

Entrepreneurship Education in Indonesia: What is Known? A Systematic Literature Review of Trends, Focus, and Research Agenda

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ABSTRACT

Entrepreneurship education should be understood not only as a means of building a business, but also as a transformative educational process. Therefore, this systematic review aims to examine entrepreneurship education in Indonesia: What is currently known? A systematic literature review of trends, research focuses, and research agendas. This paper adopts a systematic literature review in the ScienceDirect and Semantic Scholar databases from 2021 to 2026, using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA). Based on predetermined inclusion criteria, a total of 16 articles published between 2021 and 2026 were analyzed in-depth and systematically. This is because only 16 articles from that period aligned with the scope of this study on entrepreneurship education. The review's findings indicate that entrepreneurship education plays a central role in shaping entrepreneurial competencies, intentions, and behaviors among students at various educational levels. The research findings confirm that experience-based pedagogical approaches, institutional support, and the integration of digital technology are key factors in enhancing the effectiveness of entrepreneurship education. This study is expected to contribute to fostering entrepreneurial intentions in developing competencies, innovative mindsets, and creating economic value in entrepreneurship education in Indonesia in the long term.

ABSTRAK

Pendidikan kewirausahaan perlu dipahami tidak hanya sebagai sarana untuk membangun bisnis, tetapi juga sebagai proses pendidikan transformatif. Oleh karena itu, tinjauan sistematis ini bertujuan untuk mengidentifikasi pendidikan kewirausahaan di Indonesia: Apa yang sudah diketahui? Tinjauan literatur sistematis tentang tren, fokus, dan agenda penelitian. Makalah ini mengadopsi tinjauan literatur sistematis di basis data ScienceDirect dan Semantic Scholar dari tahun 2021 hingga 2026, menggunakan Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA). Berdasarkan kriteria inklusi yang telah ditentukan, sebanyak 16 artikel yang diterbitkan antara tahun 2021-2026 dianalisis secara mendalam dan terstruktur. Karena pada tahun tersebut hanya 16 artikel yang sesuai dengan bidang yang dibahas dalam penelitian ini mengenai pendidikan kewirausahaan. Temuan tinjauan menunjukkan bahwa pendidikan kewirausahaan memainkan peran sentral dalam membentuk kompetensi, niat, dan perilaku kewirausahaan pada siswa di berbagai tingkat pendidikan. Temuan penelitian menegaskan bahwa pendekatan pedagogis berbasis pengalaman, dukungan kelembagaan, dan integrasi teknologi digital merupakan faktor kunci dalam meningkatkan efektivitas pembelajaran kewirausahaan. Penelitian ini diharapkan dapat berkontribusi untuk menumbuhkan niat kewirausahaan dalam membentuk kompetensi, pola pikir inovatif, dan menciptakan nilai ekonomi pada pendidikan kewirausahaan di Indonesia dalam jangka panjang.



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INTRODUCTION

Entrepreneurship is a mindset and a person's ability to turn ideas into action, creativity, innovation, risk taking, competency development, and skills (Addy et al., 2026). In some developing countries, the lack of success in running a business can be explained by an entrepreneurial mindset (Wishnu et al., 2020). In recent years, entrepreneurship education has grown rapidly globally, especially in business-focused fields (Kumari & Sudha, 2026; Branca et al., 2025; Anubhav et al., 2024 ; Wiyoko & Sari, 2025).

Entrepreneurship education faces persistent challenges, including an overemphasis on theoretical content, inadequate practical training that can undermine entrepreneurial competencies (Yu et al., 2025) . This gap highlights the importance of developing an updated framework that integrates technological, ethical, and social aspects, and creates a more holistic understanding of capital in entrepreneurship education (Hasan, 2026). Entrepreneurship education research has evolved through several established theoretical traditions to better

understand how entrepreneurial skills develop in a digital context that requires an adaptive approach to educational strategies (Chotisarn & Phuthong, 2026; Branca et al., 2025).

The Indonesian government is actively promoting and developing entrepreneurship education at the university level. This initiative began with a regulation issued by the Minister of Education, which was reinforced by Presidential Instruction No. 4 of 1995 (Amalia & Korflesch, 2021).

Entrepreneurship education plays a crucial role in providing knowledge to identify opportunities and train cognitive skills in evaluating them based on available information (Sitaridis & Kitsios, 2026). However, several obstacles remain that need to be addressed in entrepreneurship education in Indonesia, such as the lack of clear standards in the entrepreneurship education curriculum, limited qualified human resources in entrepreneurship teaching materials, and access to funding and networks for business actors (Rauf et al., 2024). At the school level, students are also expected to become not only job seekers but also job creators for many people. To be able to create jobs, students are expected to have entrepreneurial readiness (Ciana & Rahmi, 2020).

In Indonesia, entrepreneurship education has been integrated into secondary school and college curricula to foster an entrepreneurial mindset from an early age (Wiyoko & Sari, 2025). Furthermore, the government, through the Merdeka Belajar Kampus Merdeka (MBKM) program, encourages the integration of entrepreneurship into the learning process to ensure that graduates become not only job seekers but also job creators (Ministry of Education and Culture, 2021). This also aims to ensure that job creation through entrepreneurship does not solely focus on conventional sales strategies, as this would be increasingly left behind, given the current online environment that utilizes the internet for product sales. This is where the importance of continuously honing the skills and expertise of digital marketers becomes crucial (Nuryana et al., 2021).

In this era of globalization and rapid technological advancement, Indonesia's education system is required to produce graduates who are globally competitive. Therefore, it is necessary to broaden our perspective on the entrepreneurial mindset—not only focusing on starting a business, but also on the ability to cope with uncertainty, adapt to change, and create innovative solutions in various professional and personal situations. (Mohamed et al., 2025).

Based on the literature review that has been traced, studies on entrepreneurship education in Indonesia are still little studied, therefore, an in-depth study of entrepreneurship education in Indonesia is needed: what is already known? a systematic literature review of trends, focus, and research agenda. The purpose of this study is to review previously published articles on entrepreneurship education. This study will assist researchers in gaining insight into the trends, focuses, and future research agendas of entrepreneurship education experts in Indonesia. From an educator perspective, this review can help improve their understanding of entrepreneurship education in Indonesia, particularly in identifying gaps that require modification.

Overall, this *systematic literature review* provides a comprehensive map of the development of entrepreneurship education studies in Indonesia. The findings of this study confirm that although entrepreneurship education has received attention at various levels of education, research gaps remain, both in terms of methodology, implementation context, and evaluation of the impact of entrepreneurship learning on entrepreneurial competencies and behavior. Therefore, the results of this review are expected to serve as a conceptual basis, not only contributing to the enrichment of academic literature but also providing practical implications for strengthening entrepreneurship education in Indonesia in the future.

The interpretation of the meaning of entrepreneurship education is emphasized by Anubhav et al., (2024) entrepreneurship education is an *instructional program* designed to foster entrepreneurial attitudes, skills, and personal qualities. Several literatures explain that entrepreneurship education has played an important role at all levels of education, especially in higher education (Carpenter & Wilson, 2022; Geaquinto & Alves, 2024; Xie et al., 2022; Liu, 2022). Entrepreneurship education is a structured process that helps students build entrepreneurial awareness, mindset, and skills through lectures, projects, and hands-on practice (Liang et al., 2025).

METHOD

Research Design

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was developed by David Moher and his team in 2005 in a published medical article (Moher et al., 2009). Using PRISMA ensures that the research process includes structured data, from data identification to presentation of results (Yepes-Nuñez et al., 2021).

The PRISMA statement consists of four stages, starting from the identification process, screening, feasibility, to the inclusion criteria process. Identification is a process that aims to enrich the main keywords using several steps so that the articles in the database can be accessed as widely as possible. The second stage is screening, which includes or excludes articles based on criteria determined by the author and generated using the database. Excluding articles means removing articles that the author feels are not necessary according to the type of article. The third stage is feasibility, the author checks all articles by reading, starting from the title, abstract, methods, results, and discussion to ensure whether the article meets the inclusion criteria and aligns with the current research objectives. The final stage is the inclusion criteria, where the selected articles meet the statement for further in-depth analysis.

The PRISMA serves as a valuable framework for reporting systematic reviews and offers benefits across multiple disciplines (Moher et al., 2009). In the context of online learning, PRISMA offers at least three significant advantages for students, educators, researchers, and other readers. First, PRISMA describes a structured search process, including identification, screening, eligibility, and inclusion, which helps students strengthen self-directed learning through digital platforms. Second, its step-by-step guidance is particularly useful for graduate students and researchers, enabling them to conduct comprehensive searches and efficiently locate relevant articles. Third, PRISMA enhances readers' understanding of systematic review procedures, making it easier to trace relationships between information and sources, observe the documentation process, and evaluate clearly reported reviews.

The Objectives of the Study

The purpose of this study is to review research on entrepreneurship education in Indonesia: what is currently known? A systematic literature review of trends, research focuses, and research agendas was conducted using PRISMA in the ScienceDirect and Semantic Scholar databases. These databases were used because they provide articles from reputable and well-indexed journals, facilitate expanded searches across various publication sources, and help identify the most relevant articles. Under this general objective, answers are sought to the following research questions:

RQ1. What are the publication trends of entrepreneurship education research in Indonesia based on year, place of publication, and context?

RQ2. What is the distribution of authors, titles, years and places of publication of articles?

- RQ3. What methodology is predominantly used in research?
- RQ4. What main findings have the literature yielded?
- RQ5. What limitations remain in previous research? And what research agenda is recommended for the future?

Data Collection

The Search String

Database: Search String

ScienceDirect: TITLE-ABS-KEY (("entrepreneurship education" and "Indonesia" and "SLR"))

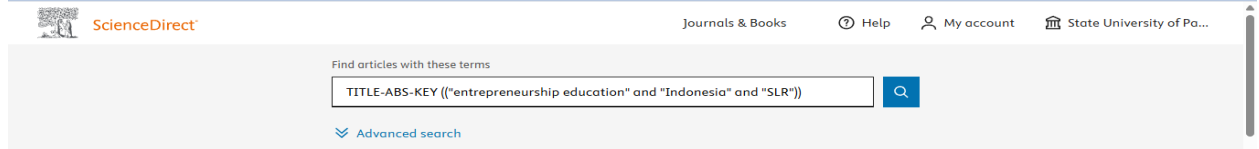


Figure 1. Advanced menu to enter search string

The Search String

Database: Search String

Simantic Scholar: "entrepreneurship education" and "Indonesia" and "SLR"

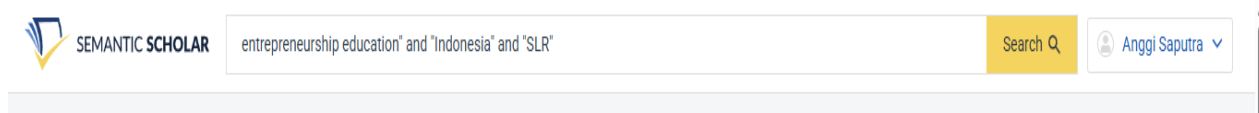


Figure 2. Advanced menu to enter search string

Analysis Prosedures

The PRISMA Procedure

Following an inclusion and exclusion procedure performed automatically by the database system, the authors screened the titles and abstracts of 33 articles. From this process, 27 articles were deemed eligible for full-text review. The first author reviewed the full texts of all selected articles, while the second author reviewed 14 articles and the third author assessed the remaining 13. The three authors then collaboratively evaluated each article's relevance to the research question and determined its eligibility based on the predetermined inclusion criteria. In cases of uncertainty regarding eligibility, the second author independently reassessed the articles. In the end, 16 papers met the requirements and were included in the final study, based on the inclusion and exclusion criteria listed in Table 1; the overall selection procedure is illustrated in Figure 5.

Table 1. Article Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Published between 2021 – 2026	Published before 2021
ScienceDirect and Semantic Scholar indexed journals	Non ScienceDirect and Semantic Scholar indexed journals
Relevant studies on : TITLE-ABS-KEY (("entrepreneurship education" and "Indonesia" and "SLR"))	Irrelevant article
Type of journal article	Other than journal articles
Open acces articles	Close access artucles

ScienceDirect and Semantic Scholar Database Resources

This research used the ScienceDirect and Semantic Scholar databases covering the last five years (2021-2026). The ScienceDirect database indexed nearly 6,000 articles in the social sciences. The Semantic Scholar database indexed over 9,000 articles from the fields of education, business, and economics.

Identification

The initial stage of this research was the identification process, which aimed to expand the primary keywords by exploring and compiling relevant synonyms to maximize article retrieval from the database. In February 2026, the researchers compiled a search string using the ScienceDirect and Semantic Scholar platforms, accessed through the Padang State University database.

Next, the finalized search string is entered into the "Find articles with these terms" field in the advanced search menu. This procedure produces the initial set of documents retrieved during the first stage of the search process.

Screening

The second phase is called the screening process, where articles are included or excluded based on criteria determined by the researchers and generated using the ScienceDirect and Semantic Scholar databases.

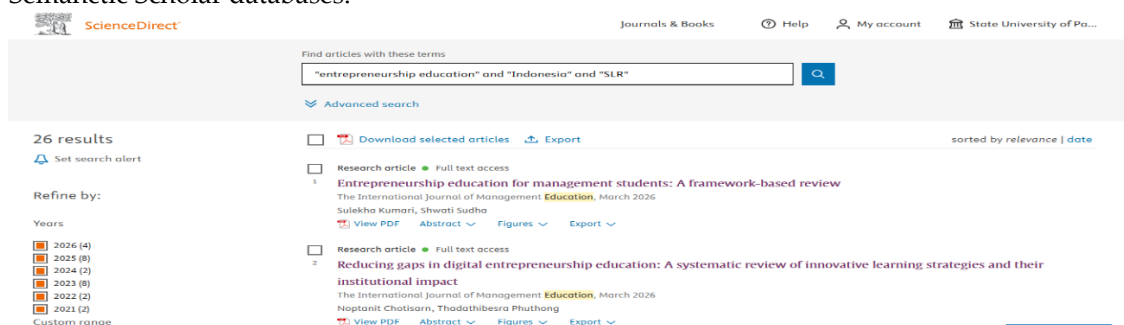


Figure 3. Number of documents that can be accessed in the ScienceDirect database using the search string



Figure 4. Number of documents accessible in the Semantic Scholar database using the search string

Based on figures 3 and 4, the term "included articles" refers to articles that meet the criteria required in this study, while excluded articles refer to unnecessary articles that are removed according to their type.

The next step involved selecting document types in the database using the keywords "entrepreneurship education," "Indonesia," and "SLR" for the ScienceDirect database. The procedure for entering these types was performed by clicking the left-hand side box (Years column) of the website interface and selecting the Limit to button below the checkbox from the

2021-2026 years range. Then, the social sciences field of study was checked. Ultimately, the filtering process yielded 33 articles. Next, the researchers examined the distribution of published articles specifically by year, field of study, author, country, and university affiliation. Of the 33 articles, 6 were excluded because the researchers failed to obtain full-text articles.

Eligibility

In the eligibility stage, 27 articles were included in the third stage, known as the feasibility stage. All articles were reviewed by reading the title, abstract, methods, results, and discussion to ensure they met the inclusion criteria and were relevant to current research. Researchers found 11 articles that needed to be rejected: 7 articles from the *closed-access ScienceDirect database*, and 4 irrelevant articles from the Semantic Scholar database. Ultimately, only 16 articles remained eligible for analysis.

RESULT AND DISCUSSION

RESULTS

A two-stage procedure was used to identify relevant studies and filter the required data. In the first stage, the PRISMA screening process was performed (Figure 5), resulting in 33 articles through an automated screening process in the ScienceDirect and Semantic Scholar databases. Several criteria, including publication year, field of study, and keywords, were analyzed to address the research sub-objectives. In the PRISMA inclusion stage, 16 articles were retained after a manual screening process (Figure 5).

The results of this systematic literature review indicate that entrepreneurship education is developing dynamically in the 2021–2026 period, although the number of publications continues to increase. Key findings demonstrate that education can prepare students for the dynamics and complexities of the business world while contributing to economic growth (Cai et al., 2022). Furthermore, the role of teachers is crucial, as entrepreneurship learning needs to encompass both theoretical and practical aspects so that students not only understand the basic concepts of entrepreneurship but also are able to apply them in real-world activities (Minarsih et al., 2022).

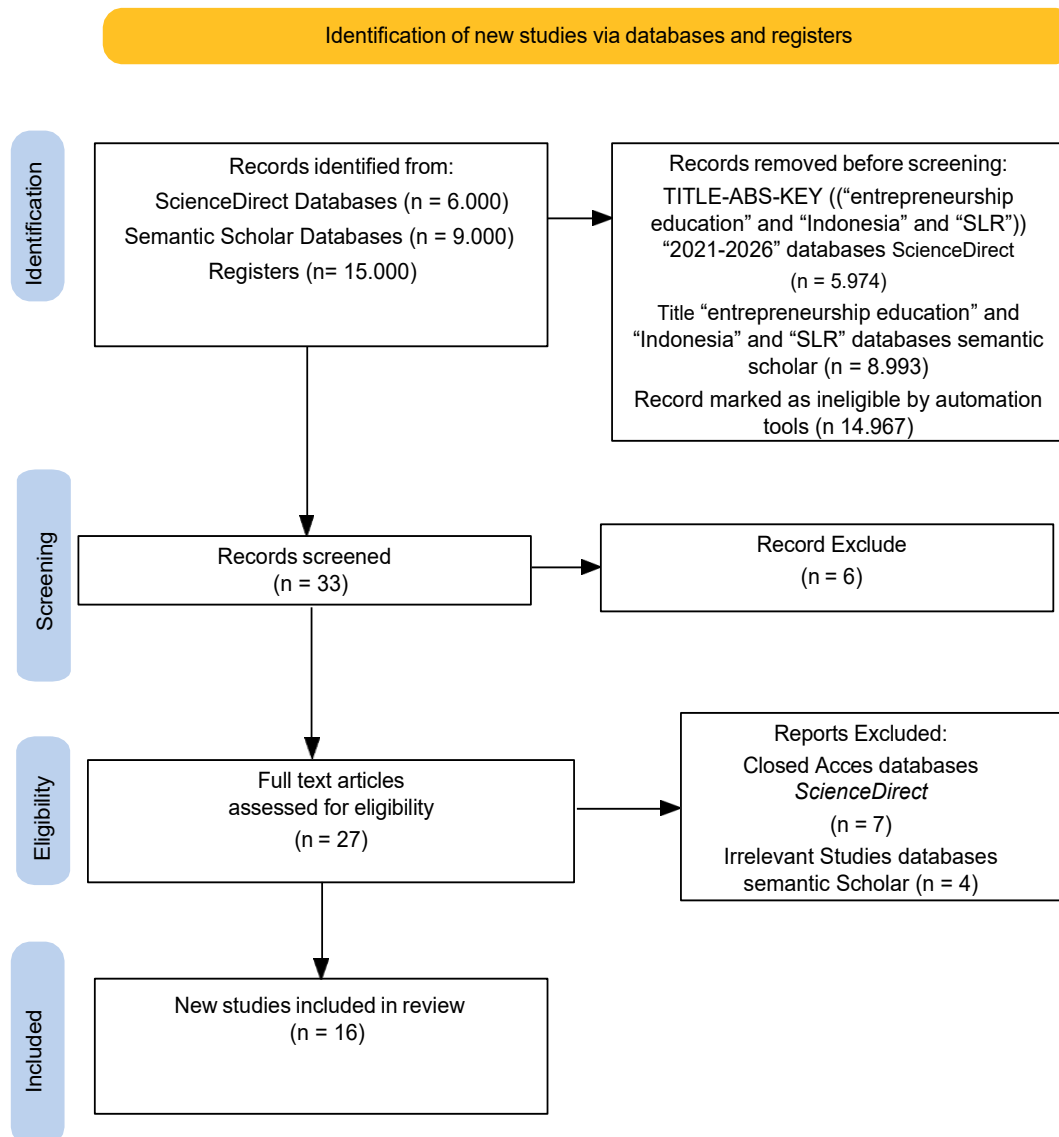


Figure 5. PRISMA Data Collection Model Diagram

RQ1. What are the publication trends of entrepreneurship education research in Indonesia based on year, place of publication, and context?

Table 2. Distribution of Articles by Year

Year	Number of Articles
2026	3
2025	6
2024	2
2023	4
2022	1
Total	16

As shown in the distribution of articles by year of publication in Table 2, the highest number of publications was recorded in 2025 with a total of 6 articles published, followed by 2023 with 4 articles published, and the largest gap occurred in 2022 and 2024. Therefore, there were not many

publications in 2022 and 2024, with only 3 articles published; this trend is consistent with 2026, which also saw 3 articles published. An increase in publications occurred in 2025 with 6 articles published. However, in 2021, there were no peer-reviewed articles published in this research field, so the researchers only discussed 16 articles from 2022-2026. This indicates that researchers are increasingly understanding and interested in studying entrepreneurship education.

Table 3. Distribution of Articles Based on Place of Publication

Articles by Place of Publication	Number of Articles
Computers and Education: Artificial Intelligence	1
Technological Forecasting & Social Change	1
Journal of Business Research	1
The International Journal of Management Education	3
Procedia Computer Science	2
Heliyon	1
Social Sciences & Humanities Open	2
Digital Business	1
International Journal of Global Accounting, Management, Education, and Entrepreneurship	1
Journal of Applied Business, Taxation and Economics Research	1
International Journal of Education, Language, Literature, Arts, Culture, and Social Humanities	1
Green Inflation: International Journal of Management and Strategic Business Leadership	1
Total	16

As shown in Table 3, the distribution of articles by publication location shows that *The International Journal of Management Education* had the highest number of publications, with three articles published. This was followed by *Procedia Computer Science* and *Social Sciences & Humanities Open*, each with two publications. The other nine journals each had only one publication. This indicates the need for further review of the most difficult publication locations for articles to be published and the obstacles researchers face when publishing.

Table 4. Articles Based on Context

Article Title	Article Context
Toward understanding the role of generative AI in entrepreneurship education: A systematic review	AI, entrepreneurship education
Religion as a social shaping force in entrepreneurship and business: Insights from a technology-empowered systematic literature review	Religion, entrepreneurship, business, technology
Digital entrepreneurship research: A systematic review	Digital entrepreneurship

Article Title	Article Context
“Sustainable entrepreneurship in HEIs. A systematic review from the perspective of higher education in business	Entrepreneurship, higher education in business
Reducing gaps in digital entrepreneurship education: A systematic review of innovative learning strategies and their institutional impact	Gaps in digital entrepreneurship education, innovative learning strategies and their institutional impact
Entrepreneurship education for management students: A framework-based review	Entrepreneurship education for management students
Entrepreneurship Determinants: A Literature Review	Entrepreneurship Determinants
Web applications in entrepreneurship: A systematic review of roles and perspectives for future research directions	Web applications, entrepreneurship
Determinant factors of entrepreneurial ideation among university students: A systematic literature review	factors of entrepreneurial ideation among university students
Fueling entrepreneurship in STEM: Unveiling trends, educational programs, and their impact	STEM, Unveiling trends, educational programs, and their impact
Exploring the determinants of entrepreneurial career intention among university graduates: A systematic literature review	Exploring the determinants of entrepreneurship
Digital entrepreneurship ecosystems: Then vs. now-a future perspectives	Digital entrepreneurship ecosystems
Systematic Literature Review (SLR): The Influence of Entrepreneurship Education and Self-Efficacy on Entrepreneurial Intention	Entrepreneurship education, self-efficacy, entrepreneurial intention
Systematic Literature Review on Interest in Learning Entrepreneurship in Environmental Education	Learning Entrepreneurship in Environmental Education
Internalization of Character Education during the Covid-19 Pandemic through Entrepreneurship Education: Systematic Literature Review (SLR)	Character education, Covid-19, Entrepreneurship Education
Entrepreneurship Learning Strategies and the Contribution of Teacher Behavior in Shaping Vocational High School Students' Entrepreneurial Intentions: A Literature Review	Entrepreneurship Learning Strategies, Contribution of Teacher Behavior, Entrepreneurial Intentions

As shown in Table 4, 16 articles were categorized based on their context within the literature. The results indicate that the most dominant research context is entrepreneurship education, followed by digital entrepreneurship and technology. Studies within the context of

entrepreneurship education describe learning strategies, teacher behavior, curriculum, and their impact on entrepreneurial intentions and competencies in students. Other contexts include digital entrepreneurship, higher education and students, and social and environmental issues.

RQ2. What is the distribution of authors, titles, years and places of publication of articles?

Table 5. Distribution of Authors, Titles, Years and Places of Publication of Articles

Author(s)	Title	Years	Journal
Yu et al.	Toward understanding the role of generative AI in entrepreneurship education: A systematic review	2025	Computers and Education: Artificial Intelligence
Kumar et al.	Religion as a social shaping force in entrepreneurship and business: Insights from a technology-empowered systematic literature review	2022	Technological Forecasting & Social Change
Paul et al	Digital entrepreneurship research: A systematic review	2023	Journal of Business Research
Vargas-merino et al.	Sustainable entrepreneurship in HEIs. A systematic review from the perspective of higher education in business	2025	The International Journal of Management Education
Chotisarn, N., & Phuthong, T	Reducing gaps in digital entrepreneurship education: A systematic review of innovative learning strategies and their institutional impact	2026	The International Journal of Management Education
Kumari & Sudha,	Entrepreneurship education for management students: A framework-based review	2026	The International Journal of Management Education
Tristiyono et al.	Entrepreneurship Determinants: A Literature Review	2023	Procedia Computer Science
Abdhala & Purnomo	Web applications in entrepreneurship: A systematic review of roles and perspective for future research directions	2024	Procedia Computer Science
Wardoyo et al.	Determinant factors of entrepreneurial ideation among university students: A systematic literature review	2023	Heliyon
Setiawan et al.	Fueling entrepreneurship in STEM: Unveiling trends, educational programs, and their impact	2025	Social Sciences & Humanities Open
Narmaditya et al.	Exploring the determinants of entrepreneurial career intention among	2026	Social Sciences & Humanities Open

Author(s)	Title	Years	Journal
	university graduates: A systematic literature review		
Miah et al.	Digital entrepreneurship ecosystems: Then vs. now-a future perspectives	2025	Digital Business
Prasasti & Kamalia	Systematic Literature Review (SLR): The Influence of Entrepreneurship Education and Self-Efficacy on Entrepreneurial Intention	2025	International Journal of Global Accounting, Management, Education, and Entrepreneurship
Pratiwi et al.	Systematic Literature Review on Interest in Learning Entrepreneurship in Environmental Education	2024	Journal of Applied Business, Taxation and Economics Research (JABTER)
Mulyono et al.	Internalization of Character Education during the Covid-19 Pandemic through Entrepreneurship Education: Systematic Literature Review (SLR)	2023	International Journal of Education, Language, Literature, Arts, Culture, and Social Humanities
Setyowati et al.	Entrepreneurship Learning Strategies and the Contribution of Teacher Behavior in Shaping Vocational High School Students' Entrepreneurial Intentions: A Literature Review	2025	Green Inflation: International Journal of Management and Strategic Business Leadership

As shown in Table 5. Based on the distribution of authors, titles, years, and places of publication of articles, it shows that of the 16 articles analyzed, each author contributed one article to the discussion, and no author discussed two or three different articles. Furthermore, of the 16 articles, each author discussed different titles but had similarities in the context of a systematic literature review. On the other hand, of the 16 articles analyzed from 2021 to 2026, only 16 articles were published in 12 publication journals.

RQ3 . What methodology is predominantly used in the research?

Table 6. Dominant Methodologies Used in Research

Article Title	Methodology
Toward understanding the role of generative AI in entrepreneurship education: A systematic review	Systematic Literature Review (SLR): Traditional narrative reviews, meta-analysis, and systematic reviews
Religion as a social shaping force in entrepreneurship and business: Insights from a technology-empowered systematic literature review	Systematic Literature Review (SLR): Bibexcel, Bibliometrix-R, Gephi, and VOSviewer

Article Title	Methodology
Digital entrepreneurship research: A systematic review	Systematic Literature Review (SLR): Working with the TCM framework
Sustainable entrepreneurship in HEIs. A systematic review from the perspective of higher education in business	Systematic Literature Review (SLR): Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)
Reducing gaps in digital entrepreneurship education: A systematic review of innovative learning strategies and their institutional impact	Systematic Literature Review (SLR): VOSviewer
Entrepreneurship education for management students: A framework-based review	Systematic Literature Review (SLR): Framework-based, structured theme-based, bibliometric, hybrid, and conceptual SLRs
Entrepreneurship Determinants: A Literature Review	Systematic Literature Review (SLR): Structured using the PICOC principles, namely Population (the target group of investigation), Intervention (specifies the investigation aspects or issues of interest to the research), Comparison (aspect of the investigation with which the intervention is being compared), Outcomes (the effect of the intervention) and Context (the setting of the environment of the investigation).
Web applications in entrepreneurship: A systematic review of roles and perspectives for future research directions	Systematic Literature Review (SLR): Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)
Determinant factors of entrepreneurial ideation among university students: A systematic literature review	Systematic Literature Review (SLR): Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)
Fueling entrepreneurship in STEM: Unveiling trends, educational programs, and their impact	Systematic Literature Review (SLR): Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)
Exploring the determinants of entrepreneurial career intention among university graduates: A systematic literature review	Systematic Literature Review (SLR): Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)
Digital entrepreneurship ecosystems: Then vs . now-a future perspectives	Hybrid Methodology: Bibliometric analysis with topic modeling (LDA)
Systematic Literature Review (SLR): The Influence of Entrepreneurship Education and Self-Efficacy on Entrepreneurial Intention	Systematic Literature Review (SLR)
Systematic Literature Review on Interest in Learning Entrepreneurship in Environmental Education	Systematic Literature Review (SLR)
Internalization of Character Education during the Covid-19 Pandemic through	Systematic Literature Review (SLR)

Article Title	Methodology
Entrepreneurship Education: Systematic Literature Review (SLR)	Systematic Literature Review (SLR): VOSviewer
Entrepreneurship Learning Strategies and the Contribution of Teacher Behavior in Shaping Vocational High School Students' Entrepreneurial Intentions: A Literature Review	

As shown in Table 6, 16 articles were categorized according to the methodology used. Systematic Literature Review (SLR) was the most dominant methodology in the 16 articles analyzed, with a variety of approaches such as bibliometric analysis, topic modeling, thematic synthesis, and science mapping frameworks. Methodologically, SLR is used to systematically identify, evaluate, and synthesize empirical and conceptual findings, usually by following standard protocols such as PRISMA and utilizing other software such as VOSviewer, and bibliometric software, as well as large databases such as ScienceDirect and Web of Science, and Semantic Scholar.

RQ4. What main findings has the literature yielded?

Table 7. Main Findings Generated

Article Title	The findings produced
Toward understanding the role of generative AI in entrepreneurship education: A systematic review	The four main factors in Generative AI in entrepreneurship education are personalized learning, simulation training, ethical issues, and ecosystem integration. The long-term impacts remain unclear and require longitudinal studies.
Religion as a social shaping force in entrepreneurship and business: Insights from a technology-empowered systematic literature review	Religion influences business behavior, CSR, organizational culture, ethics, and socio-economic development as well as research opportunities in business education and public policy.
Digital entrepreneurship research: A systematic review	A conceptual model of the transformation of traditional companies to digital is proposed, with categorization of themes, contexts, and methodologies of digital entrepreneurship research.
Sustainable entrepreneurship in HEIs. A systematic review from the perspective of higher education in business	Experiential learning and a holistic ecosystem approach are essential for sustainable entrepreneurship development. Triple bottom line competencies must be developed.
Reducing gaps in digital entrepreneurship education: A systematic review of innovative learning strategies and their institutional impact	Digital literacy, experiential learning, and simulation-based learning enhance entrepreneurial competency. Institutional and technological factors determine the effectiveness of digital entrepreneurship education.

Article Title	The findings produced
Entrepreneurship education for management students: A framework-based review".	The research focuses on entrepreneurial intention and self-efficacy. It is dominated by quantitative methods and psychological theory.
Entrepreneurship Determinants: A Literature Review	Entrepreneurship determinants are divided into internal and external factors, recent studies add new determinants and identify research gaps.
Web applications in entrepreneurship: A systematic review of roles and perspectives for future research directions	Web applications play a role in innovation, efficiency, collaboration, market strategy, and data management; technology trends include gamification, crowdsourcing, and sentiment analysis.
Determinant factors of entrepreneurial ideation among university students: A systematic literature review	Entrepreneurial ideation is influenced by entrepreneurship education, motivation, markets, entrepreneurial imagination, and information technology; ideation is positively correlated with entrepreneurial intention.
Fueling entrepreneurship in STEM: Unveiling trends, educational programs, and their impact	Effective STEM-integrated entrepreneurship learning through experiential learning and interdisciplinary approaches, industry-academia collaboration is important for strengthening entrepreneurial skills.
Exploring the determinants of entrepreneurial career intention among university graduates: A systematic literature review	The determining factors of entrepreneurial career intention are individual psychological factors, cognitive and skill factors, socio-environmental factors, and educational and motivational factors.
Digital entrepreneurship ecosystems: Then vs . now-a future perspectives	Six key topics were identified, including digital entrepreneurship in academia, gender entrepreneurship, ecosystem innovation, government policy, social entrepreneurship, and startup incubation. A Quadruple Helix conceptual framework for sustainable digital ecosystems was proposed.
Systematic Literature Review (SLR): The Influence of Entrepreneurship Education and Self-Efficacy on Entrepreneurial Intention	Entrepreneurship education and self-efficacy have a significant influence on entrepreneurial intention, practical learning and a supportive environment strengthen entrepreneurial intentions.
Systematic Literature Review on Interest in Learning Entrepreneurship in Environmental Education	The research trend is increasing, the dominant variables are learning models and entrepreneurship education.
Internalization of Character Education during the Covid-19 Pandemic through Entrepreneurship Education: Systematic Literature Review (SLR)	Entrepreneurship education internalizes character values through three stages: value transformation, value transaction, and value internalization. This produces responsible,

Article Title	The findings produced
Entrepreneurship Learning Strategies and the Contribution of Teacher Behavior in Shaping Vocational High School Students' Entrepreneurial Intentions: A Literature Review	creative, independent, and visionary characters. Project-based and collaborative learning enhance entrepreneurial intention. Teachers serve as important role models, motivators, and facilitators.

As shown in Table 7, 16 articles were categorized based on the main findings generated by the literature. The results demonstrate that entrepreneurship development is a multidimensional process involving complex interactions between education, individual factors, digital technology, and the socio-institutional ecosystem. These findings provide a strong conceptual foundation for the formulation of educational policies, the design of entrepreneurship curricula, and a future research agenda oriented toward sustainable and innovation-based entrepreneurship development.

RQ5. What limitations remain in previous research? And what research agenda is recommended for the future?

16 articles categorized based on their remaining limitations and recommended future research agendas. The results indicate that the main limitations in the entrepreneurship education literature include the dominance of conceptual approaches based on literature reviews and limited databases. Based on these limitations, a future research agenda is directed at strengthening empirical methodologies, diversifying research contexts in developing countries, developing validated measurement instruments, exploring disruptive technologies in entrepreneurship education, and evaluating the impact of entrepreneurship education on career outcomes and new venture formation.

The Results section presents the empirical findings of the study in a clear, systematic, and objective manner. This section must report only the findings derived from the current research. The results should directly address the central research questions or hypotheses stated in the Introduction. Findings must be supported by data presented in tables, charts, graphs, or other relevant figures. Each table or figure must be clearly explained in paragraph form, providing contextual analysis to clarify the meaning, patterns, relationships, or significant differences revealed by the data. All primary findings must be reported comprehensively, followed by any secondary findings, such as subgroup analyses or additional outcomes. The presentation should be concise, coherent, and free from redundancy, ensuring clarity and scientific accuracy.

DISCUSSION

This systematic literature review examines studies related to entrepreneurship education published in ScienceDirect and Semantic Scholar journals. The results, first, show that articles published between 2021 and 2026 exhibit fluctuations, instability, or spikes in the number of publications from 2021 to 2026. Furthermore, of the 16 articles analyzed, 12 publication venues were produced. Furthermore, in terms of context, the most frequently studied are entrepreneurship education, digital entrepreneurship, and technology. Studies in the context of entrepreneurship education describe learning strategies, teacher behavior, curriculum, and their impact on entrepreneurial intentions and competencies in students (RQ1). Second, based on the distribution of authors, titles, years, and publication venues (Table 3), it shows that of the 16

articles analyzed, each author contributed one article, and no single author discussed two or three different articles. Furthermore, each author's 16 articles discuss different titles but share similarities in the context of a systematic literature review. On the other hand, of the 16 articles analyzed from 2021-2026, only 16 articles were published in 12 publication journals (RQ2).

Third, the most dominant methodology used is the Systematic Literature Review (SLR) with various approaches, such as bibliometric analysis, topic modeling, thematic synthesis, and science mapping frameworks. The software used includes PRISMA, VOSviewer, and bibliometric software (RQ3). Fourth, the main findings generated by the literature explain that entrepreneurship development involves the interaction between education, individual factors, digital technology, and the socio-institutional ecosystem. These findings provide a foundation for education, entrepreneurship curriculum design, and a future research agenda (RQ4). Entrepreneurship education in Indonesia has a broad and strategic scope.

Fundamentally, entrepreneurship education aims to equip students with the skills to identify opportunities, develop innovations, and create value in various situations by strengthening their entrepreneurial intentions and competencies. Thus, entrepreneurship education plays a role in fostering an entrepreneurial mindset and spirit in students. Internalizing this spirit enables entrepreneurship education programs to prepare students for the dynamics and complexities of the business world while contributing to economic growth (Cai et al., 2022). Within the context of the Independent Curriculum, the implementation of entrepreneurship education is generally integrated into P5 (Pancasila Student Profile Strengthening Project) activities at the elementary and secondary school levels. Meanwhile, in phase F, students receive the Creative and Entrepreneurship Project (PKK) subject. PKK learning not only emphasizes strengthening entrepreneurial values but also focuses on developing students' competencies in producing products with economic value (Inanna et al., 2023).

In its implementation, teachers play a central role by integrating two main approaches: theory-based learning and practice-based learning. The theoretical aspect encompasses an understanding of the basic concepts of entrepreneurship, while the practical aspect represents the concrete implementation of these concepts in real-life activities (Minarsih et al., 2022). Therefore, teacher competence in entrepreneurship is a crucial prerequisite for ensuring the effectiveness of entrepreneurship education. Therefore, technology, including Artificial Intelligence (AI), plays a central role in the development of entrepreneurship in Indonesia. Fifth, limitations that still emerge in the literature include the dominance of conceptual approaches and limited databases. Therefore, given these limitations, the future research agenda is directed at strengthening empirical methodologies, diversifying research contexts in developing countries, developing validated measurement instruments, exploring disruptive technologies in entrepreneurship education, and evaluating the impact of entrepreneurship education on career outcomes and new venture formation (RQ5).

Research by Hornaday identifies four key characteristics of successful entrepreneurs: a willingness to take calculated risks, a high degree of initiative, adaptability, and a strong work ethic and persistence (Tristiyono et al., 2023). Currently, entrepreneurship studies in various countries focus on the role of entrepreneurship education in fostering students' entrepreneurial intentions, alongside psychological factors such as motivation, personality traits, and self-efficacy (Wardoyo et al., 2023). Therefore, future research needs to place greater emphasis on these four key characteristics along with their psychological aspects. Moreover, individuals with high self-efficacy have been shown to possess stronger entrepreneurial intentions due to their confidence in managing and developing a business (Prasasti & Kamalia, 2025).

Entrepreneurship education consists of three main components: hands-on entrepreneurship practice, achieving entrepreneurial learning objectives, and developing critical thinking skills. These three aspects are designed to shape and enhance students' self-efficacy in the world of entrepreneurship. Through this education, students feel more prepared and confident to start a business because they are equipped with the right knowledge and skills that can be immediately applied. They also recognize that the learning experiences gained during the educational process are very helpful in facing future entrepreneurial challenges.

According to Wiig et al., (2024), women can overcome these cultural hurdles by using digital technology to network, study, generate chances, and expand their enterprises. This empowers them to take on systems that are dominated by men. The growth of new businesses and successful entrepreneurship is facilitated by the relationship between entrepreneurship, institutions, and culture (Santos & Malta, 2024). Additionally, digital tools and platforms have changed how organizations function, fostering new types of entrepreneurial endeavors and stretching the limits of conventional models (Song, 2019). The intricate interactions between many ecosystem elements, such as educational institutions, governmental regulations, financial resources, and societal perspectives on entrepreneurship, are what propel this progress. Furthermore, it is impossible to ignore the part that individual actors play in the ecosystem. Therefore, academic institutions play a critical role in bridging the gap between research and practical application. Additionally, universities and research facilities serve as significant accelerators for entrepreneurial development by fostering an innovative culture and providing the required funding. All things considered, a culture that encourages and celebrates entrepreneurship can improve the ecosystem's overall efficacy. In order to have a greater understanding of how to optimize ecosystems for innovation and economic growth, future study should keep examining these relationships.

However, several challenges remain in the implementation of entrepreneurship education, particularly those related to the gap between entrepreneurial intentions and actual entrepreneurial behavior. The entrepreneurship learning process, which involves interactions between students, lecturers, and the entrepreneurial ecosystem, can lead to differing interpretations of entrepreneurial concepts, competencies, and practices if not accompanied by a clear pedagogical framework. One major problem occurs when students develop an understanding of entrepreneurship based on limited experience or unstructured information, potentially leading to misconceptions about the entrepreneurial process. Furthermore, variations in entrepreneurship education approaches and institutional contexts can lead to inconsistencies in the development of entrepreneurial competencies. Therefore, educators and higher education institutions need to provide systematic pedagogical guidance, including the use of experiential learning models, business incubation, and digital technology integration, to ensure a comprehensive and applicable understanding of entrepreneurship.

Entrepreneurship education should not be viewed merely as a tool for starting a business, but must be understood as a transformative educational process. This approach fosters critical thinking, encourages ethical decision-making, strengthens emotional resilience, and promotes inclusive participation in the economic sector. To fully unlock this potential, close collaboration is needed among academics, educators, policymakers, and industry practitioners. By positioning entrepreneurship education as a holistic development model, this field can have a more significant impact on individual empowerment, institutional innovation, and sustainable social progress.

Of the 16 articles reviewed, researchers found that the most dominant research context was entrepreneurship education, followed by digital entrepreneurship and technology. Other

contexts included digital entrepreneurship, higher education and students, and social and environmental issues. The results indicate that entrepreneurship development is a multidimensional process involving complex interactions between education, individual factors, digital technology, and the socio-institutional ecosystem. This research is expected to contribute to fostering entrepreneurial intentions in shaping competencies, innovative mindsets, and creating economic value in entrepreneurship education in Indonesia in the long term.

CONCLUSIONS AND SUGGESTIONS

CONCLUSIONS

Key findings from the literature confirm that entrepreneurship development is the result of a complex interaction between formal education, individual characteristics (such as self-efficacy, motivation, and personal traits), the use of digital technology and Artificial Intelligence (AI), and the support of the institutional social ecosystem. In the Indonesian context, entrepreneurship education holds a strategic position because it aims not only to foster entrepreneurial intentions but also to shape competencies, an innovative mindset, and the ability to create economic value. Its implementation in the Independent Curriculum through P5 and PKK emphasizes the integration of values, competencies, and real-world practices, with teachers playing a key role in combining theoretical learning and applied practice. Furthermore, the literature shows that the success of entrepreneurship education is determined not only by the curriculum but also by strengthening character traits such as the courage to take calculated risks, initiative, adaptability, and persistence, as well as psychological factors such as self-efficacy. Digital technology also expands entrepreneurial opportunities, including in women's empowerment and business model transformation, through ecosystem support involving educational institutions, government policies, financial resources, and a culture of innovation. However, challenges still arise, particularly the gap between actual entrepreneurial intentions and behavior, inconsistencies in pedagogical approaches, and potential misconceptions due to the lack of a systematic learning framework.

SUGGESTIONS

This review provides significant evidence regarding the development of entrepreneurship education, ranging from traditional approaches to contemporary focuses that include the integration of digital technology, experiential learning, and strengthening the entrepreneurial ecosystem at various levels of education. Considering the identified limitations, the study's findings offer initial guidance for researchers, educators, and education practitioners in designing more effective entrepreneurship learning strategies to enhance students' entrepreneurial competencies, intentions, and behaviors. Furthermore, this study also provides important direction for future research to continue identifying innovative, contextual, and technology-based entrepreneurship pedagogical approaches that can be applied across disciplines and across educational levels in both developing and developed countries.

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AUTHOR CONTRIBUTION

Following the inclusion and exclusion procedures performed automatically by the database system, the authors screened the titles and abstracts of 33 articles. From this process, 27 articles were deemed eligible for full-text review. The first author reviewed the full texts of all selected articles, while the second author reviewed 14 articles and the third author assessed the remaining 13 articles. The three authors then collaboratively evaluated the relevance of each article to the research questions and determined their eligibility based on the predetermined inclusion criteria. In cases of uncertainty regarding eligibility, the second author conducted an independent re-evaluation. In the end, sixteen papers satisfied the requirements and were incorporated into the final study.

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