



Expanding Entrepreneurship Education Across Disciplines: Lifelong Learning at the University of Osijek

Faculty of Economics and Business in Osijek at
Josip Juraj Strossmayer University of Osijek, Croatia

Abstract

This case study updates the 2015 HEInnovate case study on entrepreneurship education at Josip Juraj Strossmayer University of Osijek, Croatia. It focuses on how the Faculty of Economics and Business in Osijek (EFOS) extends its long-standing entrepreneurship education expertise across disciplinary boundaries. Two lifelong learning initiatives are presented: the Entrepreneurship Academy, bringing together participants from different faculties, and Bioentrepreneurship, jointly developed by EFOS and the Department of Biology. The case highlights interdisciplinary learning, practitioner involvement and cross-university collaboration, as well as challenges related to capacity, participation and sustainable funding.



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Background and Rationale

About the University

[Josip Juraj Strossmayer University](#) in Osijek is a public comprehensive university in Croatia, established in 1975. The university operates across two university cities (Osijek and Pozega) and offers study programmes at undergraduate, graduate and doctoral levels through its 18 faculties and departments. In addition to its educational mission, the university plays a key role in regional research, innovation and knowledge transfer.

Internationalisation is a key aspect of the university's development. Much of its international cooperation is realised through its active membership in the European Universities Alliance [COLOURS](#), a consortium of nine European higher education institutions with strong regional connections. The Alliance provides a framework for joint education, research and innovation activities, including collaborative learning and research projects, summer and winter schools, mobility opportunities, and activities aimed at strengthening the entrepreneurial mindset of students, researchers and teaching staff.

Foundation year	1975
Programmes	216
Students (total)	16,000
Total staff	2,500
Int. agreements on students' exchanges	1150
European Universities Alliance	COLOURS

The Development of Entrepreneurship Education at the Faculty of Economics and Business in Osijek

Entrepreneurship education at Josip Juraj Strossmayer University of Osijek has been developed primarily through the [Faculty of Economics and Business in Osijek \(EFOS\)](#), which has played a leading role in introducing entrepreneurship as an academic field within Croatian higher education. The initiative emerged in the late 1990s in a challenging economic and social context marked by post-war recovery, high unemployment and limited support structures for entrepreneurship.

Led by Prof. Slavica Singer, EFOS introduced its first graduate programme in entrepreneurship in 2000, at a time when entrepreneurship was neither widely recognised within higher education nor commonly perceived as a viable career path. Supported by international academic partners and practitioners, the programme sought to equip students with entrepreneurial competences while fostering the next generation of researchers and educators in entrepreneurship education, thereby contributing to regional economic revitalisation.

Over the following years, entrepreneurship education expanded into a comprehensive educational pathway including undergraduate, graduate, postgraduate and doctoral programmes. The establishment of the [International Centre for Entrepreneurial Studies \(ICES\)](#) further strengthened programme development, international collaboration and academic capacity building. A distinctive feature of the Osijek approach was its strong emphasis on experiential learning, practitioner involvement and close links with the regional entrepreneurial ecosystem.

Beyond teaching, EFOS actively contributed to the development of entrepreneurship support structures in the region, helping to connect education, innovation and regional development. Over more than two decades, the faculty has developed a comprehensive entrepreneurship education ecosystem that combines degree programmes, experiential learning, international collaboration and strong regional engagement, reflected in its involvement in establishing and supporting organisations such as the NOA Savings and Credit Cooperative (now NOA Credit Union), the Centre for Entrepreneurship Osijek, the [BIOS Business Incubator](#) and [CEPOR – SMEs and Entrepreneurship Policy Center](#).

Developments over Time

Compared to the earlier HEInnovate case study published in [2015](#), which documented the establishment and gradual development of entrepreneurship education at the University of Osijek, the current case reflects a further stage in this development. Entrepreneurship education at EFOS has expanded beyond dedicated entrepreneurship degree programmes towards lifelong learning formats that make entrepreneurial competences accessible to participants from different academic disciplines.

This development is illustrated by the [Entrepreneurship Academy](#), which brings together participants from across the university and combines entrepreneurship education with practitioner involvement, mentoring and interdisciplinary teamwork. The [Bioentrepreneurship programme](#) represents a further development of this approach by applying entrepreneurship education to a specific disciplinary context through cooperation between EFOS and the Department of Biology.

The updated case study therefore focuses on how established expertise in entrepreneurship education is being used to **broaden access to entrepreneurial learning across disciplinary boundaries**, rather than revisiting in detail the development of the original entrepreneurship degree programmes.

Rationale for the Current Initiatives

Building on its long-standing experience in entrepreneurship education, EFOS has increasingly extended entrepreneurship education beyond students enrolled in economics and business programmes. The Entrepreneurship Academy was established **in response to a perceived gap in entrepreneurship education across the University of Osijek**: while

entrepreneurship-related education had traditionally been concentrated at EFOS, students from other disciplines had limited opportunities to develop entrepreneurial knowledge and competences. At the same time, entrepreneurial ideas and opportunities can emerge in any field of study. The Academy therefore provides a university-wide lifelong learning format through which participants from different faculties and disciplinary backgrounds can recognise opportunities, develop their own ideas and acquire knowledge relevant to developing and managing entrepreneurial ventures.

Entrepreneurship is understood in this context not only as a pathway to business creation, but as a **broader competence** that can be learned and applied across different academic and professional fields. Students from different disciplines may bring specialist knowledge and promising ideas but lack the entrepreneurial knowledge needed to translate them into viable initiatives or ventures. Bringing together **participants with different academic backgrounds** also creates **opportunities to approach problems from multiple perspectives** and develop experience in multidisciplinary teamwork.

Bioentrepreneurship represents a further development of this approach. The programme originated from an **initiative of the Department of Biology**, which identified a **lack of entrepreneurship education** and entrepreneurship-related content for its **students and alumni**. Jointly developed with EFOS, the programme combines biological expertise with EFOS's experience in entrepreneurship education and supports participants in exploring how scientific knowledge and ideas can be translated into practical applications, projects and potential entrepreneurial ventures.

Initiative Description

Entrepreneurship Academy at EFOS (Poduzetnička akademija)

Programme Overview

The Entrepreneurship Academy, developed by EFOS in 2021, is an **umbrella of programmes** in entrepreneurship such as: **Start Your Own Business, business planning, franchising** and other topics, and was developed by the Faculty of Economics and Business in Osijek (EFOS) to support the development of entrepreneurial competences among students and aspiring entrepreneurs. The programme is designed to help participants assess entrepreneurial opportunities, make informed decisions about launching a venture, and acquire the knowledge and skills required to manage and grow a business sustainably. Beyond venture creation, all programmes within the Entrepreneurship Academy aim to strengthen participants' ability to respond proactively to challenges and opportunities in a wide range of professional and personal contexts.

The programmes within the Entrepreneurship Academy **combine academic knowledge** with **practical experience**, with participants developing their own business ideas and

business plans, presenting them to a panel of experts and professors, and receiving feedback to refine their proposals. They build on EFOS's long-standing **expertise in entrepreneurship research, entrepreneurship education and entrepreneur mentoring**. Teaching is delivered by academics from the Faculty of Economics and Business, the Faculty of Law Osijek and the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, alongside experienced entrepreneurs and business professionals who contribute practical insights and real-world examples. In the current academic year, the Academy has involved 15 external experts, predominantly from the private sector in the Osijek region. They include active entrepreneurs, founders and owners of micro and small enterprises, business professionals and representatives of entrepreneurship-support institutions, most with more than five years of professional experience. Their expertise spans areas such as marketing, retail, franchising, information technology and artificial intelligence, business incubation and entrepreneurship support. Many are alumni of EFOS or other faculties at the University of Osijek.

Programme Structure and Learning Approach

The Entrepreneurship Academy adopts an interdisciplinary and practice-oriented approach across its lifelong learning offer. One of the programmes within the Academy, *Start Your Own Business*, illustrates this approach. The programme is delivered face-to-face and comprises **60 hours of training consisting of 12 mandatory and 9 elective modules**, which together cover the key stages of developing an entrepreneurial venture. The modular structure combines a common foundation in entrepreneurship with opportunities for participants to select topics that best match their interests, professional background and entrepreneurial ambitions. The programme is organised once per year and has so far been delivered to one cohort of 33 participants.

The mandatory modules focus on the core elements of entrepreneurial venture creation and development, including opportunity recognition, business model development, market analysis, marketing, financial planning, legal aspects of entrepreneurship, project management and business sustainability. In addition, participants develop essential soft skills, such as public speaking and effective communication, which support the successful presentation and implementation of entrepreneurial ideas. Elective modules allow participants to explore specialised topics in greater depth and strengthen competences relevant to their individual projects and career goals, including sales and negotiation, protecting intellectual property, crowdfunding, and other specialised areas that support venture creation and growth.

Learning activities are designed to connect theory with entrepreneurial practice and support participants in transforming ideas into viable and sustainable projects. Participants work individually and in teams on the development of entrepreneurial ideas, business models and implementation plans, while receiving guidance from academic mentors,

entrepreneurs and experienced business professionals. Upon successful completion of the programme, participants receive a certificate of completion of the lifelong learning programme and **5 ECTS credits**, providing formal recognition of the knowledge and competences acquired.

Participants and Delivery Model

The first edition delivered in the 2025/2026 academic year, the *Start Your Own Business* programme is open to undergraduate and graduate students of the University of Osijek and other higher-education institutions in the region. In line with its lifelong-learning orientation, it is also designed for a wider range of prospective participants, including young people, unemployed people, aspiring entrepreneurs and individuals seeking to acquire entrepreneurship knowledge or prepare to start their own business. The programme attracts participants from across Josip Juraj Strossmayer University of Osijek, **including students from arts and culture, food technology, agrobiotechnical sciences, engineering and information technology, mathematics, law and biology**. This diversity creates an interdisciplinary learning environment that encourages collaboration and knowledge exchange across disciplinary boundaries.

The programme is designed for approximately 25 participants and can accommodate up to 40. The first and, to date, only cohort comprised 33 participants: 32 students from the University of Osijek and one employee of the University's Technology Transfer Office.. Where selection is necessary, motivation and applicants' backgrounds are the main criteria. Cohort composition is also considered, with the aim of including participants from as many faculties as possible and avoiding an overrepresentation of EFOS students..

Beyond students, the Academy is open to university employees, alumni, employees of other institutions and other interested participants, including unemployed people and individuals considering a career change. This broad target group reflects the lifelong learning character of the Academy and makes entrepreneurship education accessible to people seeking to develop entrepreneurial competences at different stages of their careers.

Start Your Own Business is offered on a fee-paying basis and is designed to be accessible to students, aspiring entrepreneurs and individuals seeking to strengthen their entrepreneurial skills for professional development. Participation fees cover teaching activities, learning materials, mentoring support and assessment. The current participation fee is €597.25 (June 2026). In 2026, however, the programme was supported by Osijek-Baranja County, enabling all participating students to attend free of charge.

To accommodate participants who combine study with employment or other commitments, the programme is typically delivered between September and June, with classes scheduled in the afternoons and on weekends.

Bioentrepreneurship Programme

Programme Overview

The Bioentrepreneurship programme is an **interdisciplinary lifelong learning initiative** jointly developed by the Department of Biology and the Faculty of Economics and Business in Osijek (EFOS) at Josip Juraj Strossmayer University of Osijek. The programme was created to **bridge the gap between biological sciences, entrepreneurship and sustainable development**, enabling participants to transform scientific knowledge and ideas into innovative projects, products and entrepreneurial ventures.

The programme builds on the complementary expertise of both academic units. While the Department of Biology contributes scientific knowledge and domain-specific expertise, EFOS brings long-standing experience in entrepreneurship education, business development and innovation support. This interdisciplinary collaboration allows participants to combine scientific and technological knowledge with entrepreneurial thinking and business competences. The programme comprises 65 hours of face-to-face instruction and is delivered in small cohorts of up to 10 participants, enabling intensive interaction, individual support and collaborative learning. The programme does not award ECTS credits.

The programme is designed to support participants in developing entrepreneurial mindsets and innovation capabilities while addressing sustainability challenges and creating opportunities for economic and societal value creation. Rather than focusing solely on venture creation, it encourages participants to explore how scientific knowledge can be translated into practical applications and sustainable entrepreneurial solutions. Although the programme does not involve formal industry partners, practitioners from industry with expertise in bioentrepreneurship are regularly invited as guest speakers to share practical experiences and provide participants with insights into entrepreneurial opportunities and challenges in the life sciences sector.

Learning Approach

The programme combines **lectures**, interactive **workshops** and **project-based learning** activities. Participants work on the development and refinement of their own ideas and projects with the support of mentors and experts. They apply entrepreneurial methods to biological knowledge, exploring how scientific ideas can be developed into practical solutions, products, services or ventures.

Participants apply entrepreneurial methods directly to biological knowledge, exploring how scientific ideas can be developed into practical solutions, products, services or ventures.

Target Group and Accessibility

The programme is intended primarily for **specialists in biology and related sciences** (students and alumni) who wish to broaden their professional perspectives and explore entrepreneurial opportunities. It is particularly relevant for individuals interested in transforming scientific expertise into innovative projects or entrepreneurial initiatives.

Participants receive **mentoring support** throughout the development of their project ideas. A recent programme cycle was funded through education vouchers (provided by the Croatian Employment Office), allowing participants to attend free of charge. Participants who are not eligible for voucher funding may enrol on a fee-paying basis, with the current participation fee set at €900.

Impact

The *Start Your Own Business* programme has generated educational impacts particularly through its emphasis on multidisciplinary teamwork. Participants work in mixed teams, allowing them to approach challenges from different disciplinary perspectives while developing collaboration and problem-solving skills. According to the programme team, working in multidisciplinary groups has also influenced teaching practices by encouraging greater flexibility in teaching and creating valuable learning experiences for students, teachers and external contributors alike.

Beyond knowledge of the entrepreneurial process and venture creation, participants develop entrepreneurial competences that are applicable across disciplines and everyday life. The programme supports participants in understanding the various stages of entrepreneurial venture development while enabling them to prepare business plans based on their own ideas. Equally important is the development of an entrepreneurial mindset and the recognition that entrepreneurship is a competence that can be learned and strengthened, regardless of disciplinary background.

As the programme is still in its initial stages, it is too soon to assess its impact on venture creation or business success. Nevertheless, participants have already developed a range of promising business concepts. Examples of ideas recognised by the evaluation jury include a **student co-working space**, a **drone-based window-cleaning service**, **Hobby Hub**, and a **digital application supporting busy parents in coordinating family activities**.

The Bioentrepreneurship programme has also generated institutional impacts. At the institutional level, the programme has strengthened collaboration between the Department of Biology and the Faculty of Economics and Business in Osijek (EFOS). Developed as a joint initiative, the programme has brought together academic staff from both units in the design and delivery of entrepreneurship education. According to the programme team, the experience has reinforced the view that entrepreneurship is an

interdisciplinary competence relevant across academic fields and has the potential to encourage further interdisciplinary collaboration within the university.

While the Bioentrepreneurship programme itself was not designed to shape institutional strategy, it aligns with broader European policy priorities that increasingly recognise entrepreneurship as an important competence across higher education. Within this context, entrepreneurship is becoming more visible at the University of Osijek, with EFOS increasingly recognised as a university competence centre for entrepreneurship education.

Regarding regional engagement, the programme itself has limited formal collaboration with external organisations beyond the involvement of guest speakers from industry. However, the broader **Entrepreneurship Academy** initiative has established stronger links between academia, entrepreneurs, industry experts and Osijek-Baranja County, demonstrating the potential of lifelong learning programmes to strengthen cooperation between the university and regional stakeholders.

Challenges, Success Factors and Lessons Learned

Challenges

A central challenge in developing the programmes has been the time and personal commitment required from the academic staff involved. The development of new lifelong learning formats was not linked to specific incentives and therefore depended strongly on a small group of motivated and enthusiastic individuals. This dependence continues beyond programme design, as implementation, promotion and coordination also require sustained engagement from the programme team.

Attracting participants presents another challenge, particularly when participation involves a fee. In 2026, the Entrepreneurship Academy was offered free of charge to students, which contributed to strong demand. However, it remains uncertain whether students would be equally willing to participate if they had to cover the costs themselves, despite positive perceptions of the programme's value.

Recruitment has been more challenging for the Bioentrepreneurship programme, which has attracted fewer participants than the Entrepreneurship Academy. One possible explanation identified by the programme team is the limited previous exposure of students in biological sciences to entrepreneurship education. This may make it more difficult for potential participants to recognise entrepreneurship as relevant to their disciplinary and professional development.

Financial resources have not represented a major implementation barrier so far because programme costs have been covered through external support: Osijek-Baranja County supported the Entrepreneurship Academy, while Bioentrepreneurship received support

through the Croatian employment service. Nevertheless, reliance on external funding raises a longer-term sustainability challenge, particularly the need to develop a financing model that does not depend permanently on subsidies.

Success Factors

Several factors contribute to the success of the programmes. These include an attractive and applicable curriculum, competent trainers and mentors, opportunities for participants to work on their own entrepreneurial ideas, and a learning environment that encourages active participation. Particularly valuable elements are the direct involvement of entrepreneurs in the classroom, individual mentoring and work in interdisciplinary teams.

Collaboration with entrepreneurs and industry experts provides an important connection between education and practice. Many of the entrepreneurs involved are EFOS alumni and have maintained long-term relationships with the faculty. Their involvement from the initial stages of programme development brings practical experience and real-world examples into the learning process and allows participants to engage directly with people who have experience in developing and running businesses.

Institutional support is another enabling factor. EFOS leadership supported the development of the programmes and provided administrative assistance, while the development of such lifelong learning programmes forms part of the faculty's development strategy. In the case of Bioentrepreneurship, collaboration between EFOS and the Department of Biology is particularly important, combining entrepreneurship expertise with disciplinary knowledge and creating an interdisciplinary learning environment.

Lessons Learned

An important lesson from the programmes is the value of providing entrepreneurship education in an interdisciplinary setting. Bringing together participants from different faculties and disciplines exposes them to different perspectives and requires them to learn how to work effectively in multidisciplinary teams. The experience also reinforces the **understanding of entrepreneurship as a competence** that is relevant beyond economics and business and can be developed across academic disciplines.

The extracurricular nature of the programmes has helped attract **participants** who are particularly **motivated** and **willing to invest additional time in learning**. At the same time, the experience suggests that entrepreneurship education could become a more regular component of the university's educational offer, **for example through elective modules or courses available to students across the university**.

The experience also highlights two conditions for longer-term development. First, programmes should become less dependent on the motivation and commitment of a small number of individuals by creating **stronger institutional incentives and structures**

for staff involvement Second, **long-term financing needs to become less dependent on external subsidies**. Maintaining interdisciplinary participation, practitioner involvement and opportunities to work on participants' own ideas should remain central elements as the programmes develop further.

Sustainability, Transferability and Scalability

Sustainability

The current funding models differ between the two programmes. In 2026, participation in the Entrepreneurship Academy was free of charge for students. The Bioentrepreneurship programme has similarly benefited from external funding through the Croatian employment service, covering participation costs for eligible participants. Outside such funding arrangements, both programmes can be offered on a fee-paying basis.

While external support has enabled free participation, long-term sustainability **requires a financing model** that does not depend exclusively on subsidies. Lifelong learning forms part of EFOS's third mission activities and strategic priorities, providing an institutional basis for continued programme development. Sustainability also depends on sufficient staff capacity and reducing reliance on a small group of committed academics.

Transferability and Scalability

Several elements of the programmes can be transferred to other higher education institutions. These include their organisation as extracurricular lifelong learning activities, the interdisciplinary composition of participant groups, and the systematic involvement of entrepreneurs and industry experts in teaching and mentoring. The programmes demonstrate an approach through which entrepreneurship education can be offered to **participants from different disciplinary backgrounds** rather than being restricted to business and economics students.

Implementing a similar model elsewhere requires institutional support, committed academic staff and access to entrepreneurs and industry experts who can contribute practical experience. The specific content can be adapted to different disciplinary and institutional contexts.

The potential to scale the programme and reach more students depends partly on **broadening entrepreneurship education capacity across the university by involving academic staff from different faculties and departments**. This could enable the programme to expand while maintaining its interdisciplinary character. Understanding and support from both the university and the broader community are also important conditions for scaling the programme.

Outlook

The programme team aims to continue offering the programmes within the Entrepreneurship Academy on an annual basis to students across Josip Juraj Strossmayer University of Osijek. Continued support from Osijek-Baranja County would help maintain free access for students and facilitate the regular delivery of the programme.

An additional priority is to **broaden the group of university staff involved in entrepreneurship** education. A potential next step is the development of a train-the-trainers programme for academic staff, helping more educators across the university understand the relevance of entrepreneurship education and develop the capacity to integrate entrepreneurial competences into their teaching.

Experience with the two programmes also provides direction for the future development of the educational offer. The Entrepreneurship Academy has attracted greater student interest than the more specialised Bioentrepreneurship programme. Rather than developing separate entrepreneurship programmes for additional disciplines, specialised topics such as bioentrepreneurship could therefore potentially be integrated into the Entrepreneurship Academy as elective modules.

In the longer term, the programme could also be **opened to target groups beyond university students**, such as young people, unemployed people, women seeking to develop their career paths and entrepreneurial competences, retired people, migrants and other groups who could benefit from entrepreneurship education. In this way, the Entrepreneurship Academy has the potential to develop into a broader platform for entrepreneurship education in the region.

Contacts and Sources

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Links

1. [2015 Case Study: University of Osijek, Croatia: Developing entrepreneurship education from scratch over time](#)
2. [Bioentrepreneurship programme](#)
3. [BIOS Business Incubator](#)
4. [CEPOR – SMEs and Entrepreneurship Policy Center.](#)
5. [COLOURS](#)
6. [Entrepreneurship Academy](#)
7. [Faculty of Economics and Business in Osijek \(EFOS\)](#)
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