

Business-pedagogical directions for forming entrepreneurial skills in students

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Abstract

This article examines the theoretical and practical foundations of forming entrepreneurial skills in students within the framework of general secondary and vocational education. Amid the structural transformation of Uzbekistan's economy, the expansion of the private sector, and the state's strategic course toward accelerating youth entrepreneurship, general education institutions face the urgent task of systematically preparing learners for independent economic activity. The study substantiates a structural-content model comprising five interrelated business-pedagogical directions — cognitive-economic, practical-project, motivational-personal, communicative-social, and reflective-evaluative — through which entrepreneurial skills are formed in an integrated manner. The theoretical framework draws on the European Entrepreneurship Competence Framework (EntreComp), the theory of experiential learning, and achievement motivation theory. The effectiveness of the proposed model was verified through a pedagogical experiment comparing control and experimental groups of students. The results demonstrate a marked increase in the share of students with a high level of entrepreneurial skills formation in the experimental group, confirming the practical value of the proposed business-pedagogical directions.

Keywords: Entrepreneurial Skills; Business Pedagogy; Economic Education; Project-Based Learning; Entrecomp; Pedagogical Model.

1. Introduction

In the context of the accelerating structural transformation of the national economy, the formation of entrepreneurial skills in the younger generation has become one of the priority tasks of the modern education system. Global experience demonstrates that the ability to identify economic opportunities, mobilize resources, and act independently under conditions of uncertainty is increasingly regarded not merely as a professional competence of future business owners, but as a transversal skill required by every citizen for successful adaptation to a dynamic labor market. Following this logic, the European Union has, since the mid-2010s, treated entrepreneurship as one of the key competences for lifelong learning and has progressively integrated it into the school curricula of the majority of its member states.

In the Republic of Uzbekistan, the strategic importance of entrepreneurship has been consistently reflected in state policy. The Development Strategy of New Uzbekistan for 2022–2026 sets, among its hundred targets, the objective of creating favorable conditions for organizing entrepreneurial activity and forming stable sources of income for the population, with the share of the private sector planned to reach 80 percent of GDP and 60 percent of exports. Earlier, the Concept for the Development of the Public Education System of the Republic of Uzbekistan until 2030 identified the cultivation of economic thinking, initiative, and practical life skills among pupils as one of the priority directions of upbringing work in general secondary schools. In line with these documents, elective courses on the fundamentals of entrepreneurship, school-based “learning firms,” business clubs, and cooperation with regional business incubators have gradually been introduced into the practice of general education institutions.

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At the same time, the transition from isolated initiatives to a systemic, pedagogically substantiated model for forming entrepreneurial skills remains incomplete. In practice, entrepreneurship-related content is often taught episodically, is not always linked to the psychological-pedagogical mechanisms of skill formation, and rarely combines cognitive, practical, motivational, communicative, and reflective components within a single coherent structure. Teachers frequently lack methodological guidance on which pedagogical forms correspond to which components of entrepreneurial competence, and school administrations lack diagnostic tools for tracking the dynamics of skill formation. This gap between the ambitious targets of state economic policy and the pedagogical readiness of the general education system constitutes the central problem addressed in this article.

The purpose of the present study is to substantiate a structural-content model of business-pedagogical directions for forming entrepreneurial skills in students and to verify its pedagogical effectiveness empirically. In accordance with this purpose, the following tasks were set: to systematize the theoretical approaches to entrepreneurship education; to develop a model that integrates the cognitive, practical, motivational, communicative, and reflective components of entrepreneurial skill; and to test the model's effectiveness through a pedagogical experiment comparing control and experimental groups.

2. Literature Review

The psychological foundations of entrepreneurial behavior were laid by David McClelland, who identified the need for achievement as a distinct motivational disposition that drives individuals toward initiative, moderate risk-taking, and personal responsibility for outcomes — qualities that later research would treat as the motivational core of the entrepreneurial personality. Building on this psychological tradition, Shane and Venkataraman reframed entrepreneurship as a field of research centered on the nexus of enterprising individuals and valuable opportunities, emphasizing that the capacity to discover, evaluate, and exploit opportunities can, within limits, be cultivated through targeted education rather than treated solely as an innate trait.

The pedagogical foundations of entrepreneurship education rest heavily on Kolb's theory of experiential learning, according to which durable competence is formed through a cyclical process of concrete experience, reflective observation, abstract conceptualization, and active experimentation. This model explains why the transmission of economic knowledge through lectures alone rarely produces entrepreneurial skill: without practical experience and reflection, cognitive knowledge remains inert. Jack and Anderson extended this discussion by arguing that entrepreneurship education must reconcile the "art" of enterprising creativity with the "science" of managerial competence, cautioning against reducing entrepreneurship teaching to narrow business-planning exercises and calling instead for the formation of reflective practitioners. Gibb went further, proposing that traditional transmissive pedagogy be replaced by an "enterprise" paradigm of learning built on learning-by-doing, tolerance of ambiguity, networking, and the learner's ownership of the learning process.

Empirical research on the effectiveness of entrepreneurship education programs has produced more nuanced findings than early enthusiasm suggested. Fayolle and Gailly, applying the theory of planned behavior, demonstrated that the impact of entrepreneurship education on students' attitudes and intentions is neither uniform nor permanent: certain programs produce an initial "hysteresis effect," temporarily lowering perceived feasibility as learners gain a more realistic picture of entrepreneurial activity, before the effect stabilizes over time. Katz, tracing the century-long institutional history of entrepreneurship education in the United States, showed that the field evolved from isolated business-planning courses toward a diversified ecosystem of experiential and project-based formats — a trajectory that mirrors the direction contemporary school-level entrepreneurship education is now taking. Drucker, in turn, insisted that entrepreneurship is best understood not as a fixed personality type but as a systematic, purposeful practice that can be organized, taught, and learned, a position that provided much of the intellectual legitimacy for later educational interventions.

The most consolidated contemporary reference for structuring entrepreneurial competence in education is the European Entrepreneurship Competence Framework (EntreComp), developed by the European Commission's Joint Research Centre. EntreComp organizes entrepreneurial competence into three interrelated areas — Ideas and Opportunities, Resources, and Into Action — comprising fifteen specific competences that range from spotting opportunities and creativity to self-awareness, mobilizing resources, and coping with uncertainty. According to the Eurydice report on entrepreneurship education across Europe, most national systems have adopted a broad, mindset-oriented definition of entrepreneurship education rather than a narrow business-start-up definition, and effective implementation depends critically on combining curricular integration with practical, extracurricular formats such as mini-companies and competitions.

Despite the breadth of this international literature, systematic studies that translate these frameworks into a coherent set of business-pedagogical directions suited to the general secondary and vocational education context of Uzbekistan remain limited. Existing national research and policy documents tend to address entrepreneurship education either at the level of broad strategic declarations or as isolated elective courses, without offering an integrated structural model that pedagogically connects the cognitive, practical, motivational, communicative, and reflective components of entrepreneurial skill formation. It is this gap that the present study seeks to address.

3. Research Methodology

To achieve the stated purpose, the study combined theoretical and empirical research methods. At the theoretical level, methods of analysis, synthesis, systematization, and generalization were applied to the pedagogical, psychological, and economic literature in order to identify the structural components of entrepreneurial skill and their corresponding pedagogical directions. The method of pedagogical modeling was used to construct the structural-content model uniting these directions into a coherent system.

At the empirical level, a pedagogical experiment was conducted in two stages — an ascertaining (diagnostic) stage and a formative stage — involving students of general secondary and vocational education. Two groups were formed: a control group ($n = 62$), in which entrepreneurship-related content was taught through the traditional, predominantly lecture-based format, and an experimental group ($n = 64$), in which the business-pedagogical model proposed in this article was implemented through project-based learning, business simulation games, mentorship, and reflective portfolio methods.

Diagnostic tools included a structured questionnaire, expert observation protocols, and analysis of student project outputs, applied to assess the level of entrepreneurial skills formation across the five directions of the model. On this basis, three levels were distinguished: low (fragmentary economic knowledge, passive participation, absence of independent initiative), medium (adequate knowledge, participation in guided practical tasks, situational initiative), and high (systematic knowledge, independent project activity, stable motivation, and the ability to reflect critically on outcomes). Comparative and statistical-descriptive methods were used to process and interpret the resulting data, and the percentage distribution of students across the three levels in the control and experimental groups was compared at the final stage of the experiment.

4. Analysis and Results

4.1. Structural-content model of business-pedagogical directions

The theoretical analysis conducted in the course of the study made it possible to substantiate a structural-content model comprising five interrelated business-pedagogical directions through which entrepreneurial skills are formed in students in an integrated manner (Figure 1).

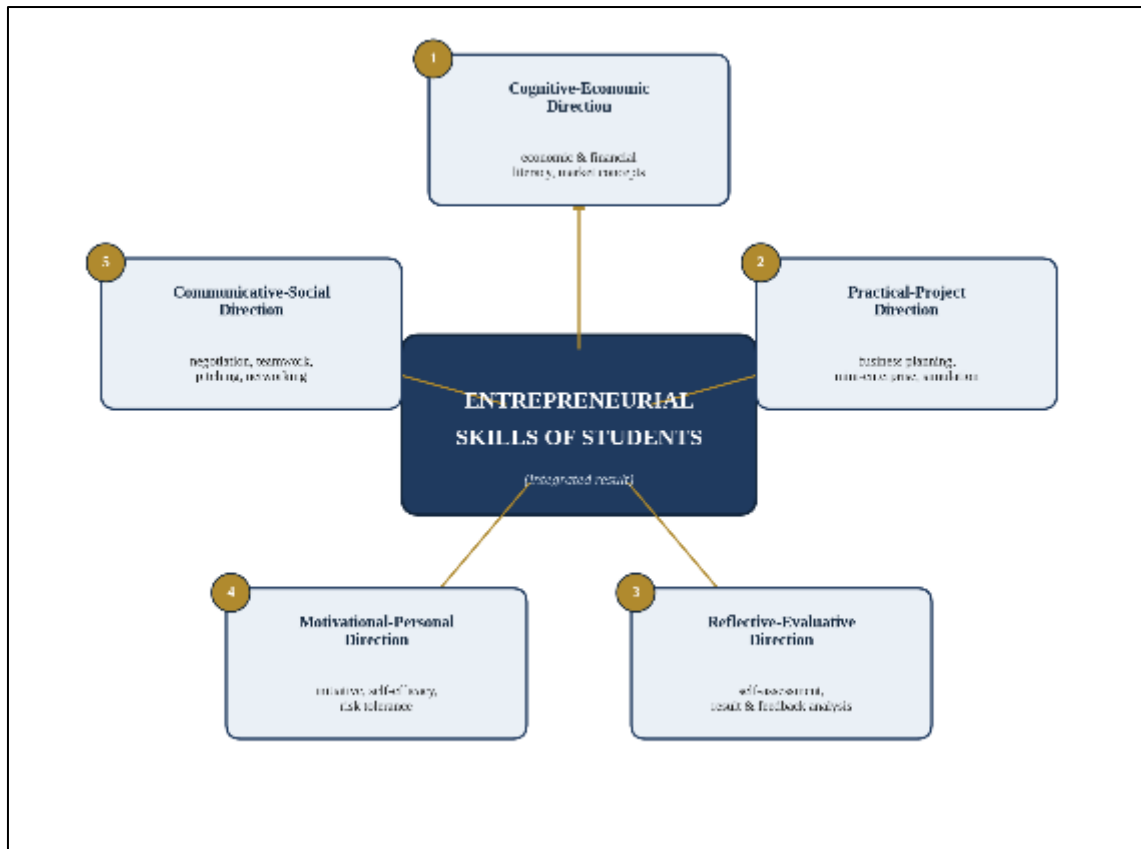


Figure 1 Structural-content model of business-pedagogical directions for forming entrepreneurial skills in students

Source: compiled by the author.

As shown in Figure 1, the cognitive-economic direction forms the knowledge foundation of entrepreneurial skill — an understanding of market mechanisms, financial literacy, and the basics of business legislation, without which independent economic activity is impossible. The practical-project direction translates this knowledge into action through business planning, mini-enterprise and startup simulation, and product or service design, corresponding closely to the “Into Action” area of the EntreComp framework. The motivational-personal direction addresses the psychological core of entrepreneurial behavior — achievement motivation, initiative, tolerance of risk and ambiguity, and self-efficacy — echoing McClelland’s account of the achievement-oriented personality. The communicative-social direction develops the negotiation, teamwork, public-speaking, and networking skills without which even a well-designed business idea cannot attract resources or partners. Finally, the reflective-evaluative direction closes the pedagogical cycle by developing students’ capacity for self-assessment, analysis of financial and non-financial outcomes, and processing of feedback, directly operationalizing the reflective-observation stage of Kolb’s experiential learning cycle.

The detailed structural-content characteristics of the five directions — including their core content, corresponding pedagogical forms and methods, and the target competencies they are intended to develop — are presented in Table 1.

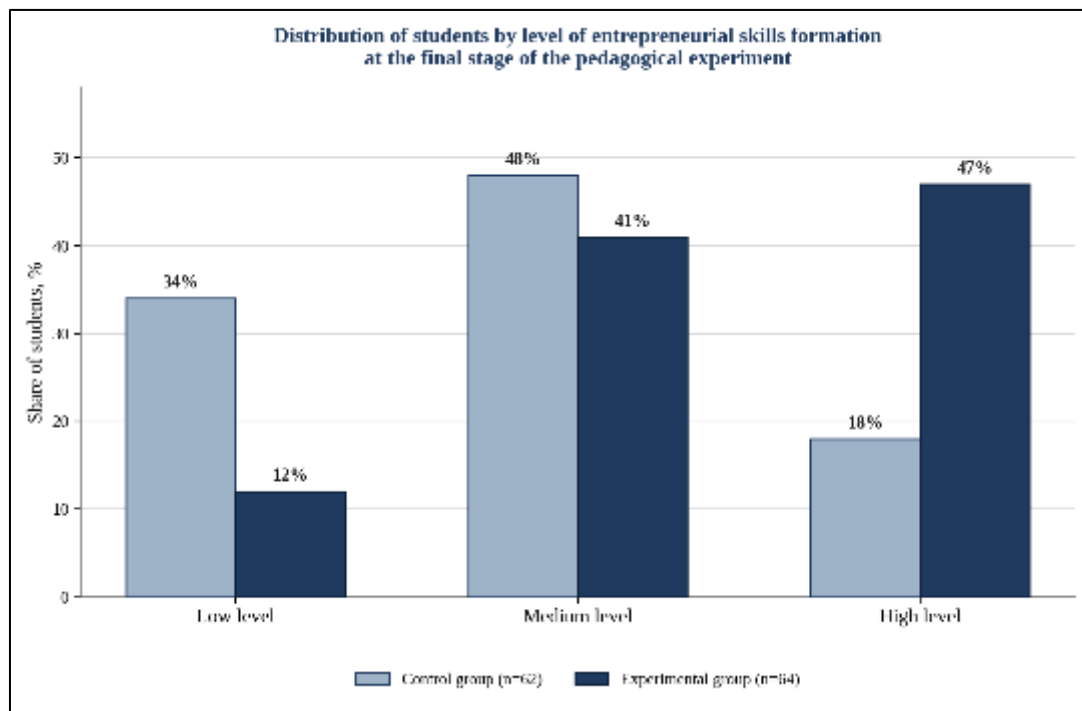
The data presented in Table 1 demonstrate that each business-pedagogical direction relies on a distinct set of pedagogical forms and methods, ranging from case studies and digital economics platforms in the cognitive-economic direction to portfolio methods and business-game debriefing in the reflective-evaluative direction. It is important to emphasize that these five directions do not function in isolation: within a single project-based learning cycle — for instance, the development and presentation of a school mini-enterprise business plan — elements of all five directions are activated simultaneously, which is precisely what distinguishes the proposed model from fragmented, single-subject approaches to entrepreneurship education.

Table 1 Structural-content characteristics of the business-pedagogical directions for forming entrepreneurial skills in students

Direction	Core Content	Pedagogical Forms and Methods	Target Competencies
1. Cognitive-Economic Direction	Basic economic concepts, market mechanisms, financial literacy, fundamentals of entrepreneurship legislation	Lectures, case studies, business-terminology workshops, digital economics platforms	Economic and financial literacy; opportunity recognition
2. Practical-Project Direction	Business-plan development, mini-enterprise and startup simulation, product/service design	Project-based learning, school "learning firms," business simulation games, hackathons	Planning and management; mobilizing resources
3. Motivational-Personal Direction	Achievement motivation, initiative, tolerance of risk and ambiguity, self-efficacy, goal-setting	Motivational trainings, analysis of success stories, mentorship, personal SWOT-analysis exercises	Self-awareness and self-efficacy; motivation and perseverance
4. Communicative-Social Direction	Negotiation, teamwork, public speaking and pitching, networking, customer communication	Role-play, business-pitching competitions, debate clubs, team projects	Mobilizing others; communication in a business context
5. Reflective-Evaluative Direction	Self-assessment of results, analysis of financial and non-financial outcomes, processing of feedback, error analysis	Portfolio method, reflective journals, peer and expert assessment, business-game debriefing	Learning through experience; evaluating results

Source: compiled by the author.

4.2. Empirical verification of the model's effectiveness



Source: compiled by the author based on the results of the experimental study.

Figure 2 Distribution of students by level of entrepreneurial skills formation at the final stage of the pedagogical experiment

To verify the pedagogical effectiveness of the proposed model, a formative experiment was conducted in which the experimental group studied under the business-pedagogical model described above, while the control group continued to receive entrepreneurship-related content through traditional, predominantly lecture- and textbook-based instruction. At the ascertaining stage, no meaningful difference was recorded between the two groups: the overwhelming majority of students in both groups demonstrated a low or medium level of entrepreneurial skills formation, with fragmentary economic knowledge and limited practical experience of independent project activity.

At the final stage of the experiment, conducted after one academic year of implementation, a marked divergence between the two groups was observed (Figure 2).

As illustrated in Figure 2, in the control group the distribution of students across levels remained close to the initial pattern: 34 percent of students demonstrated a low level, 48 percent a medium level, and only 18 percent a high level of entrepreneurial skills formation. In the experimental group, by contrast, the share of students with a low level fell to 12 percent, while the share demonstrating a high level rose to 47 percent — more than two and a half times higher than in the control group. The share of students at the medium level remained comparatively stable across both groups (48 percent and 41 percent respectively), which is consistent with the expectation that pedagogical intervention primarily shifts students from the low to the high level rather than uniformly compressing the entire distribution.

These results indicate that the systematic, integrated implementation of the five business-pedagogical directions — rather than any single method in isolation — produces a substantially stronger effect on entrepreneurial skills formation than traditional instruction. Qualitative observation further showed that students in the experimental group demonstrated greater confidence in the public presentation of their project ideas, more realistic assessment of financial risk, and a stronger capacity to revise their business plans in response to peer and expert feedback — outcomes that correspond directly to the communicative-social and reflective-evaluative directions of the proposed model.

4.3. Pedagogical conditions for effective implementation

The experimental results confirm that the effectiveness of the business-pedagogical model depends not only on its structural completeness but also on the pedagogical conditions under which it is implemented. First, the practical-project direction requires an authentic organizational form — a school-based “learning firm,” business club, or mini-enterprise — through which students can test business ideas under conditions that approximate real economic activity, however modest in scale. Second, the motivational-personal and communicative-social directions benefit substantially from mentorship: the involvement of local entrepreneurs and business-incubator specialists as guest mentors and jury members for student pitching sessions was found to increase both the perceived authenticity of the tasks and students’ willingness to take initiative. Third, teachers responsible for entrepreneurship-related content require targeted methodological training, since the transition from a transmissive to an experiential pedagogical style demands facilitation skills that differ substantially from conventional subject teaching. Finally, the reflective-evaluative direction requires dedicated instructional time and tools — such as structured portfolios and debriefing protocols — since reflection rarely develops spontaneously and is easily crowded out when instructional time is under pressure. Taken together, these conditions suggest that the business-pedagogical directions substantiated in this study function most effectively not as an additional, isolated elective course, but as an integrated pedagogical approach embedded across project work, mentorship, and school-community partnerships.

5. Conclusion

The present study has substantiated a structural-content model of business-pedagogical directions for forming entrepreneurial skills in students, combining cognitive-economic, practical-project, motivational-personal, communicative-social, and reflective-evaluative components into a single, pedagogically coherent system. The theoretical analysis demonstrated that this model is consistent with, and operationalizes, established international frameworks — most notably the European Entrepreneurship Competence Framework and Kolb’s theory of experiential learning — while responding directly to the strategic objectives set out in Uzbekistan’s national development and education policy documents.

The empirical verification of the model, conducted through a pedagogical experiment comparing control and experimental groups, confirmed its practical effectiveness. Students who studied under the proposed business-pedagogical model demonstrated a substantially higher level of entrepreneurial skills formation than students taught through traditional, predominantly lecture-based methods, with the share of students at the high level rising to nearly half of the experimental group. These results indicate that the systemic integration of the five directions produces a measurably stronger pedagogical effect than fragmented or single-method approaches to entrepreneurship education.

At the same time, the study has shown that structural completeness alone is not sufficient: the effectiveness of the model depends on the organizational and methodological conditions of implementation, including authentic project formats, mentorship from the local business community, targeted teacher training, and dedicated instructional time for reflection. These conditions constitute a necessary complement to the structural-content model and should be taken into account when the proposed business-pedagogical directions are introduced into the practice of general secondary and vocational education institutions.

The scientific novelty of the research lies in the systematization of business-pedagogical directions into an integrated structural-content model adapted to the conditions of general secondary and vocational education, and in the empirical confirmation of its effectiveness through a controlled pedagogical experiment. The practical significance of the study lies in the possibility of applying the proposed model, together with its diagnostic tools, in the design of entrepreneurship-related curricula, elective courses, and extracurricular programs aimed at forming entrepreneurial skills in students.

Recommendations

Based on the research findings, the following scientific and practical recommendations aimed at forming entrepreneurial skills in students and increasing the effectiveness of business-pedagogical work have been formulated:

- **Integrating the business-pedagogical model into curricula.** It is advisable to incorporate the five substantiated directions — cognitive-economic, practical-project, motivational-personal, communicative-social, and reflective-evaluative — into the content standards of entrepreneurship-related elective courses in general secondary and vocational education institutions, rather than treating entrepreneurship education as a purely cognitive, lecture-based subject.
- **Developing authentic practical formats.** Schools and colleges should expand the network of “learning firms,” student business clubs, and mini-enterprise projects that allow students to test business ideas under conditions approximating real economic activity, thereby operationalizing the practical-project direction of the model.
- **Strengthening mentorship and school-business partnerships.** Systematic cooperation with local entrepreneurs, regional business incubators, and youth entrepreneurship support agencies should be established, including their participation as mentors and jury members in student business-pitching sessions.
- **Providing targeted methodological training for teachers.** Teachers responsible for entrepreneurship-related content require specialized training in facilitation, project-based learning, and business-simulation techniques, since effective implementation of the proposed model requires a shift from transmissive to experiential pedagogical practice.
- **Introducing diagnostic monitoring tools.** Educational institutions should adopt structured diagnostic instruments — of the type applied in this study — to track the dynamics of entrepreneurial skills formation across the five business-pedagogical directions and to adjust pedagogical practice accordingly.
- **Expanding the research agenda.** Future research should examine the long-term effects of the proposed model on students’ post-graduation entrepreneurial behavior, the applicability of digital simulation and gamification tools within the practical-project direction, and the adaptation of the model to different age groups and regional socio-economic contexts.

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