ANALYSIS OF THE ORIENTATION OF STUDY PROGRAMS TOWARDS THE LABOUR MARKET THROUGH THE PRISM OF ENTREPRENEURIAL COMPETENCIES: ANALYSIS OF STUDY PROGRAMS AT THE UNIVERSITY OF OSIJEK

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UDK: 378.4:[37.014.5:339.9]
(497.5-Osijek)=111
Izvorni znanstveni rad
Primljen: 5. 11. 2024.
Prihvaćen: 12. 11. 2025.

Abstract

This study aims to elaborate, compare and revise the characteristics, trends and connections between the orientation of certain study programs on the labour market demands through the development of entrepreneurship by using theoretical and comparative approach. Accordingly, a qualitative methodological approach was used, that is, data collection through document analysis as well as the trend analysis method.
The results indicate the presence and/or absence of a large number of outcomes related to entrepreneurial competencies and the potential relevance of individual study programmes. Special attention is focused on the analysis of the learning outcomes visible in the syllabi of eighteen undergraduate, graduate and integrated study programs conducted at the Josip Juraj Strossmayer University of Osijek. There is a difference in study programmes designed in the last five years, while other study programmes which have been delivered at the University of Osijek for many years retain the tradition, but also the need to change for new generations. The trend analysis highlights the ever-increasing relevance and, therefore, the orientation on the labour

Keywords:
entrepreneurial competencies, labour market, learning outcomes, study programmes

market of those study programmes that were created in the last five to seven years. As a result, one can conclude that students outside the faculties of economics do not acquire enough competencies for entrepreneurship. In addition to revising study programmes, it is necessary to offer new elective courses at different levels of education, but also free elective courses that would give students a wider knowledge and the possibility of acquiring entrepreneurial competencies during their studies.

All of the above is a response to the challenges that the young face when completing their higher education. One of the indicators of the necessity of introducing changes is the growing number of teaching staff who decide to change their profession upon completing their studies or who enter the private sector (OECD, 2008; 2016; 2019). In this sense, the development of entrepreneurial competencies strengthens competitiveness on the market but also contributes to the sense of a complete professional competence.

1. INTRODUCTION

The academic community has long been aware of the need to adapt to the needs of the labour market. Both in the direction of increasing the number of courses that will increasingly direct students towards practice, as well as towards global trends and innovations of a particular profession. Most important advantage of universities with many students is their practically-oriented education. One of the key features of practice-oriented education is connection with private sector companies (Geijsel, 2010; Stanić, Bolfek & Tršinski, 2016).

Labour-market orientation in higher education refers to the strategic and operational efforts of institutions to align academic programs with the evolving needs of the workforce and the broader economy. It encompasses the design of curricula that equip students not only with theoretical knowledge but also with the practical skills and competencies demanded by employers. This approach involves ongoing assessment of educational outcomes, including graduate employability, the quality of job alignment, and the capacity of graduates to generate value in professional and societal contexts. A *labour-market-oriented approach* relies on proactive collaboration between universities, industry partners, and governmental entities to ensure that educational offerings remain relevant to current and future workforce requirements. It emphasizes flexible curricula and experiential learning opportunities, such as internships, project-based learning, and collaborative initiatives, which develop competencies directly applicable in professional practice.

Furthermore, effective *labour-market orientation* requires comprehensive institutional governance, including strategic policies, financial instruments, and coordination mechanisms to maintain the relevance and quality of education. Modern interpretations also stress ethical and sustainable practices, recognizing that responsiveness to labour market demands must be balanced with the preservation of academic integrity and the social mission of education. Properly implemented, this orientation enhances graduate employability, fosters the development of entrepreneurial and professional skills, and contributes to broader economic and societal advancement.

In recent years, there has been a marked increase in interest in higher education programs designed to *systematically develop entrepreneurial competences*. Research analyses demonstrate a sustained growth in scientific publications within the field of entrepreneurship education, highlighting emerging research trends and expanding conceptual domains (Rachmatilah, 2024; Cervantes Muñoz, Devece,

& Peris Ortiz, 2024). Concurrently, universities are strengthening institutional support frameworks, as the perception of institutional encouragement has been shown to significantly enhance students' entrepreneurial intentions, a relationship consistently confirmed by empirical studies conducted across Europe and globally (Galvão, Marques, Mendes, & Azevedo, 2024).

The position of entrepreneurship education (further in the text EE) within higher education has undergone a notable conceptual reconfiguration, both in Croatia and internationally. Rather than functioning as a domain-specific component of business curricula, EE is increasingly recognised as a transversal educational priority that contributes directly to the alignment of university programs with complex labour-market dynamics. Empirical studies conducted in the Croatian context indicate that universities are gradually expanding the range of pedagogical and institutional mechanisms through which entrepreneurial competences are developed, including formal instruction, structured extracurricular opportunities, innovation-oriented events, and the activities of university incubators. Despite these developments, the extent and coherence of implementation continue to vary across institutions, suggesting uneven processes of curricular integration and resource mobilisation (Bujan Katanec, Pisker, & Magdalenić, 2024). Programs focused on practical challenges such as mentorship initiatives, engagement with role models, and project-based activities, have demonstrated particular effectiveness in fostering students' entrepreneurial orientation. Likewise, structured courses and participation in entrepreneurial competitions play an important role in strengthening students' self-perception of entrepreneurial competences, which in turn positively correlates with their intention to launch their own ventures (Burhanudin, Sojanah, & Utama, 2025).

One of the most significant contemporary trends and one that carries substantial theoretical implications is the increasing diffusion of entrepreneurial learning beyond the confines of business education. Study programs in fields such as tourism, engineering, the arts and various social science disciplines have begun to incorporate EE principles with growing intentionality. These programs frequently rely on experiential formats, including project-based learning, service-learning, collaborative community-partner engagements, and cross-disciplinary approaches designed to support the development of core entrepreneurial capabilities such as opportunity identification, creative problem-solving, cooperative work practices and the ability to navigate uncertainty (Štefanić, Šimunović, Štefanić, & Campbell, 2017). The expansion of EE into these disciplinary spaces illustrates

an ongoing shift in understanding entrepreneurial competence as a generalist and adaptable skill set rather than a specialised business-oriented attribute.

2. LITERATURE REVIEW

With the advent of globalization, there is also an increase in competition among universities, so accordingly, educational strategists should fight for their stable position on the so-called educational market. Also, working at a certain faculty should be one of the most desirable jobs, but also a reflection of quality and prestige. One of the most important aspects in preserving the university's position on the domestic and international market is quality education.

2. 1. Development of students' entrepreneurial competences

According to the Organisation for Economic Co-operation and Development [OECD] (2005), competencies are a multidimensional concept that consist of personal components (knowledge, cognitive abilities, motivation, attitude, and emotions), social components (context knowledge), and conducts (activities, behaviours, initiative) used in specific situations or contexts. Earlier research emphasized the necessity of implementing entrepreneurial content and acquiring entrepreneurial practical experience through innovating university courses (Gao, Zhuang, & Chang, 2021). Investing in additional outcomes that would be aimed at the entrepreneurial competencies of students at the university level can also be understood as an investment in the future. The authors point out that students who attend such study programs could be entrepreneurial investors because in the future they can "trade" their knowledge by offering themselves to more places that are offered on the labour market (Orfalea, Helfert, Lowe & Zatkowsky, 2008; Chaker, & Jarraya, 2021).

Entrepreneurial competence, in addition to stimulating the growth of new companies, influences the development of an entrepreneurial way of thinking and more effective use of the creative potential of existing knowledge and skills. For this reason, the interest in educational programs that encourage and develop entrepreneurial competence is increasing (Sedlan König, 2013).

Recent research refers to the need for a more open attitude of society towards entrepreneurship and the need for a multidisciplinary approach in the form of

the integration of entrepreneurship with different scientific fields. In the holistic development of entrepreneurial competencies, the quality of education plays the most significant role primarily in shaping broad entrepreneurial competencies, strengthening entrepreneurial skills, but also shaping preferences towards entrepreneurship (Lim, 2021).

Entrepreneurial competence is not limited to teaching subjects related to company formation. According to the *Council of Europe's* definition (2014), this competence more broadly refers to the education of entrepreneurial traits, attitudes, and skills — that is, the personal qualities that make an individual entrepreneurial. In a narrower sense, it includes training for successfully starting and managing a business, i.e., concrete entrepreneurial knowledge. Identified entrepreneurial traits include: initiative, proactivity, independence, motivation, decisiveness, leadership, creativity, and willingness to take risks. Skills include general management abilities (such as planning, organization, task delegation, and analysis), teamwork, self-assessment, communication, reporting, evaluation, documentation, project creation and implementation, and risk assessment and management where justified. Entrepreneurial attitudes encompass a readiness to take initiative, a positive outlook on change and innovation, and the ability to recognize opportunities for entrepreneurial expression — whether at work, in the community, or in private life. Finally, relevant knowledge includes general economic literacy and an understanding of how the market economy functions, as well as awareness of available opportunities that align with one's personal and professional goals. In the *contemporary educational context*, it is defined as a competence that includes knowledge, skills, attitudes and behavioural capacity aimed at creating (economic, social or cultural) value. The above definitions of entrepreneurial competence were the criteria against which course syllabi in certain study programs were analysed.

The study addresses an important and timely topic include the adaptation of higher education to labour market demands, particularly through the development of entrepreneurial competences within non-business study programs.

2. 2. Modernization of study programs

It is worth to note that quality education plays a crucial role in preserving the position of universities at domestic and international markets. At the same time, it is significantly important to consider requirements of major stakeholders (em-

ployers, students) in developing content of educational programmes. The challenges of information and technology age have triggered complete modernization of university's educational programs (Manarbek et al., 2019). Modernization of study programs at universities is increasingly being achieved through the systematic introduction of content, learning outcomes and teaching activities that explicitly encourage the development of entrepreneurial competences, as contemporary literature shows that such curricular interventions improve employability and students' ability to create value, and facilitate employability.

Competency frameworks like EntreComp serve as an operational model for redesigning existing courses starting from abstract goals (e. g. "recognition of opportunities", "mobilization of resources", "planning and implementation") to concrete learning outcomes (*European Commission, Joint Research Centre*, 2018). The results of previously conducted research indicate that the integration of experiential methods (visible in project methods, internships, start-up labs, collaborative projects related to industry) in non-economic programs increases student self-evaluation of entrepreneurial skills and the intensity of entrepreneurial intentions, especially when they are supported by mentoring programs and institutional services such as incubators (Lambarri Villa, Gordon-Isasi, & Arrondo Diez, 2025).

A systematic review of the literature indicates that curricular innovations that combine theoretical knowledge with practical tasks including risk assessment tasks, resource mobilization activities, and market simulations lead to better transition outcomes in the labor market and a greater number of initial entrepreneurial ventures (Csákné Filep, Timár, & Szennay, 2025; Ríos Yovera et al, 2025). The key mechanism of such reforms lies in the clear mapping of learning outcomes to measurable competencies and in the establishment of verification mechanisms (rubrics, portfolios, practical evaluations) that enable validation of the development of entrepreneurial capacities within non-economic courses. On the contrary, without such a targeted design and institutional support, additional content remains declarative and does not result in a permanent competence shift, which recent studies clearly document as the main challenge for successful implementation (Csákné Filep et al, 2025).

Therefore, it is recommended that the modernization of the curriculum includes a threefold approach: (a) formal introduction of clearly articulated outcomes focused on entrepreneurship, (b) mandatory and/or credit-valued experiential activities and (c) institutional support mechanisms (mentoring, incubators, cooperation

with industry) to ensure sustainability and measurable effects on students' employability and entrepreneurial activity (Lambarri Villa et al, 2025).

2. 3. Orientation of study programs according to desirable scenarios of the future

Planning personal and professional future is one of the most important tasks of every individual. Earlier research shows that students do not sufficiently predict their personal and professional future, and when they do plan, these plans relate to the short term, most often to one school year (Nurmi, 1991; Steinberg *et al*, 2009; Chen, & Vazsonyi, 2011; Singh, & Yadav, 2017; Dubovicki, 2020). Yanez *et al*. (2019) believe that it is important for students not to prepare themselves for some predetermined future through developmental programs, but that in some critical scenarios they will be presented with aggressive roles in which they will be able to negotiate real challenges and controversial tools from the real world in authentic sociotechnical contexts (Luke, Sefton-Green, Graham, Kellner and Ladwig, 2018; Thumlert, de Castell, & Jenson 2014).

Accelerated development, constantly decreasing prices and increasing the presence of information and communication technologies (ICT) significantly affects the society as a whole, and in particular the education and the role of teachers that are constantly changing (Hamisch & Kruschel, 2022). Oyaid (2009) emphasizes that the current role of the teacher is not suitable for the future. Davidson (2011) cites an example of new occupations in the future, noting that 65% of children attending primary school in 2011 will get a job that did not exist in that year. Some researchers wrote about the importance of thinking, researching, and predicting the future in education (Tafel, 1984a, 1984b; Ishler, 1984; Henson & Balentine, 1984; Wildman & Inayatullah, 1996; Dubovicki & Dilica, 2022)

> According to Eurostat (2021) data, in 2020 there were 17.6 million students in the European Union, i.e. all those who will enter the labour market in the following years (or who have already entered it) and who will face the challenges posed by the commitments, responsibility, negotiations, and the practical application of knowledge. The higher education market will put forward 17.6 million new employees, and the size of that market speaks about the difficulties of harmonising educational programmes and ulti-

> mately knowledge, skills, and competencies, with market demands. A larger market means less flexibility. Lower flexibility means that the required competences from the market will incorporate more slowly into educational programmes. (Štimac & Bilandžić Tanasić, 2023, 617).

The implementation of content and methods from the field of future studies in the syllabi of individual courses that raise and educate future teachers and teaching staff is of exceptional importance. In this way, students are given the opportunity to plan different future scenarios created for the purpose of solving possible future challenges. The goal is orientation towards desirable scenarios of the future (Tafel, 1984a; Inayatullah, 1996; 2020; Chen & Hsu, 2020; Dubovicki, 2020; Dubovicki, & Dilica, 2022; Dubovicki, & Kostanjčar, 2023).

In a modern world marked by rapid technological change, global challenges and uncertain future scenarios, higher education programmes have a key responsibility to educate young people not only for the present, but also for the future. Future-oriented education must include the development of competences that enable students to be proactive, innovative and resilient in the face of change. Entrepreneurial competences therefore become a fundamental part of this education, as they enable them to identify opportunities, generate sustainable solutions and transform ideas into concrete initiatives that can bring social and economic value.

In this context, higher education curricula should integrate contents directed towards sustainable and positive visions of the future such as green technologies, social innovations and digital transformation through interdisciplinary projects, cooperation with industry and experiential learning. Such an approach not only prepares students for future economic conditions, but empowers them to actively shape these conditions and contribute to the development of more resilient and fairer societies.

3. METHODOLOGY

Research goals and tasks

The primary objective of the research was to analyze the presence, depth and character of the integration of entrepreneurial competencies in 18 non-economic study programs at three components of the University of Osijek, through a review

of 682 courses that make up their curricula. The purpose of the research was to determine whether entrepreneurial competencies appear explicitly or implicitly, in what forms they most often manifest themselves, and to what extent the content and learning outcomes are aligned with the internationally accepted conceptual frameworks of entrepreneurial competence and the needs of the contemporary labour market. An additional objective was to identify areas of underrepresentation in order to define recommendations for the modernization and improvement of study programs.

The aim of the study is to elaborate, compare and recapitulate the characteristics, trends and connections between the orientation of some study programs to the needs of the labour market through encouraging the development of entrepreneurship, using a theoretical and comparative approach. In accordance with the objective, a qualitative methodological approach was chosen (data collection through *documentation analysis* and with the help of the *trend analysis method*).

In relation to the stated goal, the following research tasks were set: study of recent literature; an approach to the theoretical-comparative analysis of 18 study programs at the three components of the University of Osijek in order to observe the links between the orientation of some study programs to the needs of the labour market through encouraging the development of entrepreneurship. The criteria according to which the mentioned University of Osijek components and the mentioned study programs were selected are those where the authors teach or which are taught at a component where one of the authors is employed. Also, the Faculty of Economics in Osijek was deliberately left out because it is considered that with its study programs, it educates and educates the most about entrepreneurial competences, but also prepares students for the labour market. The aforementioned study programs were also included in the analysis because authors working on the previously mentioned components can influence the implementation of content that includes the previously mentioned elements of entrepreneurial competence each year with changes of up to 20%.

In relation to the objectives and tasks of the research, the following research questions were asked:

1. *Are the study programs aimed at developing entrepreneurship and entrepreneurial competences of students analysed?*
2. *Are the analysed study programs focused on the needs of the labour market?*

3. 1. Analysis of documentation - Analysis of learning outcomes

In the first part of the research, special attention is focused on the analysis of learning outcomes visible in the syllabi of 18 undergraduate, graduate and integrated study programs conducted at the University of Osijek: *University Undergraduate Study Programme in Pedagogy (Double Major); University Undergraduate Study Programme in Early and Pre-School Education Studies; University Graduate Study Programme in Pedagogy; University Graduate Study Programme in Early and Pre-School Education Studies; Integrated Undergraduate and Graduate University Class Teacher Study Programme; University Undergraduate Study Programmes in Fine Arts; University Graduate Study Programmes in Fine Arts; University Undergraduate Study Programmes in Music Pedagogy; University Graduate Study Programmes in Music Pedagogy; University Undergraduate Study Programmes in Singing; University Graduate Study Programmes in Singing; University Undergraduate Study Programmes in Piano; University Graduate Study Programmes in Piano; University Undergraduate Study Programmes in Instrumental Studies; University Graduate Study Programme in Guitar Pedagogy; University Graduate Study Programme in Music Theory; University Graduate Study Programme in Composition; University Graduate Study Programme in Tambourine*.

Excluded from the analysis are study programs that directly raise and educate for entrepreneurship, and are implemented at the Faculty of Economics, University of Osijek.

Identifying entrepreneurial competencies in non-economics course syllabi requires a systematic, multi-layered methodological approach that combines qualitative and quantitative elements of analysis. *The first step* involves corpus selection of relevant syllabi, including courses from all (technical, social, humanities and STEM) fields, with the aim of ensuring a representative sample within an institution or multiple institutions.

The next step included a qualitative analysis of the content of the syllabus. For this approach, a conceptual framework based on definitions of entrepreneurial competences, such as the *European Commission* (2014), was used, which breaks down competence into three main areas: ideas and opportunities, resources, and into action. By analysing the content of individual course syllabi, elements are identified that point to the development of specific competencies: initiative, creativity, problem solving, teamwork, the ability to plan and manage projects, proac-

tivity, innovation and recognition of opportunities.

For a more precise and consistent identification, content coding was applied: syllabi were reviewed according to content elements, activities or tasks that students need to complete (a matrix with + and - values). The use of the coding matrix further enables us to standardize assessment and comparison between different courses and study programs. This methodological framework provides a systematic and transparent approach to identifying entrepreneurial competences in non-economic study programs, providing an empirical basis for further analysis of the impact of educational content on the development of students' entrepreneurial competences. The research results are visible in Table 1 and Table 2.

Table 1 Analysis of the results of some teacher studies directed towards entrepreneurship (analysis of the first nine study programs)

Order. no.	The faculty at which the study program is conducted	Study program	Number of analysed courses (mandator, elective and free electives)	Outcomes that encourage entrepreneurial competence
				f (%)
1.	Faculty of Humanities and Social Sciences, University of Osijek (FFOS)	University Undergraduate Study Programme in Pedagogy (Double Major)	**47**	/
2.	Faculty of Education, University of Osijek (FOOZOS)	University Undergraduate Study Programme in Early and Pre-School Education Studies	**42**	/
3.	Faculty of Humanities and Social Sciences, University of Osijek (FFOS)	University Graduate Study Programme in Pedagogy	**18**	/
4.	Faculty of Education, University of Osijek (FOOZOS)	University Graduate Study Programme in Early and Pre-School Education Studies	**42**	/
5.	Faculty of Education, University of Osijek (FOOZOS)	Integrated Undergraduate and Graduate University Class Teacher Study Programme*	**135**	/

Order. no.	The faculty at which the study program is conducted	Study program	Number of analysed courses (mandator, elective and free electives)	Outcomes that encourage entrepreneurial competence
				f (%)
6.	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Undergraduate Study Programmes in Fine Arts	**104**	/
7.	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programmes in Fine Arts	**60**	/
8.	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Undergraduate Study Programmes in Music Pedagogy	**39**	/
9.	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programmes in Music Pedagogy	**13**	/
TOTAL			**500**	**/**

***** It is important to note that the study is carried out in 3 modules: Teacher study with optional module A – *development course*; Teacher's study with optional module B - *computer science major* and Teacher's study with optional module C1 - *English language major*[1]

From Table 1 and Table 2, we can see that in the analysis of even 682 courses in 18 study programs, not a single course was observed that emphasizes entre-

[1] After the first semester, the mentor advises the student about choosing one of the following optional modules:
a) *Module A - the development course* which, through selected courses in pedagogy, psychology and methodology, trains students to understand specific issues of upbringing and education, and child development.
b) *Module B - informatics course*, which trains students more thoroughly for the use of information technologies in the educational process, and for informatics education of children in the first four grades of elementary school (a project of the Ministry of Education and Sports from September 1, 2003).
c) *Module C1 – English course*, which additionally prepares the student for early teaching of a foreign language to children of younger school age.
file:///C:/Users/PC/Downloads/Sveu%C4%8Dili%C5%A1ni%20integrirani%20preddiplomski%20i%20diplomski%20U%C4%8Diteljski%20studij%20(1).pdf (accessed 12 March 2024).

preneurship in its learning outcomes. The above-mentioned results are supported by mostly outdated study programs, in which later implementation plans and programs tried to innovate study programs in a slightly smaller percentage (up to 20%). Implementation plans and programs served us for further analysis.

Table 2 Analysis of the results of some teacher studies directed towards entrepreneurship (analysis of the other nine study programs)

Order. no.	The faculty at which the study program is conducted	Study program	Number of analysed courses (mandator, elective and free electives)	Outcomes that encourage entrepreneurial competence f (%)
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Undergraduate Study Programmes in Singing	**31**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programmes in Singing	**17**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Undergraduate Study Programmes in Piano	**18**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Undergraduate Study Programmes in Piano	**11**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Undergraduate Study Programmes in Instrumental Studies	**33**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programme in Guitar Pedagogy	**29**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programme in Music Theory	**23**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programme in Composition	**7**	/
	The Academy of Arts and Culture in Osijek, University of Osijek (AUKOS)	University Graduate Study Programme in Tambourine	**13**	/
TOTAL			**182**	**/**

In many non-economic study programmes, the limited presence of entrepreneurial competences can be attributed to a combination of possibilities (specific traditions, organisational practices and pedagogical constraints). In many academic fields, entrepreneurship is still seen as a concept primarily related to business studies, resulting in the perception that its application has no natural foothold in, for example, the humanities, arts, technical or biomedical sciences. Such epistemological division leads to the fact that entrepreneurial competences are not recognised as an integral part of the professional profile of teachers or as an expected outcome of disciplinary education. In addition, the very nature of entrepreneurial competences, which are often described as broad, interdisciplinary and difficult to measure, slows down their inclusion in precisely formulated learning outcomes and structured course activities.

In addition, institutional factors can limit the space for curricular innovation. University structures are often focused on maintaining existing teaching frameworks, with cross- and transdisciplinary learning progressing more slowly due to administrative procedures, lack of strategic support or unclear evaluation mechanisms. The pedagogical dimension also plays a significant role: a large number of teachers in non-economic fields have not received formal training in entrepreneurial teaching and therefore often lack the confidence or materials needed to implement activities that encourage creativity, initiative, problem identification or the development of innovative solutions.

Following the previously mentioned, insufficient cooperation between higher education institutions and the business sector leads to delays in identifying new competence requirements, which further limits the timely integration of entrepreneurial elements into curricula. As a result, entrepreneurial competences in non-economic courses appear sporadically, in implicit forms or within elective subjects, without a clear strategic framework that would ensure their systematic and long-term presence. The results of some recent studies point to similar conclusions (Makwara, Iwu, Sibanda, & Maziriri, 2024; Nchu, Tengeh, & Cronje, 2023; Chang, Alam, & Taylor, 2025).

3. 2. Trend analysis method

The analysis of the trend of entrepreneurial competences in the syllabi of non-economics courses was carried out using a methodological procedure aimed at systematically identifying changes in the level and manner of integration of

entrepreneurial learning outcomes during the observed period. In the initial phase, an analytical framework was defined that included the operationalization of the concept of entrepreneurial competences in accordance with the relevant European and national reference frameworks, identification of the target population of the course, and formulation of research questions focused on the dynamics of inclusion of competences such as creativity, initiative, project management, and problem solving. Data were collected from official syllabi and subjected to a standardization process, ensuring the content comparability of learning outcomes despite the heterogeneity of non-economics study programs.

Descriptive analysis identified preliminary patterns of entrepreneurial competences, including possible cyclical oscillations associated with curricular reforms or institutional strategic directions. To quantitatively determine long-term direction, a regression model was applied in which time was the predictor variable and the level or frequency of explicitly stated entrepreneurial competences was the dependent variable, which assessed the intensity and direction of changes in the curricular representation of these competences. Model validation included an assessment of the statistical significance of the trend, checking autocorrelation and the sensitivity of the model to structural changes that may arise from reforms of the higher education system or institutional changes in the way the syllabus is designed. The final interpretation integrated the statistical findings with the educational and curricular context, taking into account the prevalence of entrepreneurial education in non-economic areas, the differentiation of disciplines in the approach to entrepreneurial competences, and the possible impacts of higher education development policies. Such an approach enabled not only a precise determination of the trend of changes, but also its placement in a broader educational and institutional framework.

The analysis of the trend points to the ever-increasing topicality, and therefore the orientation towards the labour market, of those study programs that were created in the last 5-7 years, but also of innovative study programs, the changes of which can be seen in the implementation plans and programs. Detailed analyses of all the mentioned implementation plans would exceed the possibilities of this work.

In relation to the courses offered at the Academy of Arts and Culture, University of Osijek, the following courses were observed in which a link with entrepreneurial competences is visible: The University undergraduate course Piano has an elective course *Change Management* stated in the Implementation Plan; The

University's undergraduate study of String Instruments has elective courses *Management in Culture I and II*, *Marketing and Art, Management of Concerts I* and II indicated in the Implementation Plan; The university's graduate study Guitar Pedagogy has optional courses indicated in the Implementation Plan: *Event Management and Event Organization in practice*; The University's graduate study in Music Theory has an optional course: *Project financing in culture*, as stated in the Implementation Plan. The University Bachelor's Degree in Composition has the optional courses: *Organization of Events in Practice and Contemporary Business Communication*, and the University Bachelor's Degree in Tambourine has the elective courses: *Organization of Events in Practice and Influence of the Economy on Music* in the Implementation Plan.

In relation to the courses taught at the Faculty of Education, University of Osijek, the following courses were observed in which a link with entrepreneurial competencies is visible. Integrated Undergraduate and Graduate University Class Teacher Study Programme in the Implementation Plan has a stated course: *Pedagogy of life-practical skills*. University Undergraduate Study Programme in Early and Pre-School Education Studies has a course in the Implementation Plan: *Entrepreneurial Competences and Self-Employment in the Teaching Profession*. University Graduate Study Programme in Early and Pre-School Education Studies has the following courses in the Implementation Plan: *Intercultural Education in Early and Preschool Education* and *Pedagogy of Practical Life*.

At the Faculty of Education, University of Osijek, at the post-graduate level, a great shift has been observed in the creation of the entire study program and courses, which in their learning outcomes are oriented towards entrepreneurial competencies, and therefore the needs of the labour market. It is a *Postgraduate specialist study in Leadership and Management of Educational Institutions* which brings up and educates people who will work or are already working at the head of educational institutions (most often directors of schools or preschool institutions). Courses in which special emphasis is placed on competencies that are highly sought after on the labour market are: *Human Resource Management*, *Marketing in Education*, and *Marketing Activities for Fundraising in Educational Institutions*.

As a result of the above, we can conclude that students at faculties that do not focus on economics do not acquire enough competencies that would prepare them for entrepreneurship. It is necessary, in addition to revising the study programs, to offer new elective courses at different levels of education, but also as free elective

courses that would give students breadth and the possibility of acquiring entrepreneurial competences during their studies. The results obtained in the first and second parts of the research provide us with answers to the research questions.

4. DISCUSSION

An analysis of 18 study programs and 682 courses in non-economic disciplines indicates a heterogeneous, often sporadic integration of entrepreneurial competences. The research results confirm that, although there is institutional and curricular awareness of the importance of entrepreneurship, the implementation of specific competences in curricula remains limited. One of the key reasons is the epistemological perception of entrepreneurship as a domain of economic or business studies, which leads to teachers in humanities, technical or natural science programs not recognizing entrepreneurial competences as inherently relevant to their own curricula. Analyses of previous research show that courses that have managed to integrate entrepreneurial elements often use experiential and project-based learning methods, including practical challenges, internships, collaborative projects linked to external stakeholders and mentoring, which have proven to be more effective in encouraging students' self-evaluation of competences and the intensity of entrepreneurial intentions. These methods enable students to develop key dimensions of the EntreComp framework, such as "opportunity recognition", "resource mobilization" and "planning and implementation", through concrete, measurable activities (*European Commission, Joint Research Centre*, 2018).

Despite examples of good practice, a significant number of courses include entrepreneurial content declaratively, without systematic mapping of learning outcomes to competencies and without institutional support that would enable evaluation and verification of results. Such an approach limits the sustainable development of entrepreneurial capacities, which recent works clearly document as the main challenge for the sustainable integration of entrepreneurial education into non-economic programs (CsáknéFilep, 2025; RíosYovera et al., 2025).

Given these findings, different approaches to modernizing study programs are recommended. This primarily refers to *defining clearly articulated learning outcomes focused on entrepreneurship*; then to i*ncluding mandatory and/or optional experiential activities in the field of entrepreneurship* that will be evaluated; and *establishing institutional support mechanisms* such as mentoring programs, start-

up incubators, and collaboration with external stakeholders. Such an integrated approach not only enables the development of competencies and self-confidence in students, but also increases their employability and ability to initiate their own entrepreneurial ventures, thereby achieving a long-term impact on the level of the higher education system and policy (LambarriVilla, 2025; RíosYovera et al., 2025). Community sustainability depends on the creation of new values, and new jobs depend on new values. The research results indicate the absence of a large number of learning outcomes related to entrepreneurial competencies; on the potential topicality of individual study programs. A special difference is made by the study programs that were created in the last 5 years, while on the other hand, the study programs that have been conducted at the University of Osijek for many years retain the tradition, but also the necessity of changes for the coming generations.

Earlier research points out that it is important to strengthen the entrepreneurial spirit at all faculties, which can be recognized already in the visions and missions of individual higher education components, and it is desirable to open Centres for entrepreneurial learning (for example, the University of Cambridge). Strengthening the entrepreneurial spirit can be achieved through optional courses, implementation of entrepreneurial learning outcomes in already existing syllabuses, new study programs at postgraduate specialist and doctoral level (Bischoff, 2017).

Not everything we can do is listed. Sometimes it is enough to start from the university classes themselves, where we can create different entrepreneurial scenarios from which students can learn and conditionally gain some experience in that field. Minniti, & Bygrave (2001) present a structured model of entrepreneurial learning from which one can learn from failure as much as from success. Beginners in entrepreneurial experience (in our case, students of teacher studies) can provide in class the possibility of short-term predictions, information processing, processing and improving performance, errors and upgrading decision algorithms that are crucial in the process of developing entrepreneurial competencies.

Experts in the field of economics go a step further and propose a so-called pedagogical portfolio that would be aimed at teaching entrepreneurship that is based on practice. The teaching of entrepreneurship is also thought of as a method in which a way of thinking and acting focused on simulation and role play would be used, and the teacher and student would be reflective practitioners (Neck, & Greene, 2011). The above represents another innovative way of learning and teaching in a university context in which lifelong education, self-actualization, joint engagement and mutual exchange of ideas are encouraged, all with the aim

of developing a complete person (Dubovicki, 2013; Fink, 2013).

Recent Croatian scholarship contributes to international debates by offering contextually grounded empirical insights that capture the specificities of the national higher education system. These studies illuminate how institutional cultures, regional socio-economic structures and disciplinary traditions mediate the ways in which entrepreneurial learning is designed, delivered and evaluated. Importantly, by analysing the emergence of EE within non-economic fields, this body of research addresses a gap in global literature where such cross-disciplinary trajectories remain insufficiently theorised and empirically documented. In so doing, Croatian contributions help broaden prevailing analytical frameworks concerning the scope and educational value of entrepreneurial competences.

At the same time, these findings underscore several methodological priorities that are central to the further advancement of EE research. Scholars point to the need for longitudinal designs capable of capturing developmental trajectories over time, as well as for the adoption of unified metrics for assessing educational outcomes. Such metrics may include indicators related to graduate employability, the formation and early performance of new ventures, and the longer-term sustainability of entrepreneurial initiatives (Konecki, Toplek, & Detelj, 2023; Bujan Katanec, Pisker, & Magdalenić, 2024). Strengthening methodological rigor in these ways is essential for assessing the substantive impact of curricular changes and for supporting evidence-based policy development.

Taken together, existing evidence suggests that Croatian higher education could benefit considerably from the systematic and institution-wide adoption of interdisciplinary and experiential EE models, particularly within study programs traditionally situated outside the economic sciences. Enhancing these efforts through well-structured monitoring systems and continued collaboration with regional development actors and incubation infrastructures may significantly reinforce the societal and economic relevance of university programs, while simultaneously contributing to national innovation capacity and broader socio-economic resilience.

Despite these positive developments, the literature also highlights a shortage of longitudinal and quantitative studies capable of precisely assessing the impact of curricular innovations on tangible outcomes, including graduate employability and the creation and sustainability of start-ups (Ríos Yovera *et al.,* 2025). Such research is essential for mapping the real value of entrepreneurship education at both the systemic and policy levels, providing evidence to guide institutional strategies and long-term program design.

5. CONCLUSION

The most important thing is the update of degree programmes guarantees quality higher education in the context of global trends for the preparation of competitive graduates. Secondly, the modernization discloses introduction of practice-oriented educational programmes for the training of highly qualified specialists for priority sectors of the education, as well as development of educational programmes in accordance with modern standards of vocational education, expansion of the practical component based on creativity students and professors and digitization of the educational process based on a competence-based and humanistic approach in teaching.

The above is a response to the challenges that today's young people face when completing their higher education. One of the indicators of the necessity of introducing changes is the growing number of teaching staff who decide to change their profession after completing their studies or move into the world of the private sector. In this sense, the development of entrepreneurial competences strengthens competitiveness on the market, but also creates a sense of complete, professional competence.

Entrepreneurial competence facilitates innovation, survival and growth in a dynamic and uncertain environment and helps students develop a new awareness of themselves as experts.

An analysis of non-economics course syllabi highlights that entrepreneurship education is more than just including content; it is about the strategic and systematic design of study programs in which theoretical knowledge and practical activities work synergistically, and institutional support ensures permanent application and evaluation of competencies. Such an approach allows non-economics programs to prepare students for dynamic market conditions, encouraging initiative, innovation and the ability to recognize and exploit opportunities in a wider professional and social context.

The limitations of this research are visible in the selection of studied study programs, which do not include all study programs offered at Josip Juraj Strossmayer University in Osijek. In further research on this issue, in order to generalize the obtained results as well as possible, all the study programs conducted at the University of Osijek could be analyzed, because during the writing of this study, some new study programs were launched at the University of Osijek. Also, as a recommendation in further research, it could be the application of some of the

other scientific paradigms within which other research methods, which are still insufficiently present, could be used in the research of this issue. Complementarily, data triangulation is recommended by including interviews or questionnaires between lecturers and students in order to check the actual implementation of entrepreneurial elements in classes and the students' perception of the developed competencies. This reduces the risk that competences are recognized only declaratively, without real educational impact.

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Analiza usmjerenosti studijskih programa prema tržištu rada iz perspektive poduzetničkih kompetencija: analiza studijskih programa na Sveučilištu u Osijeku

Sažetak

Cilj je ovog rada teorijskim i usporednim pristupom analizirati, usporediti i preispitati obilježja, trendove i poveznice u kontekstu usmjerenosti nekih studijskih programa prema zahtjevima na tržištu rada u smislu razvijanja poduzetništva. U skladu s time, primijenjen je kvalitativni metodološki pristup, odnosno, analiza dokumenata u svrhu prikupljanja podataka te metoda analize trendova.

Rezultati upućuju na prisutnost i/ili odsutnost velikog broja ishoda povezanih s poduzetničkim kompetencijama, kao i na potencijalnu relevantnost pojedinih studijskih programa. Posebna pozornost posvećena je analizi ishoda učenja vidljivih u nastavnom planu za osamnaest diplomskih, postdiplomskih i integriranih studijskih programa koji se provode na Sveučilištu Josip Juraj Strossmayer u Osijeku. U studijskim programima nastalim tijekom proteklih pet godina opaža se razlika, dok se u ostalim studijskim programima koji na Sveučilištu u Osijeku postoje već niz godina odražava tradicionalnost, ali i potreba za promjenom radi novih naraštaja. Analiza trendova naglašava sve veću relevantnost, a time i usmjerenost prema tržištu rada, u onim studijskim programima koji su osmišljeni tijekom proteklih pet do sedam godina. Iz toga se može zaključiti da studenti koji ne pohađaju ekonomske fakultete ne stječu dovoljno poduzetničkih kompetencija. Osim što je studijske programe potrebno preispitati, nužno je i ponuditi nove fakultativne kolegije na različitim obrazovnim razinama, kao i besplatne fakultativne kolegije na kojima bi studenti mogli steći šira znanja i dobili mogućnosti da tijekom studija usvoje poduzetničke kompetencije.

Sve gore navedeno reakcija je na izazove s kojima se mladi susreću po završetku svog višeg obrazovanja. Jedan od pokazatelja koji signaliziraju da su promjene nužne sve je veći broj nastavnika koji se nakon završetka studija odlučuju za promjenu zanimanja ili za ulazak u privatni sektor (OECD, 2008; 2016; 2019). U tome smislu razvoj poduzetničkih kompetencija doprinosi konkurentnosti na tržištu, ali i osjećaju potpune stručne kompetencije.

Ključne riječi:
poduzetničke kompetencije, tržište rada, ishodi učenja, studijskih programi