

Keys to successful student entrepreneurship: teachers' professional qualities, pedagogical practices and institutional infrastructure

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Abstract

This article analyzes the professional traits, teaching methods, and institutional factors enabling university staff to effectively support technological entrepreneurship. A survey of 338 employees from over 70 Russian universities compared "successful" educators, whose students regularly launch ventures, with their less successful peers.

Results indicate that pedagogical success in entrepreneurship education is not tied to traditional academic credentials, but rather to practical experience in managing university or commercial projects (including corporate ventures), alongside strong project-management and mentorship skills. Successful university staff more often deals with education in social sciences and humanities. They actively employ group project work, involve external experts, and integrate digital tools and AI into student projects. A key factor is entrepreneurial ecosystem embedded into curricula.

The study concludes by advocating for a new "teacher-architect" model for university entrepreneurship education, combining the roles of project manager, mentor, and facilitator that links internal and external university environments.

Keywords: university staff; teachers; artificial intelligence, pedagogical practices; institutional factors; student entrepreneurship.

1. Introduction

Literature highlights that the effectiveness of entrepreneurial education hinges not merely on curriculum content, but critically on the quality of pedagogical support and facilitation (San-

Martín et al., 2021; Wraae et al., 2021). Yet, despite growing focus on educators' roles in this field, there remains a lack of clarity on the precise qualities, experience, and mindset a teacher requires to effectively guide the transformation of student ideas into viable ventures. Traditional academic credentials—advanced degrees, publication records, lecturing expertise—are proving increasingly inadequate as indicators of teaching effectiveness within hands-on, practice-driven learning environments. Instead, the emphasis is shifting toward the value of direct entrepreneurial and project management experience, the ability to foster interdisciplinary collaboration, to engage external stakeholders, and to leverage artificial intelligence as a tool for supporting student initiatives (Sorokin et al., 2026; Sitaridis & Kitsios, 2024). Nevertheless, a significant gap persists: there remains a scarcity of robust, evidence-based empirical research in this area.

It is crucial to recognize that an instructor's role cannot be assessed in isolation from the broader university environment when examining factors that support university students entrepreneurship initiatives. Research indicates that the success of entrepreneurial education is largely determined by a university's participation in a large-scale nation-wide initiatives, the availability of integrated support infrastructure—such as accelerators, startup studios, and the "startup-as-a-thesis" model — and established practices for engaging with the business community (Sorokin & Egorov, 2024; Clarysse et al., 2023).

The present study therefore aims to empirically identify the key individual characteristics, professional backgrounds, teaching practices, and institutional contexts of university faculty that correlate with their effectiveness in supporting entrepreneurship within Russian higher education institutions.

To achieve this objective, a comparative approach was employed, analyzing two distinct groups of university staff engaged in students' entrepreneurship initiatives: "successful" and "less successful" educators.

2. Literature review

The research on university entrepreneurship highlights that effectiveness is determined by the instructor's hands-on practical experience, particularly in managing real-world projects and engaging with the external business environment (San- Martín et al., 2021). Crucially, this is not about holding a formal status as a registered entrepreneur, but about possessing core entrepreneurial competencies (Morozova, 2024). These competencies define the entrepreneur as a specific type of project manager, characterized by the ability to formulate clear goals, manage a team, allocate resources effectively, and operate comfortably amid uncertainty. Mentorship has emerged as a cornerstone of effective pedagogical practice in this domain. Evidence suggests that traditional lectures and seminars are increasingly being supplanted by practice-oriented coaching, where the instructor's role shifts from being the primary source of

knowledge to that of a facilitator, coordinator, and mentor (Wraae et al., 2021). Digital technologies and artificial intelligence play an increasingly pivotal role in entrepreneurship education. Digital transformation not only reshapes the very substance of startups — through big data, generative AI, and automation—but also fundamentally alters the learning process itself, enabling everything from personalized student support to the scaling of mentorship (Sitaridis & Kitsios, 2024). However, it is widely noted that a systematic methodological framework for integrating AI into the curriculum is lacking. Consequently, related pedagogical practices remain largely fragmented and experimental in nature.

3. Methodology

This study employs a mixed-methods approach, integrating both quantitative and qualitative research techniques.

The quantitative component was conducted via a survey questionnaire distributed among academic and administrative staff at Russian universities. Data collection took place from mid-May to mid-June 2025, with the fieldwork officially concluding on June 19, 2025. The survey garnered responses from 338 participants. Of these, 241 provided answers regarding their perceived effectiveness in supporting university-based entrepreneurship, forming the core analytical sample for this research. The respondents—comprising faculty, researchers, and administrative personnel—represented more than 70 higher education institutions.

The questionnaire incorporated a mix of closed-ended and open-ended questions designed to assess several core parameters:

- Social-demographic and professional characteristics of respondents, including gender, age, position, academic degree, title, and self-assessment of proficiency in key competencies.
- The scope and nature of respondents' experience across scientific research, teaching, organizational roles, administration, general employment, and entrepreneurship.
- Pedagogical methods and educational results relevant to supporting university entrepreneurship. This covered practices personally employed by the respondents as well as those they observed among colleagues, such as project-based work, mentorship, business simulations, case studies, and similar approaches.
- The conditions and infrastructural elements supporting entrepreneurship at the university level, including participation in specific programs and the availability of dedicated resources.

A particular focus of the analysis was the identification of a "successful" subgroup—respondents whose work with students is accompanied by tangible cases of entrepreneurial activity, ranging from moderately to highly successful ventures.

The qualitative component of the study serves to deepen and verify the quantitative findings. It is based on semi-structured interviews conducted with 10 instructors. These individuals were selected for their consistently high track record in fostering student entrepreneurship, identified through the authors' professional networks and expert consultations with university leadership and development institutions actively engaged in supporting university entrepreneurship within the Russian higher education system.

4. Results

4.1. From Formal Credentials to Relevant Expertise: What Defines a "Successful" Educator in Supporting Student Entrepreneurship?

The profile of "successful" instructors reveals a notable departure from traditional academic markers. They are less likely to hold advanced academic degrees (52% vs. 62% hold a Candidate or Doctor of Sciences degree) and formal academic titles such as Associate or Full Professor (29.9% vs. 35.6%). No significant differences were observed concerning gender or age. The most striking distinction, however, lies in their disciplinary backgrounds. A clear disparity exists: instructors whose students demonstrate entrepreneurial activity are significantly more likely to specialize in the social sciences and humanities. This finding highlights the substantial, yet often underappreciated, potential of faculty from these fields to contribute effectively to student-led entrepreneurial initiatives.

4.2. The Instructor's Experience: Key to Effective University Entrepreneurship Support

While "successful" instructors are somewhat less involved in formal research roles (41.8% vs. 50.6% in the rest of the sample, a difference not statistically significant) and act as academic supervisors less frequently (25.4% vs. 34.5%), their scholarly output does not markedly differ from their peers. The proportion publishing academic articles is nearly identical (79.1% vs. 75.9%), as is the share with no publications or registered intellectual property (14.9% vs. 19.5%).

In stark contrast, successful instructors are far more likely to possess hands-on administrative and project management experience. Nearly twice as many report having served or currently serving as project leaders or managers compared to their colleagues in the control group (41.8% vs. 22.4%; $p < 0.01$). This distinction underscores a shift in the relevant expertise for fostering entrepreneurship: from primarily research-oriented activity to practical experience in steering initiatives and managing resources.

Over two-thirds of these successful instructors act as organizers of project-based learning, a proportion nearly double that of their less successful counterparts. Similarly, they are almost twice as likely to serve as project trackers, mentors, or tutors. The analysis also examined

instructors' personal experience in commercial or entrepreneurial ventures. The hypothesis that instructors whose students successfully launch startups would themselves more frequently possess such experience was broadly confirmed. Notably, however, a significant portion (43.3%) of "successful" instructors reported no formal commercial experience (compared to 53.4% in the control group). Nevertheless, they are more likely to be registered individual entrepreneurs (17.9% vs. 9.8%), heads of commercial companies (20.9% vs. 10.9%), or self-employed professionals.

4.3. Mentorship and Digital Tools as Keys to Effective Entrepreneurship Education

A comparison of the pedagogical practices employed by respondents reveals that instructors whose students have launched entrepreneurial ventures systematically and significantly more actively utilize a wide range of practice-oriented methods for developing entrepreneurial potential. The gap is particularly pronounced in practices that facilitate interaction with the external business environment. These instructors are far more likely to involve practicing entrepreneurs—both as guest speakers and as project mentors for student teams. They also organize student participation in educational-accelerator programs and tech/innovation-focused events much more frequently, indicating a concerted effort to build bridges between the university and the real-world business landscape. Successful instructors further demonstrate greater initiative in structuring the learning process and fostering peer interaction. They make more active use of business simulations, workshops, case studies based on real entrepreneurial experience, and peer-to-peer mentorship practices. Group project work forms the cornerstone of their approach, being utilized to a much greater extent than individual projects.

4.4. The University Environment as a Success Factor

Instructors whose students have realized entrepreneurial projects consistently and more frequently report the presence of a well-developed entrepreneurship support infrastructure at their universities. Their advantage is especially notable regarding key elements such as the option to defend a final thesis in the format of a startup. They also report their institution's participation in federal student entrepreneurship initiatives and the existence of in-house accelerators significantly more often, pointing to a strategic, top-down approach to creating conditions for launching and scaling student ideas.

Equally important is active engagement with the external business community. Successful instructors are far more likely to report organized joint events with regional companies, pitch sessions, and financial support programs such as grants and scholarships. This indicates that at their institutions, entrepreneurship is not merely an internal academic exercise but is actively integrated into the real economic landscape. Interestingly, more traditional infrastructure elements like business incubators or technology parks are reported with similar frequency

across both groups. This suggests that the mere presence of formal infrastructure does not, in itself, guarantee success.

4.5. Interview Findings

The interviews revealed a critical shift in the instructor's role. To effectively guide students in launching and developing startups, faculty are increasingly required to demonstrate the competencies of an "uncertainty manager" rather than solely those of a subject-matter expert or academic supervisor. This encompasses the ability to define clear goals, build and manage teams, oversee timelines and resources, and cultivate partnerships with external stakeholders.

The data further indicates that, first, while personal entrepreneurial experience increases the likelihood of pedagogical "success" in this context, it is not an absolute prerequisite. Second, not all business experience that an instructor possesses automatically translates into effectiveness in teaching entrepreneurship.

Furthermore, respondents emphasized that successfully fostering student entrepreneurship demands not a collection of isolated initiatives in university but a cohesive ecosystem. This ecosystem must seamlessly integrate internal university infrastructure with deep connections to the real business world. The key factor is not merely the existence of resources but their functionality and proactive utilization—for organizing competitions and pitch events, facilitating grant support, and systematically engaging external experts. Consequently, universities that host "successful" instructors are distinguished not by the sheer number of infrastructure elements but by the depth of their integration into the educational process, a clear orientation toward practical outcomes, and a genuine commitment to creating conditions where a student project can evolve into a viable business.

The qualitative investigation also yielded several unexpected insights. For instance, it documented the active use of artificial intelligence in successful cases of university entrepreneurship support, extending beyond its role as an auxiliary tool for market analysis or idea generation. AI was found to be an integral component in the very process of building the entrepreneurial project itself, signaling the emergence of a new paradigm of "digital entrepreneurial thinking."

Another key finding from the qualitative component is the discovered differentiation among "successful" instructors. This variation pertains to their experiential backgrounds, the pedagogical practices they implement, and their perceptions of the most crucial university infrastructure elements. For example, it is possible to tentatively categorize instructors based on whether they primarily leverage, on one hand, deep subject-matter expertise (e.g., in engineering or technology) or, on the other hand, social networks and organizational skills. Furthermore, a division exists regarding preferred pedagogical practices, linked to an orientation either toward "soft" social skills and in-person interactive environments, or toward

modern digital formats and the associated systems of algorithmic monitoring and data-driven support for student project work. These differing pedagogical approaches are, in turn, connected to distinct views on the importance of various infrastructural conditions at the university. These views range from the general assessment of institutional support for student projects and faculty, to the identification of specific infrastructure elements deemed critical for success—such as access to technology and physical resources versus platforms designed for interaction with the external business environment.

5. Conclusion

The findings of this study align with key tenets in the contemporary literature on university entrepreneurship. Specifically, they confirm that an instructor's effectiveness in this domain is determined less by formal academic credentials and more by practical, hands-on experience, competency in project management, and engagement in interdisciplinary collaboration (Sorokin et al., 2026; San-Martín et al., 2021). The research also reinforces the central role of mentorship as a pedagogical tool that surpasses traditional lectures and seminars in efficacy (Wraae et al., 2021), alongside the significant value of integrating external experts and digital technologies into the educational process (Sitaridis & Kitsios, 2024; Gorbacheva, 2025).

Simultaneously, the study has identified several novel aspects that appear to influence an instructor's success in supporting university entrepreneurship: 1) experience that is not necessarily commercial but is project-based, including within the context of supporting a university's research and educational activities; 2) a connection to the social sciences and humanities, such as teaching courses in these fields or being primarily engaged with students from these disciplines; 3) a substantially more active use of digital tools, particularly in organizing and facilitating student teamwork.

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