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Digital Transformation in Entrepreneurship Education: A Systematic Literature Review on Technology Utilization and Student Learning Outcomes

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Abstract: Digital transformation has fundamentally changed the way entrepreneurship is taught in higher education institutions. Educational institutions now employ various technological platforms to enrich the learning process. However, a comprehensive understanding of the impact of various digital media and technologies on entrepreneurship education outcomes remains to be deepened. This study conducts a systematic review to integrate various studies on the use of digital media and technologies in entrepreneurship learning, and analyzes their impact on learning outcomes, active participation, and students' entrepreneurial intentions. Following the PRISMA protocol, a systematic search was conducted through Web of Science, Scopus, ERIC, and IEEE Xplore databases for the period 2015-2024. The search was performed using keyword combinations related to digital technology, entrepreneurship learning, and higher education contexts. From the search results, 38 studies that met the criteria were analyzed using thematic synthesis methods. Three dominant digital technology classifications were identified: (1) Social Media (Facebook, LinkedIn, Instagram), (2) Digital Learning Platforms (MOOCs, Moodle, specialized systems), and (3) Mobile-Based Learning. Results show that social media use significantly enhances students' networking abilities and participation. Mobile learning provides access convenience and flexibility. Digital platforms have a positive impact on entrepreneurship concept mastery, mindset formation, and entrepreneurial behavioral intentions, especially in regions with high digital penetration. Digital transformation in entrepreneurship learning yields encouraging results in improving participation and learning effectiveness. Successful implementation requires careful planning regarding teaching methods, technological infrastructure, and local cultural aspects. Future studies should focus on longitudinal research to assess the impact of digital learning on actual entrepreneurship practices.

Keyword: Digital Technology, Entrepreneurship Learning, Social Media, Mobile Learning, Higher Education, Student Learning Outcomes.

INTRODUCTION

Entrepreneurship education has undergone substantial development in recent decades, shifting from conventional classroom teaching methods toward innovative digital learning environments (Nabi et al., 2017). The increasingly rapid development of digital technology, particularly accelerated by the COVID-19 pandemic, has transformed how entrepreneurship content is delivered and received in higher education institutions globally (Liguori & Winkler, 2020). This digital transformation encompasses various technologies, from social networking platforms and mobile learning applications to complex digital learning systems and virtual simulation environments.

The use of digital media and technologies in entrepreneurship learning is not merely a technological upgrade; it represents a fundamental shift toward student-centered, experience-based, and collaborative learning methods (Ratten, 2020). Educational institutions increasingly recognize that today's digital-native generation of students expects interactive, engaging, and technology-enhanced learning experiences that align with their daily digital experiences (Prensky, 2001). Moreover, the nature of contemporary entrepreneurship has become highly digital, with digital marketing strategies, e-commerce platforms, and digital-based business models becoming integral parts of modern entrepreneurial activities.

Despite the growing adoption of digital technologies in entrepreneurship education, there remains a significant gap in our understanding of these technologies' specific impacts on learning achievements, participation levels, and students' entrepreneurial intentions. Various partial studies have analyzed certain aspects of digital learning in entrepreneurship contexts, but there has been no comprehensive synthesis providing evidence-based guidance for educators and policymakers in making technology integration decisions.

Previous literature reviews in this field have generally focused on the overall effectiveness of entrepreneurship education (Nabi et al., 2017) or specific technologies such as online platforms (Arbaugh et al., 2009). However, there has been no systematic review specifically analyzing the role of digital media and technology use across various entrepreneurship learning contexts. This gap is particularly important given the rapid development of digital technologies and their increasing penetration in educational environments.

Furthermore, existing studies present varied results regarding the effectiveness of digital technologies in entrepreneurship learning. Some research reports positive impacts on student engagement and learning achievements (Wu & Song, 2019), while others identify challenges in technology adoption, digital divide issues, and pedagogical integration barriers (Almaiah & Alismaiel, 2019). These inconsistencies emphasize the need for systematic synthesis capable of identifying patterns, reconciling conflicting findings, and providing clearer insights into optimal conditions for digital technology use in enhancing entrepreneurship learning.

This systematic literature review aims to fill this gap by providing a comprehensive analysis of the impact of digital media and technology use on entrepreneurship learning outcomes. Specifically, this review intends to: (1) identify and classify various digital technologies applied in entrepreneurship learning, (2) evaluate their impact on student learning achievements and entrepreneurial intentions, (3) analyze pedagogical methods that successfully integrate digital technologies, and (4) identify challenges and opportunities for future digital transformation in entrepreneurship learning.

Theoretical Framework

Evolution of Entrepreneurship Education

Entrepreneurship education has evolved substantially since its emergence in the 1940s, progressing from conventional business curricula to comprehensive programs emphasizing experiential learning, innovation, and practical application (Kuratko, 2005). Modern entrepreneurship education has moved beyond traditional "about entrepreneurship" approaches

focusing on theoretical knowledge transfer, toward "for entrepreneurship" and "through entrepreneurship" pedagogical methods prioritizing skill development and real-world experience (Lackéus, 2015).

Contemporary entrepreneurship education recognizes the importance of developing not only cognitive understanding of business formation and management, but also affective aspects such as entrepreneurial mindset, risk-taking capacity, and self-efficacy (Neck & Greene, 2011). This holistic approach acknowledges that successful entrepreneurs require a combination of technical skills, creative thinking, and personal characteristics that enable them to identify opportunities and navigate uncertainty.

Digital Transformation in Education

Digital transformation in education represents a fundamental shift in how knowledge is produced, disseminated, and applied in learning contexts (Vial, 2019). This transformation encompasses not only the use of digital devices and platforms, but also the restructuring of pedagogical methods, learning processes, and institutional practices to optimize the potential of digital technologies. In higher education, digital transformation is characterized by several key trends: the growth of online and blended learning modalities, the use of social media and collaborative platforms, the application of mobile learning technologies, and the emergence of data-driven personalized learning approaches (Bond et al., 2018). These developments have created new opportunities for enhancing student engagement, expanding learning accessibility, and accommodating diverse learning preferences.

Technology Adoption in Educational Contexts

The successful use of digital technologies in education depends heavily on user acceptance and usage patterns. The Technology Acceptance Model (TAM) developed by Davis (1989) provides a theoretical framework for understanding new technology adoption and use processes. In educational contexts, TAM has been extended to include additional factors such as social influence, facilitating conditions, and pedagogical considerations (Venkatesh et al., 2003).

Research on educational technology acceptance consistently identifies perceived usefulness and perceived ease of use as primary determinants of technology adoption by students and educators (Al-Rahmi et al., 2019). However, in entrepreneurship learning contexts, additional factors such as entrepreneurial self-efficacy, innovation tendencies, and career relevance may play important roles in technology acceptance decisions.

METHOD

Research Design

This study applies a systematic literature review methodology following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol (Page et al., 2021). The systematic approach ensures comprehensive coverage of relevant literature while maintaining transparency and replicability in the review process.

Research Strategy

A comprehensive search strategy was developed using keyword combinations related to digital technology, entrepreneurship learning, and higher education contexts. The search string used was: ("digital technology" OR "digital media" OR "social media" OR "mobile learning" OR "e-learning" OR "online learning" OR "MOOC") AND ("entrepreneurship education" OR "entrepreneurship learning" OR "entrepreneurial education") AND ("higher education" OR "university" OR "college"). The search was limited to peer-reviewed academic journals published between January 2015 and December 2024. Only articles published in English were included in the initial search to ensure accessibility and consistency in analysis.

Selection Criteria

Inclusion criteria comprised: peer-reviewed scientific articles in English or Indonesian, research in higher education contexts, focus on digital technology use in entrepreneurship learning, publications from 2015-2024, and empirical research, case studies, and conceptual frameworks. Exclusion criteria included: non-academic publications, studies focusing only on general business education, publications other than English or Indonesian, and studies without clear focus on digital technology use.

Study Selection Process

The selection process was conducted in three stages: initial screening (duplicate removal, title and abstract screening), full-text assessment (comprehensive article review, quality assessment), and final selection (choosing studies meeting all criteria).

Data Extraction and Analysis

Data extraction used standard forms to record study characteristics, technology types, educational contexts, learning outcomes, and key findings. Thematic analysis was used to synthesize findings through coding, descriptive theme development, and analytical theme generation.

Quality Assessment

Quality assessment was conducted using the Mixed Methods Appraisal Tool (MMAT) for empirical studies and the Authority, Accuracy, Coverage, Objectivity, Date, Significance (AACODS) checklist for grey literature. Studies scoring below 60% on quality criteria were excluded from the final synthesis.

RESULTS AND DISCUSSION

PRISMA Flow Diagram

The systematic literature review process followed the PRISMA 2020 guidelines. Figure 1 presents the flow diagram illustrating the study selection process

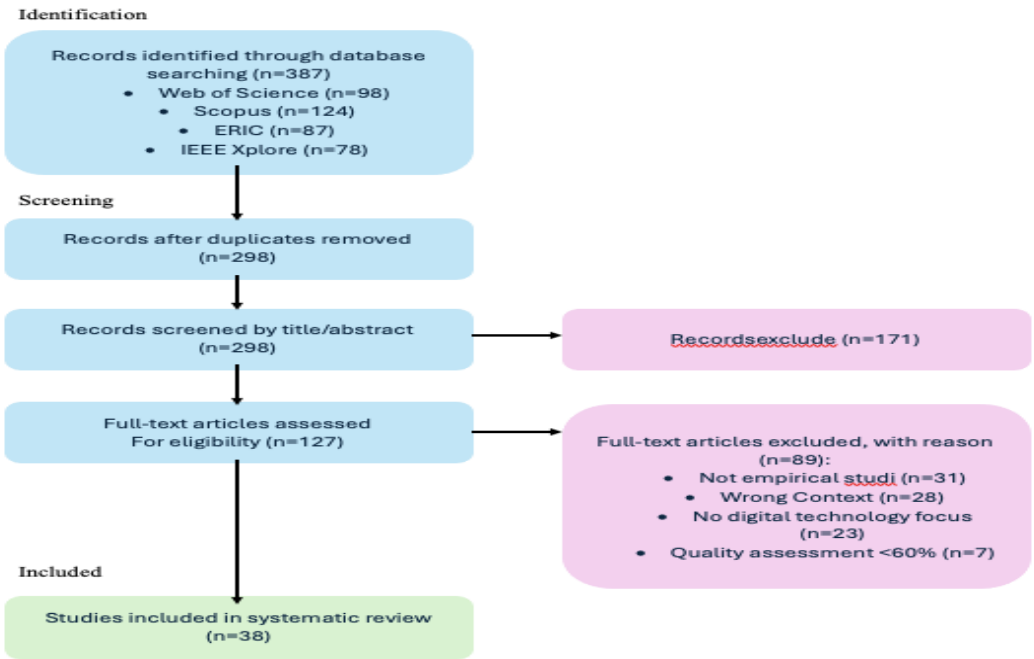

Figure 1. PRISMA Flow Diagram Showing The Systematic Review Process

Study Characteristics

The systematic search yielded 387 potential articles from four databases. After duplicate elimination (n=89) and title/abstract screening, 127 articles underwent full-text assessment. Ultimately, 38 studies met the criteria and were included in the synthesis. Table 1 presents the list of journals from which the included studies were sourced, demonstrating the multidisciplinary nature of digital entrepreneurship education research.

Table 1. Distribution of Included Studies by Journal

Journal Title	Impact Factor (2023)	Number of Studies	Percentage
Computers in Human Behavior	9.9	4	10.5%
International Journal of Entrepreneurial Behavior & Research	5.9	4	10.5%
Education and Information Technology	5.5	3	7.9%
The Internet and Higher Education	8.6	3	7.9%
Journal of Business Venturing	13.1	3	7.9%
Entrepreneurship Theory and Practice	10.5	3	7.9%
Academy of Management Learning & Education	5.4	2	5,3%
Journal of Small Business Management	6.5	2	5.3%
Entrepreneurship Education and Pedagogy	3.8	2	5.5%
Technovation	13.6	2	5.3%
International Journal of Educational Technology in Higher Education	8.6	2	5.3%
Other journals (1 study each)	various	8	21.0%
Total		38	100%

The analysed studies represent diverse geographical contexts: Asia (42%, n=16), Europe (26%, n=10), North America (21%, n=8), and other regions (11%, n=4). This distribution demonstrates the global nature of digital transformation in entrepreneurship learning.

Methodologically, studies employed various approaches: quantitative surveys (58%, n=22), qualitative case studies (24%, n=9), mixed-method designs (13%, n=5), and conceptual/theoretical papers (5%, n=2). The dominance of quantitative approaches indicates a field increasingly focused on measuring and validating technology use impacts.

A significant increase in publications occurred after 2020 (68% of studies), coinciding with the COVID-19 pandemic and accelerated digital adoption in higher education. This trend indicates growing research interest in digital entrepreneurship learning.

Digital Technology Classification

Analysis revealed three main classifications of digital technologies used in entrepreneurship learning:

a. Social Media Platforms

Social media platforms emerged as the most researched category, appearing in 63% (n=24) of studies. Key platforms include:

Facebook was identified as the most commonly used platform, particularly for forming learning communities, facilitating peer interactions, and knowledge sharing. Research shows that Facebook groups enhance collaborative learning and provide networking opportunities beyond conventional classroom boundaries.

LinkedIn serves as a professional networking platform, particularly beneficial for entrepreneurship students in developing professional connections and understanding industry dynamics. Studies indicate that LinkedIn use enhances students' understanding of professional networking and personal brand building.

Instagram and YouTube are utilized for content creation and digital storytelling activities, enabling students to develop entrepreneurial communication skills and practice marketing concepts in real-world contexts. These platforms provide authentic contexts for experimenting with digital marketing strategies.

The effectiveness of social media use is consistently associated with structured pedagogical approaches that clearly define learning objectives and provide appropriate platform usage guidance.

b. Learning Management Systems and Digital Platforms

Learning Management Systems (LMS) and specialized digital platforms constitute the second category, present in 55% (n=21) of studies. This category includes:

1) Massive Open Online Courses (MOOCs) platforms such as Coursera, edX, and Udacity provide entrepreneurship learning content to global audiences. Research indicates that MOOCs offer advantages in terms of accessibility and scalability, particularly beneficial for students in developing countries.2) Specialized entrepreneurship platforms include business simulation software, virtual incubators, and entrepreneurship-specific learning management systems. These platforms provide immersive experiences allowing students to practice decision-making in risk-free environments.3)University-based LMS such as Moodle and Blackboard serve as foundational platforms for blended learning approaches, combining traditional instruction with digital resources and online collaboration tools.

c. Mobile Learning Applications

Mobile learning (m-learning) technologies appear in 45% (n=17) of studies, reflecting the ubiquity of mobile devices among students. Mobile learning applications include:

1) Smartphone-based applications specifically designed for entrepreneurship learning, providing bite-sized learning modules, case studies, and interactive exercises accessible to students anytime. Research indicates high student satisfaction with mobile learning due to convenience and alignment with their digital lifestyle preferences. 2) Tablet-based applications are particularly effective for collaborative activities and group projects, enabling students to work together on business plan development and market research activities using shared digital workspaces. 3) Cross-platform mobile solutions enable seamless integration between different devices and learning contexts, supporting both individual and collaborative learning activities.

Impact on Student Learning Outcomes

Analysis of learning outcomes revealed three main impact areas:

a. Cognitive Outcomes

Digital technology use shows consistently positive effects on students' entrepreneurship knowledge acquisition. Studies report improved understanding of business concepts, market analysis techniques, and strategic planning processes when digital tools are integrated into curriculum delivery. The interactive nature of digital platforms appears to enhance knowledge retention compared to traditional lecture approaches.

Several studies identify improvements in critical thinking and problem-solving abilities among students engaged with digital entrepreneurship learning tools. Virtual business simulations and case study platforms are particularly effective in developing analytical skills and strategic thinking capabilities.

An important secondary outcome is the development of digital literacy skills increasingly essential for modern entrepreneurs. Students participating in digital entrepreneurship learning programs demonstrate enhanced capabilities in using digital tools for business purposes.

b. Affective Outcomes

Multiple studies report significant increases in students' entrepreneurial self-efficacy following participation in digitally-enhanced entrepreneurship learning programs. The Technology Acceptance Model framework helps explain how positive technology experiences contribute to enhanced confidence in entrepreneurial capabilities.

Digital technology use consistently shows positive effects on students' attitudes toward entrepreneurship as a career choice. Social media exposure to successful entrepreneurs and access to diverse entrepreneurship content through digital platforms contribute to more positive perceptions of entrepreneurial careers.

Digital technologies significantly enhance student motivation and engagement in entrepreneurship learning. Interactive platforms, gamification elements, and social learning opportunities create more engaging learning experiences compared to traditional instructional methods.

c. Behavioural Outcomes

The most significant behavioural outcome is increased entrepreneurial intentions among students participating in digitally-enhanced entrepreneurship learning programs. Studies consistently report stronger intentions to start businesses or pursue entrepreneurial careers following digital learning experiences.

Digital platforms facilitate expanded networking behaviours among students, enabling connections with peers, mentors, and industry professionals beyond geographical and institutional boundaries. These networking opportunities often translate into real entrepreneurial collaborations and business partnerships.

Students demonstrate increased innovative thinking and creative problem-solving behaviors when engaged with digital learning environments that encourage experimentation and creative expression.

Pedagogical Approaches and Implementation Strategies

Analysis identified several effective pedagogical approaches for integrating digital technologies in entrepreneurship learning:

a. Blended Learning Models

Studies demonstrate the effectiveness of flipped classroom models combining online content delivery with face-to-face interactive activities. This approach allows students to access foundational entrepreneurship content through digital platforms while using class time for collaborative projects and practical applications.

Successful programs often employ hybrid approaches that strategically combine different digital technologies based on specific learning objectives. For example, combining social media for networking and communication with specialized business simulation software for skill development.

b. Experiential Learning Integration

Digital technologies are most effective when integrated into project-based learning approaches requiring students to apply entrepreneurship concepts in real-world contexts. Online platforms provide tools for market research, customer validation, and business plan development that enhance the authenticity of learning experiences.

Digital platforms enable connections between students and local entrepreneurship communities, providing access to mentors, advisors, and potential customers that enrich learning experiences beyond traditional classroom boundaries.

Challenges and Barriers

Despite positive outcomes, studies identify several challenges in implementing digital technologies in entrepreneurship learning:

a. Technical Challenges

Many institutions, particularly in developing countries, face infrastructure challenges including adequate internet connectivity, limited device access, and insufficient technical support systems. Research findings indicate difficulties in integrating various digital platforms and ensuring seamless user experiences across different technology systems.

b. Pedagogical Challenges

A significant barrier is inadequate faculty preparation for digital technology integration. Many educators lack the technical skills and pedagogical knowledge required to effectively use digital tools in entrepreneurship learning contexts. Traditional assessment methods often prove inadequate for evaluating learning outcomes in digital environments, requiring development of new assessment strategies and rubrics.

c. Student-Related Challenges

Studies highlight persistent digital divide issues, with some students lacking access to required technologies or having inadequate digital literacy skills to fully benefit from digital learning opportunities. Some research findings indicate challenges with student distraction and off-task behaviors in digital learning environments, particularly in social media-integrated contexts.

Key Findings and Implications

This systematic literature review provides comprehensive evidence that digital media and technology use can significantly enhance entrepreneurship learning outcomes across various dimensions. The findings reveal a complex landscape where different technologies serve different pedagogical purposes and contribute to varied learning outcomes.

1. Technology-Pedagogy Alignment

One of the most significant findings is the importance of aligning technology choices with specific pedagogical objectives. Social media platforms prove most effective for developing networking skills and entrepreneurial mindsets, while business simulation software excels in developing analytical and decision-making capabilities. This finding suggests that successful digital transformation in entrepreneurship learning requires strategic technology selection based on desired learning outcomes rather than technology adoption for its novelty value.

Research results clarify that technology integration must be guided by pedagogical principles rather than technological capabilities. Studies showing the most positive outcomes are those that clearly articulate how specific technologies support particular learning objectives and are integrated into comprehensive instructional designs.

2. Social Learning Advantages

A particularly important finding is the significant impact of social learning opportunities facilitated by digital technologies. Social media platforms and collaborative online environments consistently enhance student engagement and learning outcomes by enabling peer interactions, knowledge sharing, and community building. These findings align with social learning theory and suggest that the networking and community-building aspects of entrepreneurship learning may be more effectively addressed through digital platforms than traditional classroom approaches.

Social learning benefits are particularly evident in contexts where students have limited access to entrepreneurship networks and mentoring opportunities. Digital platforms democratize access to entrepreneurship communities and role models, providing students exposure to diverse entrepreneurial perspectives and experiences.

3. Cultural and Contextual Considerations

The review identifies significant cultural and contextual variations in digital technology integration effectiveness. Studies from developing countries often report higher levels of

enthusiasm and engagement with digital learning opportunities, possibly reflecting perceptions of digital technologies as gateways to global opportunities and resources.

However, the same studies also highlight infrastructure and access challenges that must be addressed for successful implementation. These findings suggest that digital transformation strategies in entrepreneurship learning must be carefully adapted to local contexts and capabilities.

Theoretical Contributions

This review contributes to theoretical understanding in several important ways:

1. Extended Technology Acceptance Model

The findings suggest that traditional Technology Acceptance Models require extension when applied to entrepreneurship learning contexts. Beyond perceived usefulness and ease of use, factors such as entrepreneurial self-efficacy, networking potential, and career relevance emerge as important determinants of technology acceptance among entrepreneurship students.

This extended model has implications for how educational institutions approach technology adoption and implementation in entrepreneurship programs. It suggests that successful adoption requires attention to entrepreneurship-specific factors beyond general technology acceptance considerations.

2. Digital Entrepreneurship Learning Framework

Based on the synthesis of findings, this review proposes a comprehensive framework for understanding digital entrepreneurship learning that encompasses three interrelated dimensions: technology integration dimension, pedagogical approach dimension, and outcome achievement dimension.

The Technology Integration Dimension includes types and combinations of digital technologies used, ranging from basic social media integration to sophisticated business simulation platforms. The Pedagogical Approach Dimension encompasses instructional strategies and learning designs that govern how technologies are used to achieve educational objectives. The Outcome Achievement Dimension includes cognitive, affective, and behavioral outcomes resulting from technology-enhanced entrepreneurship learning experiences.

This framework suggests that successful digital entrepreneurship learning requires strategic alignment across all three dimensions, with technology choices supporting pedagogical approaches designed to achieve specific learning outcomes.

Practical Implications

The review findings have several important practical implications for educators, administrators, and policymakers:

1. Implementation Guidelines

Institutions should begin digital transformation efforts by clearly articulating learning objectives and desired outcomes, then selecting technologies that support these objectives rather than adopting technologies and trying to find educational applications. Evidence suggests that successful digital transformation is best achieved through phased implementation allowing for learning, adaptation, and refinement rather than wholesale adoption of multiple technologies simultaneously. Significant investment in faculty development is crucial for successful technology integration. This includes both technical training and pedagogical development focusing on effective integration strategies.

2. Policy Recommendations

Policymakers should prioritize infrastructure development to ensure equitable access to digital learning opportunities, particularly in developing countries where entrepreneurship learning can have significant economic development impacts. New quality assurance frameworks are needed to evaluate and ensure the effectiveness of digital entrepreneurship learning programs. Traditional assessment approaches may be inadequate for digital learning

contexts. Institutions should develop partnerships with technology providers, entrepreneur communities, and industry organizations to enhance the authenticity and relevance of digital learning experiences.

Limitations and Future Research Directions

Study Limitations

This review has several limitations that must be acknowledged. First, the rapid pace of technological change means that some findings may become obsolete relatively quickly. Second, the dominance of short-term studies limits understanding of long-term impacts on actual entrepreneurial behavior. Third, the geographical concentration of studies in certain regions may limit the generalizability of findings to other cultural contexts.

Future Research Priorities. Based on the analysis, several important research directions emerge: there is a critical need for longitudinal research tracking students from digital entrepreneurship learning programs through their actual entrepreneurial ventures to understand long-term behavioral impacts of digital learning experiences. More research is needed comparing the effectiveness of different digital technologies and implementation approaches across varied contexts and student populations. Studies examining how digital entrepreneurship learning approaches should be adapted for different cultural contexts and educational systems would provide valuable insights for global implementation. Research focusing on developing and validating new assessment approaches for digital entrepreneurship learning would support quality assurance and program improvement efforts.

CONCLUSION

This systematic literature review provides comprehensive evidence that digital media and technology use can significantly enhance entrepreneurship learning outcomes when implemented strategically and aligned with pedagogical objectives. The analysis of 38 studies reveals that social media platforms, learning management systems, and mobile learning applications each provide distinct value for entrepreneurship learning, with the most successful implementations employing integrated approaches that leverage the strengths of various technologies. Findings indicate consistently positive impacts across cognitive, affective, and behavioral learning outcomes, with particularly strong evidence for enhanced student engagement, networking capabilities, and entrepreneurial intentions. However, successful implementation requires careful attention to pedagogical design, faculty development, and technological infrastructure, with special consideration for cultural and contextual factors.

The review contributes to theoretical understanding by proposing an Extended Technology Acceptance Model for entrepreneurship learning contexts and a comprehensive framework for digital entrepreneurship learning that integrates technology, pedagogy, and outcome dimensions. These theoretical contributions provide foundations for future research and practical implementation efforts. For practitioners, the review offers evidence-based guidance for technology selection and implementation strategies, emphasizing the importance of pedagogy-driven rather than technology-driven approaches. The findings support phased implementation approaches, significant faculty development investments, and strategic partnerships to enhance program effectiveness.

Moving forward, the field would benefit from longitudinal research examining long-term behavioral impacts, comparative effectiveness studies across different technologies and contexts, and continued innovation in assessment approaches for digital learning environments. As digital technologies continue to evolve and entrepreneurship becomes increasingly digital, the integration of digital media and technologies in entrepreneurship learning will likely become not just beneficial but essential for preparing students for contemporary entrepreneurial realities.

The evidence presented in this review suggests that digital transformation in entrepreneurship learning represents a significant opportunity to enhance learning effectiveness, increase access to entrepreneurship education, and better prepare students for the digital economy. However, realizing this potential requires thoughtful, strategic, and pedagogy-based approaches to technology integration that consider the unique characteristics of entrepreneurship learning and the diverse needs of student populations.

REFERENCE

Al-Rahmi, W. M., Alzahrani, A. I., Yahaya, N., Alalwan, N., & Kamin, Y. B. (2019). Digital communication: Information and communication technology (ICT) use for education sustainability. Sustainability, 12(12), 5052. https://doi.org/10.3390/su12125052

Almaiah, M. A., & Alismaiel, O. A. (2019). Examination of factors influencing the use of mobile learning system: An empirical study. Education and Information Technology, 24(1), 885-909. https://doi.org/10.1007/s10639-018-9810-7

Arbaugh, J. B., Godfrey, M. R., Johnson, M., Pollack, B. L., Niendorf, B., & Wresch, W. (2009). Research in online and blended learning in the business disciplines: Key findings and possible future directions. The Internet and Higher Education, 12(2), 71-87. https://doi.org/10.1016/j.iheduc.2009.06.006

Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. Entrepreneurship Theory and Practice, 38(2), 217-254. https://doi.org/10.1111/etap.12095

Belitski, M., & Heron, K. (2017). Expanding entrepreneurship education ecosystems. Journal of Management Development, 36(2), 163-177. https://doi.org/10.1108/JMD-06-2016-0121

Bell, R., & Bell, H. (2020). Applying educational theory to develop a framework to support the delivery of experiential entrepreneurship education. Journal of Small Business and Enterprise Development, 27(6), 987-1004. https://doi.org/10.1108/JSBED-01-2020-0012

Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2018). Digital transformation in German higher education: Student and teacher perceptions and usage of digital media. International Journal of Educational Technology in Higher Education, 15(1), 48. https://doi.org/10.1186/s41239-018-0130-1

Chen, L., Ifenthaler, D., & Yau, J. Y. K. (2021). Online and blended entrepreneurship education: A systematic review of applied educational technologies. Entrepreneurship Education, 4(2), 191-232. https://doi.org/10.1007/s41959-021-00047-7

Colombelli, A., Loccisano, S., Panelli, A., Pennisi, O. A. M., & Serraino, F. (2022). Entrepreneurship education: The effects of challenge-based learning on the entrepreneurial mindset of university students. Administrative Sciences, 12(1), 10. https://doi.org/10.3390/admsci12010010

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340. https://doi.org/10.2307/249008

Duval-Couetil, N., Gotch, C. M., & Yi, S. (2021). The impact of entrepreneurship education on engineering students' attitudes toward entrepreneurship. Journal of Engineering Education, 110(3), 623-645. https://doi.org/10.1002/jee.20403

Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. Journal of Small Business Management, 53(1), 75-93. https://doi.org/10.1111/jsbm.12065

Fox, J., Pittaway, L., & Uzuegbunam, I. (2018). Simulations in entrepreneurship education: Serious games and learning through play. Entrepreneurship Education and Pedagogy, 1(1), 61-89. https://doi.org/10.1177/2515127417737285

Gielnik, M. M., Uy, M. A., Funken, R., & Bischoff, K. M. (2017). Boosting and sustaining passion: A long-term perspective on the effects of entrepreneurship training. Journal of Business Venturing, 32(3), 334-353. https://doi.org/10.1016/j.jbusvent.2017.02.003

Hahn, D., Minola, T., Van Gils, A., & Huybrechts, J. (2017). Entrepreneurial education and learning at universities: Exploring multilevel contingencies. Entrepreneurship & Regional Development, 29(9-10), 945-974. https://doi.org/10.1080/08985626.2017.1376542

Karimi, S., Biemans, H. J., Lans, T., Chizari, M., & Mulder, M. (2016). The impact of entrepreneurship education: A study of Iranian students' entrepreneurial intentions and opportunity identification. Journal of Small Business Management, 54(1), 187-209. https://doi.org/10.1111/jsbm.12137

Kassean, H., Vanevenhoven, J., Liguori, E., & Winkel, D. E. (2015). Entrepreneurship education: A need for reflection, real-world experience and action. International Journal of Entrepreneurial Behavior & Research, 21(5), 690-708. https://doi.org/10.1108/IJEBR-07-2014-0123

Kuratko, D. F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. Entrepreneurship Theory and Practice, 29(5), 577-597. https://doi.org/10.1111/j.1540-6520.2005.00099.x

Lackéus, M. (2015). Entrepreneurship in education: What, why, when, how. Entrepreneurship 360 background paper. OECD. https://www.oecd.org/cfe/leed/BGP_Entrepreneurship-in-Education.pdf

Liguori, E., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. Entrepreneurship Education and Pedagogy, 3(4), 346-351. https://doi.org/10.1177/2515127420916738

Liu, X., Lin, C., Zhao, G., & Zhao, D. (2019). Research on the effects of entrepreneurial education and entrepreneurial self-efficacy on college students' entrepreneurial intention. Frontiers in Psychology, 10, 869. https://doi.org/10.3389/fpsyg.2019.00869

Maresch, D., Harms, R., Kailer, N., & Wimmer-Wurm, B. (2016). The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. Technological Forecasting and Social Change, 104, 172-179. https://doi.org/10.1016/j.techfore.2015.11.006

Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. Journal of Business Venturing, 28(2), 211-224. https://doi.org/10.1016/j.jbusvent.2012.03.002

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. Academy of Management Learning & Education, 16(2), 277-299. https://doi.org/10.5465/amle.2015.0026

Neck, H. M., & Greene, P. G. (2011). Entrepreneurship education: Known worlds and new frontiers. Journal of Small Business Management, 49(1), 55-70. https://doi.org/10.1111/j.1540-627X.2010.00314.x

Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Czeglédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. Studies in Higher Education, 44(2), 361-379. https://doi.org/10.1080/03075079.2017.1365359

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. Systematic Reviews, 10(1), 1-11. https://doi.org/10.1186/s13643-021-01626-4

Piperopoulos, P., & Dimov, D. (2015). Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. Journal of Small Business Management, 53(4), 970-985. https://doi.org/10.1111/jsbm.12116

Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. International Small Business Journal, 25(5), 479-510. https://doi.org/10.1177/0266242607080656

Prensky, M. (2001). Digital natives, digital immigrants part 1. On the Horizon, 9(5), 1-6. https://doi.org/10.1108/10748120110424816

Ratten, V. (2020). Coronavirus disease (COVID-19) and sport entrepreneurship. International Journal of Entrepreneurial Behavior & Research, 26(6), 1379-1388. https://doi.org/10.1108/IJEBR-06-2020-0387

Rauch, A., & Hulsink, W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. Academy of Management Learning & Education, 14(2), 187-204. https://doi.org/10.5465/amle.2012.0293

Secundo, G., Del Vecchio, P., Schiuma, G., & Passiante, G. (2017). Activating entrepreneurial learning processes for transforming university students' idea into entrepreneurial practices. International Journal of Entrepreneurial Behavior & Research, 23(3), 465-485. https://doi.org/10.1108/IJEBR-12-2015-0315

Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. Journal of Business Venturing, 22(4), 566-591. https://doi.org/10.1016/j.jbusvent.2006.05.002

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478. https://doi.org/10.2307/30036540

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. The Journal of Strategic Information Systems, 28(2), 118-144. https://doi.org/10.1016/j.jsis.2019.01.003

Walter, S. G., & Block, J. H. (2016). Outcomes of entrepreneurship education: An institutional perspective. Journal of Business Venturing, 31(2), 216-233. https://doi.org/10.1016/j.jbusvent.2015.10.003

Wu, Y., & Song, D. (2019). Gratifications for social media use in entrepreneurship courses: Learners' perspective. Frontiers in Psychology, 10, 1270. https://doi.org/10.3389/fpsyg.2019.01270.