

Lessons learned from entrepreneurship education: Foreword to the special collection

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The aim of this special collection is to present a diverse selection of articles on entrepreneurship education, social enterprises, the learning processes of start-up entrepreneurs and the impact of entrepreneurship education on students' entrepreneurial competences. The papers in this collection focus specifically on the relationship between knowledge transfer and entrepreneurship.

1. ENTREPRENEURIAL UNIVERSITIES: LITERATURE REVIEW

The concept of university-centred entrepreneurial ecosystems (entrepreneurial universities) has a long history. Since the Bayh-Dole act was passed in the United States in 1980, the commercialisation of academic knowledge and innovations has become widespread globally (Etzkowitz et al. 2000), which required new approaches in university business models. The concept of the entrepreneurial university encourages universities to develop new business models that allow them to respond to internal and external challenges, to connect to the local/regional entrepreneurial ecosystems and, especially, to help university students and staff bring their innovations to the market (Audretsch – Belitski 2021).

There is a vast literature on the concept of the entrepreneurial university. In the following, we briefly outline the key milestones of the theories that led to the development of the latest three-ring entrepreneurial university model in increasingly knowledge-based societies. One of the first models was introduced by Clark (1998), and it is based on the imbalance of demand and supply. The demand for university programmes significantly exceeds institutional capacity to respond. Creating entrepreneurial universities may provide a systemic solution for this. The elements of this solution are a strengthened steering core, an expanded developmental periphery, a diversified funding base, a stimulated academic heartland, and an integrated entrepreneurial culture. Later, Etzkowitz et al. (2000) introduced the triple helix model (the interactions between academia, industry, and government), which suggested an imminent paradigm

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shift where universities would have a more prominent role in technological innovations. Most governments encouraged this transformation of scientific activity as an economic development strategy that reflects the changes in the relations between those creating knowledge and those using it. It seems that the 'entrepreneurial university' is a global phenomenon with an isomorphic development path, with different starting points and directions. In line with this, [Sporn \(2001\)](#) stated that the university is an integral part of its environment (ecosystem), and the goal is adaptation. In his view, to achieve this, universities must take action with regard to seven critical factors: environment, mission and goals, culture, structure, management, governance and leadership. [Kirby \(2005\)](#) listed a number of activities to overcome the challenges hindering entrepreneurial activities in a university-centred ecosystem. These included incorporation, implementation, communication, encouragement and support, recognition and reward, endorsement and organisational change. [Stam's \(2015\)](#) model defined two categories for the elements required for the development of an ecosystem. Regional attributes (from which the conditions forming system elements are generated) are defined as framework conditions in the model. Systemic and framework conditions together are the elements of the ecosystem, and these are responsible for entrepreneurial activity and aggregate value creation. The 'three-ring entrepreneurial university' is a new concept in the literature ([Audretsch – Belitski 2021](#)). In addition to teaching and research, the third type of activity of an entrepreneurial university is entrepreneurial activity, which allows for knowledge transformation between the university and the economy. One manifestation of this are businesses established by students. [Audretsch and Belitski \(2021\)](#) argue that the congruence between knowledge and entrepreneurial capital is a core component of a new business model.

These models are all attempts to find out what actions universities must take to boost the entrepreneurial ecosystem and to define their responsibilities in the process. The goal is the same, to commercialise academic knowledge and innovations, but different frameworks are recommended in the different approaches.

What all models share is the great emphasis on incremental response to environmental challenges and changes. All models emphasise that creating university-centred ecosystems/entrepreneurial universities is a long process, lasting several years, where adaptability and flexibility are key. The models also highlight that a change in the organisational structure at universities is inevitable, and for that the support of the leadership is necessary. University courses must shift their focus from theory to practice, and the development of entrepreneurial attitudes must be introduced as a new approach. For this, a culture with an appropriate entrepreneurial approach must be created and talents must be supported and promoted.

Entrepreneurship is an important and integral part of the modern market economy, without which a country's economy cannot exist and grow. In developed economies, entrepreneurs not only play an important economic role, but they are also a key component of political and social stability. Today, entrepreneurship education for young people in the European Union is more relevant than ever. The Entrepreneurship 2020 Action Plan identifies four areas for immediate intervention to foster entrepreneurship, one of which is 'improving entrepreneurship education and training to support growth and entrepreneurship', and the other is 'promoting an entrepreneurial culture in Europe and training the next generation of entrepreneurs'. In line with this, entrepreneurship education is a rapidly growing area of research that emphasises the role of educational institutions in developing entrepreneurial skills and attitudes.



2. THE DANUBE CUP CONFERENCE

The Danube Cup network is committed to quality in entrepreneurship and start-up education, to facilitating knowledge sharing among instructors and researchers and to promoting international cooperation. The Danube Cup Conference 2022 was organised by *Corvinus University of Budapest* and *the Faculty of Economic and Social Sciences of Budapest University of Technology and Economics*. Besides the two organisers, there were five partner universities. Each university – organisers and partners – nominated one of their top scientists to serve on the scientific committee:

1. Elisabeth Berger chairs the Institute for Entrepreneurship at Johannes Kepler University Linz, Austria. She studies the perception and social evaluation of entrepreneurship. She has published in a number of entrepreneurship and management journals. In one of her two most recent publications on the subject, [Kuckertz et al. \(2020\)](#), she presented the difficulties start-ups face in times of crisis based on interviews from the entrepreneurial ecosystem in the early stages of the crisis and provided an analysis and evaluation of initial policy measures. In another study, [Berger and Kuckertz \(2016\)](#) investigated female entrepreneurship in start-up ecosystems worldwide. She is co-editor of the *International Journal of Entrepreneurial Behaviour & Research*, and serves on the editorial board of the *Journal of Business Research*.
2. Mladen Cudanov is a Full Professor at the University of Belgrade, Faculty of Organizational Sciences, Serbia. He has published more than 140 papers in research journals and conference proceedings. One of his most interesting publications related to the topic of this special collection is [Ivancevic et al. \(2020\)](#), where he investigated heavy work investment and burnout in a survey involving 1,640 students of the University of Belgrade.
3. Pál Danyi is an associate professor at the Faculty of Economic and Social Sciences of the Budapest University of Technology and Economics. His research focuses on artificial intelligence. He has founded several start-ups working in pricing-based areas and is also an expert advisor. [Danyi \(2019\)](#) investigated the expected effects of the application of Artificial Intelligence in pricing.
4. Rudolf Dömötör is Managing Director of the WU Vienna Entrepreneurship Center and of the Entrepreneurship Center Network (ECN). His joint research with [Leitner et al. \(2020\)](#) uses an annual online survey which provides information on the Austrian start-up ecosystem and its prospects on a regular basis.
5. Sean Patrick Sassmannshausen is Professor for Business Administration and Entrepreneurship and Head of the Startup Center at OTH Regensburg, Germany. He investigates entrepreneurship and manages entrepreneurship projects and more. He has published several studies related to the topic of this special collection, an outstanding paper is [Sassmannshausen and Volkmann \(2018\)](#), which provided an overview of social entrepreneurship and described how it can be established in the academic world.
6. Kai von Lewinski is a Professor and has held the Chair for Public Law, Media and Information Law at the Faculty of Law at the University of Passau, Bavaria, Germany. He founded his own law firm in 2002 and was involved in his brother's start-up marketing venture. He gives legal advice to enterprises on a regular basis.
7. János Vecsenyi has taught at the Corvinus University of Budapest since 1978 and at the Budapest University of Technology and Economics since 2011. He has published several books on entrepreneurship-related topics, the latest is *Smart Entrepreneurship - From Idea to Market Entry* ([Vecsenyi 2017](#)).



“The conference aims to highlight trends in entrepreneurship/startup education, to share experience and knowledge and to identify applied teaching/learning techniques which can be implemented at other Higher Education institutions. An international forum is aimed to be developed where participants can attend sessions held by entrepreneurship educators and practitioners from the Danube region. There are many academic professionals working in many different disciplines and faculty areas. The conference is therefore an essential means of assembling academic professionals and others to share ideas in order to improve the student learning experience” (Jáki – Huszák 2022).

The Danube Cup Conference offered a wide range of interactive sessions, presentations and lectures led by academics. Presenters came from Austria, Germany, Poland, Serbia, Moldova, the Netherlands and the United Kingdom. Five sections were organised: the ‘Start-up/Entrepreneurship Research’ section was led by Elisabeth Berger. In this section, the papers compared higher education programmes or analysed the role of government-backed venture capital in funding growth and innovation at start-ups. The ‘Entrepreneurship from a broader perspective’ section was led by Kai von Lewinski, here the audience learned the meaning of ‘Managerial Economics’ for start-uppers, two emerging research fields, ‘Intercultural Entrepreneurship’ and ‘Ethics, Globalisation and Entrepreneurship’ were introduced, and the current entrepreneurship challenges of university students were presented. The ‘Best practice sharing’ section was led by Patrick Sassmanshausen, and the ‘Entrepreneur Education in Practice’ section was led by Nedeljko Milosavljevic, a serial entrepreneur and director of the Centre for Technology Transfer at the University of Belgrade. In both sections, various teaching methods were presented. The ‘Ecosystem’ section was led by Jakob Pohlisch from the Institute for Entrepreneurship and Innovation at the Vienna University of Economics and Business, and it focused on ‘ecosystem’ support activities that universities can provide for future entrepreneurs.

There were two consecutive workshops. One was hosted by Health Venture Lab’s REACTOR MedTech Accelerator, which is powered by GE Healthcare and nurtures start-ups innovating in the field of Life Sciences and Digital Health from all over Europe to reach the next stage of development. The other workshop was held by Startup Business Launchpad, which ran the ‘Startup V.I.P’ programme series earlier in 2022, presenting an online focus group software solution developed by the founders.

Participants had the opportunity to meet the editors of the conference’s supporting journals, Society of Economy in Central and Eastern Europe, Information Society Info and Review of Economic Theory and Policy. They could also ask questions from the co-editor of the International Journal of Entrepreneurial Behaviour & Research. Thanks to that opportunity, almost half of the participants found a way to publish their papers or move forward with their publication.

The war in Ukraine erupted in February 2022 and at the time of the conference, all of Europe was concerned about the war’s developments. Neighbouring countries have tried to help refugees from the war zone in many ways and support them in their difficult temporary situation. Ukrainian colleagues from Kyiv National Economic University and Izmail State University also attended the conference, and participants discussed how the Danube Cup network can support them. As a result of the support initiative, Ismail State University has joined the Danube Cup network as an observer.

One of the unique elements of the conference was that a former student of Corvinus University of Budapest, a successful start-up entrepreneur who is now CEO of her own company, shared what she, based on her university studies and experience, considered useful and what she would suggest adding to the curriculum to prepare students to start a successful



business. Kati Orbán launched her first start-up as a university student. It grew into a multi-national conglomerate with a series of exciting turn-arounds. When she moved to Switzerland, she co-founded her second start-up, GoMomGo. The company is an international online fitness community offering online exercise classes for mothers.

The conference concluded with a roundtable discussion, with Kati Orbán representing scaleups, Elisabeth Berger representing academic faculties, Patrick Sassmanshausen representing innovation centres and Pál Danyi representing the Danube Cup competition. As a result of the roundtable discussion, the goals of the Danube Cup for the coming year were set and new areas for cooperation were identified.

3. PURPOSE OF THE SPECIAL COLLECTION

One of the main focuses of the Danube Cup Conference was entrepreneurship education at different levels of education. In this special collection dedicated to the conference, four outstanding research papers on start-up education are published. Hungarian entrepreneurship education is examined from several perspectives, and an insight is provided into the Moldovan entrepreneurial system. The papers were conducted through questionnaires or in-depth interviews with professors and students. The description of a social enterprise (SE) that has been in operation for more than 10 years is particularly exciting, and it points out, similarly to the Moldovan study, that entrepreneurship education has a place outside university education, even in secondary school. Further publications can be found in the other two special issues of the conference (Huszák – Jáki 2022a, 2022b).

4. CONTRIBUTIONS TO THE SPECIAL COLLECTION

Jáki et al. (2023) explore the prominent educational and technological trends of leading Hungarian business development programmes. The research compares the applied entrepreneurial educational methods and practices in the leading Hungarian business development MSc programmes, analysing the effects of COVID-19, Industry 4.0 and digitisation, as well as the types of extracurricular activities offered by the universities to foster entrepreneurship. One of the outstanding features of the research is that it evaluates the three largest enterprise development programmes in Hungary, based on the combined views of academics and students. According to the study, students can learn from practitioners solving real business problems (case studies, real-life data). Due to the COVID-19 pandemic and Industry 4.0, instead of printed documents the students are required to submit their work in a digital format, e-learning platforms help their studies, and the use of online tests is becoming more widespread. Extracurricular opportunities such as mentoring and workshops help students towards entrepreneurial success.

Vinogradova et al. (2023) investigate the impact of entrepreneurship education on the development of students' entrepreneurial competences and career plans in the Republic of Moldova. Young citizens, mainly university students and students of vocational secondary schools, completed the questionnaires. The main research questions were the following: how students evaluate the usefulness of the entrepreneurial discipline embedded in education, what impact entrepreneurship education has on entrepreneurial competencies and how entrepreneurial education and competencies influence the students' intention to start their own



businesses. Based on their research, the authors conclude that young Moldovans at different levels of education found entrepreneurial studies a very useful and interesting element of their education. Most of the Moldovan students confirmed the positive effect of education on their entrepreneurial competences. Finally, they confirmed the positive relationship between perceived entrepreneurial competencies and entrepreneurial intentions.

Gosztanyi (2023) examines a very specific issue, not only from a research point of view, but also as a development area: the development of social enterprises. He discusses in detail the definition of social enterprises (SEs), their specific issues, and their evaluation methodology. This is a topical issue nowadays, since the aim of these companies is to create social value, social profit or democratic solidarity, which is increasingly relevant in the context of COVID-19 and the Russian invasion of Ukraine. Gosztanyi presents a case study of a social enterprise established in a small, economically disadvantaged village in Hungary. It is particularly interesting that a university course has been included in the process. In an environment that lacks resources and services, low-income families can use SEs as a way out of their often-hopeless situation. The study points out that the SEs' development process serves as an opportunity for low-income people to earn higher income, and as a result it reduces poverty, and works as a regional development tool.

Beke et al. (2023) explore the learning process of start-up entrepreneurs. The paper begins with a comprehensive overview of the theories of the learning organisation. Then it focuses on highly knowledge-intensive technology start-ups to investigate different organisational learning patterns. Based on the theory, five pillars of the 'start-up learning' framework were defined to investigate empirically. Their research question was how can the skills and abilities needed by adaptive and successful entrepreneurs be developed? For the study, the authors conducted five qualitative, semi-structured in-depth interviews with six professors who are participants in the start-up ecosystem at the university. The interviews were used to identify trends, strengths and gaps in management education programmes. The main finding is that the management education programmes provide students with strong benchmarking skills, but the culture and experience of failure and so the ability to learn from their own failures is missing. The key message of the study is that the programme should focus on "teaching with entrepreneurship" instead of "teaching about entrepreneurship".

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