

Exploring Digital Entrepreneurial Self-Efficacy in The Context of Education

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INFO ARTIKEL

Riwayat artikel:

Diterima 10 Februari 2026

Revisi 16 Maret 2026

Diterima 27 Maret 2026

Terbit 30 April 2026

Kata kunci:

Digital Entrepreneurship,
Self-Efficacy,
Entrepreneurship
Education,
Higher Education,
Digital Skills.

ABSTRAK

The rapid transformation of the global economy, driven by the acceleration of digital technologies, has created new opportunities and challenges in the field of entrepreneurship education. Digital Entrepreneurial Self-Efficacy (DESE) has emerged as a critical psychological construct influencing individuals' intention and capability to initiate and manage digital ventures. This study aimed to explore the concept of Digital Entrepreneurial Self-Efficacy within the educational context by synthesizing recent scholarly literature. A systematic literature review methodology was employed, analyzing peer-reviewed articles published between 2019 and 2025 from major academic databases, including Scopus, Web of Science, and Google Scholar. The findings revealed that DESE comprises multiple dimensions, including digital opportunity recognition, digital resource management, technology adoption, and online networking capabilities. Educational institutions were found to play a pivotal role in fostering DESE through experiential learning, digital entrepreneurship curricula, mentorship programs, and collaborative platforms. Furthermore, individual factors such as prior digital experience, self-regulation, and creativity, alongside contextual factors like institutional support and digital infrastructure, significantly influenced DESE development. The study concluded that integrating digital entrepreneurship modules and practical digital exposure into higher education curricula can substantially enhance students' DESE, preparing them to navigate the digital economy. These findings provided valuable implications for educators, policymakers, and curriculum designers in developing future-ready entrepreneurship programs.

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1. INTRODUCTION

The emergence of digital technologies has fundamentally reshaped the landscape of entrepreneurship, creating what is now widely recognized as the digital economy era. Digital entrepreneurship, defined as the pursuit of opportunities through the creation of new digital ventures or the digital transformation of existing businesses, has become a central driver of innovation and economic development worldwide (Kraus et al., 2019). The proliferation of digital platforms, e-commerce, artificial intelligence, and social media has lowered traditional barriers to entrepreneurial entry, enabling individuals, particularly students and young professionals, to launch ventures with unprecedented speed and flexibility.

Within this context, the concept of self-efficacy, originally proposed by Bandura (1977), has taken on new dimensions. Entrepreneurial self-efficacy refers to an individual's belief in their capability to successfully perform entrepreneurial tasks and roles. However, in the digital age, a more specialized construct known as Digital Entrepreneurial Self-Efficacy (DESE) has emerged. DESE captures the confidence of individuals in leveraging digital tools and platforms to identify opportunities, mobilize resources, and operate digital ventures effectively (Nambisan, 2017; Secundo et al., 2021). As digital entrepreneurship requires a unique blend of technical, creative,

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and managerial competencies, understanding how DESE is developed has become a matter of growing importance for both scholars and practitioners.

Education, particularly at the higher education level, plays a pivotal role in shaping students' entrepreneurial mindset and capabilities. Traditional entrepreneurship education has long focused on business plan development, opportunity recognition, and risk management. However, in a digitally transformed economy, educational institutions must now equip students with digital literacy, online business competencies, and the confidence to navigate rapidly changing technological environments (Liguori & Winkler, 2020). Despite growing recognition of this need, research exploring how educational contexts foster DESE remains limited and fragmented.

Several studies have highlighted the importance of integrating digital competencies into entrepreneurship curricula (Mikic et al., 2022; Ratten & Usmanij, 2021), yet there is still a lack of conceptual clarity regarding the dimensions of DESE and the specific educational interventions that effectively enhance it. Furthermore, the interplay between individual characteristics, pedagogical approaches, and institutional factors in shaping DESE has not been comprehensively examined. This gap underscores the need for a systematic exploration of DESE within educational contexts to inform both theory and practice.

The objectives of this study were threefold. First, the study aimed to conceptually map the construct of Digital Entrepreneurial Self-Efficacy and its dimensions. Second, the study sought to identify the educational strategies and interventions that foster DESE among students. Third, the study aimed to synthesize the individual and contextual factors that influence DESE development. By addressing these objectives, this research contributes to the growing body of literature on digital entrepreneurship education and provides actionable insights for educators, curriculum designers, and policymakers seeking to prepare students for the digital economy.

2. METHOD

This study employed a systematic literature review (SLR) methodology to explore the concept of Digital Entrepreneurial Self-Efficacy within the educational context. The SLR approach was selected because it provides a rigorous, transparent, and replicable process for identifying, evaluating, and synthesizing relevant scholarly works (Tranfield et al., 2003). The review followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure methodological quality.

The literature search was conducted across three major academic databases: Scopus, Web of Science, and Google Scholar. These databases were selected for their comprehensive coverage of peer-reviewed journals in business, management, education, and information systems. The search was performed using a combination of keywords, including "digital entrepreneurial self-efficacy," "digital entrepreneurship education," "entrepreneurial self-efficacy AND digital," and "digital entrepreneurship AND higher education." Boolean operators (AND, OR) were used to refine the search results.

The inclusion criteria specified that the selected articles must be: (1) peer-reviewed journal articles published in English, (2) published between 2019 and 2025 to capture the most recent developments, (3) explicitly discussing self-efficacy in the context of digital entrepreneurship or digital business, and (4) addressing educational implications or interventions. Articles were excluded if they were conference proceedings without peer review, book chapters, editorials, or studies that focused solely on traditional entrepreneurship without a digital component.

The initial search yielded 487 articles. After removing duplicates and screening titles and abstracts, 112 articles were retained for full-text review. Following the application of the inclusion and exclusion criteria, 38 articles were selected for the final analysis. The selected articles were then analyzed thematically using a three-stage coding process: open coding to identify initial concepts, axial coding to group related concepts into themes, and selective coding to develop the overarching framework. The analysis was conducted iteratively to ensure consistency and depth.

3. RESULTS AND DISCUSSION

This section presents the findings of the systematic literature review, organized around three major themes: (1) the conceptualization and dimensions of Digital Entrepreneurial Self-Efficacy, (2) the role of educational interventions in fostering DESE, and (3) the individual and contextual factors influencing DESE development. The discussion integrates these findings with existing

theoretical frameworks to provide a comprehensive understanding of DESE in the educational context.

Conceptualization of Digital Entrepreneurial Self-Efficacy

The review revealed that Digital Entrepreneurial Self-Efficacy is conceptualized as a domain-specific form of self-efficacy that captures individuals' confidence in performing entrepreneurial activities within digital environments. Building on Bandura's (1997) social cognitive theory and Chen et al.'s (1998) framework of entrepreneurial self-efficacy, DESE extends traditional notions by incorporating digital competencies as a core component. According to Secundo et al. (2021), DESE reflects the belief in one's ability to identify digital opportunities, develop digital products or services, manage digital resources, and engage with stakeholders through digital channels.

The analysis identified four primary dimensions of DESE that consistently appeared across the reviewed literature. The first dimension is digital opportunity recognition, which refers to the confidence in identifying and evaluating entrepreneurial opportunities enabled by digital technologies. The second dimension is digital resource management, encompassing the ability to mobilize financial, human, and technological resources in digital contexts. The third dimension is technology adoption and adaptation, reflecting the capacity to adopt, learn, and adapt to emerging digital tools and platforms. The fourth dimension is digital networking and communication, which captures the ability to build and maintain professional networks through online channels such as social media, virtual communities, and digital collaboration platforms (Mikic et al., 2022; Ratten & Usmanij, 2021).

Table 1. Dimensions of Digital Entrepreneurial Self-Efficacy

Dimension	Description	Key References
Digital Opportunity Recognition	Confidence in identifying and evaluating opportunities enabled by digital technologies	Nambisan (2017); Secundo et al. (2021)
Digital Resource Management	Ability to mobilize financial, human, and technological resources in digital contexts	Kraus et al. (2019); Ratten & Usmanij (2021)
Technology Adoption	Capacity to adopt, learn, and adapt to emerging digital tools and platforms	Mikic et al. (2022); Liguori & Winkler (2020)
Digital Networking	Ability to build and maintain professional networks through online channels	Secundo et al. (2021); Hull et al. (2020)

Educational Interventions for Fostering DESE

The second major theme that emerged from the review concerns the role of educational interventions in developing DESE among students. The analysis revealed that experiential learning approaches are particularly effective in fostering DESE. Experiential methods such as digital startup simulations, hackathons, live-project consulting, and digital business competitions provide students with authentic opportunities to apply theoretical knowledge in digital entrepreneurship contexts (Liguori & Winkler, 2020). Through these activities, students develop confidence by directly engaging with digital tools, solving real-world digital problems, and receiving feedback on their performance.

Curriculum design also plays a critical role in shaping DESE. The integration of digital entrepreneurship modules that cover topics such as digital marketing, e-commerce platforms, data analytics, and online business models has been shown to enhance students' digital competencies and entrepreneurial confidence (Mikic et al., 2022). Moreover, interdisciplinary curricula that combine business, technology, and design thinking perspectives provide students with a holistic understanding of digital ventures, thereby strengthening their DESE across multiple dimensions. Recent studies have emphasized the importance of project-based learning and problem-based learning approaches, which encourage active engagement with digital business challenges (Ratten & Usmanij, 2021).

Mentorship and role modeling represent another crucial pathway through which DESE is developed in educational settings. Bandura (1997) identified vicarious experience as one of the four primary sources of self-efficacy, alongside mastery experience, verbal persuasion, and emotional

states. Access to digital entrepreneurs as mentors, guest speakers, and role models allows students to observe successful digital entrepreneurial behaviors and outcomes, thereby building their confidence in pursuing similar paths. Universities that establish partnerships with digital startups, incubators, and accelerators provide students with valuable exposure to the digital entrepreneurial ecosystem (Secundo et al., 2021).

Furthermore, collaborative digital platforms have emerged as important tools for cultivating DESE. Online learning management systems, virtual co-working environments, and digital collaboration tools allow students to engage in entrepreneurial activities beyond the physical classroom. These platforms facilitate peer learning, cross-institutional collaboration, and the development of digital communication skills, all of which contribute to the enhancement of DESE. The COVID-19 pandemic accelerated the adoption of such platforms and demonstrated their potential for supporting entrepreneurship education at scale (Liguori & Winkler, 2020).

Factors Influencing DESE Development

The third theme identified in the review pertains to the individual and contextual factors that influence DESE development. At the individual level, prior digital experience emerged as a significant predictor of DESE. Students who have had previous exposure to digital tools, whether through personal use, part-time work, or previous education, tend to exhibit higher levels of DESE (Mikic et al., 2022). This finding aligns with Bandura's (1997) concept of mastery experience, where past successes in digital domains build confidence for future digital entrepreneurial endeavors.

Self-regulation and metacognitive skills were also identified as important individual-level factors. Students who are able to set goals, monitor their progress, and adjust their strategies in response to feedback tend to develop stronger DESE over time. Creativity and innovative thinking further contribute to DESE by enabling students to envision new digital opportunities and design novel digital solutions. Additionally, personality traits such as openness to experience, proactiveness, and risk tolerance have been linked to higher DESE levels (Kraus et al., 2019).

At the contextual level, institutional support plays a pivotal role in shaping DESE. Universities that provide dedicated entrepreneurship centers, digital innovation labs, and funding opportunities for student-led digital ventures create an enabling environment for DESE development. Faculty support, including expertise in digital entrepreneurship and willingness to mentor students, is equally critical. Furthermore, the availability of digital infrastructure such as reliable internet access, cloud-based tools, and software licenses significantly influences students' ability to engage in digital entrepreneurial activities (Secundo et al., 2021).

Broader contextual factors, including national digital readiness, cultural attitudes toward entrepreneurship, and government policies supporting digital innovation, also shape the ecosystem within which DESE develops. In countries with strong digital infrastructure and supportive regulatory frameworks, students generally exhibit higher DESE levels. Conversely, in environments with limited digital access or cultural skepticism toward entrepreneurship, additional efforts are required to cultivate DESE among learners (Ratten & Usmanij, 2021).

Implications and Integrated Framework

The findings of this review suggest that DESE is shaped by a dynamic interplay of individual characteristics, educational interventions, and contextual factors. Based on the synthesis, an integrated framework can be proposed in which educational interventions, including experiential learning, curriculum integration, mentorship, and digital platforms, serve as mediating mechanisms that translate individual predispositions and contextual enablers into enhanced DESE. This integrated perspective advances the theoretical understanding of DESE by positioning education not merely as a content delivery mechanism but as an active catalyst for self-efficacy development in the digital entrepreneurial domain.

From a practical standpoint, the findings have several important implications. Educators should prioritize experiential and interdisciplinary approaches when designing digital entrepreneurship programs. Institutions should invest in digital infrastructure, mentorship networks, and innovation ecosystems that support student-led digital ventures. Policymakers should recognize the role of DESE in preparing future digital entrepreneurs and support initiatives that integrate digital competencies into entrepreneurship education at national and regional levels. Finally, students themselves should actively seek opportunities to engage with digital tools,

participate in digital entrepreneurial activities, and develop the self-regulation skills that underpin DESE growth.

4. CONCLUSION

This study explored the concept of Digital Entrepreneurial Self-Efficacy within the educational context through a systematic review of recent scholarly literature. The findings indicated that DESE is a multidimensional construct comprising digital opportunity recognition, digital resource management, technology adoption, and digital networking. Educational interventions, including experiential learning, curriculum integration, mentorship programs, and collaborative digital platforms, play a crucial role in fostering DESE among students. Individual factors, such as prior digital experience, self-regulation, creativity, and personality traits, interact with contextual factors, including institutional support, digital infrastructure, and broader ecosystem conditions, to shape DESE development.

The study contributes to the literature by providing an integrated conceptual framework that positions education as a central catalyst for DESE development. Practically, the findings offer actionable recommendations for educators, institutions, and policymakers seeking to prepare students for the digital economy. It is recommended that higher education institutions integrate digital entrepreneurship modules into their curricula, establish partnerships with digital enterprises and innovation hubs, and invest in digital infrastructure that supports experiential learning. Educators are encouraged to adopt pedagogical approaches that emphasize active engagement with digital tools, reflective practice, and peer collaboration.

Despite its contributions, this study is subject to certain limitations. The reliance on literature published in English may have excluded relevant studies in other languages. Additionally, the conceptual nature of the study limits the generalizability of its findings to specific educational contexts. Future research should employ empirical approaches, including longitudinal studies and cross-cultural comparisons, to validate and extend the proposed framework. Investigating the role of emerging technologies, such as artificial intelligence, blockchain, and the metaverse, in shaping DESE represents a promising avenue for further exploration.

5. ACKNOWLEDGMENTS

The authors gratefully acknowledge the support provided by the Faculty of Business and Creative Design, Indonesian Institute of Business and Technology (INSTIKI), which facilitated this research. The authors also express their appreciation to colleagues and peer reviewers whose valuable feedback contributed to the improvement of this manuscript.

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