



Report on the current state of play on entrepreneurial skills in VET schools

WP2 Gap analysis and action plan development

D2.1 Report on the current state of play on entrepreneurial skills in VET schools

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1. Introduction

The GTECH+ "Green Tech Entrepreneurship Challenge Hub" project aims to enhance the capabilities of vocational education and training (VET) staff in Bosnia and Herzegovina (BiH) while fostering entrepreneurship and innovation in green technology. The project involves creating a challenge-based learning platform to host innovation competitions, connect VET providers with industry partners, and provide educational content on entrepreneurship and green tech. Additionally, the project includes mobility training for VET staff in Croatia and Slovenia to develop their skills in challenge-based learning, entrepreneurship, and industry partnerships. Two Green Tech Entrepreneurship Challenge competitions will be organized to allow students to showcase their innovative and entrepreneurial abilities. The project also intends to propose policy changes and an action plan based on a GAP analysis to promote work-based learning education in BiH. The project involves a consortium of six organizations from Croatia, Slovenia, and BiH, leveraging their collective experience and expertise in working with VET providers.

The aim of this study is to analyze existing practices and policies regarding entrepreneurial learning and entrepreneurship competence within VET schools in BiH. Our ultimate goal is to recognize successful practices that can be built upon and challenges and shortcomings that are yet to be overcome in order to inform the development of the curriculum and entrepreneurial learning platform envisioned by GTECH+. Moreover, we aim to take a snapshot of the current state of play in this regard and compare it to the more advanced EU entrepreneurial learning ecosystems, primarily the ones in the immediate vicinity of BiH, such as Croatia and Slovenia, thus identifying the room for improvement and establishing ground for proposing policy changes upon the completion of the project.

2. Methodology

In regards to the determined goals of this study mentioned above, we have formulated the following research questions:

- a) How and to what extent are skills and traits that constitute entrepreneurship competence, as defined by EntreComp, introduced and implemented within the VET system in BiH?



- b) What are the policies and practices that delivered good results in embedding entrepreneurship competence in VET in BiH, and what are the areas where providers encountered challenges?
- c) What are successful practices from the EU in the areas where there are challenges in BiH VET systems that might be applicable to the BiH context?

For the purpose of answering the research questions, this study has been conducted by utilizing the following methodological steps:

- a) Desk research: examining the rules and regulations, policy and strategic documents as well as other analyses regarding entrepreneurship competence in BiH education system, conducted by the government bodies and international organizations; examining experiences in various EU countries in this regard, primarily the ones closer to the BiH social-economic and political context
- b) Qualitative analysis in the form of interviews conducted with representatives of 15 VET schools in BiH, including principals, vice principals, and teachers of various subjects.
- c) Cross-checking the findings of the first two steps, identifying the challenges encountered by the educators in implementation of what was envisioned by the policymakers, and identifying successful practices from EU countries which might help in proposing solutions for the challenges.

3. Overview of VET system in BiH

The educational system in BiH is complex in terms of governance, as there are 12 separate educational systems existing in a relatively small education area. These systems reflect the constitutional structure of BiH, which defines Bosnia and Herzegovina as a state of two entities (the Federation of BiH and Republika Srpska) and a separate administrative unit, the District of Brcko. The Federation of Bosnia and Herzegovina is additionally divided into 10 cantons, and the majority of jurisdictions in the domain of education are under the canton-level ministries, while the entity-level ministry of education has limited jurisdiction. In the entity of the Republic of Srpska, education is fully under the jurisdiction of an entity-level ministry. There is no state-level ministry of education; however, the Ministry of Civil Affairs is fulfilling this role when it comes to state-level policymaking. The relatively newly established state-level Agency for Pre-Primary, Primary, and Secondary Education (APOSO) is responsible for setting up learning standards, evaluating learning achievements, developing common core curricula in pre-primary, primary, and secondary education, and further competent work concerning learning standards and evaluation of education quality as defined by special laws and other regulations.

This fragmented and decentralized system is often characterized as inefficient. (World Bank, 2019)

Secondary education providers are classified into:

- Vocational schools
- Technical schools
- Gymnasiums
- Art schools
- Religious schools
- Schools for children with special needs

Students who graduate from the 3-year vocational programmes are not eligible to continue tertiary education and go directly to the labor market, while other types of schools last for 4 years and their graduates are eligible to study at a university.

In the school year 2022-2023, 77.11% of high school students in Bosnia and Herzegovina were attending VETs. (Institute for Statistics of FBiH, 2023); (Republika Srpska Institute of Statistics, 2023)

| | Total | Technical schools | Vocational schools | Art Schools | Gymnasiums | Religious schools | Special needs |
|----------|--------|-------------------|--------------------|-------------|------------|-------------------|---------------|
| Students | 105323 | 60602 | 19289 | 1334 | 21742 | 2224 | 232 |

Table 1 - Number of students in VET schools in BiH

In efforts to align the VET education system in Bosnia and Herzegovina with the European vocational education and training area, the Ministry of Civil Affairs adopted the Framework Law on Secondary Vocational Education and Training in 2008, delegating it to all lower-level education ministries to adopt and harmonize their legislation with this framework law. However, 15 years later, there are still a few cantons in the Federation of Bosnia and Herzegovina that have yet to accomplish this task.

One of the key tasks given by the VET reform was the adoption of modular curricula focused on learning outcomes, which would modernize VET. The level of adoption of modular curricula by VET providers varies from 20% to 100%, depending on the different administrative jurisdictions of the fragmented educational area of BiH. (Ministry of Civil Affairs, 2018)

In terms of curricula in general, schools are allowed a significant amount of autonomy in adopting the curricula to meet the needs of the labor market, based on the feedback of local employers, up to 30%.

APOSO, supported by the European Training Foundation (ETF) and in cooperation with representatives of the business sector and educational institutions, is in the process of creating standards for the majority of the vocations provided by VET in accordance with EU standards.

While nominally all VETs are required to conduct part of the educational process through mandatory work-based learning, available information indicates that practical education, work-based learning, and relationships between VETs and companies relevant to their vocation are largely unregulated and improperly monitored. In general, the scope and extent of VET schools' cooperation with the business sector and the organization of work-based learning rely more on the personal initiative of the school management than on set rules and regulations. (Asocijacija srednjoškolaca u Bosni i Hercegovini, 2018)

While there is no law on dual education at any level in the country, six pilot dual vocational education and training programmes at five schools are currently being implemented by GIZ. (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2020)

4. Policy and legal framework for entrepreneurial competence in BiH

As a candidate for EU accession, Bosnia and Herzegovina has accepted the concept of lifelong entrepreneurship education based on the introduction of entrepreneurship key competences both in formal and informal education as a part of the Stabilization and Association Agreement signed in 2008.

Further, as part of the reform process, the Ministry of Civil Affairs issued a document, "Increasing the Quality and Relevance of VET in Bosnia and Herzegovina, Based on Riga Conclusions 2021–2030," in 2020, which outlines a set of priorities and defines an action plan for all VET stakeholders on the path of aligning the VET system in Bosnia and Herzegovina with the EU. One of the goals is dedicated to the key competencies, including entrepreneurship competence, as defined by APOSO. It has been identified that, despite the existence of high-level documents and policies, there is a great room for improvement in their implementation, namely

- integration of key competences in legislation and strategies of the lower levels,





- promotion of entrepreneurship competence through various activities such as competitions, cooperation with companies, support to particularly proactive teachers, exchange of good practices and positive examples, etc.
- integration of the competences in the new curricula and preparation of the teachers for their delivery,
- Support for teachers training by introducing key competences to higher education institutions, teacher training on integration of key competences in curricula of all applicable subjects and grasping key competences as something integral to their core subject, teacher training in innovative approaches to teaching and use of new technologies
- Introducing methods for assessment of the key competences by using summative and formative assessment and standardized tests.

While implementation of the goals regarding all cross-curricular competencies, including entrepreneurship competence, is in most cases already underway, in some cases, the time frame is set for the period 2025–2030. These are related to adjusting local legislation to the framework strategic document, the preparation of teacher manuals, and goals regarding the assessment of competences. (Ministry of Civil Affairs, 2020)

It is important to recognize that almost all the efforts in regards to the introduction of entrepreneurship competence in Bosnia and Herzegovina's education system, including VET providers, were initiated as part of some European Union project. The most notable such projects are:

Entrepreneurial learning in education systems of BiH, Phase I

This resulted in the creation of the draft "Strategy for Entrepreneurial Learning in the Education Systems of Bosnia and Herzegovina for 2012–2015" as well as the creation of a "Handbook for Teachers and Schools for Entrepreneurial Learning with Scenarios for Entrepreneurial Learning" conducted in 20 schools.

Entrepreneurial learning in education systems of BiH, Phase II

This resulted in the introduction of entrepreneurship competence as a key competence in the final three grades of primary education and in secondary education. Further, all school counselors and 483 teachers in 86 schools were trained for entrepreneurial learning programs.

Additionally, six strategic priorities for the integration of entrepreneurial learning and entrepreneurship competence in education systems in Bosnia and Herzegovina were identified and adopted as a result of the signing of political partnerships and action plans at various levels of administration.



These priorities are:

- Establishing partnerships for entrepreneurial learning
- Raising awareness on entrepreneurial learning on all levels
- Promotion of entrepreneurship education in formal primary and secondary education
- Encouragement of entrepreneurial learning in higher education
- Promotion of entrepreneurial learning in informal education
- Implementation and monitoring of strategy implementation

It is notable that in periods after the completion of larger projects, institutions on their own have made little progress, indicating that it is crucial to find a way to ensure that the education administrations at the levels with immediate jurisdiction over VET providers take ownership of the legacy of the project results and continue building upon the results and learning of the projects.

Among the still ongoing larger projects is the Economic Governance for Growth 2 (EGG 2) project, which, even though much wider in scope, among other things, aims to enhance cooperation between education institutions, including VET, with industry stakeholders, encourage challenge-based learning, and support the implementation of entrepreneurship curricula in a number of schools by providing teacher training and dedicated laboratory setup support.

5. Definition of entrepreneurship competence and its alignment with the EU framework

Entrepreneurship competence is defined as “recognizing opportunities, evaluating opportunities, preparing plans for the realization of an idea, and acknowledging the risks associated with the realization of the idea.” Self-initiative and entrepreneurial competence are recognized as key transversal competencies and a part of the lifelong learning process encompassing the whole of the formal education process, regardless of whether the students choose an entrepreneurial career path or not.

In the document “Common core of education curricula for cross-curricular areas defined through learning outcomes” issued by the Agency for Pre-Primary, Primary, and Secondary Education, entrepreneurship competence is recognized as a cross-curricular competence, alongside career orientation and anticorruption.

Learning outcomes do not focus solely on starting a new venture but on building and applying entrepreneurial ways of thinking and an entrepreneurial attitude in all types of career and life situations. As such, the definition of entrepreneurship competence and its learning outcomes largely match the ones set in EU countries in their immediate vicinity, namely Croatia and Slovenia.



(Cedefop, 2023) Through our interviews with the teachers, we have identified that they understand entrepreneurship competence as empowering students towards self-employment, which reflects the situation in the neighboring countries but also across the EU. Understanding entrepreneurship competence more broadly as a set of life-long skills and attitudes not limited to only business contexts is a long-term process.

We recognize that the deliberate introduction of entrepreneurship competence in VET providers in BiH is still in its infancy, and we are not in a position to investigate nuances in definitions or the fine line between what should go into a dedicated entrepreneurship course and what should be spread across the curricula of other subjects. We leave that discussion for the time when entrepreneurship competence is more firmly pushed as an agenda item from relevant ministries towards schools.

Learning outcomes and indicators for the cross-curricular component of entrepreneurship at the end of secondary education are defined as follows:

| Learning outcome | Indicators |
|--|---|
| Researches entrepreneurial action in various aspects of life | Analyzes different forms of entrepreneurial action in regards to personal and social goals |
| | Evaluates resources for entrepreneurial action with aim of making decisions in different situations |
| | Connects entrepreneurial action with development of an individual and the society |
| | Recognizes personal entrepreneurial potential and develops skills for entrepreneurial action |
| | Explains importance of side effects of production and importance of sustainable development (think green) |
| | Develops components of the project cycle (generates idea, evaluates possibility of implementation, creates project) |
| | Identifies relevant stakeholders and presents the project |



| | |
|--|--|
| Analyzes forms and processes in entrepreneurship | Gives feedback on the improvement of others' projects |
| | Explains the steps of founding a business and social enterprises |
| | Utilizes principles of volunteering as a potential for development of entrepreneurial action and employment |
| | Distinguishes different financial documents and financial institutions |
| | Recognizes supply and demand of products and services on local, state and regional level |
| | Identifies costs and revenues in different stages of idea realization |
| Evaluates and suggests nature of entrepreneurial action in different contexts of learning and life | Identifies his or her role in a team and acts accordingly |
| | Critically assesses individual and team potential |
| | Assesses individual persistence (learning through try-and-fail method) |
| | Initiates activities at the class, school and community level |
| | Utilizes various methods and techniques to initiate, organize and manage specific project, individually or in a team |
| | Elaborates on their own potential in terms of social skills, past experiences and their utility |
| Expresses and elaborates opinions on ethical matters in regards to different types of activities | |

Table 2 - Learning outcomes and indicators of entrepreneurial competence in BiH



The document recognizes four key competences with overarching indicators: learning how to learn, social and citizenship competence, self-initiative and entrepreneurship competence, and creative-productive competence. (Agencija za predškolsko, osnovno i srednje obrazovanje, 2015)

This common core was adopted and recommended to be implemented at all levels of the education system by the presidency of Bosnia and Herzegovina in 2015. The document aims at secondary education as a whole and does not have parts specifically aimed at VETs.

In regards to the definition of the entrepreneurship competencies and the traits they consist of, the workgroups that created all the strategic documents for Bosnia and Herzegovina did not make significant deviations from how these are defined in the EU framework. Namely, it is identified that entrepreneurship competence and its learning outcomes are to a great extent aligned with EntreComp. (Bacigalupo et al., 2016) The only difference would be that APOSO added additional key competences to their framework: physical health competence and creative-productive competence, which is to an extent overlapping with the traits related to entrepreneurship competence as defined by EntreComp. (Agencija za predškolsko, osnovno i srednje obrazovanje (BiH), 2020)

APOSO is gradually working on defining standards for all vocations, partially in their own capacity and partially in cooperation with the Education Reform Initiative of South Eastern Europe and the Western Balkans Alliance for Work-Based Learning. Examining the standards, it has been identified that elements of entrepreneurial competence have been embedded in most of them.

6. Approaches for embedding entrepreneurship competencies in VET

“Instructions for implementation of the common core of education curricula for cross-curricular areas” additionally elaborates the competencies and gives guidelines to schools on how to incorporate them across the curricula of various courses, giving examples of successful implementation in different schools.

Types of activities for development of the entrepreneurship competencies are indicated as

- Curricular activities (within courses)
- Project activities (project-based learning)
- Extracurricular activities (with external stakeholders)
- Extracurricular activities (within school) (Agencija za predškolsko, osnovno i srednje obrazovanje, 2015)



One of the key policy documents regarding the introduction of entrepreneurship competence in VET in Bosnia and Herzegovina is "Priorities for integration of entrepreneurial learning and entrepreneurship competence in education systems in Bosnia and Herzegovina," issued by the Ministry of Civil Affairs in 2020 as a result of the work of a focus group consisting of representatives from all education-related ministries and directorates from all levels of governance. The work of the focus group and the creation of this policy document were supported by the European Training Foundation.

Priorities relevant for VET schools are as follows:

- Teaching and learning: defining and incorporating entrepreneurship competence as a learning outcome in curricula in all levels of education

The groundwork for achieving this priority was laid by issuing the "Instructions for Implementation of a Common Core of Education Curriculum for Cross-Cultural Areas." However, the level of incorporation significantly varies across different jurisdictions and schools.

- Building up capacity of all people involved in integration and delivery of entrepreneurial competence through professional development

This priority is set across the period of 2021–2030, while the short-term goal was to establish an education system for relevant employees of ministries, education institutions, and school management, which was to a considerable degree achieved in the given timeframe. In the middle term (2024-2026), it is envisioned to continue with the education of the school teachers in such a way that at least 30% are trained in entrepreneurship competence. It is also indicated that continuous work should be done, both in the short and long term, to incorporate entrepreneurship education into the university study programs that are involved in teacher training. While significant activity in terms of introducing entrepreneurial learning in economics and engineering study programs has been observed, there is no evidence of the introduction of entrepreneurial learning in the study programs that train future teachers.

- Integration of entrepreneurship competence through extracurricular activities, project activities, and cooperation with external stakeholders.

A significant increase in the level of activity in this regard was observed, however, with a high degree of variation across jurisdictions and schools.

- Entrepreneurial learning in VET: even though all priorities regarding high schools apply to VET schools as well, VET schools were additionally emphasized in terms of



introducing or revising the existing course “Fundamentals of Entrepreneurship,” which would be closely related to specific vocational direction of the VET school. Also, in the middle term, enhanced cooperation of VETs with the business sector in the context of entrepreneurship competence is foreseen. (Agencija za predškolsko, osnovno i srednje obrazovanje (BiH), 2020)

7. Curriculum frameworks

There are significant differences between two entities in BiH in terms of entrepreneurship curricula. In RS, which is more centralized and not fragmented into cantonal jurisdictions as FBiH, a unified curriculum framework for all VET schools was adopted in 2021, with clearly defined modules, learning outcomes, and teacher guidelines.

On the other hand, in FBiH, there is no unified curriculum framework for the entrepreneurship course in VET available on the web page of any of the ministries or education institutes directly administering secondary education. Also, the curricula are generally not available on the school websites. Without a predefined common core, the curricula we had access to had significant variations in terms of content. They are mostly covering topics related to the technical part of establishing and managing an SME, and there is no reference to the competencies stipulated in the guidebooks issued by APOS0. As such, we identify that curricula are burdened with an excess of legal and accounting-related topics while lacking elements of challenge-based learning and work-based learning. Some of the curricula we have managed to acquire have proven to be quite rudimentary, containing only units of study and their duration without indicating standards, learning outcomes, or assessment methods. All schools with a mandatory or elective entrepreneurship course have limited it to the duration of one academic year without a clear pattern of which year it is taught, varying from 1st to 4th grade.

The schools that do not have a course named entrepreneurship claim to cover that content with courses such as “Economics of a Company,” “Organization of Production,” and “Organisation of Business.” However, content-wise, these courses are far from ideal entrepreneurial learning content and are more close to the theoretical introduction to business or the introduction to microeconomy. In general, most of the curricula were not updated very recently, while a few of them were reported to have been unchanged for 20 years.

A number of schools that were a part of the piloting of entrepreneurship course curricula within various EU-funded projects are implementing the ones created on that occasion; however, there was no notable attempt to disseminate the good practices and learning of those pilot curricula.

One of the approaches to teaching entrepreneurship competence within curricular activities is through training firms, where students learn about managing a business or building a product specific to their VET. “Training firm” has the status of an elective course in a limited number of vocations in some of the schools, taking the place of a classical entrepreneurship course.



Contentwise, this course is the closest thing to a challenge-based entrepreneurial learning program as the students throughout the year create and manage an actual virtual company, going as far as generating revenue within the scope of the school campus and events organized in between schools.

There is a practice among some of the Canton-level education institutes to organize annual fairs or competitions for these training firms, where students showcase their work. On these occasions, representatives from various local companies and organizations are invited to participate and interact with the students. However, while in many EU countries these are allowed to register as legal entities as training firms or student cooperatives, there is no legislation framework for such organizations in Bosnia and Herzegovina, which undermines their scope of learning and longevity. (Asocijacija srednjoškolaca u Bosni i Hercegovini, 2018). One of the most desired changes in terms of entrepreneurial learning opportunities that VET administrators have indicated was a mechanism that would enable schools to register these “training firms” in any form, enabling VET students to learn how to monetize particular skills they learn within their vocation. In that regard, it has been underlined by some of the administrators that, in their experience, students who, through some school projects, actually “felt how it is to sell something they made” are more likely to end up self-employed and start their own craft upon graduation or later in their lives.

Even though their scope is wider, student cooperatives serve as a platform for WBL and enhance entrepreneurial traits among students in Croatia through extracurricular engagement. Student cooperatives are officially recognized and supported, with 724 such entities listed in the registry.¹

In some EU countries, mandatory entrepreneurship modules with a common core prescribed by the relevant ministries can be taught throughout high school education. For example, in Croatia, the mandatory entrepreneurship module prescribes courses Entrepreneurship in 1st and 2nd grade and Training Firm in 3rd and 4th grade. In the VET qualification where entrepreneurship is prescribed as an elective, it is delivered in the form of a one-year course in 4th grade, with a focus on generating ideas and business planning.

What we can clearly identify as a major shortcoming in comparison to the EU is the lack of an overarching entrepreneurship curriculum framework that would clearly define modules to be integrated into a subject or subjects related to entrepreneurship, with goals and learning outcomes.

8. Cross-curricular approach

Entrepreneurship competence is recognized as a cross-curricular competence, and relevant strategic documents and guidebooks provide a good basis for introducing learning outcomes related to entrepreneurship competence in a variety of courses. However, there is no mechanism for

¹ <https://hsuz.hr/clanstvo-i-registar-huuz-a/>

evaluating the level of implementation of cross-curricular competencies within the curricula. Also, even if the inclusion of entrepreneurial competence across curricula was successful, there is no defined method of assessing the progress students made in acquiring the competence.

Integrating learning outcomes of cross-curricular competency across various courses requires a high level of cooperation among teachers, and based on the available data, currently there is no sufficient incentive for VET staff to make such an effort.

While interviewing the representatives of the schools, very few of them did remember the training held in 2016; however, there was no continuation of any activities in regards to revising the school curricula and introducing the cross-curricular key competencies. In general, while the majority of the school representatives were familiar with the cross-curricular approach and cooperation between various course instructors to jointly deliver parts of the learning outcomes prescribed by the curriculum, they have indicated that in most of the cases, they do it with their colleagues on their own initiative in areas they find important. Moreover, none of the interviewed teachers was familiar with the obligation to introduce entrepreneurship competence into their course content. Curriculum reform is underway in all of the cantons, and it has made varying degrees of progress; however, even in the cantons that did the most, it is still limited to core courses. Examining the reformed curriculum of the core courses for high schools in the cantons that have completed that part, we did not find the traces of cross-curricular entrepreneurship competence as prescribed by APOSO. We can conclude that the policies issued and adopted by the state-level agencies are very slow to appear on the agenda of the schools, as they drip through the heavy bureaucratic mechanism in between.

9. Extracurricular and project activities

Entrepreneurship competence through extracurricular activities can be developed through school partnerships with business and industry stakeholders, organized participation in entrepreneurship events, and participation in fairs and competitions. Besides, extracurricular activities can be organized within school boundaries, such as student clubs, volunteering, or community service. Project-based learning also encourages collaboration with the school's internal and external ecosystems. Extracurricular is a more flexible area to engage in interdisciplinary project-based learning outside of the rigid boundaries of slow-changing curricula.

All the schools we have interacted with have an established system of school student clubs (sekcije), which operate according to a yearly adopted plan for extracurricular activities. Schools have autonomy in developing the plans, depending not only on the needs of the school but also on the workload of the teachers. Types of activities may include volunteering, charity work, company visits, deeper learning of some vocational topics, or working on projects significant for school.



Depending on the type of vocation taught at the school, these projects can vary from building a school website to painting the school walls. There are no significant incentives for teachers to “run an extra mile” in engaging students in extracurricular activities, as they mainly rely on their personal initiative and enthusiasm. There is a bureaucratic mechanism in place to reward teachers who show extra effort; however, according to the principals we have interviewed, the procedure is so complicated that they usually don't find it possible to see it through. Even though acquiring entrepreneurial competence is not deliberately set as a goal of extracurricular activities organized by schools, based on our interviews with school representatives, we have concluded that they are the most efficient mechanism schools currently have in terms of providing students with entrepreneurial traits.

Project-based learning is very valuable in terms of acquiring traits such as planning, communication, teamwork, and problem solving. Project activities can be part of both curricular and extracurricular activities. We have identified a widespread practice among schools to include students on a voluntary basis or as a part of a course or group of courses in conducting project-based activities relevant to general school functioning, such as working on the promotion activities of the school or designing and creating content for the school website. Similarly, in some cases, the students were involved in projects related to the supporting activities of some external stakeholder, such as participating in the creation of a PR plan for a company or organizing recycling campaigns in cooperation with a recycling company. These activities are a good example of teaching entrepreneurship competencies through various general or vocational courses without labeling them as such. However, these examples are more the result of individual teachers or school administrators self-initiative than a systematic effort to incorporate entrepreneurial competence in school curricular and extracurricular activities.

The challenge platform envisioned by the GTECH+ project is an opportunity for VET providers to build upon this culture of project-based learning and enhance the entrepreneurial competence of students by using challenges sourced from industry stakeholders. This is also an opportunity for employers, as it was identified that there is no sufficient level of flexibility that would enable companies to contribute more to the organization of work-based learning in schools; through posting the challenges, they will be able to dictate the content of the students' work.

VET representatives from Austria, Latvia, and Spain commented on entrepreneurship competencies, mostly referring to participation in extracurricular activities, including business competitions, contests, and hackathons. In some of these countries, there are central databases of such events that teachers can incorporate into their regular curricula and encourage students to participate. (Cedefop, 2023)

10. External stakeholders



The framework law on VET in Bosnia and Herzegovina prescribes that part of the practical education should be conducted in cooperation with industry partners in such a way that students spend 1-3 days per week or part of the summer break in a company relevant to their preferred vocation. This type of work-based learning is currently present in the majority of VETs, in a way that the students are followed up by the teacher and company mentor through their practical learning. While in some jurisdictions companies are required to insure and, at least symbolically, pay the students, in most of them there is no such requirement; it is upon the good will of the company to do so. In such jurisdictions, the local chamber of commerce is in charge of approving the cooperation between the schools and the companies and vetting the companies eligibility to receive student interns, while in other cases, the cooperation and its scope are fully reliant on the agreement between the school administration and the company.

During the interviews with schools, we got almost unanimous feedback that in recent years, companies are taking initiative much more than before and working hard to establish close relations with VETs relevant to their field of work. The schools interpret this as a result of an increasing shortage in the labor market for a great number of vocations due to demographic issues and migrations. Thus, companies try to engage students of deficient vocations to support their education and add them to their labor pool. This situation works to the benefit of the students, as it enhances their work-based learning and increases their prospects of employment. Moreover, it is highly beneficial to the schools as it enriches their educational offerings and opens them up to receiving other types of benefits from the companies, such as equipment and lab donations. However, as this state of affairs derives from the goal of filling the immediate shortage of a less qualified workforce, it is questionable how this enhanced cooperation between the VET and the companies serves the students in the long run in terms of empowering them for career paths that require higher qualifications or enhancing their proclivity towards self-employment. Therefore, while increased engagement between the VETs and industry stakeholders is praiseworthy, adjustment of its end goals is necessary to ensure the students' long-term wellbeing.

Cooperation with other types of external stakeholders, such as universities and NGOs, has proven to have a more direct effect on entrepreneurial learning among VET students, as these stakeholders have a more direct goal of contributing to the development of entrepreneurial competence among students. Leveraging these types of collaborations to enhance entrepreneurship competence in schools is the most cost-effective way for schools, as they usually do not require any additional resources. Taking students to events organized by organizations that professionally deliver entrepreneurial learning tackles one of the major challenges: a lack of training and confidence in teachers to deliver entrepreneurial learning themselves. Moreover, in many instances, it has been observed that students participate in events organized by these organizations on their own initiative rather than being actively encouraged by the school.



11. Assessment

Even though the EU member countries have made immeasurably bigger progress towards competence-based teaching and learning compared to BiH, assessment of entrepreneurship competence is a segment in which they encounter challenges as well. The solutions for this challenge that are being suggested include identifying a number of key traits and concentrating effort on them (such as creativity or teamwork) and self- or peer assessment. (Cedefop, 2023) We believe that the instrument for measuring entrepreneurial mindset traits based on the self-assessment of the students, which is planned to be created and disseminated by the GTECH+ project, will be a valuable asset for schools to engage in evaluating the level of student progress across the domains of entrepreneurship traits and competencies.

12. Teacher training

Most of the teachers we have interviewed claimed that they are not satisfied with the quantity and quality of training opportunities they have access to. While core subjects teachers, to some extent, had access to more frequent training, the teachers of vocational subjects had almost none. Apart from the few teachers who attended the trainings regarding entrepreneurship competence as a part of the international projects that were implemented some years ago, there was no follow-up on these activities, and based on our interviews, we can conclude that those trainings did not have any far-reaching effects on how things are done in any of the participating schools.

Teachers also did not express awareness of the existence of any disseminated education materials on entrepreneurship competence, digital or otherwise, that they could use to engage in self-paced training.

For the teachers to acquire the know-how to associate part of their course content with entrepreneurial competence and demonstrate confidence to deliver it, it is crucial that they are thoroughly trained and armed with go-to resources and teacher guidebooks.

While this challenge is present in many EU countries as well, it is gradually overcome by enhanced training opportunities, shared digital resources, as well as incentives in the form of certification and micro-credentials for teachers who go through certain milestones of the programs. These are especially important, given that teachers are usually overloaded as it is and engaging in additional work of coordinating with their colleagues to cooperate across curriculum and incorporate the key competences in their course content without being incentivised in a way that might make the overall idea repulsive.

From the example in Austria, we can see that not only the teachers that go through certain training programs are additionally recognized and certified, but also the schools that implement a

certain package of interdisciplinary, cross-curricular, project-oriented modules are certified as entrepreneurship schools by the relevant authorities.

13. Challenges and opportunities

In terms of strategic documents and policies necessary for the alignment of VET in Bosnia and Herzegovina with the European Union VET area, Bosnia and Herzegovina does not seem to lag behind, as most of the puzzle pieces seem to be in place: the necessary laws are adopted, guidelines for all stakeholders with clear goals are created, and action plans are created. However, due to the fragmented nature of Bosnia and Herzegovina's education system, implementation of these regulations and policies is not successful to the same extent in all of the jurisdictions. While some of the jurisdictions have at least to some degree started introducing entrepreneurship competence in their VET systems, there are those that still have not taken the first steps toward necessary reforms, such as harmonizing the local secondary education law with the Framework Law on Secondary Education or conducting the curriculum reform prescribed by APOSO.

There are multiple challenges in monitoring and evaluating the level of integration of entrepreneurship competence in schools. In cases where the changes were driven by international projects and donors, which was more often than not the case, the relevant education authorities were reluctant to take over monitoring and evaluation once the project was completed. Currently, there are no activities in regard to gathering data or follow-up activities driven by the authorities. Thus, even though many pilot activities were conducted as a part of various projects, systematic evaluation of the lessons learned from these activities and efforts to disseminate and apply the piloted programs to schools other than the schools that participated in the pilot program were scarce. Ministries and pedagogical institutes are yet to develop systems for monitoring and evaluation of key competencies, including entrepreneurship competencies, which will gather data, document progress and lessons learned, and identify further areas for improvement.

While our research indicates that necessary legislation and practical guidebooks for the introduction and implementation of entrepreneurship competencies in VET have been issued by the relevant state-level bodies, it has been identified that their adoption at the local level is highly limited. Additionally, while action plans for further steps towards the adoption of entrepreneurship competence in all high schools, including VETs, are being created, it appears that their application heavily relies on future grants and project funding from international organizations rather than on the built-up capacity of local institutions to conduct the required next steps. In jurisdictions where curricular reform is already underway, the absence of content regarding entrepreneurship competence is one of the indicators of this challenge.





While many EU countries are not immune to the challenge of translating policies into practice, especially countries with decentralized education such as Spain, where there are often discrepancies between central government and regional policies, the situation in BiH appears to be even more complex. The local ministries that have secondary education under their immediate jurisdiction (canton education ministries, entity education ministries) practically hold little accountability towards the state agencies that are driving the process of introducing and implementing entrepreneurship competence, which poses a big challenge to the process. Agencies like APOSO, in a practical sense, have no mechanism to hold accountable ministries or schools that choose not to implement their policies.

One way to gain insight into the overall progress of the country in terms of entrepreneurship is through SBA reports, which assess the level of implementation of the Small Business Act of Europe. It is notable that in the domain of formal and informal entrepreneurship education, Bosnia and Herzegovina made significant progress in the period 2013–2019 and then entered a period of stagnation in 2019–2022. (OECD, 2022)

| SBA principles | 2010 | 2013 | 2016 | 2019 | 2022 |
|---|------|------|------|------|------|
| Principle 1: Formal entrepreneurship education | 1.75 | 1.5 | 2.16 | 3.24 | 3.23 |
| Principle 8a: Informal entrepreneurship education | 1.75 | 2.31 | 2.83 | 2.7 | 2.72 |

Table 3 - SBA reports assessment of entrepreneurship education in BiH

In this regard, another significant challenge to the long-term introduction of entrepreneurship competence in VET providers is the considerably short continuity of initiatives and achieved results. We have identified that there are schools that, as a part of international projects, have introduced an entrepreneurship course and equipped an entrepreneurship lab, only to inspect their curricula five years later and find that they do not teach entrepreneurship anymore. The lack of budgetary support by the relevant ministries and lack of oversight after the completion of important milestones in introducing entrepreneurship competence in schools result in the quick loss of the momentum achieved.

Work experience and apprenticeship are recognized as crucial in acquiring entrepreneurial competencies; however, only under circumstances when students are given autonomy to tackle and solve work-based problems (challenge-based learning). While there are many positive developments



in cooperation between VET schools and industry stakeholders, there is a lot of progress to be made in tilting the balance from solving the immediate needs of employers for low-skilled labour to catering to the actual, long-term educational priorities of the students. On the other hand, schools need to show more flexibility in adapting the learning content to the feedback received from the companies.

Wide spread practice of virtual companies or training firms in VET schools offers a good basis for embedding challenge based learning into VET curricula, provided that the schools are given legal framework to support these types of student companies beyond the scopes of just another course.

In order for entrepreneurship competence to truly become rooted in VET culture in BiH, efforts to build the skills and confidence of the teachers to embed its content throughout the curricula need to be shown in the form of systematic and accessible regular training sessions supplemented with easily accessible guidebooks and digital materials. Occasional, unevenly distributed training opportunities through international projects are insufficient to make a long lasting impact on the current state of affairs.

Moreover, a great asset lies in something that all the schools we interacted with agreed on: the new generations of students are proactively demanding to be taught and trained in entrepreneurial competence. Strong extracurricular culture in VET schools and high intrinsic motivation of both teachers and students to be active in this regard is a great opportunity to, with little direction and incentive to the teachers, organise multidisciplinary challenge-based entrepreneurial learning without dependency on rigid and bureaucratic curriculum reform processes. That is also in line with EU policies. Eurydice defines practical entrepreneurial experiences as student-led initiatives, executed individually or in small teams, that involve learning by doing and produce tangible outcomes. These experiences develop learner skills, confidence, and the ability to identify opportunities and implement their ideas. (Eurydice, 2016)

The inherent financial constraints of the BiH education system have demonstrated that many measures stop delivering results as soon as their external financing expires. This compels us to seek out solutions that will be more cost-effective and have a greater chance of sustainability, such as shared digital resource databases and platforms for interaction with stakeholders and between schools and student groups, regardless of formal administrative jurisdictions.

We recognize that the positive examples given in this study are mostly isolated, teacher-driven initiatives rather than the result of systematic and structured effort in embedding entrepreneurship competence in VET. Reflecting on these positive examples, systematizing and replicating them across the system would require the prioritization of entrepreneurship competence by the local ministries and school administrations on their agenda and the allocation of time needed for these

activities within teachers routine workloads, or establishing a mechanism that would provide additional incentive for teachers to engage in these activities.

Similar studies across the EU have also found that project-based and problem-based learning, which require the application of knowledge and skills acquired through different courses, are becoming favored methodological choices in developing entrepreneurial competence in VET. (Cedefop, 2023) Thus, the GTECH+ project brings in a fresh nudge towards the implementation of entrepreneurship competence in the VET system in BiH, building a program that will take into consideration the realities of the BiH education area and introduce the right mix of curricular and extracurricular approaches in terms of content while providing a platform for school-company cooperation that will go beyond mere apprenticeship for unskilled labor and deliver entrepreneurial learning that will be thoroughly assessed and updated based on the lessons learned.



Abbreviations

APOSO - Agency for Pre-Primary, Primary and Secondary Education

BiH - Bosnia and Herzegovina

EntreComp - European framework for entrepreneurship competence

ETF - European Training Foundation

EU - European Union

FBiH - Federation of Bosnia and Herzegovina

GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit

GTECH+ - Green Tech Entrepreneurship Challenge Hub

RS - Republic of Srpska

SBA - Small Business Act of Europe

VET - Vocational Education and Training





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