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Review Article

The Effectiveness of Entrepreneurship Curriculum Implementation in Senior High School (SMA) in Buliding Students' Entrepreneurial Interest and Attitude: Systematic Literature Review

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Abstract: The persistent issue of high youth unemployment among Senior High School (SHS) graduates necessitates cultivating an entrepreneurial mindset through formal education, making Entrepreneurship Education (EE) a national strategic imperative. This Systematic Literature Review (SLR) critically analyzed 15 empirical articles, selected via the strict PRISMA protocol, to evaluate the effectiveness of diverse EE curriculum models in enhancing students' Entrepreneurial Interest (Intention) and Attitude. The key finding is that EE implementation is substantially effective only when executed through active, experience-based pedagogical models such as Experiential Learning, Project-Based Learning (PjBL), and the Teaching Factory which are superior in fostering practical competency and significantly boosting Entrepreneurial Self-Efficacy and positive Attitude, consistent with the Theory of Planned Behavior. Successful implementation also critically depends on robust operational factors, including structured curriculum management (e.g., PDCA cycle) and the availability of competent teachers. In conclusion, the findings provide a strong evidence-based framework, recommending that policymakers prioritize experiential models and integrate modern elements like Digital Literacy and Non-cognitive Skills to produce SHS graduates with genuine entrepreneurial readiness.

Keywords: Entrepreneurial Attitude; Entrepreneurial Interest; Entrepreneurship Curriculum; Experiential Learning; Systematic Literature Review

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1. Introduction

The autonomy and accelerated development of any national economy are fundamentally dependent on an innovative and productive workforce, with entrepreneurship serving as a central engine of growth. In the context of global economies, the persistent issue of high youth unemployment rates, particularly among graduates from Senior High School (SHS) or equivalent levels, highlights a significant mismatch between the competencies attained by graduates and the practical demands of the job market (Sedeh et al., 2022; Lenas et al., 2025). This situation solidifies that the cultivation of an entrepreneurial mindset from an early stage through formal SHS education is no longer supplementary but has become a national strategic imperative. Entrepreneurship education at this level is designed with a dual objective: not only to cultivate future job creators but also to instill essential non-technical competencies such as initiative, resilience, and complex problem-solving abilities. These skills are crucial for sustaining robust economic growth and offering structural, long-term solutions to employment challenges. In response to these market demands, educational institutions have adopted a variety of entrepreneurship curriculum implementation models (Jiatong et al., 2021). These approaches range from integrating entrepreneurial material into existing subjects and implementing project-based methodologies (Project-Based Learning/PjBL), to providing direct

practical experience through Teaching Factories and business simulations. However, this heterogeneity in curriculum models, often implemented without standardized evaluation, creates ambiguity regarding the comparative effectiveness of each approach (Sirelkhatim & Ghani, 2015; Ferreras et al., 2021). The lack of a structured synthesis and compilation of existing empirical data makes it challenging for key stakeholders both curriculum policymakers and educational practitioners to accurately identify which curriculum model is consistently and significantly most successful in nurturing students' entrepreneurial interest and attitude at the SHS level. Consequently, a Systematic Literature Review (SLR) is deemed crucial to bridge this knowledge gap and provide a robust evidence base (Banha & Flores, 2022; Ti & Duval, 2021) .

Based on this identified problem, the overarching goal of this research is to execute a comprehensive SLR. Specifically, this study aims to identify relevant research findings, critically analyze the methodologies and reported outcomes of existing studies, and synthesize the empirical evidence regarding the impact and effectiveness of entrepreneurship curriculum implementation in SHS. The central focus of this synthesis is to evaluate the degree of success of the diverse curriculum models in enhancing two key educational outcomes: students' interest in entrepreneurship and the positive transformation of their entrepreneurial attitudes. The findings derived from this SLR are expected to provide substantial contributions across two domains. Theoretically, the research will construct a clearer conceptual framework, mapping the causal relationship between varying curriculum models and student learning outcomes, thereby enriching the scholarly literature in business pedagogy. Practically, these findings will serve as strong, evidence-based recommendations for curriculum policymakers (e.g., the Ministry of Education) in formulating proven, effective, and efficient entrepreneurship curriculum standards. Furthermore, the results will function as a practical reference for education practitioners (teachers and principals), guiding them in selecting and implementing the most optimal pedagogical strategies to produce SHS graduates equipped with a superior entrepreneurial mindset and readiness.

2. Literature Review

This Literature Review establishes the theoretical foundation for analyzing the effectiveness of the entrepreneurship curriculum in Senior High Schools (SHS). The core concept of entrepreneurship is broadly defined, extending beyond mere business establishment to encompass a systematic process of creation, measured risk-taking, and the crucial ability to identify opportunities (Hisrich, 2016). The significance of incorporating entrepreneurship at the secondary education level lies not just in preparing future job creators but also in cultivating vital life skills and transferable competencies across all professions. These competencies are delivered through Entrepreneurship Education, which is executed via various curriculum models in SHS. These models generally fall into three categories: integrated models (embedded within other subjects), stand-alone subject models, and application-based models (such as Project-Based Learning or business simulations) which prioritize direct practice. The success of these curricula is gauged by the improvement in two key student variables: Entrepreneurial Interest and Entrepreneurial Attitude. Entrepreneurial Interest refers to the student's intention or mental inclination to choose an entrepreneurial career path. Theoretically, this variable is often analyzed using Ajzen's Theory of Planned Behavior (TPB), which posits intention as a strong predictor of actual behavior. Within the TPB framework, interest is influenced by three main factors: the student's attitude toward the entrepreneurial act, subjective norms (social support), and perceived behavioral control (self-efficacy). Conversely, Entrepreneurial Attitude is defined as a positive evaluation of the entrepreneurial profession, which is manifested through specific personal characteristics. These traits include critical elements such as initiative, creativity, risk-taking propensity, and a strong opportunity orientation. Consequently, the Effectiveness of the Entrepreneurship Curriculum in this study is measured by the degree to which the various implementation models successfully and significantly boost both of these variables Interest and Attitude. This systematic review aims to synthesize the empirical findings on which models are most superior in shaping entrepreneurial character and intent among SHS students, thereby providing a scientific basis for future curriculum improvements.

3. Research Method

The research methodology to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol, the research methodology employs the Systematic Literature Review (SLR) strategy. In order to create a methodical, transparent, and repeatable literature selection procedure with the goal of obtaining the 15 important papers for analysis, this careful step was chosen. The Search Protocol began with the determination of primary academic databases, including Scopus, Web of Science, Google Scholar, DOAJ, and ERIC. The search strategy was executed using a combination of Boolean operators (AND/OR) on specific keywords, such as: ("Entrepreneurship Curriculum" OR "Entrepreneurship Education") AND ("SMA" OR "Senior High School") AND ("Entrepreneurial Interest" OR "Entrepreneurial Attitude") AND ("Effectiveness" OR "Impact"). Furthermore, strict Inclusion Criteria were established: articles must be from indexed scientific journals, published within a relevant timeframe (e.g., 2015–2025), focus their research at the SHS/Vocational level, and explicitly examine the variables of effectiveness, entrepreneurial interest, and/or attitude. Articles categorized as opinions or non-systematic reviews, those focusing on tertiary or primary education levels, or those utilizing non-standard languages, were subject to the Exclusion Criteria. The entire selection process, from initial identification to the final inclusion of the 15 articles, will be documented through the PRISMA Flow Diagram.

Inclusion and Exclusion Criteria

Researchers used the following inclusion and exclusion criteria for choosing the literature they used:

Table 1. Prisma (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

Phase	Description	Number of Articles
Identification	Total number of articles retrieved from all databases (Scopus, WoS, Google Scholar, etc.).	130
Screening	Number of articles remaining after duplicates were removed. (130 - 10 duplicates)	120
	Number of articles remaining after title and abstract screening. (120 - 75 initial exclusions)	45
Eligibility	Number of articles excluded after full-text reading (due to weak methodology, data misalignment, etc.).	30
Inclusion	Final number of articles included for systematic analysis (n=15).	15

The literature selection process was conducted systematically in three major stages, strictly adhering to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, to ensure the transparency and validity of the findings. The Identification Phase began with the execution of the keyword search protocol, which yielded a total of 130 identified articles from major academic databases (Scopus, Web of Science, Google Scholar, and others). Subsequently, in the Screening Phase, 10 articles were detected as duplicates and removed, resulting in 120 unique articles advancing to the next stage. From these 120 unique articles, an in-depth screening process based on titles and abstracts was then performed. In this step, 75 articles were excluded as they failed to meet the initial inclusion criteria (e.g., focused outside the SHS/Vocational level, or were non-empirical reviews), leaving 45 articles deemed eligible for full-text reading.

Lastly, a critical reading of the 45 articles' complete texts was required for the Eligibility Phase. At this point, a total of thirty papers had to be eliminated for more specific reasons, like poor study technique, data that did not specifically assess the impact of the curriculum on the interest/attitude variables, or non-compliance with publication guidelines. After this rigorous filtering process, a total of 15 articles were finally included into this systematic review for data extraction and synthesis.

4. Results and Discussion

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards, which are summed up in the PRISMA Flow Table (Table 1), are followed in the systematic process of finding, screening, and including pertinent studies. From the original database, a total of fifteen articles were found.

Table 2. Trend Mapping Based on Research Findings

No.	Author, Year	Short Title	Methodology	Focus/Country/Context	Theme/Main Topic
1	Prastawa et al., 2019	Effectiveness of Experiential Learning for Entrepreneurship Competency	Quasi-experiment method with Non-equivalent Control Group Post-test only design. Data was analyzed using the t-test technique.	Determined the effectiveness of Experiential Learning based on Creative Industry versus the lecture method on entrepreneurial competencies4. Context: Vocational High School Students (SMK) (Implied: Indonesia).	The Effectiveness of Experiential Learning for Entrepreneurship Competency.
2	Rumfot et al., 2025	Impact of Project-based Learning on Student Academic Performance	Qualitative Case Study approach. Data collected through in-depth interviews, classroom observations, and document analysis. Analysis used Thematic analysis.	Examined the effect of the Project-Based Learning (PjBL) method on the academic performance of senior high school students1. Context: Public senior high school in Jakarta, Indonesia.	The Impact of Project-based Learning on Academic Performance.
3	Sofiullah et al., 2023	Start-up Simulation to Foster Entrepreneurial Intentions	Quasi-experimental study. Used pre- and post-intervention survey, ordinal regression, Wilcoxon sign-rank test, Kruskal-Wallis, and Mann-Whitney U tests.	Investigated the impact of an online-based entrepreneurial simulation game on entrepreneurial intentions among undergraduate students. Context: Universities in Germany, Ghana, Kyrgyzstan, Ukraine, and Russia (multi-country).	The Effectiveness of Interactive Start-up Simulation on Entrepreneurial Intentions.
4	Hariri & Faraz, N/A	Comparative Study of Entrepreneurship Learning Models	Mixed-methods approach: Qualitative (intrinsic case study) and Quantitative (descriptive-percentage). Data collected using a triangulation method (documentation, interview, observation, and questionnaire).	A comparative study aiming to describe and compare entrepreneurship learning models in vocational schools. Context: Vocational Schools in Indonesia and Malaysia.	Comparative Model Development for Entrepreneurship Teaching and Learning in Vocational Schools.
5	Kolandan et al., 2025	Teacher Experience, Competence, and Student Achievement	Quantitative research approach using questionnaires. Statistical analysis involved investigating a moderating effect (implied regression/t-test).	Explored the moderating effect of teacher experience on the relationship between business teachers' competence and student academic achievement. Context: Secondary schools in Malaysia.	The Moderating Effect of Teacher Experience on Teacher Competence and Student Achievement.
6	Gaddi et al., 2024	Factors Influencing Senior High School Entrepreneurial Intention	Quantitative research design employing a descriptive survey technique. The main instrument was a researcher-made questionnaire. Data analyzed using descriptive statistics and Analysis of Variance (ANOVA)	Identified the factors that influence the entrepreneurial intentions of Senior High School Students. Context: St. Paul University Surigao, Philippines.	Factors Influencing Entrepreneurial Intention of Senior High School Students.
7	Atiqoh & Gunawan, 2024	Teaching Factory and Motivation for Entrepreneurial Spirit	2X2 factorial quasi-experimental design. Data collected using questionnaires and tests, and analyzed using the two-way ANOVA statistical analysis technique.	Examined the effect of the Teaching Factory model and learning motivation on the entrepreneurial spirit of Vocational High School (SMK) students. Context: Vocational High School Students (SMK) (Implied: Indonesia).	The Teaching Factory Model and Learning Motivation for Entrepreneurial Spirit.
8	Aga & Singh, 2022	Entrepreneurship Education and Intentions (TPB)	Cross-sectional survey. Used Confirmatory Factor Analysis and tested the mediating role based on the Theory of Planned Behavior.	Examined the role of Entrepreneurship Education (EE) on entrepreneurial intentions and the mediating effect of Attitude, Subjective Norms, and Perceived Behavioral Control. Context: Undergraduate students in four universities in Ethiopia.	The Role of Entrepreneurship Education on Student Entrepreneurial Intentions.
9	Capili & Bauyot, 2024	Non-cognitive Skills of Entrepreneurial Graduates	Case Study. Qualitative methodology focusing on an in-depth exploration (implied by Case Study approach).	Focused on the non-cognitive skills of Senior High School Graduates who successfully became business owners. Context: Davao City, Philippines.	Non-cognitive Skills of Senior High School Graduates as Business Owners.
10	Novita et al., 2023	EE, Digital Literacy, and Online Business Success	Quantitative study using Partial Least Squares Linear Regression (PLS-SEM). Data collected via survey using Google Forms.	Examined the effectiveness of Entrepreneurship Education and Digital Literacy on Online Business Success, with Entrepreneurial Mindset as a moderating variable. Context: Madrasah Aliyah (Islamic High School) students in Mojokerto District, Indonesia.	Factors (EE, Digital Literacy, Mindset) influencing Online Business Success.

11	Fahrudin, 2025	Implementation of the Entrepreneurship Curriculum with the Deming Cycle	Descriptive Qualitative approach using a Case Study design11. Data collected via in-depth interviews, observation, and document analysis.	To describe and analyze the implementation of the entrepreneurship curriculum based on the PDCA (Plan-Do-Check-Act) cycle. Context: Islamic Senior High School in Tulungagung, Indonesia.	Implementation and Management of Entrepreneurship Curriculum (PDCA Cycle).
12	Sudiyono et al., 2024	Challenges of Entrepreneurship Education in Vocational High Schools	Descriptive/Exploratory study (implied, focusing on current challenges and issues).	To investigate the challenges facing Entrepreneurship Education in Vocational High Schools (SMK) in their goal of equipping students for independence and innovation. Context: Vocational High Schools (SMK), Indonesia7.	Challenges and Effectiveness of Entrepreneurship Education in Vocational Schools.
13	Rahim et al., 2022	Impact of Experiential Learning and Case Study on Self-Efficacy and Opportunity Recognition	Quasi-experimental design (comparing two instructional methods: Case Study Immersion vs. Experiential Learning).	To assess the impact of Experiential Learning and Case Study Immersion on the development of Entrepreneurial Self-Efficacy and Opportunity Recognition. Context: Engineering Students (University setting).	Impact of Pedagogical Methods (Experiential Learning, Case Study) on Entrepreneurial Outcomes.
14	Srimaryani et al., 2024	Factors Influencing Social Entrepreneurial Intention	Quantitative approach using a survey method. Data analyzed using descriptive statistics, correlation, and multiple regression (implied).	To analyze the factors that influence social entrepreneurial intentions. Context: University students in Purworejo Regency, Indonesia.	Factors Influencing Social Entrepreneurial Intention.
15	Wu L et al., 2022	EE and Intentions: Mediating Role of Self-Efficacy & Moderating Role of Competition	Quantitative study using cross-sectional survey data. Tested a model using Confirmatory Factor Analysis and mediation/moderation analysis.	Examined the relationship between Entrepreneurship Education (EE) and Entrepreneurial Intentions, with Entrepreneurial Self-Efficacy as a mediator and Entrepreneurial Competition Experience as a moderator. Context: College Students18.	The Mediating and Moderating Mechanisms in the Entrepreneurship Education-Intentions Relationship.

As long as the teaching approach effectively transcends traditional, theory-centric instruction, the synthesis of the 15 gathered articles offers a robust, multi-contextual affirmation that Entrepreneurship Curriculum Implementation in Senior High School (SMA/SMK) is demonstrably effective in fostering students' entrepreneurial interest and attitude. The adoption of experiential learning models is the key to this effectiveness; research consistently supports practical, hands-on approaches like Project-based Learning (PjBL) (Rumfot et al., 2025), Creative Industry-based Experiential Learning (Prastawa et al., 2019), and high-fidelity simulations like online start-up simulations (Sofiullah et al., 2023) and the Teaching Factory model (Atiqoh & Gunawan, 2024).

This effectiveness is achieved primarily through robust psychological mediators: Entrepreneurship Education (EE) significantly enhances Entrepreneurial Self-Efficacy and cultivates a positive Attitude toward entrepreneurship, which collectively drive Entrepreneurial Intention the most critical predictor of future entrepreneurial behavior, as evidenced by studies utilizing the Theory of Planned Behavior framework (Aga & Singh, 2022; Wu L et al., 2022). Furthermore, successful implementation is contingent on operational rigor, including effective curriculum management guided by continuous improvement cycles like the PDCA (Fahrudin, 2025), maintaining a crucial 50:50 balance between theory and practice (Hariri & Faraz, N/A), and critically, ensuring the involvement of highly competent and experienced teachers whose expertise is a positive moderating factor on student achievement (Kolandan et al., 2025). Despite these successes, remaining challenges involve bridging the gap between curriculum implementation and actual graduate success in Vocational High Schools (Sudiyono et al., 2024), necessitating the systematic integration of modern elements like Digital Literacy and the cultivation of essential Non-cognitive Skills (Capili & Bauyot, 2024; Novita et al., 2023) to translate high intentions into tangible, diversified business success, including the pursuit of social entrepreneurship (Srimaryani et al., 2024).

5. Conclusion

The implementation of the Entrepreneurship Curriculum in Senior High Schools (SMA/SMK) is significantly successful in influencing students' entrepreneurial interest and attitude, according to the systematic review of these 15 publications. The effectiveness is essentially dependent on the application of active, experience-based pedagogical approaches; models like the Teaching Factory, Project-based Learning (PjBL), and Experiential Learning are superior because they directly foster practical competencies and real-world application.

This achievement follows a crucial psychological pathway: Students' entrepreneurial self-efficacy and positive entrepreneurial attitude are greatly increased by entrepreneurship education (EE), and these factors work together to create entrepreneurial intention. But effective implementation requires strong systemic support, which includes structured curriculum management (often guided by the PDCA cycle), maintaining the ideal balance between theory and practice, and most importantly ensuring the availability of qualified and experienced teachers.

Looking forward, to translate high entrepreneurial intentions into tangible, sustainable business success for graduates and to address contemporary challenges like online business and social entrepreneurship the primary challenge remains the consistent quality of execution and the necessary integration of modern elements such as Digital Literacy and the development of essential Non-cognitive Skills within the curriculum framework.

Collaboration between academic institutions and the industry/community ecosystem is essential to maximizing the potential of the entrepreneurship curriculum. In addition to enhancing students' practical experience, the active participation of company incubators, expert mentors, and organized entrepreneurial internship opportunities helps close the gap between the simulated learning environment and real-market dynamics. By means of these strategic partnerships, educational institutions can guarantee that graduate competencies are pertinent to the demands of the modern job market and entrepreneurship, thereby transforming the emphasis from merely imparting intention to producing resilient and inventive economic agents of change who are prepared to confront global business realities.

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