

COOPERA

Integrating Dual Higher Education In Moldova and Ukraine

REPORT

of companies needs for Dual Higher
Education in the Republic of Moldova and
Ukraine

Deliverable 1.2.

DUAL
HIGHER
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DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE

Report of companies needs for Dual Higher Education in the Republic of Moldova and Ukraine is a deliverable within COOPERA project” Integrating Dual Higher Education in Moldova and Ukraine”, reference number 617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP, funded by the European Union through the Erasmus + Programme 2014-2020, KA2 – Cooperation for innovation and the exchange, Key action 2 - Capacity Building in Higher Education.



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DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE

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REPORT OF COMPANIES NEEDS FOR DUAL HIGHER EDUCATION IN THE REPUBLIC OF MOLDOVA AND UKRAINE

The adaptation of higher education in the Republic of Moldova and Ukraine to the changes taking place in modern society requires the implementation of innovative forms of education of the young generation. The integration of dual education at a higher level of education will allow to effectively combining the development of knowledge, skills and attitudes appropriate to each context by collaborating with the business environment, thus providing opportunities to capitalize on theoretical skills in the real sector.

*The report presents the results of a survey on companies needs for dual higher education in the Republic of Moldova and Ukraine. The study is carried out within the **Erasmus + COOPERA project "Integrating Dual Higher Education in Moldova and Ukraine"**, ref. no. **617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP**. The aim of the project is to integrate dual higher education in partner countries in general, and to improve work capacity and individual development, to increase compatibility and continuity between the requirements of the business environment and the initial training of university students and to achieve a better high economic efficiency and social integration, in particular.*

The identification of the specific needs and requirements of economic agents, as basic partners in dual education in higher education institutions, allowed foreshadowing the opportunities and perspectives for universities and business in the Republic of Moldova and Ukraine.

The survey was conducted through the joint efforts of all COOPERA project partners: from the Republic of Moldova: Academy of Economic Studies of Moldova (ASEM), Technical University of Moldova (TUM) and Free International University of Moldova (ULIM); from Ukraine: Uzhhorod National University (UzhNU), KROK University (KROK), V.N. Karazin Kharkiv National University (KhNU) and Odessa National University of Economics (ONEU).

The report of companies needs for DHE in the Republic of Moldova and Ukraine was prepared by the team of the Academy of Economic Studies of Moldova, the Grant coordinator of the COOPERA project.



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ABBREVIATIONS

ASEM – Academy of Economic Studies of Moldova

BIBB – Federal Institute for Vocational Education and Training, Germany

HEI – Higher Education Institutions

DHE – Dual Higher Education

KhNU – V.N. Karazin Kharkiv National University/Ukraine

KROK – KROK University/Ukraine

MD – Republic of Moldova

ONEU – Odessa National University of Economics/Ukraine

TUM – Technical University of Moldova

UA – Ukraine

ULIM – Free International University of Moldova

UzhNU – Uzhhorod National University/Ukraine

VET – Vocational Education and Training



INTRODUCTION

The priority goal of higher education is to train highly qualified specialists, necessary for the labour market in accordance with current and future needs, in close correlation with the technologies and business processes applied. Quality assurance in higher education must be achieved through three distinct elements: the requirements of potential employers, the standards of competence in the fields of training and the performance of higher education institutions (quality of teachers and training infrastructure). The closer the connections are between these three elements, the better the human resources will be prepared.

Currently, the training process of specialists through higher education is mainly based on relatively weak connections with business representatives. There is no systemic approach at the level of both the Ministry of Education and Research and the higher education institutions regarding the constant identification of the needs of the business environment in the necessary knowledge, skills and specialties. On the other hand, no qualification/competence standards are developed for most training areas for levels 6 and 7 of the national qualifications framework on the basis of which curricula are developed and adjusted. These gaps directly influence the quality of trained specialists and generate dissatisfaction on the part of economic agents, public institutions and other entities, being placed in the situation of realising additional intensive training after first days of the employment.

In order to rectify this situation, as well as to facilitate the training with competencies relevant to the business environment, it is necessary to rethink their training/preparation process. An alternative form in this sense is dual higher education (DHE), which places a significant emphasis on the training of practical skills in the real work environment, with a high degree of business representatives' involvement in this process.

This specialists' training model for comes from the German education system, which has been quite successful for about 60 years and has been implemented in the field of technical vocational education with extension and in higher education. According to the Federal Institute for Vocational Education and Training (BIBB), the number of students involved in this study model in Germany has grown from just under 40,000 to about 100,000 over ten years. An increasing number of employers appreciate the dual education system because it not only achieves a better balance between higher education and labour market needs, but also because it



facilitates the recruitment and retention of students as potential top performers or management staff” (Hesser, 2018).

Thus, the pioneer of dual education belongs to Germany, where about 20% of companies offer vocational training (Ghid organizarea și implementarea programelor de învățământ dual, 2019). According to German statistics, the dropout rate for dual education is extremely low: about 90% of students successfully complete their studies, and students enjoy a high employability after graduation (about 85-95%). Moreover, 76% of the investments made by the employer during the dual education period are recovered through productive contributions of the students during the training period.

The adjustment of higher education in the Republic of Moldova and Ukraine to the changes taking place in modern society requires the implementation of innovative forms of education of the young generation. Thus, the introduction of dual education at a higher level of training will allow to effectively combining the development of knowledge, skills and attitudes appropriate to each context by collaborating with the business environment, providing opportunities to capitalize on theoretical skills in the real sector.



1. THE DUAL HIGHER EDUCATION SYSTEM

Regarding the higher education institutions in the Republic of Moldova and Ukraine, so far, the use of the dual system in the training of future specialists is not attested. It is an untapped opportunity to combine the development of theoretical knowledge with the training of practical skills in real business environment.

The essence of dual study in higher education is based on two learning places: the educational institution and the enterprise. To a large extent, higher education institutions enter into cooperation agreements with companies. In addition, companies enter into training and learning arrangements during the course of study with students participating in the dual system. Sumacova et al. (2016, p. 2) outlines that the basic principle in dual higher education must be the sharing of responsibilities for the qualitative training of specialists between educational institutions and economic units.

The implementation of the dual system in higher education can have multiple benefits for all stakeholders involved: students, economic agents, universities, and the state.

For students:

- ④ Learning in real working conditions (access to equipment and machinery, work processes, etc.);
- ④ Teaching is carried out by both academic teachers and industry experts;
- ④ Identifies with the training company and gradually integrates into the staff;
- ④ Excellent labour market prospects due to valuable work experience;
- ④ The student is remunerated for the work performed during the educational process;
- ④ The student adapts from his university years to the organizational culture and the labour market.

For economic agents:

- ④ Obtain competent and loyal specialists who meet the company's requirements;
- ④ Increases both productivity and quality of products / services;
- ④ Ensures a corporate socialization of the young generation of qualified employees;
- ④ Get a high return on medium and long - term investment;



- ⦿ Participates, as needed, in the development and modernization of occupational standards relevant to the sector;
- ⦿ Saves financial sources related to the outsourcing of labour in conditions of high employee turnover;
- ⦿ Becomes a socially responsible company through the indispensable contribution made in the education of the young generation.

For universities:

- ⦿ By collaborating with enterprises, it contributes to the development of the higher education system;
- ⦿ A higher level of training of students and teachers is ensured through a sustainable partnership with the business environment;
- ⦿ Expanding one's professional network;
- ⦿ Strengthens cooperation with economic agents in elaboration of curricula, master's and doctoral theses;
- ⦿ Facilitates the transfer of knowledge from the company to the university and vice versa;
- ⦿ Contributes to the improvement of research activity within the higher education institution;
- ⦿ Contributes to improving the image of the higher education institution through cooperation with economic agents.

For state:

- ⦿ Provides the labour market with qualified staff;
- ⦿ Obtain an educational system capable of modernizing itself autonomously, keeping up with the new technologies applied by the private environment;
- ⦿ Can effectively coordinate higher education institutions and ensure their quality;
- ⦿ Early capture of indicators on the demand for qualified personnel on the labour market.

Dual education is a form of training in which all parties have only to gain, if there is motivation, a unique understanding of how to achieve collaboration and delegate responsibilities.



1.1. The dual system in the Republic of Moldova

In the Republic of Moldova, dual education has been implemented at the technical vocational level since 2014, at the initiative of the Ministry of Education and Research of the Republic of Moldova, with the involvement of the Chamber of Commerce and Industry of the Republic of Moldova.

Since 2016 and until now, the Ministry of Education and Research of the Republic of Moldova in the implementation of dual technical vocational education is supported, including financially, by the German Federal Ministry for Economic Cooperation and Development and the Swiss Agency for Development and Cooperation through the project *“Promoting VET for a Green Economy”*. The main purpose of this support is to facilitate the training of skilled labour in the Republic of Moldova, according to the needs of local employers and foreign investors through dual education, which is an alternative form of technical vocational education.

The Education Code of the Republic of Moldova specifies that in technical vocational education for certain trades / professions dual education may be applied, under the conditions established by the Ministry of Education and Research through coordination with other relevant central bodies and interested economic agents. Dual education takes place in parallel in technical vocational education institutions and in enterprises or other economic units. (Codul Educației al Republicii Moldova, 2014).

The first company to implement dual education programs in the country, starting with 2014, was the Foreign Capital Enterprise DRA “Draexlmaier Automotive” S.R.L. in partnership with vocational school no. 5 from Balti municipality (Ghid organizarea și implementarea programelor de învățământ dual, 2019). By 2020, more than 160 economic agents from all over the country (with domestic and international capital) and of different sizes will form qualified dual system staff in more than 40 programs in about 15 areas of the national economy. The annual range of occupations is diversified based on the needs expressed by the business environment and later found in the state order, where is a compartment dedicated to the dual education (Ministerul Educației și Cercetării, 2021). Thus, annually, out of about 8000 available places, 10% are destined for dual education with funding from the state budget.

Currently, 34 vocational technical education institutions out of the 89, train through a dual system at national level. In the period 2016-2020, 5,300 places were subsidized from the state budget for dual programs, and 4,100 apprentices were enrolled in dual programs. Over 60% of the graduates of these programs are employed and remain active in companies



where they have completed practical training for long periods, receiving an average salary during professional technical studies in dual of about 1600 MDL (about 80 euro) per month.

According to the Government Decision no. 70 (2018) which regulates the implementation of dual education in the technical vocational field, the following specific characteristics have been assigned to it:

- 1) Is organized exclusively at the initiative of the interested economic agent, as a potential employer;
- 2) Ensures the profile training, under the responsibility of the economic agent, in real working conditions, with the monthly payment of the apprenticeship salary;
- 3) Ensures the participation of the economic agent in the process of elaboration of the curricula, of evaluation and certification of the competences of the apprentice.

At the same time, it should be mentioned that there are certain challenges in the implementation of this alternative form of specialists training in technical vocational education, identified in the implementation process.

Educational institutions face the following challenges: low level of attractiveness of technical vocational education for young people, which creates difficulties in recruiting candidates for dual programs; the inadequacy of teachers and the level of training of existing ones that does not correspond to the realities of the environment; training programs poorly adjusted to labour market requirements; obsolete technical-material basis; lack of educational packages for the required occupations (occupational profiles, occupational and qualification standards).

In turn, economic agents also face a set of difficulties such as: weak involvement in the training of staff in technical vocational education institutions; high training costs; poor promotion of the necessary occupations among young people; attracting potential candidates for training; poor collaboration with technical vocational education institutions.

Thus, the dual form of training has become a more attractive one for young graduates, offering them the opportunity to embrace occupations / specialties required and sought after on the labour market.



1.2. The dual system in Ukraine

The Ministry of Education and Science of Ukraine reported that the government approved on September 19, 2018 the concept of dual education, which involves the integration of training in vocational and higher education. It is believed that the introduction of dual education will help to overcome by 60-100% the problem of outdated equipment in higher and vocational education institutions, will allow employers to get involved in the training process and not to retrain graduates, and to use time more efficiently and the financial resources of students, schools and employers. (Маруніч, 2018).

The concept has been developed for 2.5 years. Thus, the dual form of education involves combining training in educational institutions with on-the-job training (enterprises and organizations) in order to obtain a certain qualification. This training is usually based on a contract. In fact, it is a system that allows building a bridge between employer and applicant in the learning process. Students and scholars will be able to see directly the production or company in which they will be able to work in the future; they will learn to work on modern equipment.

The learning outcomes will be evaluated by both the employer and the institution. The employer will be directly involved in the selection of students who will study in the program.

The implementation of dual education in Ukraine has started at the level of vocational education. Thus, in 2020, 217 education and training institutions apply the dual mode of training. In total, over 12,000 students study in dual mode. According to Ministry of Education and Science of Ukraine, the introduction of a dual form of education is one form of public-private and social partnership and the number of graduates hired in 2020 was 83 percent. One of the ways to improve the quality of training is to create training and practice centres in the industry. For this, 100 million hryvnia were allocated, opening 49 of the 53 planned training and practice centres (Бондар, 2021).

At the end of December 2020, the Governing Council of the Ministry of Education and Science of Ukraine approved a strategy for the development of vocational education by 2023. It identifies key areas in which the vocational education system will be modernized in the next few years.



2. RESEARCH METHODOLOGY

Dual education at the high school level is a novelty for the educational system of the Republic of Moldova and Ukraine. In this context, it is necessary to analyse not only the advantages that universities obtain from the implementation of dual education, but also the extent to which the business environment is ready to get involved in this new method of staff training. Thus, we consider it appropriate to study the current needs of employers in these countries and their attitude towards cooperation with academia.

In order to analyse the prospects for the development of dual education in higher education institutions in the Republic of Moldova and Ukraine, we set out to study the current needs of employers and their attitude towards cooperation with academia.

The study is carried out within the Erasmus + COOPERA project "Integration of dual higher education in Moldova and Ukraine", ref. no. 617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP.

The empirical research was conducted through a questionnaire sent to respondents from both countries. The survey was conducted online between August and September 2021. The research was attended by top management representatives from 27 organizations in the Republic of Moldova and 32 companies in Ukraine. The selection of the organizations was made by the higher education institutions participating in the COOPERA project. From the Republic of Moldova: ASEM, TUM and ULIM, and from Ukraine: UzhNU, KROK, KhNU and ONEU.

The selection of companies was made from the perspective of further cooperation and the existence of a link with the study programs, in which DHE is to be implemented. Also, as the important criterion in choosing the entities participating in the survey was their membership in various fields of activity, to be located in different areas of the Republic of Moldova and Ukraine, as well as the diversity of the size of enterprises.

In the case of the Republic of Moldova, the analysed companies refer to eight fields of activity, a larger number being from information and communication, public administration and defence, manufacturing, financial and insurance activities, etc. (*Figure 1*).

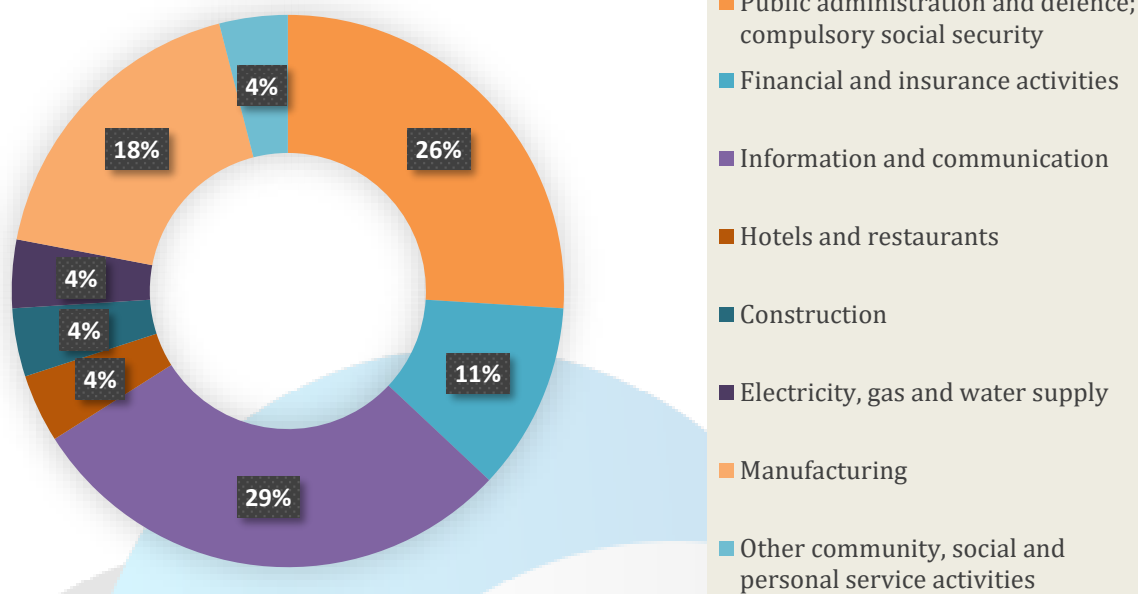


Figure 1. Distribution of companies according to the field of activity, Republic of Moldova

Source: Elaborated by the authors

The diversity of the organizations participating in the survey is explained by the fact that the higher education institutions participating in the COOPERA project have identified the following programs for piloting DHE:

- ◉ ASEM - Business and Administration; Applied Informatics;
- ◉ TUM - Robotics and Mechatronics; Automatics and Informatics;
- ◉ ULIM - Diplomacy, Security, Business and Communication.

The companies that participated in the study in Ukraine also refer to eight fields of activity, several being in financial and insurance activities, manufacturing, information and communication, etc. (*Figure 2*).

When selecting the responding economic entities, the Ukrainian universities were guided by the specifics of the study programs, within which the DHE is to be implemented:

- ◉ UzhNU - Entrepreneurship, Trade and Exchange Activities;
- ◉ KROK - Journalism;
- ◉ KhNU - Business Administration;
- ◉ ONEU - Finance, Banking and Insurance; Entrepreneurship, Trade and Stock Exchanges.

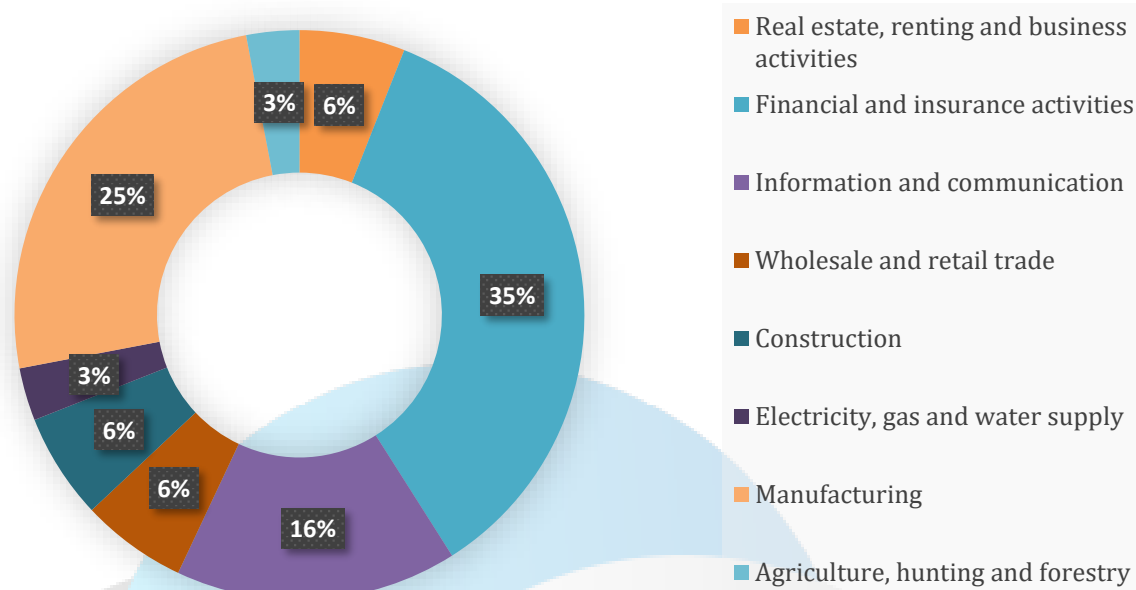


Figure 2. Distribution of companies according to the field of activity, Ukraine

Source: Elaborated by the authors

In order to increase the level of representativeness of the study, the size of the entities was also taken into account. The grouping of companies was carried out according to the number of employees. SMEs are subdivided into micro enterprises (fewer than 10 employees), small enterprises (10 to 49 employees), and medium-sized enterprises (50 to 249 employees). Large enterprises employ 250 or more people.

REPUBLIC OF MOLDOVA

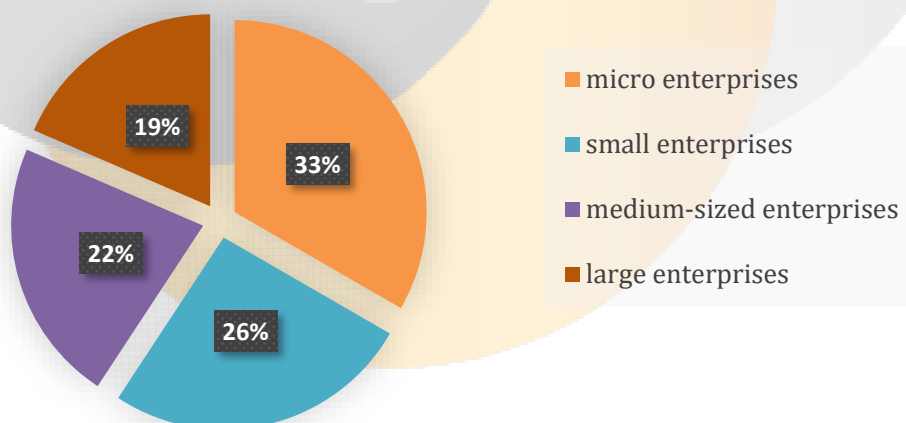


Figure 3. Distribution of companies by size, Republic of Moldova

Source: Elaborated by the authors

The business environment in the Republic of Moldova was represented by micro companies, constituting 33% of the total, small companies - 26%, medium - 22% and large ones, accounting for 19% (Figure 3).

UKRAINE

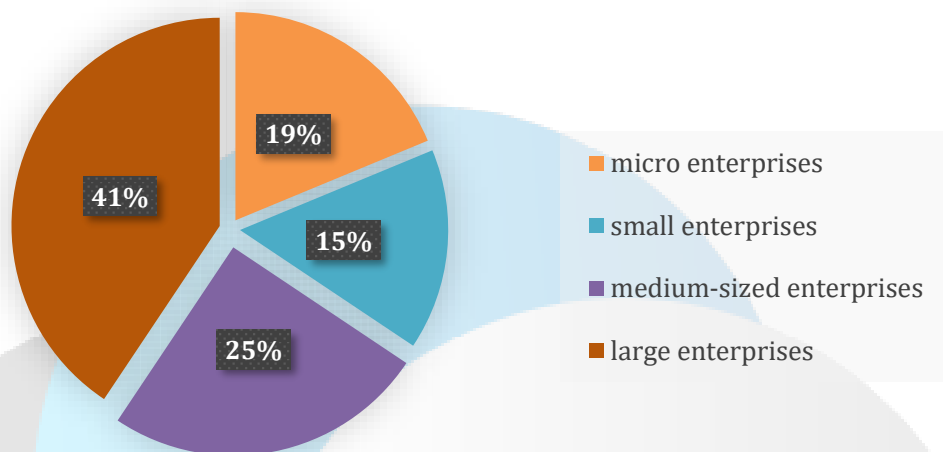


Figure 4. Distribution of companies by size, Ukraine

Source: Elaborated by the authors

The economic entities participating in the survey in Ukraine are predominantly large - 41% of the total, followed by medium - 25%, small - 15% and micro - 19% (Figure 4).

We can conclude that the selected companies in both countries belong to a multitude of activity fields and are of different sizes.

3. THE RESULTS OF THE STUDY

3.1. Needs and employment forecasts for higher education specialists

Based on the experiences of implementing dual education at the level of vocational education in the Republic of Moldova and Ukraine and being motivated to take this form of training of specialists at the level of higher education, we set out to conduct research among business representatives, which represent the main beneficiaries of this form of training, regarding their attitude and openness to participate in partnership with the educational institution in the training of specialists.

The organizations that participated in the study responded almost unanimously, 96.3% from the Republic of Moldova and 90.6% from Ukraine, with a positive answer, confirming that they need specialists with higher education (*Figure 5*).

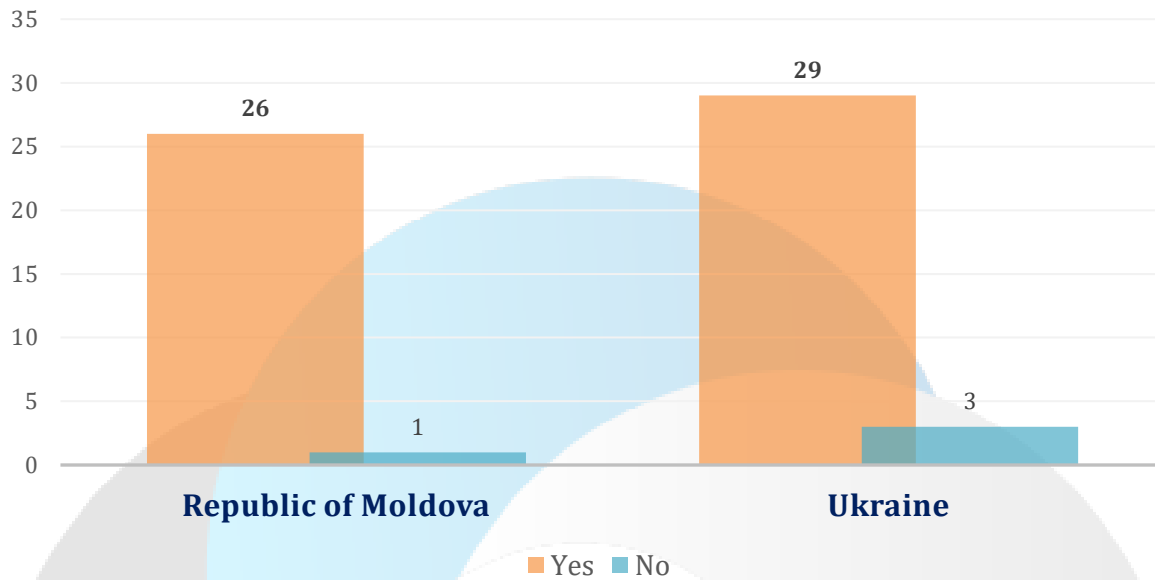


Figure 5. The need for specialists with higher education in the analysed company, Republic of Moldova and Ukraine
Source: Elaborated by the authors

This reveals a peculiarity of the labour market at the moment: the desire of companies to develop is met with a lack of skilled labour.

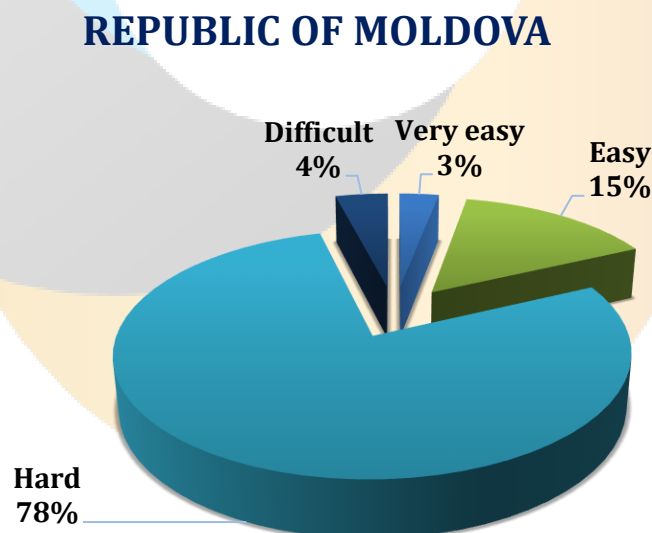


Figure 6. Difficulty in recruiting specialists in the analysed companies, Republic of Moldova
Source: Elaborated by the authors

At the same time, the companies attest to a certain level of difficulty in recruiting specialists with higher education (*Figure 6*). 78% of the companies participating in the survey in the Republic of Moldova mentioned that it is hard to recruit specialists with higher education, 4% consider it difficult, 15% do not feel that it will be difficult in this process, and 3% find it very easy to find specialists with higher education.

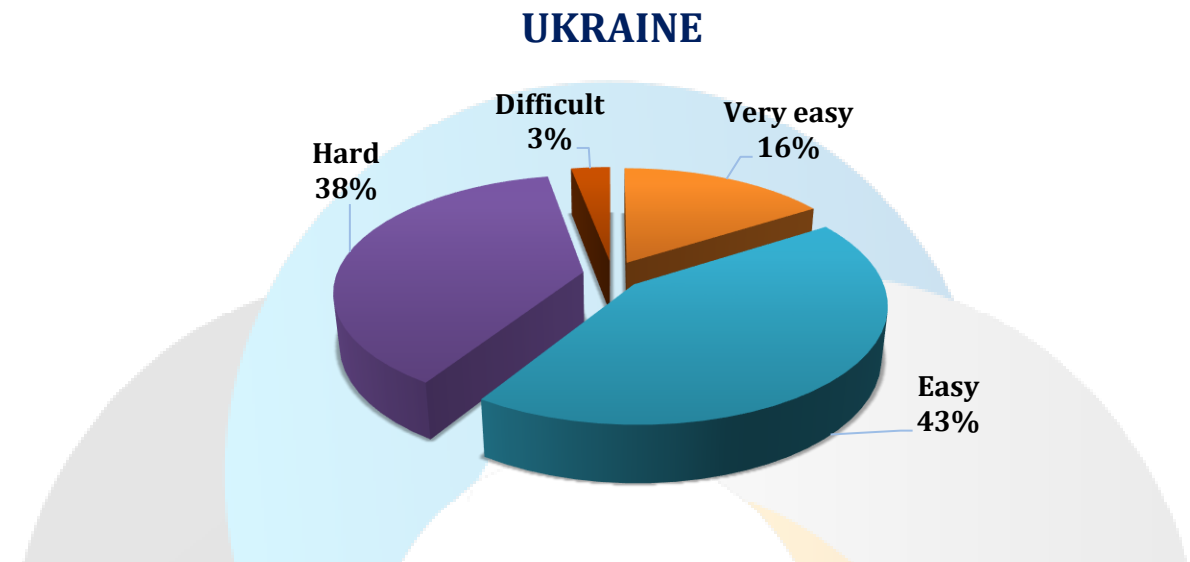


Figure 7. Difficulty in recruiting specialists in the analysed companies, Ukraine

Source: Elaborated by the authors

The analysed companies in Ukraine feel certain problems in recruiting specialists with higher education, but the comparative analysis allows us to conclude that they are not as acute as in the Republic of Moldova (*Figure 7*). Thus, only 3% of companies indicated difficulties in finding specialists, 38% mentioned that the process is hard, while 43% of Ukrainian companies find it easy to recruit graduates, and 16% mentioned that it is very easy.

In the process of recruiting highly qualified staff, the organizations participating in the survey use various sources (*Figure 8*). The comparative analysis of the sources of recruitment of specialists used by the entities from the Republic of Moldova and Ukraine shows distinctions compared to the way in which the higher education institutions are approached. Thus, Moldovan organizations most often use announcements on specialized sites and collaborate with universities. An important share is the recruitment of specialists through recommendations, on social networks, announcements in newspaper, media. Recruitment companies, acquaintances, attracting specialists from competitors and employment offices are rarely used. Ukrainian companies, in the process of recruiting qualified staff, rely mainly on announcements on specialized sites, finding

candidates through acquaintances, through recommendations, on social networks. This is followed by collaboration with higher education institutions, media advertisements, recruitment companies, attracting specialists from competitors and employment offices.

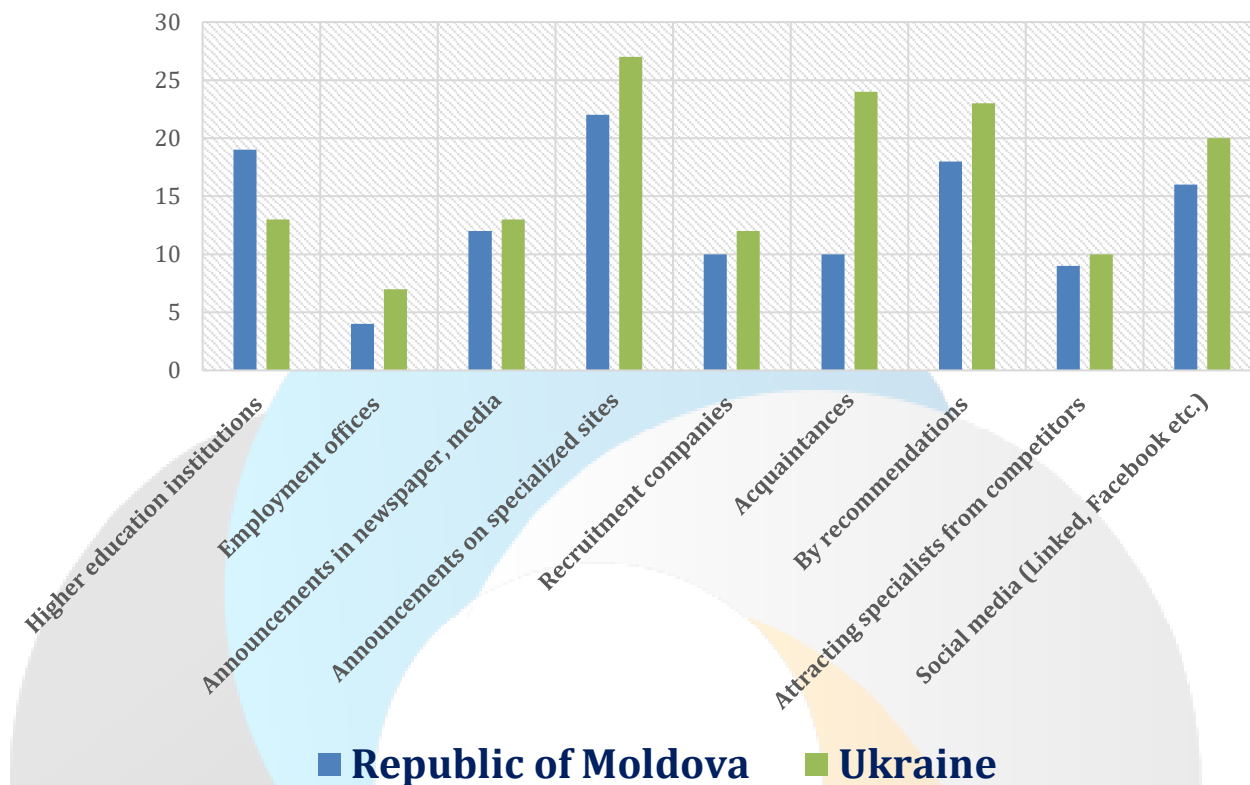


Figure 8. Sources used to recruit specialists with higher education in the analysed company, Republic of Moldova and Ukraine

Source: Elaborated by the authors

When asked what are the main difficulties in the process of recruiting specialists, the representatives of the companies expressed the following opinions:

- ⦿ High competition in the labour market;
- ⦿ Very few qualified specialists;
- ⦿ High „demand” for low skills;
- ⦿ Specialists often have higher salary expectations than can be offered by the employer;
- ⦿ The discrepancy between the state order and the necessity of the labour market;
- ⦿ Inadequate qualification to the requirements of the labour market;
- ⦿ The training of specialists is detached from production; as a result, the qualification of specialists is low. The company has to spend money on repeated training;
- ⦿ Emigration;



- ⦿ The difficulty lies not so much in the recruitment procedure, but in finding the necessary number of specialists, which should correspond to a minimum of requirements;
- ⦿ Acute shortage of available responsible staff to work;
- ⦿ We receive very few resumes, but after discussions we realize that they are not prepared enough;
- ⦿ The level of training is at the limit of expectations (people have theoretical knowledge and no practice in the activity);
- ⦿ Finding the best specialists has become increasingly difficult, because areas of paramount importance, such as security, preventing and combating corruption, require continuous and specific training in their expansion and change;
- ⦿ In practice, the classic recruitment methods at the moment do not give the expected results in the selection of experts;
- ⦿ Complexity of staff requirements;
- ⦿ Usually, specialists with higher education and good practical skills are already employed (a ready-made specialist who needs no training). It only remains to attract from other companies;
- ⦿ There is a lot of educated staff, but they are not very sensitive.

Thus, it is observed that the business environment does not treat higher education institutions as the main source of recruitment of specialists and there are significant resources for changing this attitude.

3.2. Insurance with qualified specialists by the higher education system

In this regard, it is important to determine whether the share of specialists with higher education in the analysed companies is high and what are the main issues regarding the preparation of graduates of educational institutions for absorption in the business environment.

The organizations participating in the survey confirmed that a large number of highly educated specialists are currently working in companies.

REPUBLIC OF MOLDOVA

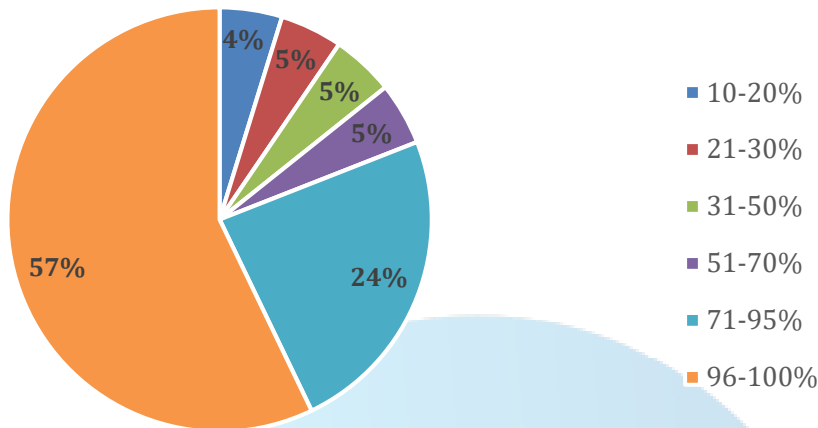


Figure 9. The share of specialists with higher education in the analysed companies, Republic of Moldova

Source: Elaborated by the authors

Thus, about 81% of the analysed companies in the Republic of Moldova have a share of more than 70% of employees with higher education, and in 57% of companies almost all employees are graduates of higher education institutions (*Figure 9*).

UKRAINE

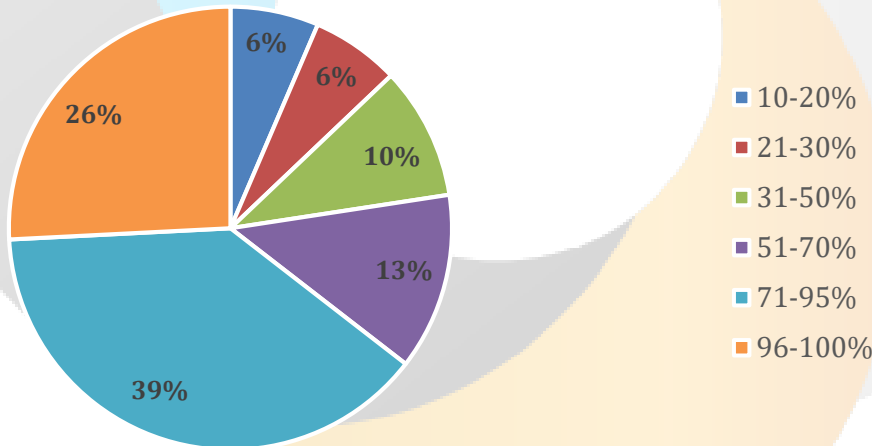


Figure 10. The share of specialists with higher education in the analysed companies, Ukraine

Source: Elaborated by the authors

Ukrainian companies have shown that the share of specialists, graduates of higher education institutions, is higher than 70% of the total employees in 65% of enterprises and higher than 95% of the total employees in 26% of the economic units participating in the survey (*Figure 10*).

Through its answers, the analysed companies identified that there are certain problems not only in the process of recruiting specialists, but also in maintaining them within the company, mentioning a high level of fluctuation among this category of staff (*Figure 11*).

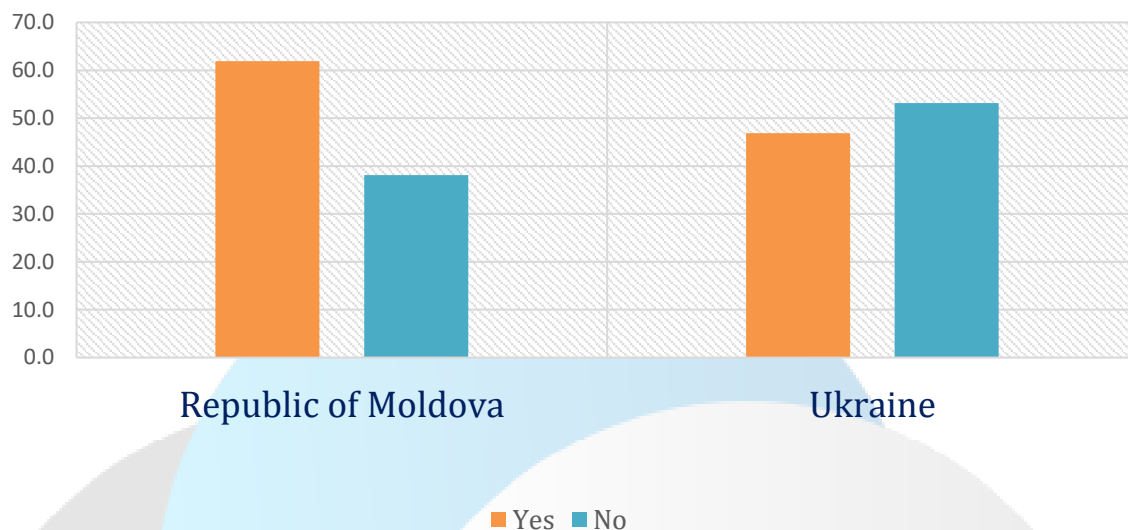


Figure 11. Existence of fluctuation of higher education specialists in the analysed companies, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Respondents of Moldovan companies are more affected by the turnover of highly qualified staff (61.9% of companies provided positive answer), and the representatives of the economic units in Ukraine perceive this problem at a lower level, but still considerable (46.9% of the analysed companies).

Regarding the level of satisfaction with the qualification of graduates of higher education institutions, the results of the study show an average level of satisfaction (*Figure 12*).

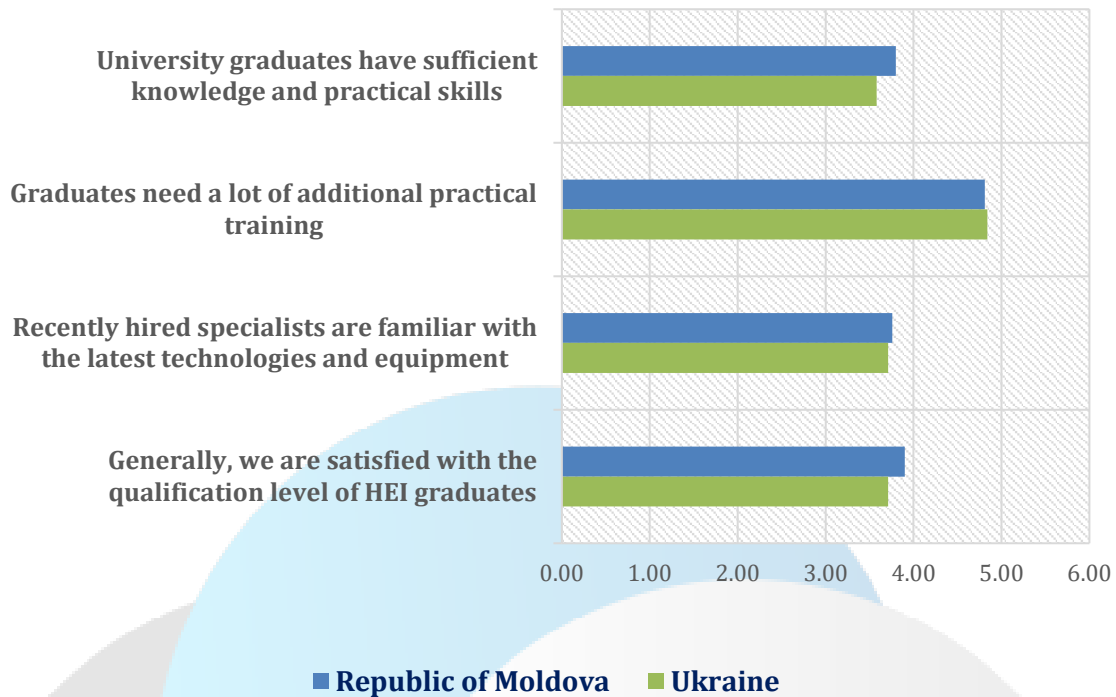


Figure 12. Level of satisfaction with the qualification of graduates of higher education institutions, Republic of Moldova and Ukraine

Source: Elaborated by the authors

There is a similarity in the answers given by the representatives of the companies from the Republic of Moldova and Ukraine. Respondents in these companies believe that graduates need more practical training and that further efforts are needed to familiarize newly hired specialists with the latest processes, technologies and equipment.

To the question "Are you working with educational institutions in the region?" all companies in the Republic of Moldova responded positively, while the opinion of the economic units in Ukraine differs (*Figure 13*).

UKRAINE

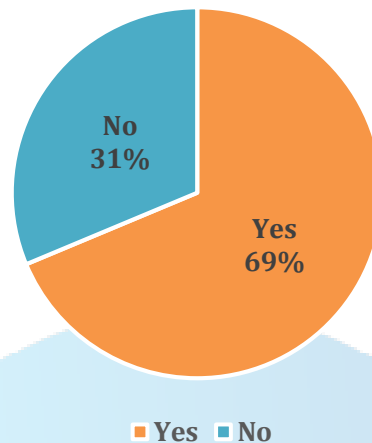


Figure 13. Level of collaboration with higher education institutions, Ukraine
Source: Elaborated by the authors

Almost two-thirds of the companies surveyed in Ukraine, 69%, already work with universities in the region, but 31% of companies are not yet involved in the process.

At the same time, 100% of Moldovan companies and 96.87% of Ukrainian economic units expressed interest in further cooperation with higher education institutions.

Understanding the importance of working with higher education institutions in the training of future specialists, the companies participating in the survey highlighted the most frequently used forms of cooperation with universities in the country (*Figure 14*).

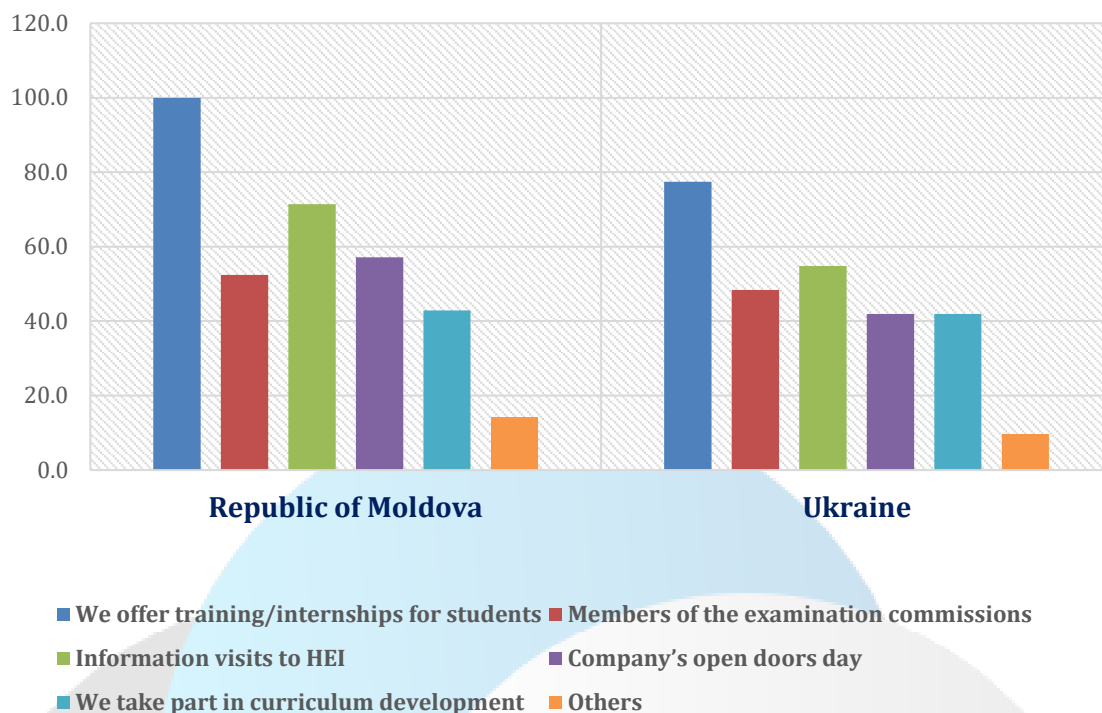


Figure 14. Forms of collaboration of companies with higher education institutions, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, it is observed that most companies in both countries offer internships (100% companies in the Republic of Moldova and 77.4% in Ukraine), carry out information visits in higher education institutions (respectively 71.4% and 54.8%), organizes the open day at the enterprise (57.1% companies from the Republic of Moldova and 41.9% from Ukraine), acts as members of the examination commissions (respectively 52.7% and 48.4%), participates in elaboration of curricula (respectively 42.9% and 41.9%), etc.

Although there are various ways of working together between business representatives and higher education institutions, they do not have a systematized character, framed in certain legislative regulations. Dual higher education can serve as a way to streamline these partnerships.

3.3. Knowledge and expectations of the dual education system

It is gratifying that when asked whether organizations are aware of dual education as a form of training for qualified staff for enterprises, respondents largely confirmed that they are aware of the existence of such a form of education (*Figure 15*).

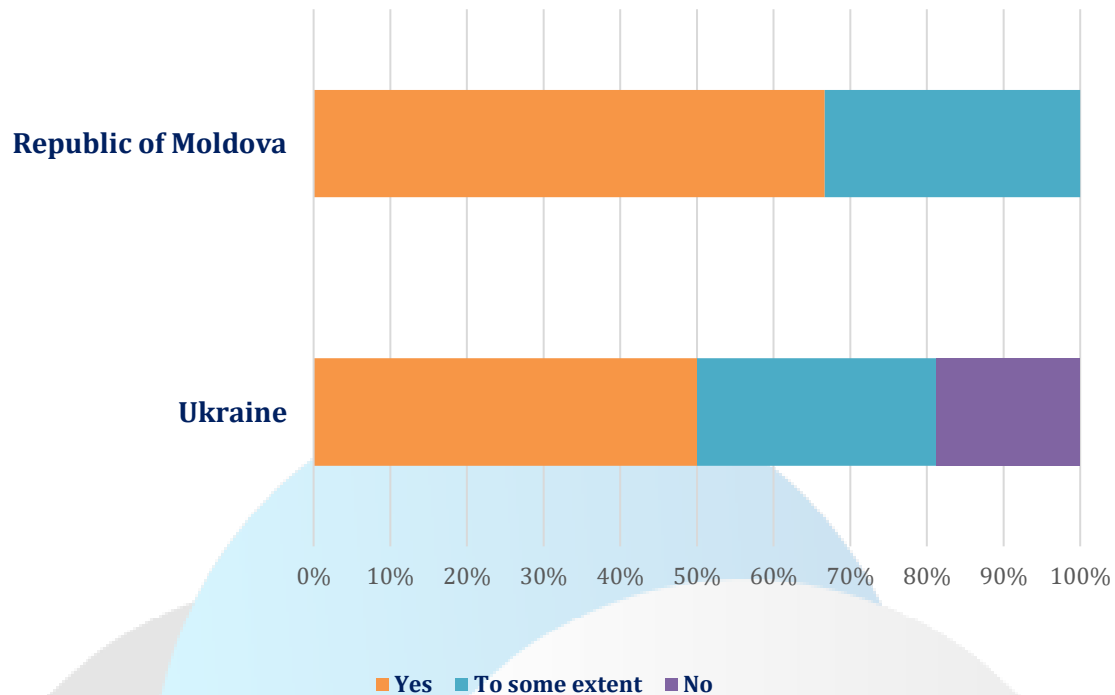


Figure 15. Level of information on dual education, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, 62.5% of the organizations participating in the survey in the Republic of Moldova stated that they are well informed, and 37.5% know something about this form of education. In the case of Ukraine, it is observed that the level of information is lower, namely: 50% of respondents know about dual education, 31% have heard about this form of education, but 19% are not familiar with this notion. The increased degree of information about dual education in the Republic of Moldova can be explained by the fact that since 2014 this form of education is used at the vocational level.

It is clear that further efforts are needed to popularize the concept of dual education. In this context, it becomes important to know from which sources the companies learned about dual education (*Figure 16*).

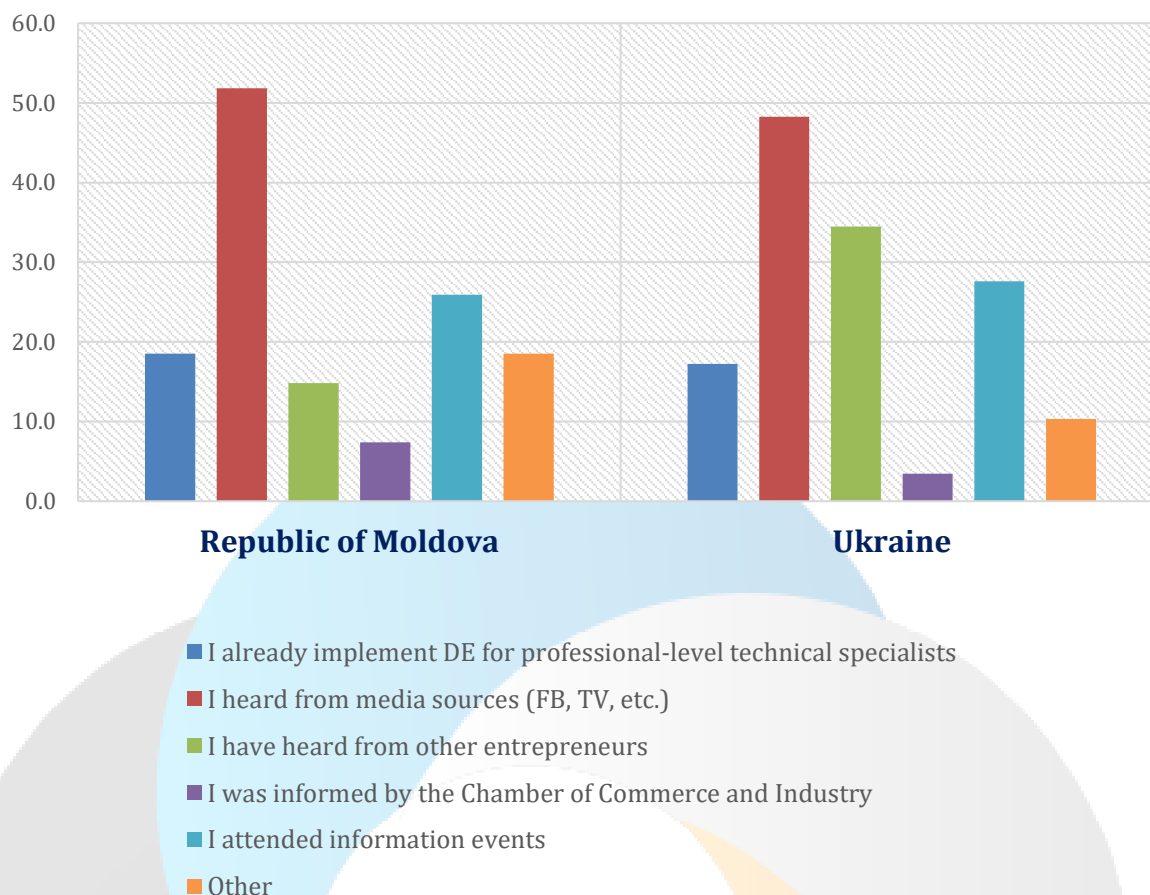


Figure 16. Sources of information on dual education, Republic of Moldova and Ukraine

Source: Elaborated by the authors

The companies from the Republic of Moldova, participating in the survey, mentioned that they found out about dual education from the following sources, which are exposed in descending order: mass media (Facebook, television, etc.), participation in various information events, implementation of dual education at technical vocational level, have been informed by higher education institutions.

Ukrainian companies have learned about dual education, mostly from media sources, from communicating with other entrepreneurs, participating in various information events, already implementing dual education at a technical vocational level and being informed by higher education institutions.

Economic entities in both countries have clearly shown interest in learning more about dual education (*Figure 17*).

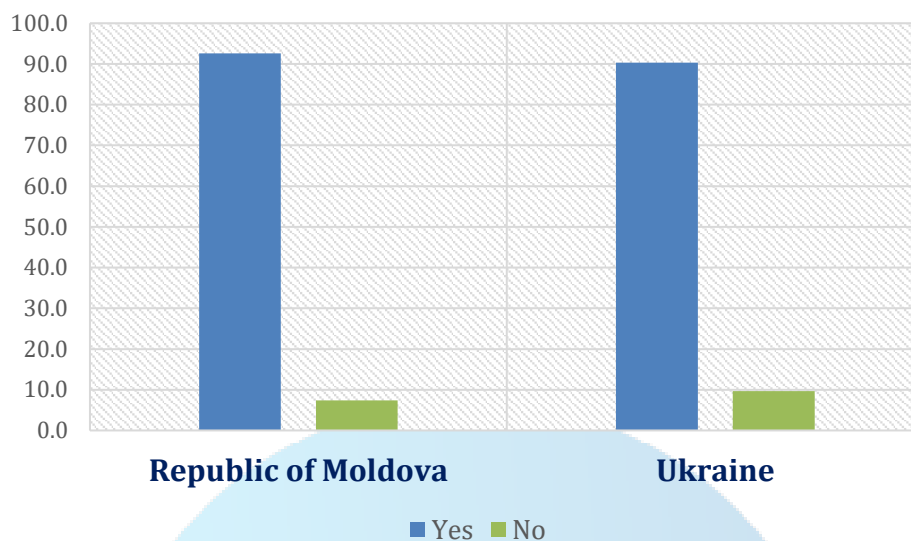


Figure 17. Level of interest in learning more about dual education, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, to the question: “Would you like to get additional information about dual education” 92.6% of the respondents from the Republic of Moldova and 90.3% of the survey participants from Ukraine answered positive.

The interest in dual education from the business environment is not limited only to the cognitive level, but is also followed at the intentional level, by manifesting a desire to participate in the training of specialists through this new form of education (Figure 18).

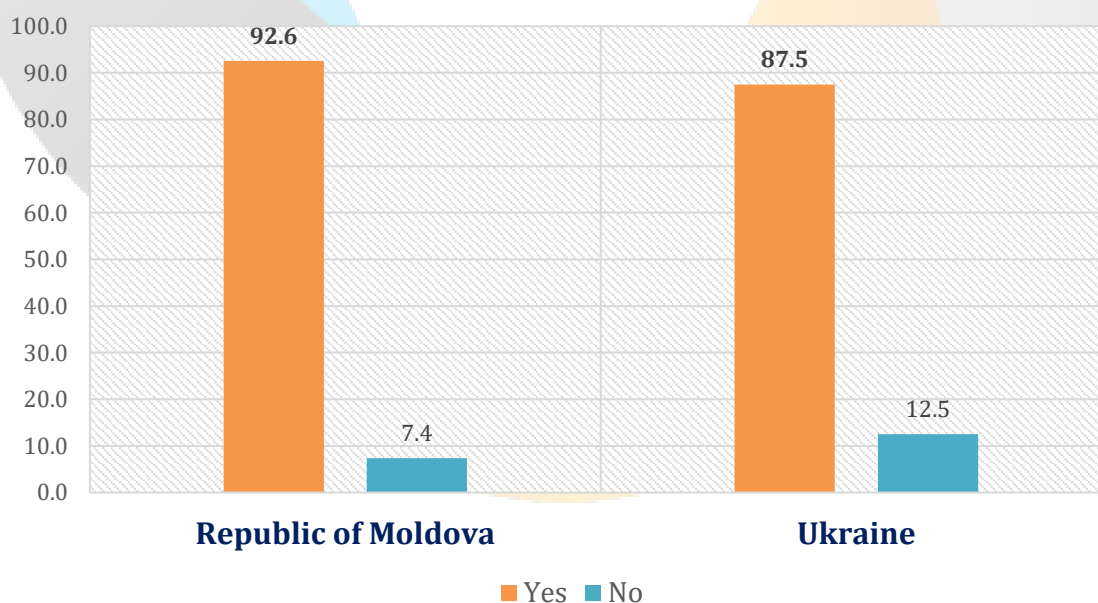


Figure 18. Level of interest in training specialists through dual education, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, 92.6% of the analysed companies in the Republic of Moldova and 90.3% of the companies participating in the survey in Ukraine expressed the intention to get involved in the training of qualified staff through dual system.

The companies, which expressed their desire to participate in the training of specialists through the dual system, were asked to indicate the occupations they considered more necessary (*Figure 19*).

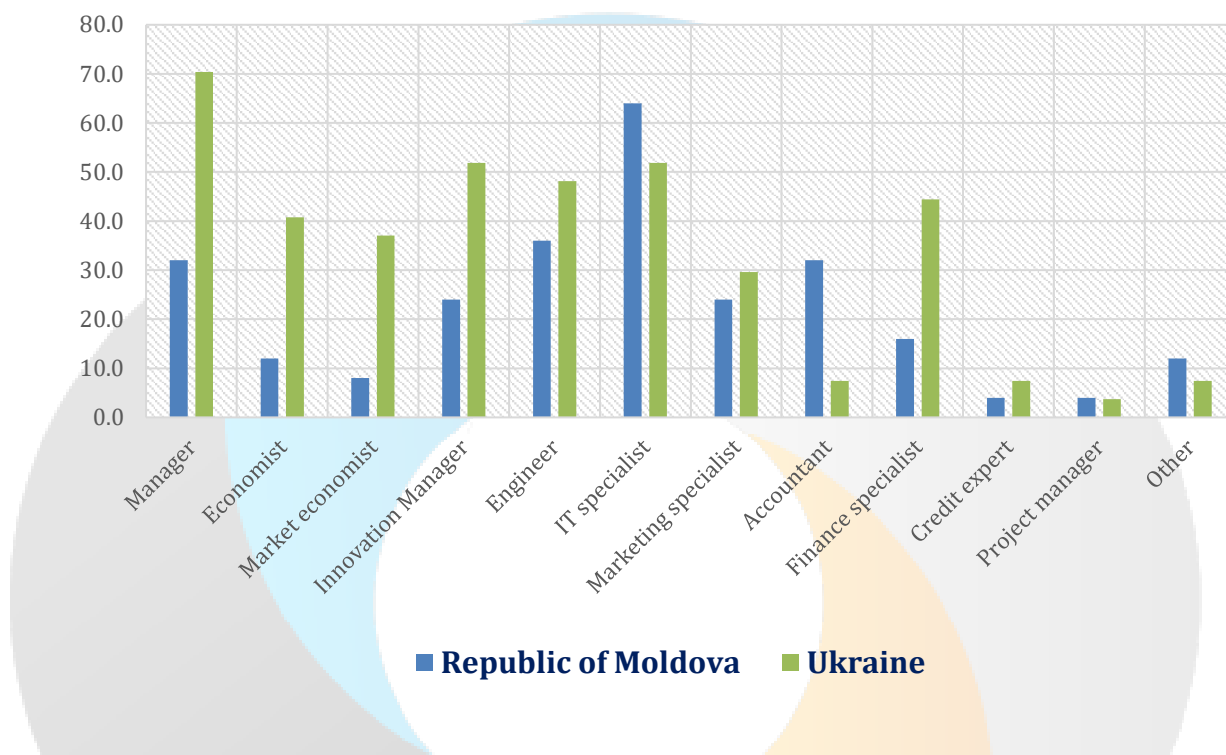


Figure 19. Occupations, which would be of interest to be prepared through dual education, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Organizations in the Republic of Moldova have clearly shown that they are ready to work with higher education institutions to train IT specialists - 64%, engineers - 36%, managers - 32%, accountants - 31.82%, etc.

Ukrainian companies have shown a greater interest in the training of management specialists - 70%, IT specialists and innovation managers, respectively - 52%, engineers - 48%, finance specialist - 44%, etc.

At the same time, the organizations participating in the survey expressed their agreement to contribute through various methods to the successful completion of the training of specialists through a dual system (Figure 20).

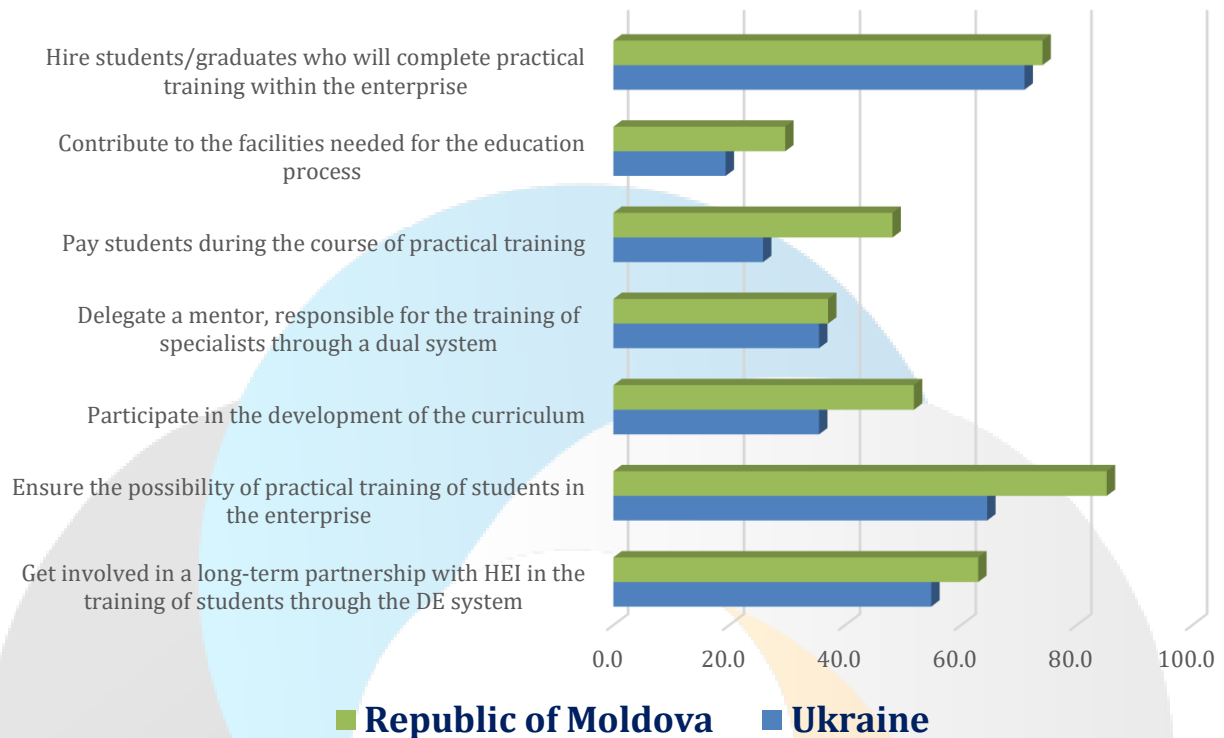


Figure 20. Contributions of companies to the training of specialists in partnership with educational institutions, Republic of Moldova and Ukraine

Source: Elaborated by the authors

It is obvious that both Moldovan and Ukrainian companies are ready to hire graduates, trained through the dual system. At the same time, there are some similarities in the opinions of companies in both countries: companies are available to provide practical training of students within the company (85% of companies in the Republic of Moldova and 65% in Ukraine marked this method), are prone to get involved in a sustainable partnership with universities in the process of preparing students (respectively 63% and 55%), are ready to participate in the development of curricula (respectively 52% and 36%), to remunerate students during practical training (respectively 48% and 26%), to delegate a person within the company (instructor, mentor), who will be responsible for the training of specialists through dual system (respectively 37% and 36%) and few companies have expressed their desire to contribute to the facilities necessary for the training process (respectively 30% and 20%).

Dual education, according to the experiences of other countries, assumes that students must be remunerated for their work in companies, so it was important to find out the opinion of the companies on the size of the salary that would be available to pay the student (figure 21).

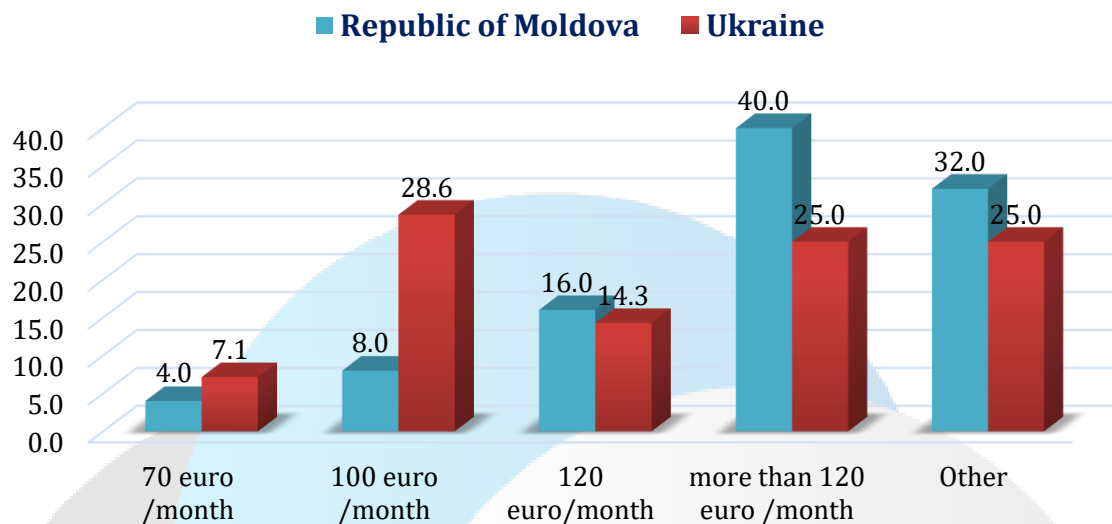


Figure 21. The amount of salary that companies are available to pay students, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, the companies participating in the survey from the Republic of Moldova expressed their opinion on student remuneration, as follows: 40% of respondents are available to pay more than 120 euros per month, 16% are ready to pay up to 120 euros per month, 8% of companies consider that they could pay 100 euros per month, 4% are willing to pay 70 euros and 32% of respondents expressed a different point of view, stating: that they are not ready to pay for the internship; it depends on the number of hours and the involvement of the students; the minimum wage in the real sector; possible more, but it depends on skills and effort.

The economic units in Ukraine, which were interviewed, have the following views on the size of the salary to be paid to the student by the company: 28.6% of companies are willing to pay 100 euros per month, 25% - more than 120 euro per month, 14.3% agree with 120 euro, 7.1% consider that 70 euro per month is enough and 25% of companies have other opinions, namely: the company must teach the student, but not to pay his salary; it will all depend on the results of the interview; they normally pay fare market rate; finance issues need to be discussed further.

Thus, it is highlighted that many companies do not perceive the difference between dual education and internship, in the case of the

classical model of higher education, which emphasizes the importance of further actions to popularize DHE and explain the role of the business environment in this process.

Regarding the duration of the practical training, from the total number of study hours, accepted by the company, the opinions at country level differ (*figure 22*).

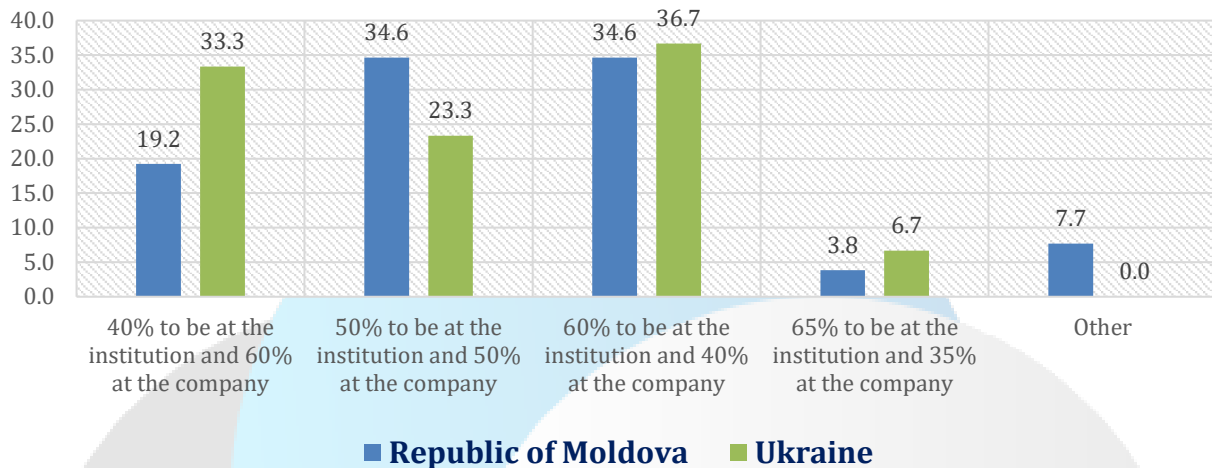


Figure 22. Share of the number of training hours at the enterprise and university (practical and theoretical), from the total number of study hours, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, the companies from the Republic of Moldova voted equally with 34.6 percentage points for the proportion of 60% at the higher education institution and 40% at the enterprise and 50% at the enterprise and 50% at the university. Less were in favour of the 40% at the higher education institution and 60% at enterprise - only 19.2%, and the 65% at the university and 35% at the enterprise was selected by only 3.8% of respondents. At the same time, some companies have mentioned that any combination may be possible for higher education.

In the case of Ukrainian companies, the answers provided marked 60% at the higher education institution and 40% at the enterprise - 36.7% of the total answers, followed by 40% at university and 60% at enterprise - 33, 3%, for 50% at the higher education institution and 50% at the enterprise voted 23.3% and 6.7% were exposed for 65% at the higher education institution and 35% at the enterprise.

Dual higher education can be organized according to several forms of training of future specialists within companies, so it was important to find out which would be more suitable for the organizations participating in the survey (*Figure 23*).

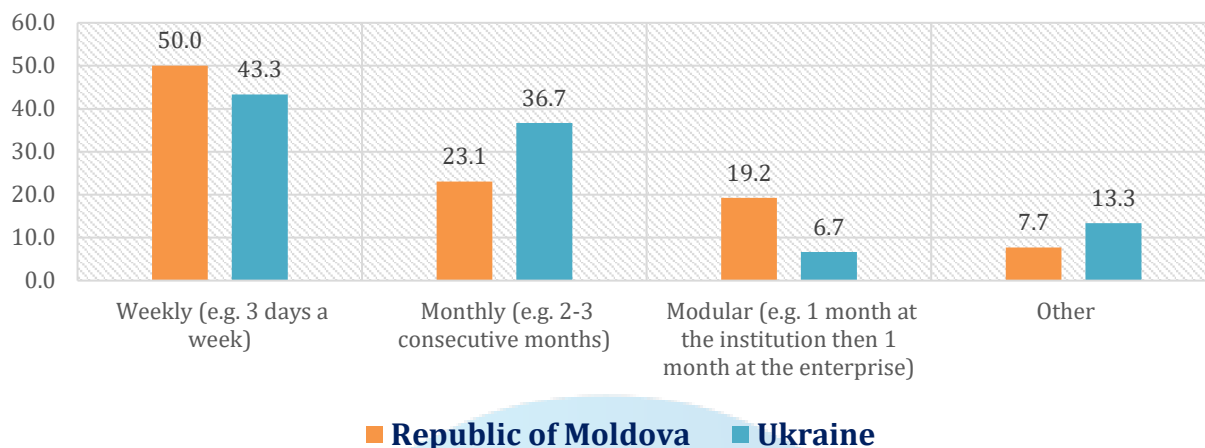


Figure 23. Form of in-company training of future specialists, Republic of Moldova and Ukraine

Source: Elaborated by the authors

The analysis of the answers provided by companies in both countries identifies similar views to this question. Thus, the representatives of the business environment in the Republic of Moldova (50%) and in Ukraine (43.3%) opt for a weekly program, for example, 2-3 days each week when the student is with the company. The monthly program follows (for example: 2-3 consecutive months), being chosen by 23.1% of companies, participating in the survey from Moldova and 36.7% from Ukraine. For the modular system, which involves, for example, 1 month at the institution, 1 at the company, 19.2% of respondents from Moldova and 6.7% from Ukraine opted.

In order to identify the reasons that would lead companies to engage in dual education, respondents were asked to indicate the most important and relevant benefits (*Figure 24*).

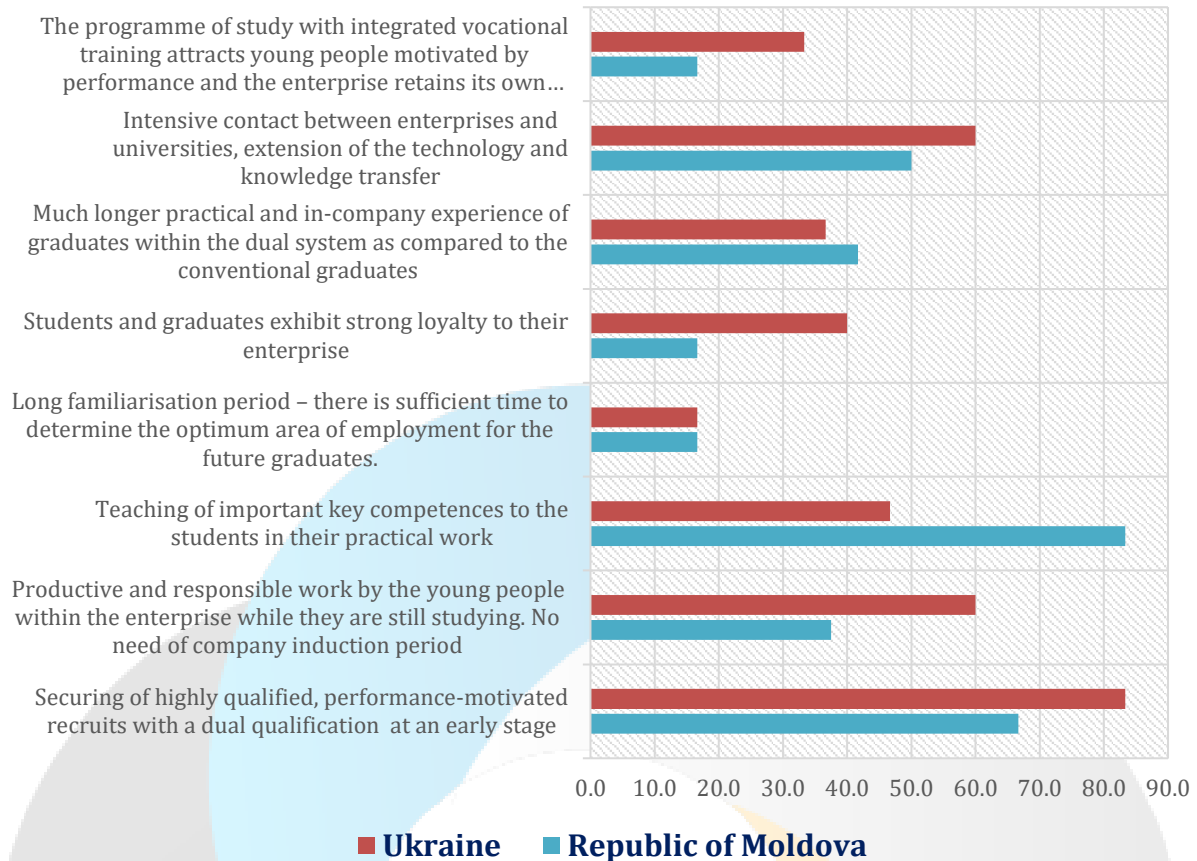


Figure 24. The advantages of the company's involvement in the dual system, Republic of Moldova and Ukraine

Source: Elaborated by the authors

Thus, all the advantages listed are important when deciding to get involved in DHE for Ukrainian companies, but some are given priority:

1. Ensuring highly qualified, performance-motivated recruits with a double qualification from the moment of employment;
2. Productive and responsible work of young people in the company while they are still studying, no need for a period of integration in the company at the end of the course;
3. Closer relationships between businesses and universities, technology extension and knowledge transfer.

In the case of companies from the Republic of Moldova, all the advantages are also considered relevant, of which only three are highlighted with the maximum score:

1. Teaching of the key competencies important to the students in their practical work;
2. Ensuring highly qualified, performance-motivated recruits with a double qualification from the moment of employment;

3. Closer relationships between businesses and universities, technology extension and knowledge transfer.

Representatives of the business environment were asked to determine which are the most important professional skills related to performance that students can develop through dual education (*Figure 25*).

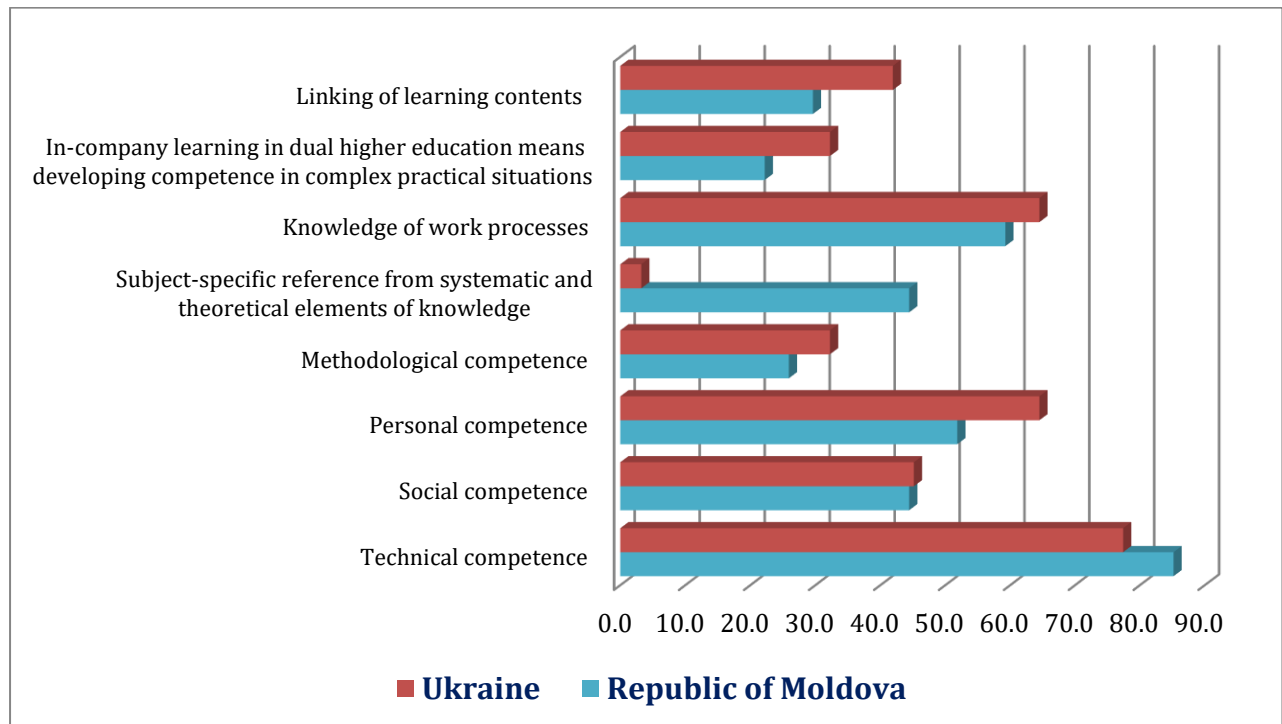


Figure 25. Performance-related professional skills gained by students in dual education, Republic of Moldova and Ukraine

Source: Elaborated by the authors

The analysis of the answers provided by the representatives of the companies from the Republic of Moldova and Ukraine reveals the existence of similar opinions regarding the abilities obtained by the students due to the dual education.

Respondents pointed out, first of all, that students will be able to develop **technical skills**, thus increasing their ability to solve problems in a task-oriented manner, based on knowledge of the subject and the ability to evaluate the result. Secondly, they will have the opportunity to increase their level of **knowledge in the field of work processes**, dealing with specific knowledge in a way that is productive and relevant to the situation.

At the same time, dual education through dual system will allow the increase of the students' **personal skills** to individual and social values. It is also important that through dual education it will be possible to develop

social skills, which consist in the availability and capacity to understand relationships and social interests.

Given that the representatives of the business units in the previous questions expressed some dissatisfaction with the level of training of graduates of higher education institutions, identifying weaknesses in the field of practical skills, knowledge of new processes, technologies and equipment, DHE appears as a system of education that could solve these problems.

The implementation of dual higher education is a complex process, in which various stakeholders must be involved, each assuming well-defined tasks and responsibilities. At the same time, we must mention that it is necessary to develop country-specific DHE models that take into account the experiences of the leading countries in the field, but are based on the particularities of their own education system. For these reasons, the companies participating in the survey were asked to express their views on which stakeholders are considered relevant in the DHE implementation process (*Figure 26*).

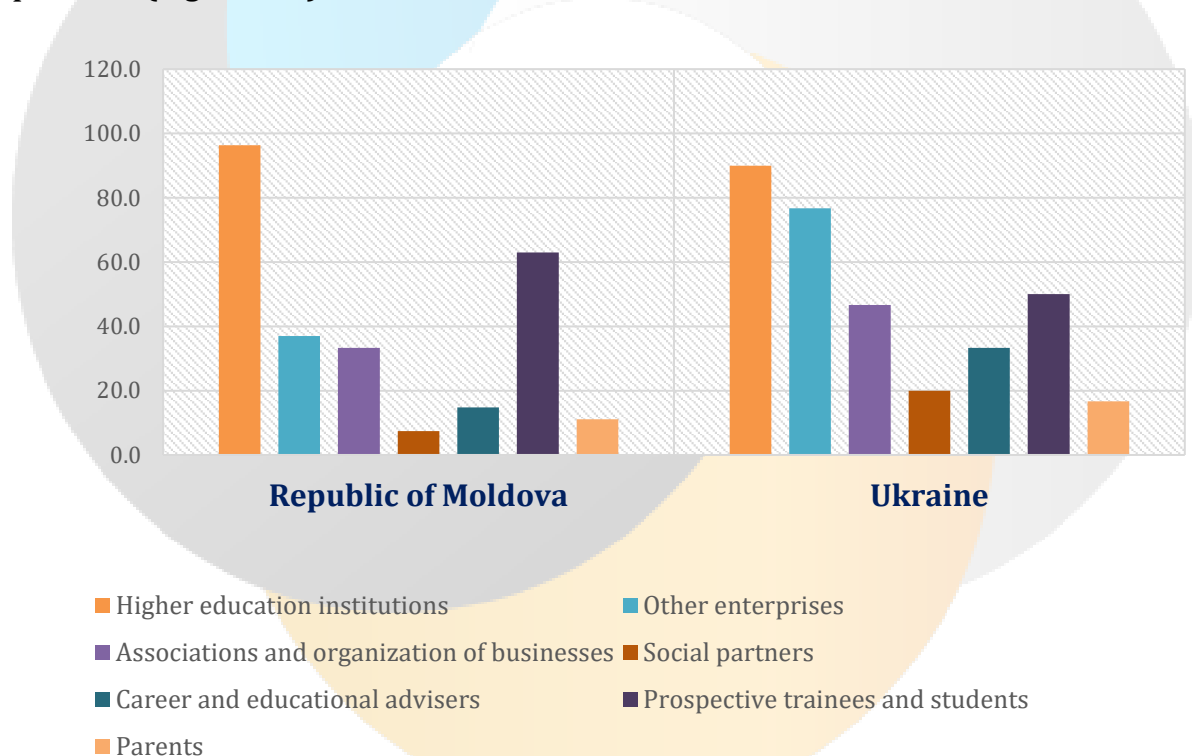


Figure 26. Relevant stakeholders to collaborate for the Implementation of the DHE, Republic of Moldova and Ukraine

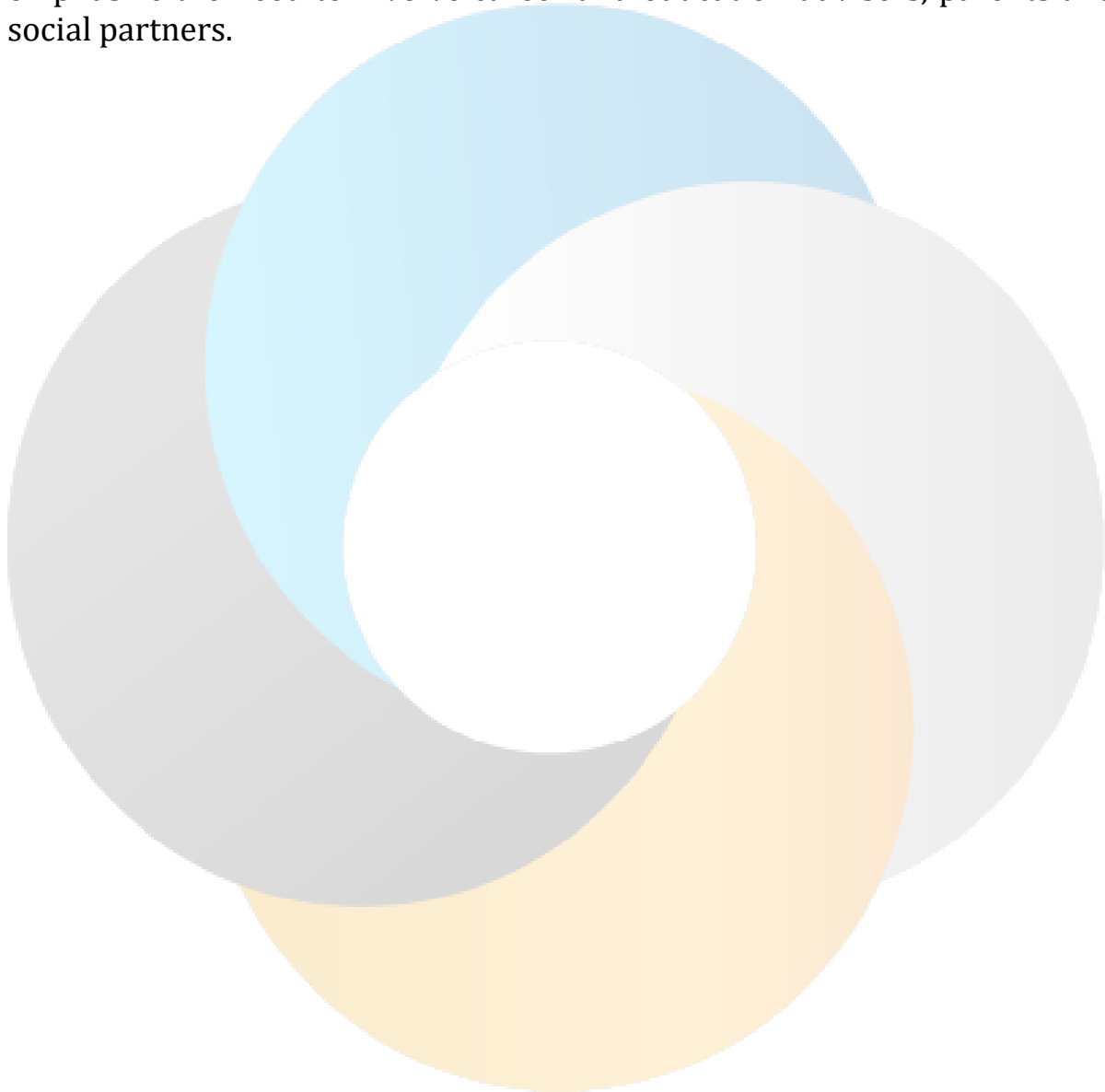
Source: Elaborated by the authors

Companies from the Republic of Moldova highlighted the importance of two stakeholders: universities and prospective trainees and students. A



smaller role in the process of implementing DHE belongs to other enterprises and business associations and organizations, and the relevance of career and education advisers, parents and social partners is considered very low.

Ukrainian companies have noted the importance of several stakeholders in this process. Thus, the respondents consider that the role of HEI, other companies, potential students and trainees, and business associations and organizations is important. At the same time, they emphasize the need to involve career and education advisers, parents and social partners.





CONCLUSION

Based on the study, we can conclude that companies are ready to get involved in the integration of dual higher education in the Republic of Moldova and Ukraine. The organizations participating in the survey expressed their willingness to contribute in various ways to the training of future specialists with higher education.

In this context, we consider that it would be welcome to intensify the cooperation relations between the partners involved in promoting dual higher education: the Ministry of Education and Research of the Republic of Moldova, Ministry of Education and Science of Ukraine, the Moldovan Chamber of Commerce and Industry, universities and companies, and other stakeholders: trainees and students, business associations and organizations, career and education advisers, parents and social partners.

Efforts are needed to adapt the regulatory framework for the organization of dual higher education: changes in the Education Code, the adoption of the draft Law on dual education, where dual higher education should be regulated.

It is also necessary to disseminate information about dual higher education and to actively promote it in the business environment, in order to involve more local companies to work together for implementation of dual education. This form of education can only be successfully achieved if the active involvement of economic entities is ensured.

Thus, there is a reservation regarding the satisfaction level of the business environment regarding the quality of graduates of higher education institutions in the analysed countries. According to the respondents, graduates who have recently been hired have theoretical knowledge, but lack practical skills. At the same time, a high level of expectations regarding low skills can be noticed. Graduates are reluctant to look for jobs, companies claiming to receive few resumes, and after discussions, they realize that the applicants are not sufficiently prepared.

In this way, it is obvious that the business environment feels an acute need in specialists with higher education, but is not satisfied with the level of training of higher education institutions graduates. This situation can only be remedied through more intense and complex collaboration between businesses and universities, which will be possible through dual education. Dual education is a way of training new staff, which combines theoretical education in universities with the development of practical skills in enterprises.



The dual education implemented at the level of higher education institutions will require the realization of several considerable changes, but which will contribute to the increase of the quality of the educational process. These include:

- ④ Concluding a trilateral agreement between the student, the university and the business unit;
- ④ To ensure the possibility of practical training of students within the enterprise, using one of the possible training models: 40% of the total number of study hours are spent at the institution and 60% at the enterprise; 50% at the institution and 50% at the company; 60% at the institution and 40% at the enterprise;
- ④ A person appointed as a tutor or mentor (a specialist) will be delegated by the company, who will be responsible for the training and formation of practical specialized skills;
- ④ Universities to work with partner companies in developing / adjusting the curriculum;
- ④ Teachers should have the opportunity to complete training courses in partner companies;
- ④ To ensure the salary for students, during the entire training process as a motivating factor and to encourage potential young specialists;
- ④ Facilitate the employment of graduate students, who will carry out practical training in the partner company.



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