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New Perspectives on Entrepreneurship Education: Introduction

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Entrepreneurship education (EE) plays an essential role in developing the competencies of modern knowledge-based societies and economies, the so-called 21st-century competencies (OECD 2018). This is evidenced by the inclusion of EE in national policy documents and daily regional and sectoral development work (e.g., O'Connor 2013; Ministry of Education 2009; Laukkanen 2000), indicating the need to develop competencies at the individual level in the education system. Setting such goals requires the education system to answer the following questions in a broader sense: At what age and by which methods should competencies be developed? Which content competencies should be focused on (general and further education)? At the same time, EE must respond to society's challenges, such as climate change, technological development, migration and COVID-19, among others. The Special Issue 'New Perspectives on Entrepreneurship Education', although aimed at finding solutions to the mentioned challenges through EE, cannot provide all the answers. It is, therefore, important to extend the earlier discussion to the modern times through a collective scholarly effort. This means approaching traditional and new problems in a new way. The guest editors will feel their mission is accomplished if they manage to compile the latest developments in the field that are relevant the tasks set for EE.

This editor's introduction provides a brief overview of the field and articles included in the Special Issue. Then, secondly, the Special Issue's contribution to EE research and possible transfers to practice are discussed. Some EE development opportunities are highlighted.

The task of EE in society is seen as raising age-appropriate entrepreneurial competences in students. One such generic entrepreneurial competence model, EntreComp (Bacigalupo et al. 2016), was developed at the European Commission's initiative. EntreComp includes three domains: behavioral, attitudinal, and skill-related competencies. It has now become the concept of several EE projects outside Europe as well (e.g., Silveyra et al. 2021). EntreComp is also the subject of discussion in the articles included in this Special Issue of the journal.

This Special Issue largely presents the publications of EE researchers and practitioners from Estonian universities. This Special Issue is a summary of their years of work, in which they raise a variety of issues with a significantly broader meaning. Many of these issues lack evidence-based solutions in the field's publications.

The articles that comprise the Special Issue are arranged in a thematic order from generic to specific. At the same time, the most essential topics are reflected in different aspects in several different articles. Therefore, we begin the Editors' Review in order of major topics based on these five articles. This is followed by a short discussion of the relevant topics.

The introductory viewpoint paper 'Entrepreneurial Education Challenges for Green Transformation' by Mets, Holbrook and Läänelaid opens up EE as a tool to develop an active, informed, responsible and environmentally sustainability-oriented citizen. The



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conceptual model of dynamic changes in the framework for ‘green transformation competencies’, presented by the authors, explains the main factors of EE challenges and the necessary developments. The common element of EntreComp entrepreneurial and green competencies is pointed out, and the development tasks of entrepreneurial green transformation are proposed. Together with the raised EE topics, the article’s focus becomes broader than only entrepreneurial green transformation.

The following paper by the group of authors Venesaar, Malleus, Arro and Toding proposes a Comprehensive Entrepreneurship Competence Model (CECM) that challenges the EntreComp model in the article ‘Entrepreneurship Competence Model for Supporting Learners Development at All Educational Levels’. Although the CECM working group worked independently from the creators of EntreComp, both models share similar features. Compared to the EntreComp model, the working group led by Venesaar complements the three areas sharing a similar pattern with a fourth—creative thinking and related competencies. The model’s psychological and cognitive–social aspects could be considered a strength of the CECM. Although the approach to the model in this article is conceptual, it is known that extensive empirical studies have been conducted at the initiative of the working group (Venesaar et al. 2018).

The third article of the Special Issue by Mets, Raudsaar, Vahejõe, Kaseorg and Vettik-Leemet, ‘Putting Entrepreneurial Process Competence into the Focus in Entrepreneurship Education: Experience from Estonian Universities’ is an empirical test of the model presented in the second article above, and it also offers an analysis and discussion of the current approach to EE. Despite the apparent Estonian focus in the title, the problems in EE are broader. Answers are sought regarding the content and focus of entrepreneurship teaching at the university level and how the output should be measured. It is considered that the so-called ‘broad approach’ to EE is not the most relevant in real higher education settings. Focusing on the fundamentals of entrepreneurship as a discipline—the entrepreneurial process and what is related to it—also enables the development of transferable competencies.

The fourth article by Trabskaia and Mets, ‘Perceptual Fluctuations within the Entrepreneurial Journey: Experience from Process-Based Entrepreneurship Training’, is partly a continuation of the topic above by mapping the entrepreneurial and learning process at the same time. The empirical article demonstrates the subjective and dynamic nature of the opportunity and the idea, the fundamental elements of entrepreneurship, within the entrepreneurial process from the perspective of a student-entrepreneur. The study points to the asynchrony of affective processes in experiential learning of entrepreneurship. Fluctuations manifest in perception as a result of entrepreneur artefacts that arise/are created during the entrepreneurial process or journey. These observations also enrich our understanding of affection in EE and the entrepreneurial process.

The fifth and last article of the Special Issue by Dana, Tajpour, Salamzadeh, Hosseini and Zolfaghari, ‘The Impact of Entrepreneurship Education on Technology-Based Enterprises Development: The Mediating Role of Motivation’, is about the impact of EE on technology entrepreneurship. A quantitative survey of technology entrepreneurs showed the importance of motivation in developing entrepreneurial competencies through entrepreneurial training. Based on these results, recommendations are given to science parks’ managers and policymakers for the design of EE programs that provide training before and after founding businesses.

In summary of the topics addressed in this Special Issue, we note that the conceptualization of EE outputs—competencies—is still relevant. The situation manifests both in the current green transformation and pandemic context but also in the context of substantive cognitive–psychological challenges. The first and second articles serve different purposes in their identification and presentation of solutions. The first article tries to open the multi-disciplinary aspects of EE in the system of 21st-century skills. The second article delves into the outputs of EE at the personal level, showing that entrepreneurial competence models are far from exhausting the possibilities of different pedagogical disciplines. Moreover, the

third article shows that the competence of the entrepreneurial (startup) process is practically absent in the existing EE output models.

We want to emphasize the need in EE to pay attention to its derivation primarily from entrepreneurship, which should shape the content of education, especially for young adults (students). This has not always been the case in EE (research). EE has developed into a relatively independent field of research (e.g., [Sirelkhatim and Gangi 2015](#); [Welsh et al. 2016](#)), not to say a discipline. Connections with the fundamental process nature of entrepreneurship tend to remain in the background in so-called generic competence models or are not considered at all. At this point, the guest editors see room for improvement in harmonizing the approaches to entrepreneurship and EE.

On the one hand, research on the entrepreneurial process as a basic concept of the entrepreneurship discipline, especially in dynamics, continues to be underdeveloped ([Davidsson and Gruenhagen 2020](#); [Mets 2022](#)). Most research uses the static variables-based approaches rather than a dynamic process approach. Partly due to this, but, on the other hand, also due to the prevalence of the so-called 'broad entrepreneurship' (essentially enterprise or entrepreneurial behavior) concept in many EE studies, the entrepreneurial process is practically not represented in the models of the necessary competencies. A possible solution is in creating a better understanding and measuring the dynamics of the entrepreneurial process, which the authors elaborate upon in the third and fourth articles. In the first case, the selection of the optimal method of formulating questionnaire statements is essential. In the second case, the issue is the frequency of measurements. These will also be methodological challenges to be addressed by researchers in the future studies.

As practitioners, we do not think the entrepreneurial process is absent in EE. It is present. However, in studies of entrepreneurship pedagogy, the learning process is primarily observed (e.g., [Hägg and Gabrielsson 2019](#)), while in entrepreneurship studies, the process of entrepreneurial learning is observed (e.g., [Cope 2005](#); [Politis 2005](#); [Dimov 2007](#)). An attempt to combine these two approaches is also made in the third and fourth articles of this Special Issue.

Finally, the impact of EE on different areas of entrepreneurship, as discussed in the fifth article on technology entrepreneurship, awaits further analysis. It is not without reason that the researchers question the specifics of training in search for new mechanisms to achieve a greater impact of entrepreneurship education.

In conclusion, we can state that this Special Issue managed to cover only a modest part of EE trends and challenges ahead. We hope to give another impetus to research and implement the connections and sources of EE and entrepreneurship.

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