership often focus on tech use and governance (Elrehail et al., 2022), while entrepreneurship research tends to look at business success rather than skill development (Dwivedi & Weerawardena, 2023). Few explore how leadership strategies link digital tools with social entrepreneurship skills. In Malaysia and ASEAN, this gap is even wider. Policies like MyDIGITAL and the Entrepreneurship Action Plan (MOHE, 2021–2025) support digitalisation and entrepreneurship, but there's little evidence on how universities use these policies to build student competencies.

This gap shows the need for a structured review of existing research to better understand what works and what doesn't. By identifying successful practices and common challenges, universities can design strategies that focus on building real skills. For instance, leadership models that effectively combine digital tools with entrepreneurship education could be adapted across ASEAN. At the same time, issues like limited resources, low digital literacy, and poor collaboration between departments can help guide policy improvements.

The connection between digital management and social entrepreneurship should be seen as a full ecosystem:

- Leadership and management set the direction, provide resources, and shape culture.
- Digital platforms and tools offer hands-on learning experiences.
- Students build key skills like empathy, creativity, and ethical thinking.
- These skills lead to real-world actions that support sustainable development and the SDGs.

This approach shows that educational management is not just a background factor, it plays a central role in making digitalisation meaningful. Without strong leadership, digital tools may be underused or disconnected. But with the right strategies, they can drive real change and help students become effective social entrepreneurs.

IV. METHOD

Research Design

This study employed a Systematic Literature Review (SLR) to analyse recent research (2020–2025) on how digital educational management and leadership contribute to developing social entrepreneurial competencies among public university students. The SLR approach ensures transparency and replicability in synthesising both empirical and conceptual findings (Snyder, 2019).

The review process adhered to the PRISMA 2020 guidelines (Page et al., 2021), which outline four key stages:

1. Identification – searching major academic databases for relevant studies.
2. Screening – removing duplicates and assessing titles and abstracts for relevance.
3. Eligibility – reviewing full texts against predefined inclusion and exclusion criteria.
4. Inclusion – retaining studies that meet all quality and relevance standards.

Search Strategy

Searches were conducted between July and August 2025 using Scopus, Web of Science (WoS), and Google Scholar.

- Scopus provides extensive coverage of peer-reviewed journals in education, management, and entrepreneurship.
- Web of Science indexes high-impact research and allows precise filtering.
- Google Scholar captures interdisciplinary studies and conference papers often missing from other databases.

The search string applied was:

- ("digital educational management" OR "educational leadership digital" OR "digital university governance") AND ("social entrepreneurship" OR "social entrepreneurial competencies" OR "entrepreneurial education") AND ("higher education" OR "public universities" OR "university students").

Filters restricted results to English-language publications from 2020–2025. Additionally, manual backward citation searches were performed, adding 11 further studies to the review.

Inclusion and Exclusion Criteria

TABLE I: INCLUSION AND EXCLUSION CRITERIA

Criteria	Inclusion	Exclusion
Period	2020–2025	Before 2020
Language	English	Non-English
Source Type	Peer-reviewed journals, books, conferences	Editorials, blogs, reports

Criteria	Inclusion	Exclusion
Focus	Higher education; digital management/leadership; social entrepreneurship	Non-HE or purely business contexts
Relevance	Links digital transformation with competency or entrepreneurship	Lacks digital or management dimension

PRISMA Flow

TABLE II: SUMMARY OF STUDY SELECTION PROCESS

Stage	Description	Articles (n)
Identification	Records found in Scopus, WoS, Google Scholar	428
Screening	Duplicates removed; abstracts screened	362
Eligibility	Full texts assessed	89
Inclusion	Final studies meeting criteria	47

Data Extraction

Key information was extracted for each included study: author(s), year, country, research focus, design, variables, and findings. Data were organised in Excel and coded to identify emerging themes.

TABLE III: SUMMARY OF DATA EXTRACTION

Author (Year)	Country	Focus	Method	Key Findings
García-González & Ramírez-Montoya (2023)	Mexico	Digital leadership in HE	Qualitative	Digital governance fosters innovation and social responsibility. Empathy and creativity strengthened via experiential learning. Leadership alignment crucial for digital transformation.
Hamzah et al. (2023)	Malaysia	Entrepreneurial competencies	Quantitative	Virtual mentoring improves entrepreneurial confidence.
Sahid et al. (2024)	Malaysia	Educational management	Conceptual	Virtual mentoring improves entrepreneurial confidence.
Gupta et al. (2024)	India	Digital mentorship	Mixed	Virtual mentoring improves entrepreneurial confidence.

Thematic Analysis

A thematic synthesis approach (Braun & Clarke, 2021) identified key patterns and consolidated insights. Three overarching themes emerged.

TABLE IV: THEMATIC SYNTHESIS

Theme	Focus of Discussion	Representative Sources
Digital Leadership and Institutional Strategy	Leadership vision, digital governance, and institutional readiness for competency-based education.	Kohnke & Gieselmann (2022); Elrehail et al. (2022)
Digital Pedagogies and Competency Development	How AI, LMS, and immersive tools foster innovation and problem-solving.	García-González & Ramírez-Montoya (2023); Turan & Kara (2023)

Theme	Focus of Discussion	Representative Sources
Policy and Management Alignment for Social Impact	Linking policy coherence and leadership support to entrepreneurship and social responsibility goals.	Sahid et al. (2024); Hamzah et al. (2023)

Quality Assessment

Methodological quality was appraised using the Joanna Briggs Institute (JBI) checklist (Aromataris & Munn, 2020). Studies were rated *High*, *Moderate*, or *Low* according to clarity, methodological rigour, and credibility. Low-quality studies were excluded.

TABLE V: SUMMARY OF QUALITY ASSESSMENT

Author (Year)	Design	Quality Rating
Kohnke & Gieselmann (2022)	Conceptual	High
Hamzah et al. (2023)	Quantitative	Moderate
Sahid et al. (2024)	Conceptual	High
García-González & Ramírez-Montoya (2023)	Qualitative	High

Summary

This review relied exclusively on publicly available, previously published studies; therefore, ethical clearance was not required. All sources were properly cited to maintain research integrity. Guided by PRISMA 2020 standards, the SLR systematically examined 47 studies published between 2020 and 2025, retrieved from Scopus, Web of Science (WoS), and Google Scholar. The analysis revealed three overarching themes: digital leadership, competency-oriented pedagogy, and management-policy alignment. Together, these themes provide a comprehensive perspective on how digital educational management supports the development of social entrepreneurial competencies within higher education.

V. FINDINGS

The systematic review examined 47 peer-reviewed studies published between 2020 and 2025 that explored the intersections of digital transformation, educational management, and social entrepreneurial competencies in higher education. The analysis identified three dominant themes:

1. Digital leadership and institutional strategy,
2. Digital pedagogies for competency development, and
3. Policy and management alignment to drive social impact.

Digital Leadership and Institutional Strategy

The first theme underscores the role of digital leadership and governance structures in driving successful

transformation within higher education. Research by Kohnke and Gieselmann (2022) and Elrehail et al. (2022) indicates that effective leaders leverage digital tools not merely for operational efficiency but to reshape institutional culture and foster collaborative innovation.

When digital strategies are embedded within governance frameworks, universities experience outcomes such as enhanced cross-departmental collaboration, agile decision-making, and the development of competency-based curricula (García-Morales et al., 2022).

In the ASEAN context, studies by Hamzah et al. (2023) and Zainal et al. (2022) reveal that leadership in Malaysian public universities must balance national priorities such as employability and innovation with institutional constraints like limited funding and staff readiness. Successful digital leadership is linked to vision alignment, strategic communication, and capacity building through continuous professional development. Collectively, these findings suggest that leadership commitment, rather than mere technological availability, is the critical determinant of digital transformation success.

Digital Pedagogies and Competency Development

The second theme focuses on the role of digital learning environments in developing social entrepreneurial competencies among students. Innovative pedagogical approaches increasingly use digital platforms to replicate real-world problem-solving, fostering creativity, empathy, and innovation (Turan & Kara, 2023).

For instance, García-González and Ramírez-Montoya (2023) show that AI-driven platforms enable personalised learning pathways, allowing students to progress at their own pace while strengthening critical thinking and ethical decision-making. Similarly, Yin et al. (2024) report that virtual reality and gamified learning experiences enhance resilience, adaptability, and collaboration skills essential for social entrepreneurship.

ASEAN-based research highlights contextual challenges. Studies by Ismail et al. (2022) and Hassan et al. (2023) reveal that while Malaysian universities have integrated entrepreneurship modules digitally, competency outcomes remain uneven due to infrastructure gaps and variations in instructional design quality. However, institutions adopting hybrid experiential models by combining online simulations with community-based projects will show stronger gains in student competencies. These findings underscore that digital pedagogy must be supported by deliberate management strategies to achieve measurable impact.

Policy and Management for Social Impact

The third theme emphasises the importance of institutional and national policy alignment as a driver for sustainable social entrepreneurship education. Research across ASEAN (Sahid et al., 2024; Chantarasombat, 2023) shows that universities aligning their digital education strategies with national innovation and entrepreneurship

frameworks tend to deliver more impactful social programs.

For example, Malaysia's Entrepreneurship Action Plan for Higher Education Institutions (2021–2025) and the MyDIGITAL Blueprint have accelerated the integration of digital entrepreneurship within university curricula. However, Norazmi et al. (2022) note persistent gaps in monitoring and evaluating competency outcomes. Governance tools such as performance dashboards, learning analytics, and cross-sector partnerships remain underutilised.

Comparative studies reveal that while European and North American universities frequently leverage digital ecosystems to advance sustainability-driven innovation, ASEAN institutions are still developing managerial capacity and cross-disciplinary collaboration. These findings highlight an urgent need for systemic leadership models that connect digital transformation with the delivery of social missions.

Synthesis of Key Insights

Overall, the review demonstrates that digital educational management can serve as a strategic enabler for developing social entrepreneurial competencies, if leadership vision, innovative pedagogy, and policy alignment operate in synergy. However, fragmentation across these dimensions remains a major challenge. While Western models offer strong examples of digital leadership, ASEAN universities require context-sensitive frameworks that address cultural, infrastructural, and policy-specific constraints.

This synthesis highlights three critical insights:

1. Leadership vision and governance are essential for translating digital investments into measurable competency outcomes.
2. Pedagogical design determines whether digital tools effectively cultivate empathy, creativity, and innovation among students.
3. Policy coherence and managerial alignment ensure sustainability and amplify social impact.

Collectively, these findings position educational management as a pivotal mediator between digital transformation and social entrepreneurship, particularly within emerging higher education ecosystems

VI. DISCUSSION AND IMPLICATION

The findings of this review reinforce the argument that digital educational management acts as a strategic enabler in transforming higher education into an ecosystem that nurtures social entrepreneurial competencies. Across the 47 reviewed studies, consistent evidence demonstrates that the success of digital transformation does not depend solely on technological adoption but on the leadership vision, institutional culture, and policy coherence that accompany it.

The findings of this review highlight three critical dimensions shaping the integration of digital educational management and social entrepreneurial competencies in higher education.

First, leadership and governance emerge as the cornerstone of successful digital transformation. Consistent with Shapero and Sokol's (1982) Entrepreneurial Event Theory, effective leadership fosters a "propensity to act" by creating an environment conducive to innovation. Universities that embed digital governance within strategic management frameworks demonstrate stronger competency development outcomes (Kohnke & Gieselmann, 2022). This form of leadership extends beyond managing technology; it involves articulating a shared vision that connects digital initiatives to broader social and entrepreneurial objectives.

Second, digital pedagogies play a pivotal role in accelerating competency-based learning when supported by robust management structures. Evidence from the reviewed studies shows that AI-driven platforms, virtual simulations, and gamified learning environments enhance creativity, empathy, resilience, and problem-solving—core attributes of social entrepreneurial competencies. These findings align with Bandura's (1977) Social Cognitive Theory, which underscores the importance of self-efficacy and environmental support in shaping proactive learning behaviours. However, the review also reveals that many ASEAN universities adopt digital tools without strategic alignment, resulting in fragmented implementation and limited scalability.

Third, policy and institutional alignment is essential for sustaining innovation and ensuring long-term impact. Ajzen's (1991) Theory of Planned Behaviour provides a useful lens for understanding this dynamic: universities that harmonise institutional norms and managerial practices with digital transformation goals foster stronger collective intentions toward social entrepreneurship. Despite progressive national frameworks such as Malaysia's Entrepreneurship Action Plan 2021–2025 and the MyDIGITAL Blueprint, gaps persist in translating these policies into measurable competency outcomes (Hamzah et al., 2023). This fragmentation between policy formulation, institutional management, and educational practice remains a systemic challenge.

Collectively, these insights reinforce the argument that digital educational management acts as a strategic enabler of social entrepreneurial competencies. Success depends not merely on technological adoption but on leadership vision, pedagogical innovation, and coherent policy frameworks working in synergy.

Theoretically, this study advances existing frameworks by positioning educational management as the mediating mechanism between digital transformation and social entrepreneurial behaviour. While prior research often treated these domains separately, the synthesis demonstrates that leadership and governance practices form the critical bridge linking technological capacity with student competency development.

Practically, the findings offer actionable insights for key stakeholders. Policymakers should design integrated strategies that connect digital initiatives with social entrepreneurship education, ensuring funding and performance indicators focus on competency outcomes rather than infrastructure alone. Institutional leaders must prioritise digital leadership development, invest in human

capital, and foster interdepartmental collaboration to sustain transformation. Educators should embed experiential, digitally enhanced learning that mirrors real-world social challenges to strengthen empathy, creativity, and ethical responsibility among students.

Finally, this study contributes to the global sustainability agenda by showing how digital educational management supports the United Nations Sustainable Development Goals (SDGs)—specifically SDG 4 (Quality Education) through inclusive digital pedagogy, SDG 8 (Decent Work and Economic Growth) via employability and entrepreneurial capacity-building, and SDG 10 (Reduced Inequalities) through equitable access to digital learning and innovation opportunities.

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REFERENCES

- Aboagye, E., Yawson, J. A., & Appiah, K. (2021). COVID-19 and e-learning: The challenges of students in tertiary institutions. *Social Education Research*, 2(1), 1–8. <https://doi.org/10.37256/ser.212021422>
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Al-Hunaiyyan, A., Alhajri, R., & Al-Sharhan, S. (2023). Digital transformation in higher education: Leadership challenges and opportunities. *Education and Information Technologies*, 28(2), 1143–1161. <https://doi.org/10.1007/s10639-022-11078-8>
- Anderson, J., & van Wyk, M. (2022). Leadership in digital higher education: Fostering innovation and resilience. *International Journal of Educational Management*, 36(4), 567–582.
- Aromataris, E., & Munn, Z. (Eds.). (2020). *JBIM manual for evidence synthesis*. Joanna Briggs Institute. <https://doi.org/10.46658/JBIMES-20-01>
- ASEAN. (2021). *ASEAN Digital Masterplan 2025*. ASEAN Secretariat.
- Bacq, S., & Alt, E. (2023). Service learning and social entrepreneurship education: Enhancing student engagement and self-efficacy. *Journal of Social Entrepreneurship*, 14(2), 141–160.
- Bandura, A. (1977). *Social learning theory*. Prentice Hall.
- Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Research Open*, 2(1), 100–114. <https://doi.org/10.1016/j.ijedro.2021.100017>
- Bostrom, R. P., & Heinen, J. S. (2022). MIS problems and failures: A socio-technical perspective. *Management Information Systems Quarterly*, 46(1), 97–122.
- Bush, T., & Glover, D. (2021). *Leading and managing people in education*. SAGE Publications.
- Chantarasombat, C. (2023). Social entrepreneurship education for sustainable development in Thailand. *Asian Journal of Education and Training*, 9(3), 120–131.
- Chen, C., Chen, S., & Li, J. (2023). Digital governance in higher education: Managing transformation post-pandemic. *Educational Management Administration & Leadership*, 51(3), 489–506.
- Dwivedi, A., & Weerawardena, J. (2023). Social entrepreneurship education: A competency-based perspective. *International Journal of Entrepreneurial Behaviour & Research*, 29(5), 812–830.
- Dwivedi, A., Mishra, S., & McDonald, R. (2021). Student entrepreneurial intention in higher education: The mediating role of innovation climate. *Journal of Entrepreneurship Education*, 24(5), 1–15.
- Elrehail, H., Alzghoul, A., Alnajdawi, S., & Ibrahim, H. (2022). E-leadership, innovation, and performance in higher education institutions. *Journal of Applied Research in Higher Education*, 14(2), 610–627.
- European Commission. (2021). *Digital Education Action Plan 2021–2027: Resetting education and training for the digital age*. Publications Office of the European Union.
- Flores, M. A., Barros, A., & Simão, A. M. V. (2022). The COVID-19 pandemic and its impact on higher education: Lessons for the future. *Teaching in Higher Education*, 27(8), 1113–1128.
- García-González, A., & Ramírez-Montoya, M. S. (2023). Digital competencies for social innovation in higher education: A systematic mapping. *Education and Information Technologies*, 28(4), 5123–5142.
- García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2022). The transformation of higher education institutions through digital leadership. *Technological Forecasting and Social Change*, 178, 121576.
- García-Peñalvo, F. J. (2023). Micro-credentials and lifelong learning in digital higher education ecosystems. *Computers in Human Behaviour Reports*, 10, 100–129.
- Government of Malaysia. (2021). *Malaysia Digital Economy Blueprint (MyDIGITAL)*. Economic Planning Unit, Prime Minister's Department.
- Gupta, P., Patel, R., & Jain, S. (2024). Virtual mentoring and digital incubation for social entrepreneurs: A cross-national study. *Journal of Entrepreneurship in Emerging Economies*, 16(1), 92–108.
- Hamzah, M. I., Zulkifle, N. A., & Aziz, F. (2023). Developing social entrepreneurial competencies in Malaysian public universities. *Journal of Education and Entrepreneurship*, 12(2), 33–49.

- Harris, A. (2021). Distributed leadership: Perspectives, practicalities, and potential. *Educational Management Administration & Leadership*, 49(2), 251–265.
- Hassan, H., Norazmi, A., & Zainal, M. (2023). Embedding entrepreneurship education in Malaysian public universities: Challenges and opportunities. *Asian Journal of University Education*, 19(1), 125–137.
- Ismail, H., Rahman, N. A., & Fauzi, F. (2022). University incubators and social innovation: Lessons from Malaysian public universities. *International Journal of Entrepreneurship*, 26(2), 1–15.
- Ismail, N., Rahman, N. A., & Zainal, A. (2023). Empowering social entrepreneurship education for sustainable impact. *Journal of Higher Education Policy and Management*, 45(3), 310–329.
- Jansen, D., & Schuwer, R. (2022). Erasmus+ Virtual Exchange: Building intercultural competencies through online collaboration. *European Journal of Education*, 57(1), 123–139.
- Kementerian Pendidikan Malaysia. (2015). *Malaysia Education Blueprint 2015–2025 (Higher Education)*. Putrajaya: Ministry of Higher Education Malaysia.
- Kohnke, O., & Gieselmann, M. (2022). Leading digital transformation in universities: The role of e-leadership and culture. *Higher Education Quarterly*, 76(3), 562–578.
- Kopp, M., Gröblinger, O., & Adams, S. (2021). Five common assumptions that prevent digital transformation at higher education institutions. *International Journal of Educational Management*, 35(2), 219–231.
- Kusmintarti, A., Nurtjahjanti, H., & Asdani, M. (2022). Exploring student entrepreneurial behaviour in Indonesian universities. *Journal of Entrepreneurship Education*, 25(1), 1–10.
- MEDAC. (2021). *National Entrepreneurship Policy 2030 (Dasar Keusahawanan Nasional 2030)*. Ministry of Entrepreneur Development and Cooperatives Malaysia.
- MDEC. (2021). *Malaysia Digital Economy Blueprint: MyDIGITAL Implementation Roadmap*. Malaysia Digital Economy Corporation.
- Mishra, L., Gupta, T., & Shree, A. (2022). Online teaching-learning in higher education during the COVID-19 pandemic: Students' perspective. *Education and Information Technologies*, 27(3), 2447–2468.
- Moilanen, P. (2022). Shared governance in digital transformation of Finnish universities. *Nordic Journal of Studies in Educational Policy*, 8(2), 124–136.
- Norazmi, A., Hassan, H., & Zainal, M. (2022). Assessing social entrepreneurship competencies among Malaysian university students. *Journal of Entrepreneurship, Business and Economics*, 10(1), 35–53.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Rahman, N. A., Ismail, H., & Fauzi, F. (2024). Cultivating social entrepreneurship for sustainable futures in higher education. *International Journal of Sustainability in Higher Education*, 25(2), 231–248.
- Rae, D., Martin, L., & Jack, S. (2022). Embedding social innovation and entrepreneurship in university ecosystems: The Ashoka U experience. *Journal of Entrepreneurship and Public Policy*, 11(3), 427–444.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Sahid, M., Hamzah, M. I., & Aziz, F. (2024). Digital leadership and entrepreneurial ecosystems in Malaysian higher education. *Asian Journal of University Education*, 20(1), 55–73.
- Selwyn, N., O'Neill, C., & Pangrazio, L. (2022). Digital education after COVID-19: Lessons from Australia. *Learning, Media and Technology*, 47(4), 460–476.
- Shapiro, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), *The encyclopedia of entrepreneurship* (pp. 72–90). Prentice Hall.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339.
- Suyanto, E., & Indriani, M. (2023). Kampus Merdeka and digital innovation in Indonesian higher education. *Asian Journal of Education and Social Studies*, 42(1), 44–56.
- Turan, M., & Kara, N. (2023). Gamification and digital simulations in social entrepreneurship education. *Education and Information Technologies*, 28(6), 7293–7312.
- Wang, J., & Zhao, X. (2023). Using analytics-enabled environments for competency-based education in universities. *Computers & Education*, 198, 104714.
- Yin, H., Ma, L., & Liu, Y. (2024). Immersive learning for competency development: The role of virtual reality in higher education. *Computers & Education*, 190, 104678.
- Zainal, M., Hamzah, M. I., & Norazmi, A. (2022). Leadership and digital readiness in Malaysian public universities. *Malaysian Journal of Higher Education*, 12(1), 17–31.
- Zulkifli, N. A., & Aziz, F. (2023). University-community engagement through social entrepreneurship in Malaysia. *Journal of Social Entrepreneurship*, 14(3), 265–283.