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Digital entrepreneurship education: A systematic review and contextual conceptual design

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Abstrak

Transformasi digital telah melahirkan bentuk baru kewirausahaan yang dikenal sebagai kewirausahaan digital. Perkembangan ini menempatkan pendidikan kewirausahaan digital sebagai elemen penting untuk membekali generasi menghadapi tantangan ekonomi modern. Penelitian ini menyajikan sintesis sistematis literatur dalam sepuluh tahun terakhir, mencakup analisis kata kunci, tren tahunan, distribusi geografis, pendekatan metodologis, kerangka teoretis, fokus kajian, dan rekomendasi rancangan desain konseptual pembelajaran. Metode yang digunakan adalah Systematic Literature Review (SLR) dengan pedoman PRISMA terhadap 40 artikel terpilih dari basis data Scopus yang terbit pada tahun 2015-2025. Hasil menunjukkan peningkatan signifikan publikasi dan perhatian global, terutama di Asia, dengan dominasi kontribusi dari China. Theory of Planned Behaviour menjadi kerangka teoritis paling sering digunakan, sedangkan metode penelitian yang paling dominan adalah survei. Fokus kajian umumnya meliputi pengembangan kompetensi kewirausahaan, inovasi kurikulum, literasi digital, dan ekosistem digital, namun konteks komunitas dan wilayah terpinggir masih jarang dibahas. Untuk mengisi kesenjangan tersebut, diusulkan desain konseptual praktikum berbasis lapangan yang melibatkan mahasiswa dalam pendampingan pelaku usaha lokal, memadukan konstruktivisme, problem-based learning, pembelajaran tim, dan prinsip teach others. Model ini ditujukan untuk mengembangkan keterampilan abad 21 sekaligus mendorong pendidikan kewirausahaan digital yang lebih kontekstual, inklusif, dan berorientasi pemberdayaan masyarakat.

Kata kunci: desain pembelajaran; edukasi kewirausahaan digital; kewirausahaan berbasis komunitas; tinjauan literatur sistematis

Abstract

Digital transformation has created new forms of entrepreneurship known as digital entrepreneurship, making its education vital for preparing future generations for modern economic challenges. This study synthesizes literature from the past decade, examining yearly trends, geographic distribution, methodological approaches, theoretical frameworks, research focus, and proposes conceptual learning design. We employed a Systematic Literature Review (SLR) following PRISMA guidelines to

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analyze 40 Scopus-indexed articles published between 2015-2025. Findings revealed steady publication growth and increasing global attention, especially in Asia, with China as the leading contributor. The Theory of Planned Behaviour emerged as the most applied theoretical framework, while survey methods dominated research approaches. Research topics largely addressed entrepreneurial competence development, curriculum innovation, digital literacy, and digital ecosystem enhancement. However, studies rarely focused on community-based and marginalized contexts. To address this gap, we propose a field-based practicum model in which students mentor local entrepreneurs. The design integrates constructivism, problem-based learning, team learning, and the "teach others" principle, aiming to cultivate twenty-first century skills while promoting digital entrepreneurship education that is more contextual, inclusive, and empowerment-driven.

Keywords: community-based entrepreneurship; digital entrepreneurial education; learning design; systematic literature review

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Introduction

The advancement of digital technology has brought significant transformations across various life domains, including business environments. Entrepreneurship, previously dependent on physical resources and direct interactions, has evolved into digital entrepreneurship. In this form, technologies such as the internet, artificial intelligence, blockchain, and digital platforms are utilized to create value, reach markets, and enhance business efficiency (Vorbach et al., 2019; Zhang et al., 2021). This transformation opens new opportunities for various groups to participate in modern economies based on innovation and global connectivity. Beyond serving as adaptation to technological disruption, digital entrepreneurship is also considered an approach with potential to drive more inclusive and sustainable economic growth (Mei et al., 2022; Sánchez Vera & López Vicent, 2024; Wang & Ye, 2024).

In this context, digital entrepreneurship education plays crucial roles. According to Lopes et al. (2025), digital entrepreneurship education is a field that integrates digital technology and platforms into entrepreneurship curricula. This education is designed to equip individuals with knowledge, skills, and attitudes aligned with demands of continuously evolving business worlds. Besides teaching entrepreneurship fundamentals, this education emphasizes digital literacy importance, innovation capabilities, and readiness to face rapid changes (Gillani et al., 2022; Wibowo et al., 2023). The development demonstrates increasingly widespread technology integration in learning processes. The use of artificial intelligence, including tools like ChatGPT, has been employed to strengthen learning personalization, enhance confidence, and foster student creativity (Duong et al., 2024; Weng et al., 2025). Additionally, online platforms such as massive open online courses (MOOCs) enable more open and flexible learning access (Jardim, 2021; Vorbach et al., 2019). Thus, digital entrepreneurship education has evolved into a system that not only teaches theory but also provides learning experiences connected to real-world practices and cutting-edge technology.

Despite various developing initiatives, important questions remain regarding how far digital entrepreneurship education truly addresses needs across various social and economic contexts. Several studies show that this approach can enhance entrepreneurial intention, strengthen digital literacy, and build individual motivation for starting businesses (Gillani et al., 2022; Udekwe & Iwu, 2024). However, existing literature reveals various limitations. Many studies remain focused on specific regions or countries, use descriptive approaches, and have not fully integrated technological,

cultural, and educational practice aspects comprehensively (Bulto et al., 2025; Linzalone et al., 2020). Some empirical findings have also not been linked to strong theoretical frameworks, complicating development of educational strategies suitable for socially and culturally diverse community needs (Nguyen & Nguyen, 2024; Zeng et al., 2022). This emphasizes the need for systematic studies that not only collect findings but also organize them into more comprehensive understanding.

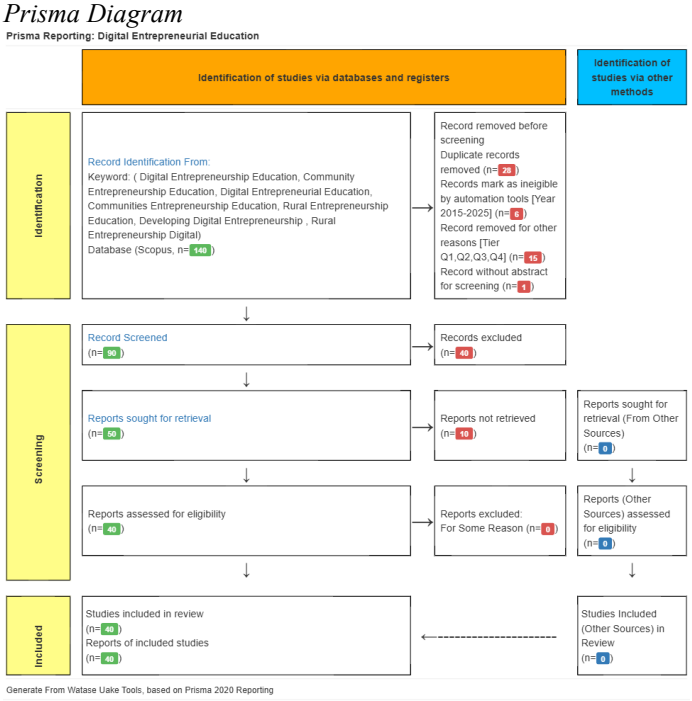
Based on this background, this article aims to develop systematic synthesis of digital entrepreneurship education literature over the past decade. This study is directed toward achieving four main objectives. First, mapping research results conducted in contexts of keywords, annual trends, geographic distribution, methodological approaches, theoretical frameworks, and study focus. Second, identifying research gaps that remain open and under-discussed. Third, developing conceptual design recommendations for digital entrepreneurship education relevant to formal education in universities or school levels. Fourth, providing future research directions more relevant to challenges and opportunities in digital transformation era. Through systematic literature review approach combining thematic exploration and bibliometric analysis, this article is expected to contribute to strengthening scientific understanding and developing digital entrepreneurship education practices that are more contextual, adaptive, and innovative.

Research Methods

This research employed a Systematic Literature Review (SLR) methodology structured according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines as formulated by Moher et al. (2009). This approach was selected to ensure that identification, selection, and analysis of articles were conducted systematically, transparently, and replicably. Study focus was directed toward digital entrepreneurship education themes, including variations such as community entrepreneurship education and rural entrepreneurship. The Scopus database was utilized as the primary source due to its rigorous indexing standards and strong academic reputation (Rocha et al., 2019).

Figure 1

Prisma Diagram



The search strategy employed Boolean operators with the following search string: ("Digital Entrepreneurship Education" OR "Community Entrepreneurship Education" OR "Digital Entrepreneurial Education" OR "Communities Entrepreneurship Education" OR "Rural Entrepreneurship Education" OR "Developing Digital Entrepreneurship" OR "Rural Entrepreneurship Digital"). To validate the effectiveness of these keywords, pilot testing was conducted initially to assess search results relevance to the study's topical focus. The initial search yielded 140 articles, which were subsequently filtered through several stages. The filtering process began with duplicate removal (n = 28), followed by elimination of articles outside the target timeframe (2015-2025), exclusion from journals not classified within Scopus Q1-Q4 indices (n = 15), and removal of articles without abstracts (n = 1). This process resulted in 50 articles proceeding to the next filtering stage.

As illustrated in Figure 1, the PRISMA diagram demonstrates the systematic selection process. From the 50 articles that passed initial selection, 10 were inaccessible in full-text format, leaving 40 articles for further analysis. The inclusion criteria applied encompassed: articles published within 2015-2025, availability in reputable Scopus Q1-Q4 international journals, clear abstract availability, and explicit discussion of digital entrepreneurship education in various forms. Exclusion criteria were applied to duplicate articles, those irrelevant to the core theme, or those from unclassified journals. To maintain analysis accuracy and traceability, this research utilized Watase Uake, a visual and analytical support tool that facilitates SLR activities through PRISMA modules, article classification, and data visualization (Wahyudi, 2024). However, this tool was not used as the primary determinant but as support that still required direct assessment and interpretation from the authors. Through qualitative thematic approaches to the 40 selected articles, this study aimed to provide comprehensive mapping of dynamics and research directions in digital entrepreneurship education over the past decade.

Results and Discussion

Research Results

Keyword Analysis

Figure 2
Keyword Wordcloud

To examine research directions and trends in digital entrepreneurship education more closely, visual analysis of keywords was conducted using WordCloud. As demonstrated in Figure 2, terms such as "entrepreneurship education," "digital entrepreneurship," "entrepreneurial intention," "innovation," and "education" emerged as the most frequently appearing keywords. This indicates that main focus of studies over the past decade has largely centered on institutional-level education, entrepreneurial intention development, and technology utilization in learning processes.

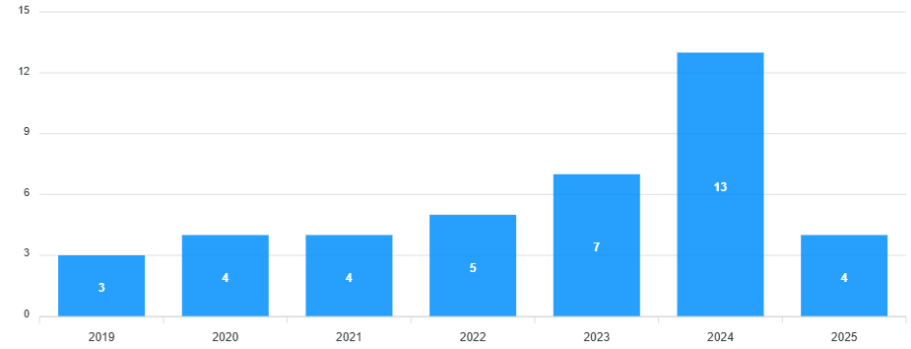
Additionally, terms such as "digital literacy," "technology transfer," "gamification," and "simulation games" appeared, indicating attention toward technology-based and experiential learning approaches. Several popular theories such as "The Theory of Planned Behavior" and "Social Cognitive Theory" also appeared to be widely used. Based on visualization in Figure 2, terms related to community, rural areas, or vulnerable groups were barely visible as part of dominant terminology. Words such as "community," "rural," or "marginalized" were not prominent and tended not to appear at all. This indicates that digital entrepreneurship education approaches involving grassroots communities remain under-discussed in academic literature.

Publication Trends

The number of publications on digital entrepreneurship education themes shows an increasing trend year over year. Figure 3 illustrates the publication trend, revealing that in 2019, only 3 articles existed, rising to 4 articles in 2020 and maintaining the same number in 2021. The increase became noticeable in 2022 with 5 articles, then surged to 7 articles in 2023. This development shows gradual growth in researcher attention toward this issue.

Figure 3

Publication Trend Diagram

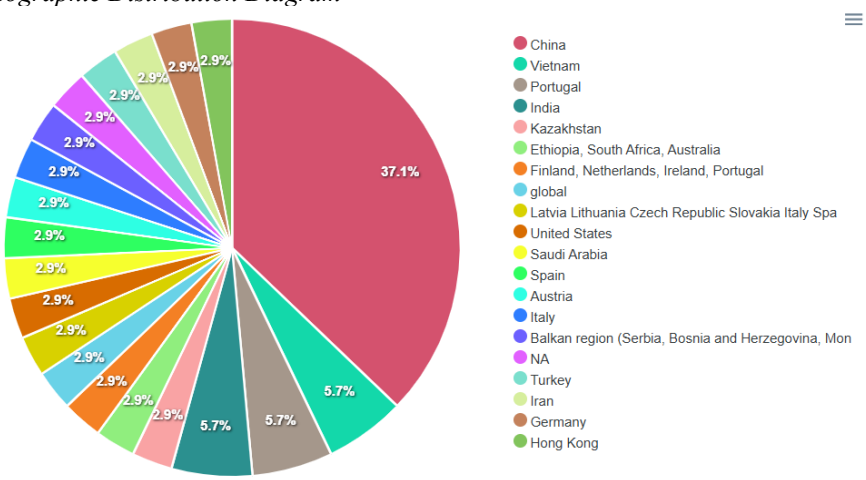


As shown in Figure 3, the peak number of publications occurred in 2024 with a total of 13 articles, indicating significant surge in research interest. Meanwhile, by 2025, 4 articles have been recorded, which may still increase. Overall, this graph reflects consistent growth in research numbers, with 2022-2024 as particularly notable increase phase. This indicates that digital entrepreneurship education has increasingly become primary focus in academic studies.

Geographic Distribution

The geographic distribution of digital entrepreneurship education research shows strong dominance from one country: China, contributing more than one-third of total analyzed studies. As illustrated in Figure 4, with a percentage reaching 37.1%, China becomes the primary research center in this topic. This demonstrates the seriousness of this country in developing innovation and digital integration in entrepreneurship education.

Figure 4
Geographic Distribution Diagram



Besides China, several other countries such as Vietnam and Portugal also recorded significant contributions, each at 5.7%. The remainder is distributed evenly among various other countries, including India, Kazakhstan, Austria, Italy, and several combined global regions, each around 2.9%. The distribution map reflected in Figure 4 shows that digital entrepreneurship research has reached various world regions, though still concentrated in certain countries.

Research Approach Types

Based on analysis results, the most dominant research approach in digital entrepreneurship education studies was the survey method, with a total of 9 studies. As presented in Figure 5, this was followed by quantitative approaches with 5 studies, case studies with 4, and empirical analysis and mixed-method each with 3 studies. This pattern indicates that the majority of studies attempt to collect large-scale data for statistical analysis to describe phenomena generally.

Figure 5
Research Approach Type Diagram

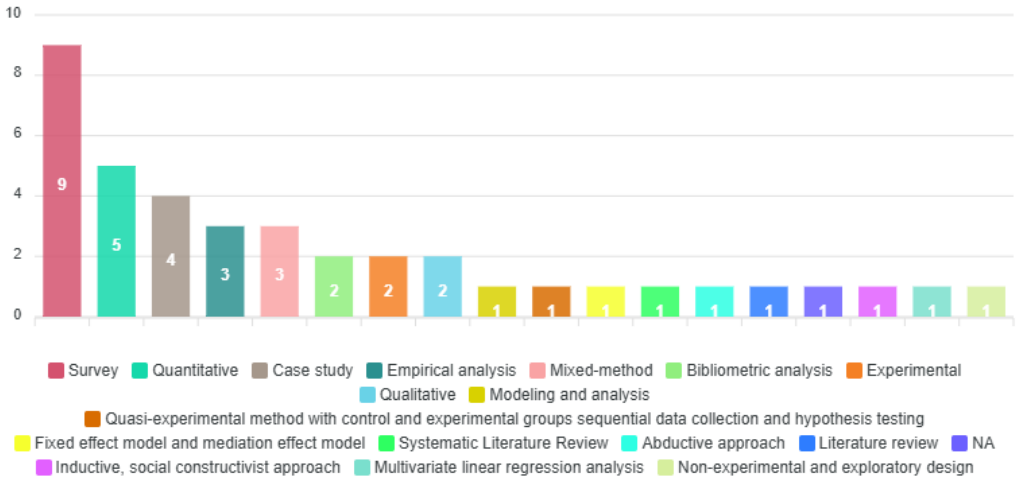


Figure 5 demonstrates that although not as numerous as quantitative methods, qualitative and mixed approaches were also used in several studies, reflecting efforts to understand contexts and

participant experiences more deeply. Additionally, diversity in other methods such as bibliometric, experimental, and systematic literature review was evident, each used in 1-2 studies.

Theoretical Frameworks

We identified the Theory of Planned Behavior (TPB) as the most dominant conceptual framework in digital entrepreneurship education studies. Scholars use this theory to explain the formation of entrepreneurial intentions in digital contexts. The theory focuses on three elements: attitudes toward behavior, subjective norms, and perceived behavioral control. Researchers consider these elements relevant for explaining individual motivation in deciding to become digital entrepreneurs. Educators regard TPB as appropriate in learning settings because intention, perception, and self-efficacy of students or trainees represent essential outcomes of digital entrepreneurship education.

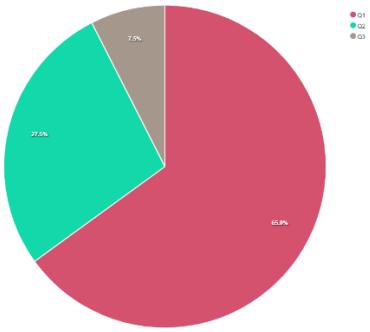
Several studies adopt Social Cognitive Theory (SCT) to highlight the role of social learning processes, self-efficacy, and observational learning through role models in shaping entrepreneurial competence and motivation. Some researchers apply alternative frameworks with contextual and structural perspectives. The Organisational Resilience framework emphasizes institutional capacity to adapt and innovate during digital disruption. The Entrepreneurship Teaching Model provides systematic approaches to designing and evaluating entrepreneurship education strategies.

Journal Classification and Distribution

From the total 40 analyzed articles, digital entrepreneurship education research was distributed across various reputable international journals, with main concentration in Frontiers in Psychology, International Journal of Entrepreneurial Behavior & Research, and Sustainability. These three became dominant publication channels and show community scientific attention directions. Based on journal classification using the Scopus quartile system shown in Figure 6, the majority of studies were published in Q1 journals, namely 26 out of 40 articles.

Figure 6

Journal Level Diagram



The Q1 category represents the highest ranking in the Scopus journal assessment system, indicating that research in this field has high quality, significant impact, and strong international relevance. Several other articles were distributed in Q2 and Q3 journals, with much smaller numbers. This fact reflects that digital entrepreneurship education has become competitive and globally valued topic.

Research Focus

Analysis of 40 reviewed articles indicates that research in digital entrepreneurship education concentrates on several central themes. The first theme emphasizes development of digital entrepreneurial competence and attitudes. Researchers examine how education enhances confidence, creativity, and readiness among students to engage in technology-based entrepreneurship. Studies by Zeynalov and Doğantan (2025), Li et al. (2024), and Wibowo et al.

(2023) reveal that both quantitative and qualitative approaches are widely applied to assess effectiveness of educational interventions in shaping digital entrepreneurial mindset. The second theme addresses innovation in curriculum design and development of adaptive skills for digital transformation. Wang et al. (2024) and Zhang et al. (2021) stress the importance of digital-based approaches in fostering innovative abilities, including use of online learning and project-based methods to enhance relevant and contextual entrepreneurial experiences.

Digital literacy and technological readiness represent another major area of concern. Researchers demonstrate that digital literacy not only strengthens technological understanding but also relates closely to entrepreneurial motivation and intention. Weng et al. (2025) and Zhao (2021) confirm that students with higher levels of digital literacy show greater readiness and stronger interest in pursuing digital entrepreneurship. The final theme highlights significance of building integrated digital entrepreneurship ecosystem. Autio et al. (2024) and Sitaridis and Kitsios (2024) demonstrate that effective digital entrepreneurship education requires collaboration among multiple actors, including educational institutions, government, and industry. Scholars emphasize that such collaboration plays crucial roles in creating ecosystems that sustain innovation and support long-term digital entrepreneurship growth.

Discussion

Digital entrepreneurship education has experienced rapid growth over the past decade. Researchers have employed diverse approaches in terms of theory, methodology, and regional context. This development demonstrates that digital entrepreneurship is increasingly regarded as essential component of higher education aimed at preparing young generations to face digital economy challenges. The rising trend of publications, spread of reputable journals that accommodate this field, and diversity of research topics indicate that this issue has gained attention in many countries, particularly in Asia, including China, Indonesia, and Vietnam.

Progress in this field, however, remains uneven. Scholars frequently investigate themes such as competence development, curriculum innovation, digital literacy, and ecosystem building. Most studies focus on higher education institutions located in urban areas with adequate technological infrastructure. Researchers often assume that students already possess access to digital resources, sufficient digital capabilities, and supportive entrepreneurial environment. Actual conditions, however, do not always reflect these assumptions. Many regions and communities still lack access to programs that promote digital entrepreneurship education.

An important issue emerges from lack of attention to digital entrepreneurship education within marginalized communities and rural areas. Only limited numbers of studies directly address educational efforts for rural societies or vulnerable groups. Mei et al. (2022) and Autio et al. (2024) mention initiatives such as digital village development and local ecosystem building, but these findings remain exceptions rather than part of mainstream research. This gap indicates that current research agenda does not fully capture importance of extending digital entrepreneurship education to socially and geographically disadvantaged populations.

This problem carries significant implications because digital entrepreneurship education holds strong potential as tool for community empowerment. Appropriate educational approaches can help rural communities develop local businesses, increase income, and expand employment opportunities. Educational strategies that remain relevant only to universities or urban centers, however, risk deepening social and economic inequalities rather than reducing them. Future research and practice must therefore direct greater attention to outreach in peripheral areas and among groups that have not yet received adequate educational opportunities.

The discussion suggests that digital entrepreneurship education has advanced in terms of methods and topics, yet it continues to face challenges related to social and spatial equity. Locality, marginalization, and technological access require stronger emphasis to ensure that digital entrepreneurship education truly reaches all segments of society. Future studies should adopt more contextualized approaches, involve communities directly, and design learning models that align with needs and capacities of local populations.

Conceptual Design Recommendations

Digital entrepreneurship education continues to face challenges in reaching local communities and marginalized groups. Social and geographical gaps in business digitalization application highlight need for learning approaches that emphasize not only technological innovation but also direct social engagement. To address these challenges, the following conceptual design provides concrete model of experiential, collaborative, and impactful digital entrepreneurship learning. The design aims to integrate theoretical understanding with practical engagement, encouraging students to actively participate in local entrepreneurship ecosystems, particularly among small business actors and marginalized communities in their surroundings. Students gain knowledge not only about technical aspects of digitalization but also about social dynamics, structural barriers, and entrepreneurial values emerging from local communities.

The first stage positions students as active learners who work in teams. Each group collaborates with one or more entrepreneurs. The practicum is grounded in constructivist learning theory, which emphasizes that knowledge is actively built through direct experiences, social interactions, and reflection on real-life contexts. The approach employs problem-based learning, requiring students to begin with identifying real challenges in field rather than applying classroom practices as universal solutions. Solutions are developed collaboratively with business partners based on their needs and capacities.

The second stage involves classroom preparation before field engagement. Instructors provide students with training on principles of digital entrepreneurship, use of simple digital tools such as business-oriented social media, digital catalogs, QRIS payment systems, and relevant communication strategies. Ethical values also form essential components of this preparation. Instructors emphasize humility, respect for local knowledge, and equal relationships to ensure that students act as empathetic facilitators rather than authoritative instructors.

The third stage focuses on fieldwork where students conduct interviews and direct observations with entrepreneurs. Students gather information on motivation, constraints, and patterns of technological adaptation. Students then provide accessible digital assistance such as setting up WhatsApp Business accounts, organizing digital product catalogs, promoting products through social media, or introducing QRIS-based cashless payment systems. The process also allows students to learn from entrepreneurs, particularly regarding persistence, improvisation, and entrepreneurial values that are often absent from formal classroom instruction.

The fourth stage concludes with student presentations that showcase project outcomes. Presentations function as reflective sessions where groups exchange experiences, compare approaches, discuss challenges, and evaluate real impacts of their interventions. Instructors provide comprehensive feedback to ensure that students gain meaningful insights from both successes and limitations.

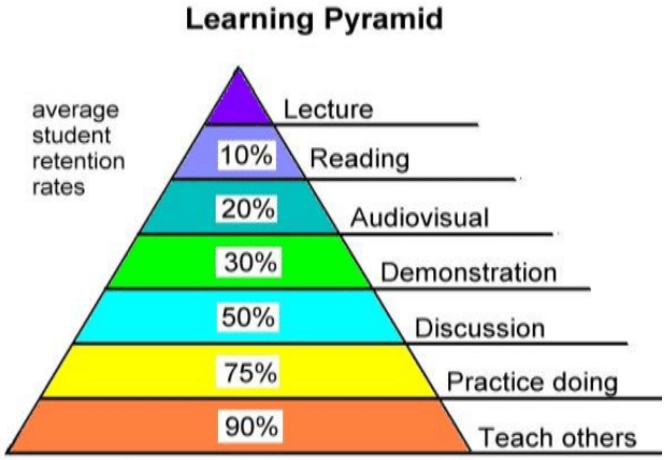
The conceptual design aligns with development of six core twenty-first-century skills or 6C as illustrated in Figure 7. Students are challenged to think critically in analyzing business partner situations, demonstrate creativity in designing digital solutions, collaborate within teams and

communities, communicate empathetically, act responsibly as active citizens, and develop resilience that embraces diversity and social realities.

Figure 7
21st Century Skills

Additionally, this design adopts the "teach others" principle which becomes the largest part in the learning pyramid, whose levels can be seen in Figure 8. By sharing knowledge with business actors, students not only help business partners access digital skills but also deepen their own understanding. Teaching something requires material mastery, explanation skills, and sensitivity toward audiences with different backgrounds.

Figure 8
Learning Pyramid



This makes learning processes more meaningful, reflective, and contextual. Through this approach, students not only learn to become digital entrepreneurs but also learn to become change facilitators, community drivers, and lifelong learners. This practicum not only strengthens cognitive aspects but also forms social sensitivity and real contributions to surrounding communities.

Conclusion

This study demonstrates that digital entrepreneurship education represents strategic approaches in preparing young generations to face technology-based economic transformation, with significant academic attention increase over the past decade, evident from growing publication numbers, diverse methodologies, and theoretical frameworks used, where Theory of Planned Behavior emerges as dominant theory, survey methods become the most widely used approach, and China emerges as the most prominent research region. Digital entrepreneurship education not only equips learners with entrepreneurship knowledge and skills but also promotes digital literacy strengthening, creativity, and innovation in facing rapid economic changes. Nevertheless, most research remains focused on urban contexts and higher education, while studies explicitly targeting local communities and marginalized areas remain minimal. Future development directions need to position inclusivity, contextuality, and sustainability as primary orientations, as reflected in the proposed field-based digital entrepreneurship practicum conceptual design that encourages students to engage directly in small business actor environments and marginalized communities to apply knowledge contextually and collaboratively. This recommendation integrates constructivism theory, problem-based learning, team-based learning, and "teach others" principles to sharpen digital and entrepreneurship competencies while building social empathy, reflective capabilities, and 21st century skills such as critical thinking, creativity, collaboration, communication, citizenship concern, and adaptive resilience. Digital entrepreneurship education designed participatively and context-based has potential to produce resilient digital entrepreneurs while serving as change agents in society. However, this study has limitations including single use of Scopus database that risks bias by not covering literature from other databases or local publications that might be more representative of community contexts, subjectivity in article selection, and limited access to paid publications. Future research should expand literature sources, explore Indonesian local contexts, and adopt transdisciplinary approaches that integrate economic, technological, educational, and social empowerment perspectives to produce richer, more relevant, and applicable findings.

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APPENDIX

No	Analyzed Articles
1	Shovqi, Zeynalov; Ece, Doğantan, 2025, The Effect of Digital Literacy and Entrepreneurship Education on Digital Entrepreneurship Intention: The Mediating Role of Personal Innovativeness, *Technology, Knowledge and Learning*
2	Arezou, Mirhabibi; Ali, Shayan; Shaghayegh, Sahraei, 2025, Improving digital entrepreneurship readiness of business students: The moderating roles of digital mindset and digital education, *International Journal of Management Education*
3	Phuong Ngoc Duy, Nguyen; Huan Hong, Nguyen, 2024, Unveiling the link between digital entrepreneurship education and intention among university students in an emerging economy, *Technological Forecasting and Social Change*
4	Xiaojing, Weng; Michelle Mingyue, Gu; Qi, Xia; Thomas K.F., Chiu, 2025, SWOT analysis of Al empowered entrepreneurship education: Insights from digital learners in higher education, *Thinking Skills and Creativity*
5	Agus, Wibowo; Bagus Shandy, Narmaditya; Ari, Saptono; Mohammad Sofwan, Effendi; Saparuddin, Mukhtar; Muhammad Hakimi, Mohd Shafiai, 2023, Does Digital Entrepreneurship Education Matter for Students' Digital Entrepreneurial Intentions? The Mediating Role of Entrepreneurial Alertness, *Cogent Education*
6	Raihan Taqui, Syed; Rashed A., Alzahmi; Urwa, Tariq, 2024, Digital entrepreneurship education in universities through the lens of educators: evidence from the United Arab Emirates, *Cogent Education*
7	Sihui, Li; Yajing, Bu; Zeyuan, Zhang; Yangjie, Huang, 2024, Digital entrepreneurship intention and digital entrepreneurship behavior: the mediating role of managing learning and entrepreneurship education, *Education and Training*
8	Ioannis, Sitaridis; Fotis, Kitsios, 2024, Digital entrepreneurship and entrepreneurship education: a review of the literature, *International Journal of Entrepreneurial Behaviour and Research*
9	Roberto, Linzalone; Giovanni, Schiuma; Salvatore, Ammirato, 2020, Connecting universities with entrepreneurship through digital learning platform: functional requirements and education-based knowledge exchange activities, *International Journal of Entrepreneurial Behaviour and Research*
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11	Cong, Wang; Yuening, Liu; Huamin, Yin, 2024, Research on Curriculum Construction and Capacity Cultivation of Innovation and Entrepreneurship Education in Colleges and Universities in the Context of Digital Curriculum Civics and Politics, *Applied Mathematics and Nonlinear Sciences*
12	Yanwei, Xu, 2024, Research on the Construction Problems of Innovation and Entrepreneurship Education Programs in Higher Vocational Colleges and Universities under the Background of Digital Technology Era, *Applied Mathematics and Nonlinear Sciences*
13	Tadesse Weyuma, Bulto; Abdella Kosa, Chebo; Berhanu, Endeshaw; Birhanu Chalchisa, Werku; Shepherd, Dhliwayo, 2025, Visualizing digital transformation in entrepreneurship education: a bibliometric analysis study from 2018 to 2022, *Frontiers in Education*
14	Jie, Zhang; Mingming, Zhang; Yaqian, Liu; Ruimin, Lyu; Rongrong, Cui, 2021, Research on the Integration of Media Literacy Innovative Concept and Entrepreneurship Education and Digital Dynamic Creative Expression Talents, *Frontiers in Psychology*
15	Yang, Zhao, 2021, Examining Digital Entrepreneurship: The Goal of Optimization of Transformation Path Normal Education in China, *Frontiers in Psychology*
16	Emmanuel, Udekwe; Chux Gervase, Iwu, 2024, The Nexus Between Digital Technology, Innovation, Entrepreneurship Education, and Entrepreneurial Intention and Entrepreneurial Motivation: A Systematic Literature Review, *Education Sciences*

17	Xiyuan, Xiang; Jing, Wang; Zehai, Long; Yangjie, Huang, 2023, Improving the Entrepreneurial Competence of College Social Entrepreneurs: Digital Government Building, Entrepreneurship Education, and Entrepreneurial Cognition, *Sustainability*
18	Kristaps, Lesinskis; Inese, Mavlutova; Aivars, Spilbergs; Janis, Hermanis, 2023, Digital Transformation in Entrepreneurship Education: The Use of a Digital Tool KABADA and Entrepreneurial Intention of Generation Z, *Sustainability*
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21	Qingfang, Wang, 2021, Higher education institutions and entrepreneurship in underserved communities, *Higher Education*
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24	Cong Doanh, Duong; Thanh Hieu, Nguyen; Tuan Vu, Chu; Thanh Van, Pham; Ngoc Diep, Do, 2024, Whether ChatGPT adoption inspires higher education students' digital entrepreneurial intention? An integrated model of the SCCT and the TPB, *International Journal of Innovation Science*
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28	Syed M.Afraz Hassan, Gillani; Aslan Bin Amat, Senin; Jürgen, Bode; , Muniba; Syed M.Ahmad Hassan, Gillani, 2022, Bibliometric Analysis of Digital Entrepreneurial Education and Student Intention; Reviewed and Analyzed by VOSViewer from Google Scholar, *International Journal of Interactive Mobile Technologies*
29	Tarja, Römer-Paakkanen; Maija, Suonpää, 2023, Entrepreneurship Education with Purpose: Active Ageing for 50+ Entrepreneurs and Sustainable Development for Rural Areas, *Education Sciences*
30	Minling, Zeng; Yanling, Zheng; Yu, Tian; Abdelhamid, Jebbouri, 2022, Rural E-Commerce Entrepreneurship Education in Higher Education Institutions: Model Construction via Empirical Analysis, *Sustainability*
31	Jonas, Soluk; Nadine, Kammerlander; Solomon, Darwin, 2021, Digital entrepreneurship in developing countries: The role of institutional voids, *Technological Forecasting and Social Change*
32	Erkko, Autio; Éva, Komlósi; László, Szerb; Mónika, Galambosné Tiszberger; Donghyun, Park; Yothin, Jinjarak, 2024, Digital entrepreneurship landscapes in developing Asia: insights from the Global Index of Digital Entrepreneurship Systems, *European Journal of Innovation Management*
33	Franklin, Nakpodia; Folajimi, Ashiru; Jacqueline Jing, You; Oluwasola, Oni, 2024, Digital technologies, social entrepreneurship and resilience during crisis in developing countries: evidence from Nigeria, *International Journal of Entrepreneurial Behaviour and Research*

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35	Christian, Bergholz; Lena, Füner; Moritz, Lubczyk; Rolf, Sternberg; Johannes, Bersch, 2024, Infrastructure required, skill needed: Digital entrepreneurship in rural and urban areas, *Journal of Business Venturing Insights*
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