

Strengthening capacities for the implementation of dual education in BH higher education (DUALSCI)

DUAL EDUCATION IN BOSNIA AND HERZEGOVINA

SURVEY ON POSSIBILITIES AND PERSPECTIVES OF DUAL EDUCATION IN BOSNIA AND HERZEGOVINA IN ATTITUDES OF COMPANIES

Authors and	d contacts:	
Authors and	a COHLACIS.	

1. WUS Austria:

Almir Kovacevic

adi.kovacevic@wus-austria.org

Louise Sperl

louise.sperl@wus-austria.org

2. University East Sarajevo:

Nenad Markovic

qaofficeuis@gmail.com

3. University Novi Sad:

Mirko Savic

mirko.savic@ef.uns.ac.rs

4. University Sarajevo:

Sasa Madacki

sasa.madacki@unsa.ba

Project acronym:	DUALSCI
Project full title:	Strengthening capacities for the implementation of dual education in BH higher education
Project No:	610251-EPP-1-2019-1-RS-EPPKA2-CBHE-SP
Funding scheme:	ERASMUS+
Project start date:	January 15, 2020
Project duration:	36 months

Abstract	The report includes the results of the analysis of Bosnia and
	Herzegovina companies' needs for DHE across involved
	cantons/entities. The analysis included 173 companies across
	different industrial sectors.

Title of document:	Dual Education in Bosnia and Herzegovina: Survey of Possibilities and Perspectives in Attitudes of Companies
Work package:	WP1
Activity:	1.3. Report on survey on companies regarding dual education
Last version date:	20 APRIL 2021
File name:	DUAL-Report-on-survey-on-compnies-regarding-dual-education.doc
Number of pages:	18
Dissemination level:	Consortium

VERSIONING AND CONTRIBUTION HISTORY

Version	Date	Revision description	Partner responsible
V1	20.01.2021.	First draft based on survey inputs	WUS Austria University East Sarajevo
V2	16.02.2021.	Second/pre-final draft	WUS Austria University East Sarajevo
V3	26.02.2021.	Final draft	WUS Austria University East Sarajevo
V4	20.04,2021	Final draft based on feedback from EU partners	WUS Austria FH Joanneum

DISCLAIMER

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

CONTENTS

Introduction	ļ		
Methods, instruments and limitations	1	(Field C
Results and analysis	3	(Field C
Conclusion1	3		Delete
APPENDIX 1: Questionnaire14	1		Field C
THE LINE I. QUOUDINIANO			Field C

Introduction

This report on possibilities and perspectives of dual education in Bosnia and Herzegovina in attitudes of companies was prepared within the framework of the project "Strengthening capacities for the implementation of dual education in BH higher education" (DUALSCI). The main goal of the project is to improve the competencies of higher education graduates and their employability in the cantons and entities of Bosnia and Herzegovina, taking into account good practices from European Union countries.

Dual higher education represents an approach that formally integrates student academic studies with gaining work experience in companies/industry. This concept of education is based on the partnership of the student, the higher education institution and the employer. The exact format of cooperation is specified by specific agreements between the company and the higher education institution, stating the number of students accepted by the company (10-20), whether students volunteer or receive a certain fee (depending on the company), working hours by the semester (etc. 150-200h) as well as other rights and responsibilities of the student and the company. Companies are expected to find mentors for students who will be able to guide them during practical classes/stay at the company, evaluate them at the end of the semester, and form a grade in cooperation with the subject professor. Companies are not obliged to hire these students after their graduation.

The goal of dual higher education is twofold, to help students gain practical knowledge and skills in order to find employment more easily, and to help companies/enterprises have quality work force that can improve their production process/provision of services.

A total of 173 institutions from Bosnia and Herzegovina participated in the research, 93 of which were from the Federation of Bosnia and Herzegovina, 77 of which were from the Republic of Srpska, 3 of which were from the Brčko District and 3 were without response. Thirty-six micro enterprises, 50 small enterprises, 48 medium enterprises and 34 large enterprises participated in the research (based on the number of employed people).

Methods, instruments and limitations

This research was developed within the DUALSCI project, implemented by public universities in Bosnia and Herzegovina, cantonal ministries of the Federation of Bosnia and Herzegovina and the entity ministry of Republic of Srpska, and the Chamber of Commerce of the Federation of Bosnia and Herzegovina and Republic of Srpska. The main goal of the DUALSCI project is to improve the competencies of graduates and improve their employability in the cantons of the Federation of Bosnia and Herzegovina, the entity of the Republic of Srpska and the Brčko District.

The goal of the research is to collect data on the evaluation of interests, needs and capacities of companies from Bosnia and Herzegovina, in order to assess the possibility for companies from Bosnia and Herzegovina to become a potential partner in dual education together with public universities.

A digital questionnaire was created with the aim of conducting a survey, i.e. the Intersectoral research design was applied, in which the survey was conducted in a short period of time in different sectors or contexts (organization, branch, economy).

A total of 173 institutions from Bosnia and Herzegovina participated in the research, 93 of which were from the Federation of Bosnia and Herzegovina, 77 of which were from the Republic of Srpska, 3 of which were from the Brčko District and 3 were without response. Thirty-six micro enterprises, 50 small enterprises, 48 medium enterprises and 34 large enterprises participated in the research (based on the number of employed people), and the researched enterprises were classified according to the areas of the Classification of Activities of Bosnia and Herzegovina, which, based on Article 8, paragraph c) of the Law on Statistics Of Bosnia and Herzegovina (Official Gazette of BiH, No. 26/04) is adopted by the Agency for Statistics of Bosnia and Herzegovina, as the body responsible for processing, distribution and determination of statistical data and statistical standards of Bosnia and Herzegovina (Agriculture, forestry and fishing, Mining and quarrying, Manufacturing, Manufacture and supply of electricity, gas, steam and air conditioning, Water supply; sewerage, waste management and environment remediation activities, Construction, Wholesale and retail trade; repair of motor vehicles and motorcycles, Transportation and storage, Accommodation and food service activities (hotel and catering), Information and communication, Financial insurance and insurance activities, Real estate activities, Professional, scientific and technical activities, Administrative and support service activities, Public administration and defence; compulsory social security, Education, Health and social work activities. Arts, entertainment and recreation and Other service activities. Areas of activity of households as employers; activities of households producing different goods and performing different services for own use, Activities of extraterritorial organizations and bodies were not researched. Further elaboration on areas, branches or classes was not included in the questionnaire.

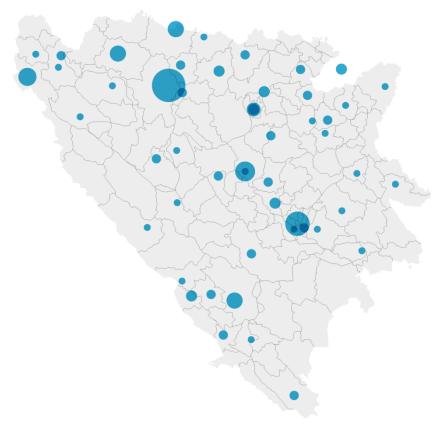
The age and sex of the subjects were not taken into account during the selection, but the position that the subjects hold in the company (director, manager).

The questionnaire consisted of three parts. The first part of the questionnaire contained nine questions (demography), and the second part, which referred to the possibility of involving companies in Bosnia and Herzegovina in the implementation of the dual program in higher education, contained sixteen (16) questions that addressed the following topics: The need for additional employment of highly educated staff, difficulties in employment, abilities and skills of the required highly educated staff, cooperation with higher education institutions, attitudes about dual education and modalities of implementation of dual education in the surveyed company.

The third and the final part contained the contact details of the persons who filled in the questionnaire on behalf of the company for possible further questions from the research team.

Results and analysis

A number of 173 companies participated in the research on capacities for the implementation of dual higher education in Bosnia and Herzegovina. A3 Considering the location of the organization's headquarters, 53.76% of companies from the Federation of Bosnia and Herzegovina, 44.51% from the Republic of Srpska, and 1.73% from the Brčko District were included. A3a In the Federation of Bosnia and Herzegovina, most of the companies that participated in the survey are based in Zenica-Doboj Canton (16.18%). They are followed by Sarajevo Canton (9.83%), Una-Sana Canton (8.67%) and Herzegovina-Neretva Canton (7.51%). A somewhat smaller number of organizations come from Tuzla Canton (4.62%), West Herzegovina Canton (3.47%), Central Bosnia Canton (1.73%), Canton 10 (1.16%) and Bosnia-Podrinje Canton (0.58%). No company from the Posavina Canton participated in the research. A4 Picture 1 shows a map with the headquarters of the companies, which shows that the entire territory of Bosnia and Herzegovina is covered.



The organizations whose representatives participated in the research differed significantly in terms of the number of employees. Companies with the number of employees between 10-49 (28.90%) and 50-249 (27.75%) dominate. Large companies with over 250 employees (19.65%), and smaller ones with up to 10 employees (20.81%) accounted for a slightly smaller but still significant share of the sample. Five representatives of companies (2.89%) did not respond to this question.

A8 The analysis of activities clearly shows the lack of socially oriented companies that participated in the research, while technically and technologically oriented companies dominate. The metal industry with a share of 24.86% is predominant in the sample. Other activities accounted for a slightly smaller share, including professional, scientific and technical activities (9.25%), wood and wood products processing (7.51%), wholesale and retail trade (repair of motor vehicles and motorcycles) and construction, which are equally represented (6.94% each). These are followed by other service activities (6.36%), financial and insurance activities as well as agriculture, forestry and fishing (5.78%), and information and communications (5.20%). The smallest share consists of water supply (sewerage, waste management and remediation activities) and transport and storage (3.47%), production and supply of electricity, gas, steam and air conditioning. In addition, there are also administrative and support service activities and education (2.89% each), production/processing of rubber and plastics and the provision of accommodation, food preparation and serving (hotels and restaurants) (2.31% each), public administration and defence (compulsory social security) (1.73%), and arts, entertainment and recreation (0.58%). Health care and social work, as well as real estate business are activities that are not present in the sample. Companies that classified their activity under the option "other" accounted for 27.75% of the total sample.

Of the companies included in the survey, 41.62% are familiar with the concept and postulates of dual higher education, and 38.15% are only partially familiar with this education system. Of all companies, 13.87% of them report not being familiar with the presented concept.

Out of 173 companies, a large number of them (51) agree that there is a need for additional employment of higher education staff in their parent company (partially agree - 29.48%; fully agree - 29.48%). There are 39 companies that are indecisive on this issue (agree and disagree - 22.54%), while 25 of them (strongly disagree - 7.51% (13) and partially disagree - 6.94% (12)) considers that they have no need for additional employment of this type of staff. A total of 7 companies did not respond to this question (4.05%). Based on the data, the arithmetic mean of the sample (M = 3.69; ST = 1.2) shows that companies are still in partial search for highly educated staff.

A similar pattern of responses can be seen in the response to the question of whether companies have difficulties/barriers in hiring adequate higher education staff for certain

qualifications. In general, companies partially agree (M = 3.51; ST = 1.39) that there are barriers related to hiring the appropriate workforce. Specifically, 51 companies fully agree (29, 82%) while 43 companies (25.15%) partially agree with this statement. From the responses of 37 companies, it is evident that they do not have difficulties like those listed in the statement (24 (14.04%) completely disagree, 13 (7.08%) partially disagree with the statement), while 33 of them are undecided (agree and disagree - 19.30%). Nine companies (5.21%) did not respond to this question.

The occupations of persons with higher education that most companies express the need for in accordance with the three-year/four-year development program of the company are mechanical engineers, which are listed by as many as 50 companies, and electrical engineers, which are sought by 40 of them. Other engineering occupations are listed, albeit to a lesser extent, and include: civil engineers (7), technology engineers (6), traffic engineers (5), forestry engineers, mining, geology, geodesy, occupational safety, agriculture, chemistry (2), metallurgy, architecture, work organization, and gas technology (1). Economists are listed by 44 companies, while 13 employers report the need for lawyers. Other occupations such as graphic designer, biologist, psychologist, criminologist, CNC programmer, veterinarian, graduate welder, tourismologist and designer have been selected by one to three companies.

Considering the frequencies of companies that express the demand for different staff, it is evident that they most need technical engineers, as well as lawyers and economists. However, it should be taken into account that the sample of companies is not heterogeneous enough according to the type of activity, wherein a shortage of organizations that employ staff from social sciences and humanities exists. Therefore, the observed pattern is not unexpected, but it does not have to necessarily reflect the real picture of the demand for occupations of higher education in the labour market.

Highly educated staff should have the following set of skills and abilities, in order to be able to work in one of these companies: teamwork (80.92%), computer work (78.61%), practical/sectoral skills (75.14%), communication skills (74.57%), knowledge of foreign languages (65.90%), planning and organizing (65.32%), ability to make decisions (58.96%), analytical problem solving (56.65%) and theoretical skills (39.88%). In the option "Other", respondents offered additional abilities and skills needed for possible work in their company, such as: willingness for continuous learning and training, knowledge of working in design programs, writing and implementing projects, possession of a driver's license, field work abroad and similar. Information such as these can be a useful guide in creating goals when organizing professional practice within dual higher education, pointing to knowledge and competencies whose development should be the focus of learning outcomes.

Although there are as many as 82 (47.40%) companies that report the existence of experience in cooperation with higher education institutions, it is important to emphasize that 58 (33.53%) of them, which make up a significant share in the research, did not have previous experience of this type. Thirty-three companies (19.08%) did not respond to this question.

The majority of companies that participated in the survey, 106 of them (61.27%), report that they have not signed cooperation agreements with higher education institutions, while 37 (10.7%) did

not respond to this question. However, 30 of them (17.34%) state that they have signed contracts of that kind. Despite the large number of companies that are familiar with the concept and postulates of dual higher education, and have had experience of cooperation with higher education institutions, a small number of them in practice are still working to formalize such cooperation.

Considering the services offered by companies to higher education institutions, the provision of practical work to students (121 - 69.94%), and project cooperation (71 - 41.04%) are predominant. Somewhat less present are joint research with faculty and university staff realized by 37 companies (21.39%), practical lectures of company employees at faculties/universities, provided by 34 companies (19.65%), cooperation on master's and doctoral theses of students, provided by 29 of them (16.76%), while laboratory exercises for students are implemented by 12 organizations (6.94%). Three companies (1.73%) classify the services they offer to higher education institutions in the category of "other", describing them as volunteer work, visits to company plants, and work on machines. Seven companies (4.05%) did not respond to this question. Since one of the most common forms of cooperation is the provision of practical work to students, it is obvious that a large number of companies have the capacity and resources to work with students, which can facilitate their inclusion in the dual higher education system.

A large number of companies believe that they should be included in the dual education system. More specifically, 60 of them (35.71%) fully agree, and 41 (24.40%) partially agree with such a statement. However, a significant share of companies, 46 of them (27.38%) are undecided regarding this question. There are also a small number of organizations that have spoken negatively about the potential for their own involvement in dual education, as 6 (3.57%) of them completely, and 8 (4.76%) partially disagree with this statement. Twelve companies (6.94%) did not respond to this question. In conclusion, given the arithmetic mean of the response of 3.88, it is evident that most companies are moving in the direction of agreeing (though not completely) with their own involvement in the implementation of the dual education system.

A number of 59 companies (35.12%) fully and 54 companies (32.12%) partially believe in the potential of a dual form of education to help and support the process of working or providing services in their organization. The pattern of indecision in a certain number of companies is visible again, specifically 36 of them (21.43%), which neither agree nor disagree with the statement. The encouraging fact is that there are a significantly smaller number of companies that fully (3 - 1.79%) and partially (9 - 5.36%) disagree with the possibility of a dual form of education to make an organizational contribution. Twelve companies (6.94%) did not respond to this question.

As many as 108 companies (57 - 33.93% partially and 51 - 30.36% fully) believe that there is a possibility of a dual form of education to compensate for existing or future shortcomings for staff in the organization. Thirty-four of them (20.24%) is undecided, while nineteen of them do not agree with the stated possibility (9 - 5.36% fully, and 10 - 5.95% partially). Twelve companies (6.94%) did not respond to this question. The arithmetic mean of the responses is 3.81, thus implying that the general attitudes in the above statement are more positive than negative. This direction of response suggests that dual education has the potential to contribute not only to

students, through providing practical experience and potential employment, but also to companies, through the employment of adequate staff for whom a growing need exists.

The question about the potential advantages of the dual higher education system was answered by 102 companies (58.96%), while 71 (42.04%) did not respond to this question. Based on the offered responses, two groups of potential advantages were formed by qualitative analysis - benefits for students and benefits for the company.

The main advantage for students is the possibility of acquiring theoretical and practical knowledge, and developing various skills and abilities necessary for further professional development. This can be achieved through introducing students to new products and technologies, collaborating on joint projects, and getting better acquainted with highly sophisticated equipment. As one subject states - "Direct involvement of students in the business process with the aim of getting to know and mastering the process, gaining practical knowledge, and thus performing certain tasks.", represents the main importance of a project such as this. The recognition of students' talents and possibilities comes through their work, as well as forming the so-called "soft skills", which are important in the organizational context. Benefits for students include obtaining financial compensation, insurance and other during their studies, the possibility of choosing a student for a company scholarship, and finally a potential job.

One of the recognized benefits for the company relates to the employment of qualified, quality and young staff with new and creative ideas, which brings information about trends and innovations in the world within the company's activities. Since students get acquainted with work processes and required competencies already during their studies, the financial and time costs of selection, recruitment, onboarding and organizational socialization are simultaneously reduced, and these processes are improved. The combination of student innovation and acquired knowledge and competencies improves the work process and job outcomes (productivity, efficiency, effectiveness, etc.). This education system has the potential to retain young educated staff in Bosnia and Herzegovina, which changes students' negative perceptions of their employment opportunities, while creating loyalty to the company, which can affect their long-term engagement in the company. Also, the implementation of the dual higher education system requires quality legal solutions that would respect the rights of legal entities, educational institutions and students involved in the program. In conclusion, it is important to emphasize that there are companies that have expressed the need for less qualified staff such as food technicians, electricians, machine locksmiths, etc., and therefore see greater potential in the dual secondary than higher education system, which may have useful implications for further educational reforms. Although the benefits can be roughly polarized in favour of students or companies, the potential of this type of education for mutual growth and development should not be overlooked, wherein students start with integration into the business world as the company expands its horizons and moves toward not only production development, but also economical and educational development.

The companies in the sample have different opinions when it comes to the year of study in which the implementation of the dual education system should begin. Forty-eight of them (27.75%) think that this system should start working in the first year, while fifty-six of them

(32.37%) think that the second year is a better option. Seventy-three (42.20%) companies believe that this system should be implemented from the third year, and sixty companies (34, 68%) believe that the fourth year is still the best option. Seven (4.05%) companies did not respond to this question.

A noticeable fact is that most organizations recognize that the workload of students needs to be adjusted to their professional capacities, knowledge, and skills. According to estimates by 38.15% of companies, students should spend 600-900 hours annually (which is 50-70 hours per month or 13-19 hours per week) in a company as part of gaining work experience within dual higher education. In percentages, 31.79% of them think that the number of hours should be 300-600 per year (which is 20-50 hours per month or 6-13 hours per week), while 21.97% of them choose 900 -1200 hours per year (which is 75-100 hours per month or 19-25 hours per week). A small percentage of 4.05% agree with work of 1200-1500 hours per year (which is 100-125 hours per month or 25-31 hours per week), while work of 1500-1800 hours per year (which is 125-150 hours per month or 31-37 hours per week) chooses only 1.16% of companies. Seven companies (4.05%) did not respond to this question.

Most of the companies in the survey, 121 of them (69.94%) report that they have the capacity to offer students dual higher education, while 38 of them (21.97%) currently do not have this option. Fourteen companies (8.10%) did not respond to this question.

Although the attitudes of companies about dual education in general, as well as its potential to contribute to their business in various aspects go in a positive direction, problems arise regarding the possibility of financing students in such a system. Almost half of the companies, 85 of them (49.13%), could hire only one to three students from the dual higher education system and finance their minimum personal income from their own funds, annually. Thirteen companies could receive and finance 4-6 students (7.51%), only one company (0.58%) could receive and finance seven to ten students, while three companies (1.73%) could receive and finance more than ten students. Also, there is a significant number of companies that could not accept any students, as many as 42 (24.28%) companies. Twenty-nine (16.77%) companies did not respond to this question.

When companies were offered the option that part of the minimum wage for students from the dual higher education system would have been paid by the state/entity/canton, or that the organization/company would have not paid this minimum wage, again more than half of the companies, 90 of them (52.02%) were willing to accept one to three, 33 of them (19.08%) four to six, 3 of them (1.73%) seven to ten, and 7 of them (4.05%) more than ten students. In this situation, the number of companies that would not be able to hire any students is significantly reduced in relation to the situation of financing from own funds, where it now amounts to only 9 (5.20%). While it is evident that the number of students that companies can receive in such circumstances is increasing, most companies still favour the engagement of a smaller number of students. These results suggest that, besides financial constraints, there are other potential factors that determine the number of students that can be included in the work within organizations (organization size, availability of supervision and mentors, etc.), which should be analyzed in detail.

As many as 76 companies (45.51%) fully believe that they could provide mentors for students, and 44 of them (26.35%) partially believe in this. Eighteen (10.78%) are undecided regarding this question. A total of 22 companies have a more negative opinion (8 - 4.79% of them completely, and 14 - 8.38% partially disagree with this statement). Thirteen (7.52%) subjects did not respond to this question. The arithmetic mean of the answers is 4.04, which points to the fact that respondents generally recognize potential mentors who would contribute to the inclusion of companies in the dual education system with the aim of its successful implementation.

Sixty-eight (40.72%) companies fully agree, and thirty-five (21.56%) partially agree that potential mentors from the organization should undergo short training in leading students during practical work in the organization/company and their assessment, which would be provided by the University. Thirty-two (19.16%) of them neither agree nor disagree. A smaller, but not negligible proportion of companies that do not agree with this statement exists, with 7 of them (4.19%) partially disagreeing and 17 of them (10.18%) completely disagreeing. Thirteen (7.52%) subjects did not respond to this question. The arithmetic mean of the response, which is 3.82, implies that the need for mentor training is generally, although not fully, recognized.

When asked about ways to stimulate companies that would be included in the dual higher education system by the state/entity/canton, 106 (61.27%) companies responded, while 67 (38.73%) did not offer any response. Since states, entities and cantons manage the budget at different levels, it is not an unexpected finding of qualitative analysis that implies that different forms of instrumental support are listed as the primary form of stimulating both students and companies to be part of such an innovative education system. Almost all respondents believe financing or co-financing the minimum personal income for students to be necessary, especially in the period of initial work in the company, when the need for learning is great and the professional contribution of students is not abundant. Such a need is particularly expressed in smaller and non-profit companies, which generally already work with an optimal number of employees. In addition, companies believe that governing structures should participate in financing student transportation and insurance costs. In addition to the benefits for students, there are other opportunities for stimulating companies to join the dual education system. The survey shows that most companies can identify mentors within their capacities, and that a need for their education in order to guide students during practical work exists. Given this, one form of support can be reflected through the provision of adequate training programs for mentors within the company, who would in that way become certified for the purpose of long-term sustainability of the program. Providing some form of compensation to mentors is an additional form of incentive recognized by companies, since in addition to their work they are also willing to work as educators. In order to address the problem of large organizational costs related to the necessary materials, equipment and space for student training (especially when it comes to modern technological activities), providing various types of financial assistance and donations would facilitate organizational readiness for inclusion in the dual higher education system. Another, often mentioned recognized type of support refers to the provision of relief to companies in the payment of taxes and contributions. In fact, the goal is to show companies through various instrumental support that their effort, work and desire to be part of innovative education is appreciated, to show young people that their needs have been recognized, as well as their potential for contribution, but also the shortcomings of the current education system. Since different activities have different potential for the implementation of dual higher education, one should not ignore the appeal of companies to pay extra attention to encouraging the development of such a system in each industry, especially those of social and humanistic orientation.

Conclusion

According to 63 companies (38.73%), the dual higher education system could be developed and implemented in Bosnia and Herzegovina in the next three years. In addition, 42 companies (24.28%) believe that the implementation of this system will happen after 3-5 years, while 20 companies (11.56%) believe that it will take more than 5 years. Only one company (0.58%) believes that this system will never be developed and implemented in Bosnia and Herzegovina. Forty-three (24.86%) companies did not respond to this question. Thus, most organizations believe in the potential for drastic higher education reform in Bosnia and Herzegovina in the near future. With the presentation of a clear idea, plan, and program, it is to be expected that organizations will continue to move toward supporting the development and implementation of a dual education system.

APPENDIX 1: Questionnaire

I. General data

- 1. Company name:
- 2. Company website:
- 3. Company headquarters: Drop down menu -FBiH Canton:

Drop down menu with list of all cantons

- Una-Sana
- Posavina
- Tuzla
- Zenica-Doboj
- Bosnian-Podrinje
- Central Bosnia
- Herzegovina-Neretva
- West Herzegovina
- Sarajevo Canton
- Canton 10
- Republic of Srpska
- Brčko District
- 4. City/Municipality:
- 5. Number of employed people:

Drop down menu with following options

- to 10
- 10-49
- 50-249
- over 250
- 6. Total number of employed workers:
- 7. Number of employees with a university degree:
- 8. What is the main product of your company? What types of services do you provide?

- 9. Company activity type (you can select more than one option):
- Agriculture, forestry and fishing
- Mining and quarrying
- Manufacturing
- Production and supply of electricity, gas, steam and air conditioning
- Water supply (sewerage, waste management and remediation activities)
- Construction
- Wholesale and retail (repair of motor vehicles and motorcycles)
- Traffic and storage
- Accommodation, food service activities (hotel and catering)
- Information and communication
- Financial and insurance activities
- Real estate business
- Professional, scientific and technical activities
- Administrative and support service activities
- Public administration and defence (compulsory social security)
- Education
- Health care and social work
- Arts, entertainment and recreation
- Other service activities
- Other
- II. Possible involvement in the implementation of the dual program in higher education:

 Rate the degree of agreement with the following statements.
 - 10. In our company, there is a need for additional employment of highly educated staff.
 - 5 completely agree, 4 partially agree, 3 both agree and disagree, 2 partially disagree, 1 completely disagree
 - 11. We have difficulties/barriers to hire adequate higher education staff for certain positions.
 - 5 completely agree, 4 partially agree, 3 both agree and disagree, 2 partially disagree, 1 completely disagree
 - 12. For which job positions do you have difficulty finding qualified higher education staff? Please indicate which job positions these are.

 FREE TEXT

- 13. What abilities and skills does a higher education staff need to have in order to be able to work in your organization? You can mark multiple options.
- · Theoretical abilities
- Teamwork
- Practical/sectoral skills
- Communication skills
- Computer skills
- Analytical problem solving
- Planning and organization
- Decision making skills
- Knowledge of foreign languages
- Other (list) ______
- 14. Do you have experience in cooperation with higher education institutions?

YES/NO

15. Do you have signed cooperation agreements with higher education institutions?

YES/NO

16. If your answer to the previous question is YES, answer with which higher education institutions do you have signed cooperation agreements?

FRFF TFXT

- 17. If your answer to question 15 is YES, what services do you offer to higher education institutions? You can mark multiple options.
- Practical work for students
- Laboratory practice for students
- Practical lectures of our workers at universities/faculties
- Joint research with faculty and university staff
- Project cooperation
- Collaboration on master and doctoral theses of students
- Other (list): ______
- 18. Do you think that this dual form of education can help and support the process of working or providing services in your organization?
- ${\bf 5}$ completely agree, ${\bf 4}$ partially agree, ${\bf 3}$ both agree and disagree, ${\bf 2}$ partially disagree, ${\bf 1}$ completely disagree
- 19. Do you think that this form of education can compensate for existing or future shortcomings for staff in your organization?

5 - completely agree, 4 - partially agree, 3 - both agree and disagree, 2 - partially disagree, 1 - completely disagree

20. Do you have the capacity to offer students practical education in your organization?

YES/ NO/ third option I don't know/ fourth option COMMENT

21. If the answer to the previous question is YES, how many students could you accept in one year for practical work?

FREE COMMENT

- 22. If the answer to question 21 is YES, could you identify mentors to students in your organization?
 - (*) A mentor is a person or persons from your organization who will share tasks to students and teach them practical work during the time spent in the company. Also, mentors will evaluate the practical work of students.
- 5 completely agree, 4 partially agree, 3 both agree and disagree, 2 partially disagree, 1 completely disagree
- 23. Do you agree that potential mentors from your organization should undergo shorter training in student leadership and their assessment (Universities would provide these trainings)?
- 5 completely agree, 4 partially agree, 3 both agree and disagree, 2 partially disagree, 1 completely disagree
- 24. Would you be willing to financially support dual students who would practically work with you for a certain number of hours per semester? You need to know that you are not obliged to pay dual students financially. In certain cases in the EU, companies pay students in the form of a certain monthly fee, hot meal, transportation, etc. If you would agree to this form of cooperation, the contract would specify all the details.
- 5 completely agree, 4 partially agree, 3 both agree and disagree, 2 partially disagree, 1 completely disagree
- 25. Would you participate in the development of dual study programs for Bosnia and Herzegovina (RS, FBIH, District) in your field of expertise?
- 5 completely agree, 4 partially agree, 3 both agree and disagree, 2 partially disagree, 1 completely disagree
- 26. Do you have anything to add, some free comment? YES/NO

If YES, please specify:

FREE TEXT

1.	Your name and surname:
2.	Your position in the organization:
3.	E-mail address:
4.	Can we contact you in case of additional questions? YES/NO
	If yes, to which phone number If yes, to which e-mail address

III. Interlocutor in the organization:

Thank you for your cooperation!