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Integration of Entrepreneurship Learning Models in Improving Students' Interest and Competence: A Systematic Literature Review

Flora Puspitaningsih[1]
[1] STKIP PGRI Trenggalek
Corresponding Author e-mail: floraeducation82@gmail.com

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Abstract: Entrepreneurship education plays a strategic role in fostering students' entrepreneurial interest and competency amidst economic challenges and technological development. This article aims to systematically examine various entrepreneurship learning models and their contribution to enhancing students' entrepreneurial interest and competency. The research method used was a systematic literature review (SLR) of 15 national and international scientific articles published between 2018 and 2025. The selection process involved identifying, screening, and analyzing articles based on topic relevance and publication quality. The study's findings indicate that experiential, collaborative, and contextual entrepreneurship learning models, such as experiential learning, project-based learning, and gamified learning, are more effective in developing attitudes, self-efficacy, creativity, and entrepreneurial readiness. Furthermore, technology integration and support from a learning ecosystem contribute to the holistic development of entrepreneurial competency. In conclusion, entrepreneurship education, designed in an integrated and sustainable manner, has the potential to produce a generation of entrepreneurs who are adaptive, ethical, and capable of contributing to sustainable economic and social development.

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Introduction

Students in schools play a crucial role in building society and driving the economic progress of a nation. Entrepreneurship, which includes the ability to identify, create, and manage business opportunities, is one of the key factors that stimulates economic growth while also opening job opportunities for the community. In recent years, many countries have increasingly recognized the importance of providing entrepreneurship education to create new employment opportunities and encourage economic development. Entrepreneurial training

can be conducted through organizing courses and entrepreneurship programs integrated into school subjects (Lynch et al., 2021)

Entrepreneurship programs based on the creative industry serve as the main drivers in producing creative works derived from information and knowledge gained from one's home, school, and surrounding environment. The creative industry encompasses various sectors, including performing arts, fine arts, design, architecture, advertising, film and media, music, fashion, video games, and many others (Meilasari et al., 2020). The creative industry has become one of the largest contributors to Indonesia's national Gross Domestic Product (GDP).

In addition, it is essential to create a creative learning environment, such as innovation laboratories, co-working spaces, or collaborative areas that encourage students to share ideas, engage in discussions, and solve problems. Through innovative activities, practical scenarios, and real-life assignments, students can learn entrepreneurial concepts while sharpening their flexible thinking skills (Atrup et al., 2023). In Indonesia, character education has become an integral part of the national education curriculum. However, its implementation still often faces various challenges, particularly in fostering an entrepreneurial mindset among students.

Entrepreneurship learning in vocational high schools (SMK) can prepare students with the skills and expertise needed by society in the workforce. The soft skills most needed in the workplace, ranked from the highest to lowest, include discipline, integrity, responsibility, ethics, determination, teamwork, communication, courtesy, confidence, leadership, entrepreneurship, and organization (Kusuma Ningsih et al., 2024). Successful entrepreneurs often possess a high level of creativity, as creativity enables them to recognize opportunities that others might overlook and to find innovative solutions to existing problems (Deviyanti et al., 2022). Many high school graduates are still unable to produce work that sustains themselves financially. Even when they work after graduation, many are employed only as store clerks in major malls, factory workers, messengers, or even domestic helpers in big cities, as stated by Alfian, Ilham Nur in (Gultom, 2021). Many senior high school graduates still lack an entrepreneurial spirit, relying more on job-seeking rather than creating their own business opportunities. This indicates the need for a new and more effective approach to integrating character education with entrepreneurship education based on local wisdom (Gunawan Saputra et al., 2024).

At the higher education level, the goal of entrepreneurship courses is to provide students with the motivation and additional skills needed to become successful entrepreneurs after graduation, thereby supporting the national economy. Entrepreneurship education in universities aims to foster students' interest in entrepreneurship through learning and practical experience (Martini et al., 2024).

Based on these existing phenomena, entrepreneurship education is essential to be delivered through various teaching methods and approaches, including lectures, discussions, case studies, business simulations, hands-on experience through internships or business incubation programs, as well as collaboration with business stakeholders and experienced entrepreneurs (Meyanti et al., 2023). Interactive, practical, and real-world-oriented teaching

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approaches are often used in entrepreneurship education to enable learners to actively engage in problem-solving, decision-making, and the development of business ideas (Kusuma Ningsih et al., 2024).

Research Methods

This research is a literature review. Systematic Literature Review (SLR) is the method used for this research, the stages of which are identifying, evaluating, reviewing, analyzing, and presenting in sequence based on previous research (Anditiasari N, Pujiastuti E, 2021). SLR was chosen because it is able to present a comprehensive mapping of published scientific findings, while identifying research gaps that are still available. To ensure transparency and validity of the review process, this study followed a protocol Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 (Hasanah & Siska, 2025)

Based on search results on November 28, 2025 using the keywords entrepreneur, learning, student 4,187 articles were obtained with a time duration from 2018 – 2025. The data search process aimed at obtaining relevant literature sources was carried out through Scopus Ai with journals indexed by Scopus Q1 to Q4 ad 1 Not yet detected by Scopus , using the keywords "entrepreneur, learning, student". The following is shown in Table 1

Table 1. Articles According to Research Criteria

No	Researchers	Article title	Journal Name	Journal Index
1	(Cadenas et al., 2023)	An educational program affirming immigrant entrepreneurship, critical consciousness, and cultural strengths	Journal Career Development Quarterly	Q2
2	(Deirmentzoglou et al., 2025)	Exploring Synergies Among European Universities, Government, Industry, and Civil Society on Promotion of Green Policies and Just Transition Facets: Empirical Evidence from Six European Countries	Journal Sustainability	Q2
3	(Rajendran, 2019)	Financing Fixed Assets Decision: An Analysis	International Journal of Management (IJM)	Q4
4	(Alshebami, Fazal, et al., 2024)	Fostering Potential Entrepreneurs: Green Self-Efficacy in Saudi Arabia (2023)	Journal Discover Sustainability	Q1
5	(Cechovsky, 2020)	Vocational Business Students' Conceptions and Misconceptions of Taxes (2020)	International Journal for Research in Vocational Education and Training (IJRVET)	Q2
6	(Cabana Rojas, 2025)	Japanese-language Promotion in Chile: Everyday Cultural Ambassadors (2025)	International Journal of Cultural Policy	Q1
7	(Mussons-Torras & Tarrats-Pons, 2018)	The Entrepreneurial Credibility Model on Nursing and Physiotherapy Students (2018)	Journal Enfermería Global	Q4

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8	(Ramírez, 2020)	Academic Stress, Risk Taking, and Internal Locus of Control in University Entrepreneurs (2020)	European Journal of Contemporary Education	Q3
9	(Alshebami, Alamri, et al., 2024)	Caffeinating Entrepreneurship: Coffee Farming Intentions in Saudi Arabia (2024	Journal Discover Sustainability	Q1
10	(Alshebami et al., 2023)	Examining the Relationship between Green Mindfulness, Spiritual Intelligence, and Environmental Self-Identity (2023)	Journal Administrative Sciences	Q2
11	(Alrubaishi, 2020)	The Entrepreneurial Intention Of University Students In Saudi Arabia (2020)	International Journal of Management (IJM)	Q4
12	(Soares et al., 2024)	Gamified Learning in Entrepreneurship Education: A Systematic Review (2024)	REGEPE Entrepreneurship and Small Business Journa	Q4
13	(Shofwan et al., 2023)	Entrepreneurship Education: Encouraging Entrepreneurial Intentions for Equality Education Students in Semarang (2023	International Journal of Learning, Teaching and Educational Research	Q2
14	(Ramasamy et al., 2024)	Empowering Youth for Social Change: The Role of Social Entrepreneurship Education (2024	Aurora: Journal of Emerging Business Paradigms	Not yet detected by Scopus
15	(Farradinna et al., 2025)	Entrepreneurial commitment and entrepreneurial technology readiness among entrepreneur students (2025)	Southern African Journal of Entrepreneurship and Small Business Management	Q3

The search and selection process is carried out through several stages. In stage 1) initial screening, duplicate articles are removed and only articles that match the keywords are selected, there were 4,124 Next, 2) articles were selected based on document type, there were 63 articles, 3) There are 34 articles selected based on their eligibility. 4) selected based on language use, there were 31 articles and finally 4) selection based on open access, there are 15 articles. Inclusion criteria are the benchmarks that make a study included in the SLR and exclusion criteria are the benchmarks that make a study excluded from the SLR. Based on the criteria set out in Table 1, 15 articles were selected

Table 2. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Published between 2018-2025	Published before 2018
The article is a peer reviewed journal	The article is not a peer reviewed journal
Journals must be indexed by Scopus Index at least	Journals lower than Scopus
Written in Indonesian or English	Not Written in Indonesian or English

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Related to Entrepreneurship Learning in High School	Regarding entrepreneurship learning in higher education
Development and empirical research	Book chapter/book review and article review and meta-analysis

RESULTS

After going through PRISMA, research results were obtained that were relevant to entrepreneurship learning. Of the 4,187 articles used in this study, there were 15 articles related to entrepreneurship learning in secondary schools and universities. In the process of mapping articles through systematic literature searches, the mapping results are based on criteria that have been defined from various relevant journal publication sources. The criteria for this research consist of articles published by Scopus-indexed journals published between 2018 and 2025 in Scopus. In the journal review there are findings such as those in table 1 below.

Table 3. Article Groups Based on Learning Models

No	Entrepreneurship Learning Model	Main Characteristics of the Model	Included Articles
1	**Pembelajaran Kewirausahaan Berbasis Pengalaman (Experiential / Practice-Based Learning)**	Learning through hands-on practice, field projects, real-world contexts, and collaboration	(1) Immigrant Entrepreneurship (2023); (7) Entrepreneurial Credibility Model (2018); (11) Entrepreneurial Intention – Saudi Arabia (2020); (13) Equality Education Students – Semarang (2023);
2	**Psychological & Intention-Based Entrepreneurship Learning**	Emphasizes self-efficacy, entrepreneurial intentions, motivation, self-control, and risk taking.	(4) Green Self-Efficacy (2023); (7) Entrepreneurial Credibility Model (2018); (10) Green Mindfulness & Spiritual Intelligence (2023); (11) Entrepreneurial Intention (2020)
3	**Value-Based, Social, and Sustainability-Based Entrepreneurship Learning**	Integration of cultural, social, spiritual and environmental values in entrepreneurship	(1) Immigrant Entrepreneurship (2023); (9) Coffee Farming Entrepreneurship (2024); (10) Green Mindfulness (2023); (14) Social Entrepreneurship Education (2024)
4	**Gamification-Based Entrepreneurship Learning**	The use of game elements to increase motivation, participation, and learning retention	(12) Gamified Learning in Entrepreneurship Education (2024)
5	**Collaboration & Ecosystem-Based Entrepreneurship Learning**	Synergy between universities, government, industry and society in entrepreneurship education	(2) Quadruple Helix Model – Europe (2025); (9) Coffee Farming Entrepreneurship (2024)
6	**Entrepreneurship Learning Based on Economic & Conceptual Literacy**	Emphasis on understanding economic, financial, and business policy concepts	(3) Financing Fixed Assets Decision (2019); (5) Vocational Students' Conceptions of Taxes (2020)
7	**Culture-Based Entrepreneurship Learning & Informal Learning**	Learning through cultural practices, the role of non-formal actors, and contextual learning	(1) Immigrant Entrepreneurship (2023); (6) Japanese-language Promotion in Chile (2025)
8	**Technology-Based Entrepreneurship Learning & Digital Readiness**	Strengthening entrepreneurial commitment and digital technology readiness	(15) Entrepreneurial Commitment & Technology Readiness (2025)

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DISCUSSION

Based on the results of the analysis of 15 articles, Table 3 shows that Entrepreneurship Learning has a large effective influence in fostering students' interest in entrepreneurship and competence to become entrepreneurs. The results of the synthesis show that entrepreneurship education plays a significant role in shaping students' intentions, self-efficacy, and entrepreneurial abilities both intermediate and high levels. Some of the topics that will be discussed include:

1. Article Linkage Analysis

All the articles analyzed show a strong common thread regarding the role of entrepreneurship education in shaping students' entrepreneurial attitudes, intentions, and abilities. In various contexts, such as education for immigrant communities (Cadenas et al., 2023), and higher education in Europe and Asia (Deirmentzoglou et al., 2025) It was found that cultural factors play an important role in increasing students' agency and critical thinking skills. This is in line with the findings (Alrubaishi, 2020) which confirms that there is a significant relationship between attitudes, subjective norms, and behavioral control with entrepreneurial intentions. This means that the values, norms, and attitudes held by individuals are rooted in the culture that influences their entrepreneurial orientation. According to (Ramasamy et al., 2024) it is emphasized that practice-based learning and social values are able to develop critical thinking skills, innovation, and ethical leadership among youth in facing social problems. Meanwhile, entrepreneurial commitment is seen as a determining factor for technological readiness in the modern business world. Thus, entrepreneurship education is positioned not only as a process of knowledge transfer, but also as a means of social empowerment, cultural transformation, and technological adaptation, especially for the younger generation and marginalized communities who are an important part of the socio-cultural ecosystem.

The multidimensional approach that emerged from this study includes psychological, social, and structural dimensions. In the psychological dimension, a number of articles highlight the importance of developing self-efficacy, creativity, and locus of control as the main determinants in the formation of entrepreneurial behavior.. The concept of green self-efficacy proposed by (Alshebami, Fazal, et al., 2024). shows that individual confidence in their ability to manage environmentally friendly behavior influences entrepreneurial motivation and awareness. (Mussons-Torras & Tarrats-Pons, 2018) emphasized that self-efficacy, creativity, and innovation are the main predictors of entrepreneurial credibility, whereas (Ramírez, 2020) shows that the psychological approach plays an important role in building mental resilience, motivation, and the ability to take risks in a healthy manner. On the other hand, (Alshebami et al., 2023) explained that the integration of spiritual values and environmental awareness in education can foster sustainable motivation and encourage green entrepreneurial behavior that focuses on innovation and environmental sustainability.

In the structural and institutional dimensions, the discussion highlights the strategic role of universities, government, industry, and society in strengthening the entrepreneurial

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ecosystem. (Deirmentzoglou et al., 2025) exemplifies how cross-sector collaboration in six European countries supports the development of green entrepreneurship policies and a just economic transition. A similar thing was found in the context of Saudi Arabia, (Alshebami, Alamri, et al., 2024) identified the positive influence of infrastructure, social, and educational support on entrepreneurial intentions in the coffee farming sector. These findings show that entrepreneurial development is the result of an integration between individual psychological aspects, social support, as well as conducive institutional policies and structures.

From the learning concept perspective, the articles reviewed show the evolution of entrepreneurship learning models from traditional to innovative approaches. The traditional model emphasizes mastery of economic theory and knowledge, as seen in research (Rajendran, 2019) on asset financing strategies and (Cechovsky, 2020) on business vocational students' understanding of tax concepts. Meanwhile, the experiential learning and project-based learning approaches in the articles (Shofwan et al., 2023) and (Farradinna et al., 2025) emphasize the importance of direct experience and the use of digital technology in the learning process. The gamified learning and blended learning approaches (Soares et al., 2024) and (Farradinna et al., 2025) describe pedagogical innovations that combine game elements and technology to increase learning motivation. Apart from that, service learning and culturally responsive learning found in articles (Cadenas et al., 2023) and (Ramasamy et al., 2024) emphasize contextual learning which is based on social and cultural values. This shift shows a paradigm shift from transfer of knowledge to transformative and participatory learning, where students are positioned as active subjects who are directly involved in the learning process.

The interrelationship of the objectives of the various studies analyzed shows two main orientations, namely empowerment and sustainability. Although the research contexts vary, including studies in Saudi Arabia, India, Austria, and Chile The entire article emphasizes that entrepreneurship education should focus on developing individuals and communities as agents of social and economic change. The concept of learning that emphasizes the aspects of individual and community empowerment is reflected in research (Cadenas et al., 2023) and in the article (Farradinna et al., 2025) which shows that contextual and collaborative learning experiences can increase independence and active participation of students in creating social values. Furthermore, the idea of sustainable economic development is emphasized through the strategic role of entrepreneurs in driving national economic growth. This is described comprehensively in studies (Alshebami, Fazal, et al., 2024) (Alshebami, Alamri, et al., 2024) (Alshebami et al., 2023) (Farradinna et al., 2025). which shows that entrepreneurship contributes to job creation, innovation, and the economic resilience of society. In addition, the integration of moral, social and environmental values in business practices is also an important dimension discussed in the article (Alshebami, Fazal, et al., 2024) (Alshebami et al., 2023) (Ramasamy et al., 2024)

Overall, the direction of the findings from the fifteen articles supports the paradigm of "entrepreneurship as empowerment and sustainability." Entrepreneurship education is

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understood not only as an economic instrument, but also as a means of forming ethics, social responsibility, and environmental sustainability. The contextual synergy between the micro, meso, and macro levels is evident throughout the study: at the micro level, individual development is focused on increasing personal motivation and capacity (Alshebami, Fazal, et al., 2024) (Mussons-Torras & Tarrats-Pons, 2018) (Ramírez, 2020). at the meso level, educational institutions and organizational structures act as supporting catalysts (Deirmentzoglou et al., 2025) (Alrubaishi, 2020)(Shofwan et al., 2023) (Ramasamy et al., 2024). and at the macro level, the relationship with public policy, culture, and global dynamics is reflected in the research (Cadenas et al., 2023) (Cabaña Rojas, 2025) (Alshebami, Alamri, et al., 2024). These cross-level findings emphasize that entrepreneurship education needs to be designed adaptively to the socio-cultural context to remain locally relevant yet globally impactful. Conceptually, the integration between knowledge, values, and action is reflected in three main patterns: combining science with real practice, instilling values with ethical actions, and synergy between innovation and technology within a holistic and sustainable entrepreneurial learning framework. Integration of Science, Values, and Action from the overall summary, three main patterns of relationships are visible:

1. Integration of science and practice: all articles encourage hands-on, experiential learning.
2. Integration of values and actions: many studies highlight the importance of ethical awareness, sustainability and social responsibility.
3. Integration of technology and innovation: appearing in articles on gamification, digital learning, and sustainable innovation.

Overall, the interconnectedness of the summaries of the fifteen articles suggests a new direction in entrepreneurship education that is interdisciplinary, reflective, and transformative. Education no longer just produces “successful entrepreneurs,” but also social leaders who are environmentally conscious, ethical, and innovative. The relationships between the papers show continuity from theory to practice, from the individual to the system level, and from an economic orientation to a humanitarian orientation.

2. Analysis of the Relationship between Learning Models to Increase Student Interest and Competence

All articles position the entrepreneurial learning model not merely as a cognitive process (knowledge transfer), but as a transformational experience which changes the way students think, act, and interact with their social, economic, and cultural environments. The learning models used are generally oriented towards empowerment and experiential learning, which encourage students to become active actors, not passive recipients of knowledge. The various models of entrepreneurship learning identified in the literature show that the development of entrepreneurial competencies cannot be achieved through a single approach, but rather through the integration of several complementary models.

a. The experiential/practice-based learning model of entrepreneurship emerged as a central approach that connects the cognitive, psychological, social, and cultural dimensions. Learning through hands-on practice, field projects, and business simulations has proven

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effective in bridging theory and business reality, as well as being a key driver the formation of self-efficacy and entrepreneurial intentions. In line with the statement (Hasan et al., 2023), the formation of entrepreneurial character can be developed through experiences that take place at the formal education level in schools. reinforced by (Andayani.E, 2015) to gain experience in learning entrepreneurship can be experienced in class, in the family environment and community environment. In the study (Cadenas et al., 2023) the Poder Program integrated Critical Consciousness Theory and Social Cognitive Career Theory (SCCT) within an experiential learning framework able to grow students' interest in entrepreneurship. In line with (Mussons-Torras & Tarrats-Pons, 2018) that strengthening self-efficacy and creativity through experience-based learning is necessary to foster an entrepreneurial spirit.

b. **Psychological and intentional based entrepreneurship learning model**

In this model, it acts as an internal mechanism that strengthens the impact of experiential learning. Factors such as self-efficacy, internal locus of control, risk-taking, and intrinsic motivation are formed more strongly when students are involved in real entrepreneurial experiences. In line with (Haryanto B, Zulrahmadi, 2025). Psychological factors play a very important role in entrepreneurial success, motivation, growth mindset, emotional intelligence, resilience, risk management, and effective leadership all contribute significantly to an entrepreneur's ability to face challenges and achieve business goals. These challenges are not only limited to technical and financial aspects but are also closely related to psychological conditions that influence thought patterns, decision making, and the ability to bounce back from failure, Elements such as motivation, emotional intelligence, mindset, mental toughness, and the ability to manage risk are crucial factors that determine success. (Sallim et al., 2025). The entrepreneurial psychology learning model in the process of running a business includes aspects of knowledge, ways of thinking, skills, conceptual understanding, and motivation (Haddoud M, Nowinski W, Laouiti, Rahma, 2024). Thus, the relationship between experiential learning not only functions as a pedagogical method, but also psychologically as a means of character formation and mental readiness for entrepreneurship. Menurut (Alshebami, Fazal, et al., 2024) The learning model based on Social Cognitive Theory (Bandura) with self-efficacy variables is able to foster students' interest in entrepreneurship in line with (Mussons-Torras & Tarrats-Pons, 2018) that strengthening self-efficacy and creativity through experience-based learning is necessary to foster an entrepreneurial spirit; So that the integration of spiritual values and environmental awareness in education is able to foster sustainable motivation and entrepreneurial behavior. (Alshebami et al., 2023)

c. Value-based, social, and sustainability learning model

This learning model broadens entrepreneurial orientation from mere economic achievement to ethical, environmental, and social responsibility dimensions. (Dyah & Nurfalah, 2025) Social entrepreneurs are a group of individuals who work independently or under the auspices of an institution and can develop creative ideas to create real solutions to challenges facing society. As stated by (Darmanto et al., 2021),

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social entrepreneurship is an innovative method that combines business and entrepreneurial principles to design sustainable solutions in dealing with various social and environmental problems (*Kewirausahaan Sosial dan Inovasi Sosial*, 2021). To support this achievement, this approach applies an innovative business model that is creatively and sustainably designed to be a solution to various social problems. Thus, the success of social entrepreneurship can be measured by how big an impact it has on social problems. (Dyah & Nurfalah, 2025) So entrepreneurship is a process of creating something new and valuable by allocating time, effort, and taking financial, psychological, and social risks in order to obtain personal and social benefits (Lestari AW, Eliyani C, 2025). Based on the study above, learning with a social model is related to a person's psychological aspects in order to foster their creativity. Apart from that, it can shape the character of students who are not only profit-oriented but also empathetic towards their surroundings. According to (Alshebami, Alamri, et al., 2024) the learning model with infrastructure, social, and educational support for entrepreneurial intentions. So that social entrepreneurship education plays a very important role in producing a young generation that is socially empowered and oriented towards sustainable development. (Ramasamy et al., 2024).

d. Collaboration-based entrepreneurship learning model

Like the Quadruple Helix approach, it acts as a structural context that allows experiential learning to run optimally. Collaborative learning is carried out based on a model that explains that knowledge can be created in a population whose members actively interact with each other, share experiences, and take on asymmetrical roles or different roles (Ali Mustadi dalam (Nadhiroh P, 2019). Collaboration between entrepreneurs and other industry players can help increase business productivity by sharing best practices, market knowledge, and technology. (Trinidad M, Tatasari T, Azzahra A, 2024). In other words, entrepreneurs must have skills in communicating with partners. Collaboration skills are important skills to drive one's success and can also improve social aspects. These skills can be developed through learning activities at lower or higher education levels. (Nadhiroh P, 2019). Collaboration between universities, industry, government, and communities provides access to resources, networks, and real-world problems relevant to the business world. In this case, the ecosystem model does not replace experiential learning, but rather enriches and broadens the scope of its implementation. In line with (Dewi Lari S, 2025). Collaborative learning involves the active participation of students and minimizes differences between individuals that are vulnerable and often occur in the form of personal conflicts and between groups. Collaborative learning has added to the educational momentum of two converging forces, namely: (1) practical realization, that life outside the classroom requires collaborative activities in real-world life; (2) fostering awareness of social interaction in an effort to realize meaningful learning. In addition, character building can also be realized in collaborative learning because in collaborative learning students are required to be active through learning by doing so that students learn based on intrinsic motivation to work together to solve existing problems, especially for understanding the material and case studies that can be studied.

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(Putri R D, Megasari R, 2018). The relationship between collaboration-based entrepreneurship learning models has a connection with student experience. In collaborating, if students have supportive experience, they will be able to optimize the results of teamwork.

e. Gamification and conceptual literacy based learning

Gamification learning models increase engagement, motivation, and learning persistence, particularly in lowering psychological barriers to risk and failure. Gamification is a learning approach using elements in a game or video game with the aim of motivating students in learning activities. In addition, this technique can also capture things that are more interesting for students and inspire them to continue learning. This game-based learning makes students feel that the learning process is more enjoyable (Purba et al., 2024). On the other hand, economic and financial literacy provides the cognitive foundation necessary for entrepreneurial practice experiences to be accompanied by rational and sustainable decision-making. Gamification method provides space for students to explore their potential in the context of entrepreneurship while strengthening 21st century skills such as communication, collaboration, and problem solving. In addition, the involvement of teachers and schools is an important factor in ensuring the sustainability of the program in the future (Budiman & Gunarsa, 2025). Direct exposure to entrepreneurial practices through gamification systems also provides significant benefits for students' career development. Through frequent involvement in business simulations and entrepreneurial projects, students gain practical insight into how the business world operates (Prasetyo et al., 2024). Gamification combined with Experiential Learning produces a learning model that is oriented towards practical activities in the field, experiencing the real atmosphere of the business world directly supported by a competition, reward and punishment system like a game (Wijaya & Nurhadi, 2021). Agree with Wijaya et al. that learning with a gamification model will be able to provide students with an overview to implement in the real field. (Soares et al., 2024) Gamification learning models have proven to be innovative pedagogical strategies in entrepreneurship education; Further research is needed to assess the long-term impact on real outcomes and the formation of entrepreneurial competencies.

f. Technology-based entrepreneurship learning and digital readiness

This learning model is cross-model and acts as an accelerator. Technology readiness strengthens the entire learning approach by expanding practice spaces, accelerating innovation, and increasing business competitiveness. Technology integration is becoming increasingly relevant in the context of modern entrepreneurship which demands high adaptability and digital literacy. The importance of technology as well as entrepreneurship, has increased the focus on technology-based entrepreneurship. Overall, it is easy to conclude that technology-driven entrepreneurs should have a key role in economic growth. (Wibowo et al., 2024). In fact, the problem currently being faced is that high school graduates generally face limitations in understanding technology-based business opportunities, so that currently students are more focused on

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the choice of continuing higher education or working, but have less knowledge about other alternatives in building an independent business (Slamet, 2024). Menurut (Farradinna et al., 2025) Entrepreneurial commitment is an important determinant of technological readiness in the modern business world. Entrepreneurship education and training must instill psychological commitment and digital skills simultaneously. Further research is recommended to test this model in different industrial and cultural contexts.

Overall, the interrelationship between the 15 articles from the entrepreneurship learning model forms a holistic and hierarchical learning flow, starting from strengthening conceptual literacy, followed by practical experience, strengthening psychological aspects, internalizing values, ecosystem support, and accelerating technology. This synthesis shows that the effectiveness of entrepreneurship education is highly dependent on the ability of educational institutions to integrate these various models in a contextual and sustainable manner, not implementing them separately. Overall, the results of the analysis of the relationship between learning models from the fifteen articles show that entrepreneurship education has evolved into a learning ecosystem which is collaborative, reflective, and technology-based. The learning model developed not only functions as a means of transferring knowledge, but also plays a role in character formation, instilling entrepreneurial values, as well as developing students' innovative abilities. Strong integration between empowerment-based socio-cultural approaches and innovation-driven learning-oriented digital approaches shows that entrepreneurship education has the potential to become a strategic instrument in encouraging social transformation while realizing sustainable development.

Conclusion

The results of a systematic literature review of 15 articles for the 2018–2025 period show that entrepreneurship learning has a significant influence on increasing students' entrepreneurial interest and competence at secondary and higher education levels. Entrepreneurship education not only transfers knowledge, but also shapes attitudes, self-efficacy, creativity, and entrepreneurial readiness. Effective learning models are experience-based, collaborative, and contextual, and are supported by the use of technology. The integration of various learning models in an integrated manner can produce entrepreneurs who are adaptive, ethical, and contribute to sustainable economic and social development.

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