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**Wydawnictwo Wyższej Szkoły Agrobiznesu  
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**NAUKI SPOŁECZNE I HUMANISTYCZNE**

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## SEARCH FOR ORGANIZATIONAL AND METHODOLOGICAL CAPABILITIES OF HIGHER EDUCATIONAL INSTITUTIONS IN UKRAINE TO IMPLEMENT THE PRINCIPLES OF DUAL EDUCATION

### Summary

The topicality of the study may be seen in the expansion of practice-oriented higher education, the desire of many educational institutions to train professionals whose level meets the contemporary requirements of the labor market, as well as the necessity to find opportunities for rapid employment of graduates. The aim of the study is to analyze the body of research on the possibilities and effects of the introduction of dual education. Research methods include analysis, generalization, systematization of scientific achievements, experience and results of empirical studies of Ukrainian and foreign scholars. The main research results, which form the novelty of our study, include the list of organizational and methodological capabilities of higher educational institutions: introduction of disciplines whose programs are focused on the dual model of learning; organization of professional (undergraduate) practical training; using the resource for conducting practical parts of term and diploma papers in the process of real work; socio-cultural activity of students (their involvement in social projects, work in NGOs, volunteering); internships in the specialty. The identified effects of organizing the educational process with regard to the principles of dual learning (increasing academic performance, development of a number of cognitive skills, soft skills, as well as sustained interest in continuing education, including master programs) emphasize the need for further systematic research aimed at solving this issue.

**Keywords:** organizational and methodological capabilities, higher educational institutions, principles, dual education, effects of dual education.

## **Introduction**

Organization of higher and vocational education in dual form has been actively discussed in recent years in Ukraine. Interest in this topic has arisen and is stimulated by several factors which are important for the educational system. In particular, it has become obvious to many educators and graduates of higher and vocational educational institutions that obtaining a certain professional specialization does not guarantee a successful career. Graduates have a problem with employment, which, according to M. Rostan, A. Stan (2017) [16], is primarily caused by the lack of cooperation and ties between educational institutions and actors of the labor market. The report of the European Commission states that young people face these specific problems, as they are new to the labor market and the employer is more interested in experienced professionals, so young people are often forced to have temporary / part-time employment [5].

Another factor that encourages the development of dual education is the current state of Ukraine's declining innovation, the reason for which can be seen in the inconsistency of the quality of education to the requirements of employers and the goals of innovative development of the country [V. Novikov, Yu. Kariahin, V. Chernychenko, 2020] [13]. Thus, in 2019, among 129 countries in the global ranking of innovations Ukraine was only on the 47th place compared to 43rd place in 2018, and the total volume of sold innovative products decreased by 84%.

The answer to these challenges and the way to establish cooperation between educators and employers (with many beneficial results for all parties involved the process) is the implementation of the idea of dual education. The benefits of this form of education have been reflected upon by many scholars. Thus, Z. Kocsis and G. Pusztai [7] argued that dual education has a number of advantages for all the three aspects of the training process: namely, educational institutions, students and employers. The authors note that the advantages for educational institutions may be the following: increasing competitiveness in the market of educational services, giving access to up-to-date information on the current state of development of professions, expanding opportunities for applied research etc. For students they mention the following benefits: increasing their chances of getting the first job after graduation, availability of work experience before the end of training, receiving a salary. P. D. Koudahl, 2010 [9] notes that the advantages of the dual form of education are a significant increase in the mobility of graduates in the labor market. The benefits for businesses include the opportunity to train employees that exactly match "the order" of a company, to select the best graduates and thus improve the image of a company.



Systemic steps of the state and the vast majority of research in the problem field are focused on studying the effects of dual education on vocational and technical education. However, higher education which is quite flexible to perceive all the recent changes and focuses on finding resources to obtain the benefits of dual education, has only started a systematic search for optimal organizational and methodological models necessary to implement the principles of duality in the educational process. Therefore, the discussion concerning the ways to find and understand the possibilities of higher educational institutions in the context of this study is rather timely.

### **Aim, subject and research methods**

The aim of the paper is to review current domestic and foreign research on the implementation of the principles of dual education, to present the results of reflecting upon own empirical experience of building educational process using elements of duality, to identify and analyze the effects of dual education, as well as its risks for all of the participants of the training process.

The research subject is the process of implementing dual education.

Research methods: analysis of publications on the organization of dual learning, generalization of results; finding in the general content some specific organizational and methodological decisions on the implementation of the principles of duality in higher educational institutions; concretization of the empirical research results from the angle of the studied problem; generalization of own pedagogical experience, systematization of the scientific research results by sections.

### **Research results**

The works that were considered within the problem field of this research represent a certain range of definitions used by the authors, namely: "duality – methodological characteristics of education" (L. Martseniuk, O. Gruzdiev) [12], "dual system" (I. Savchenko) [18], "principle of dual education" (P.D. Koudahl) [9], "elements of the dual form of learning" (T. Herliand, I. Drozich, N. Kulalaieva, etc.) [6], etc. The article uses the notion "principles of dual education" as the key term; it seems to be the best option in the context of insufficient study of the problem. Under *the principles of dual education*, we understand the essential features that underlie the development of the theory and practice of dual education. The list of

these principles includes the existence of an agreement (conclusion of an agreement) between all parties to the dual process; students practicing in real production conditions, where the educational process is carried out in tandem by teachers and instructors (mentors) from the place of work (I. Savchenko, 2018) [18], evaluation of learning outcomes according to real indicators of professional training confirmed in production conditions (O. Korkuna, I. Korkuna, O. Tsilnyk, 2018) 98].

During 2016-2019, we developed and implemented in the educational process a number of measures that used the principles of dual education. The actual research work was carried out on the basis of Khortytsia National Academy (Zaporizhzhia) with students majoring in the specialty 231 "Social Work" (n = 37) and focusing on the preparation of graduates for work in early social rehabilitation institutions; the results of this research were also published in our Ph.D. thesis [20] and a number of academic papers [21, 19]. In the process of research work the idea of breaking the process of personal and professional development of students into stages was implemented. Taking into account the general dynamics of student development and the available educational resources we aimed at building the optimal educational process allowing future social pedagogues to develop readiness for work in early social rehabilitation centers. In our opinion, taking into account the stages of personal and professional development of future graduates of the higher educational institution is also important for understanding the results of research work in the context of implementing the principles of dual education.

The first stage – propaedeutic (I-II years of studying, semesters 1-4) is aimed at acquainting students with the specifics of the chosen specialty. At this stage attention is focused on the activation of the motivational sphere of students, their professional orientation and development of an active professionally-oriented position. The introductory practical training is provided during the first years of studying; in course of this practical training students have the opportunity to observe work of specialists in their workplace and certain socio-cultural activities (involvement in the functioning of the higher educational institution, participation in projects, volunteer work, etc.). This involvement forms the basis for further developing the practice-oriented process and implementing the principles of dual education.

The second stage – orientational (III year of studying, semesters 5-6) is aimed at students understanding the range of opportunities for socio-pedagogical activities and mastering basic knowledge of socio-pedagogical work in various social institutions with different groups of clients. Change in developmental tasks determines the appropriate selection of organizational and methodological measures. In order to achieve the goals of students' awareness of the range of opportunities for socio-pedagogical activities and the development of the focus on mastering

the chosen specialty, we used the resources of socio-pedagogical practical training of students. In particular, the implementation of this practical training in the specialty 231 "Social Work" can be carried out on the basis of various organizations in the social sphere and in the spheres of health and education: namely, departments of social protection, youth and sports, health, education and science; social rehabilitation centers; regional and city employment centers; administrative service centers; directorate of the pension fund; centers of social services for children and youth and centers of medical services of different levels; educational institutions of different levels; penitentiary service, as well as public organizations and communities, etc.

In addition, at the second stage of students' personal and professional development it is advisable to work with them on individual professionally significant topics; this work is carried out in the form of term papers. Such works can motivate students to realize the benefits of a particular specialization, find personal interests in it and organize real empirical research. In this respect when reflecting on the principles of dual education, teachers can help students to implement their research ideas not only on paper but also in the real process. It should be noted that for some students the topic of their term paper in the third year of studying can be decisive in choosing a specialization and, accordingly, the desired place of work. At this stage, socio-cultural activities, cooperation of students with public organizations and other institutions also retain their influence.

The main stage (IV year of studying, semesters 7-8) is aimed at systematizing knowledge about the content, directions and techniques of social pedagogy, the development of professionally important skills and the formation on this basis of ideas about the vision of oneself as a specialist. In our opinion, this period of personal and professional development is the most favorable for organizing the educational process in dual form. Such an organization should be desirable for students (they should show a conscious desire to shift to such a form of learning) and be as individualized as possible. Moreover, this process does not necessarily require either a total change of educational programs or even their transformation into dual ones. Only certain subjects may require changes (this might be determined either by the choice of students or by the decision of the department). In the course of our research work, students were offered an optional course "Organization of Work in Early Social Rehabilitation Institutions", which was designed taking into account the principles of dual education. The program content of the course is based on the logic of inducting general ideas about the holistic system of early rehabilitation into specific elements of the content and techniques of a social pedagogue. The curriculum of the course comprised 14 lectures, 22 practical classes and 36 hours for independent work. The optional course is based on two thematic modules: the first

module "Socio-pedagogical Aspects of the Activities of Early Rehabilitation Centers" reveals theoretical foundations of this type of professional activity. The practical classes provided by the program are held in the classroom. The second module "Organization of Socio-pedagogical Work in the Centers of Early Social Rehabilitation" activates students' professional interest in practical activities, reveals some technological and methodological issues regarding the implementation of rehabilitation measures. The practical classes provided by the program of the course took place in the Center for Early Social Rehabilitation. The optional course in the academic year of 2019-2020 was synthesized with the elective course "Social Work in Rehabilitation Centers". The total number of hours for the course was 90, of which classroom work comprised 34 hours. Among the forms of work which the program of this course provided were lectures and practical classes. Some of the practical classes were conducted in the classroom, whereas some of them were provided in the Center for Early Social Rehabilitation of the Khortytsia National Academy.

At the third stage of the students' personal and professional development organization of professional (undergraduate) practical training of a dual nature is possible, as this training has all the characteristic features of dual education. In addition, research work of students can be used as a valuable resource, which allows you to delve more objectively into topics that are interesting for students, to implement in the real process and instrumentally measure its effectiveness.

Thus, in the course of our research we singled out some opportunities for higher education institutions to implement the principles of dual education. These organizational and methodological activities were performed gradually in accordance with the logic of expanding practice-oriented activities of students. In our opinion, it is possible to find features of dual education in certain subjects and programs which are focused on the dual model of learning (at the request of students), professional (undergraduate) practical training, finding resources for practical parts of term and diploma papers in the real process of work, sociocultural activity of students (participation in social projects, work in NGOs, volunteering). Internships also provide additional resources for the organization of end-to-end practical trainings [22]. In the studied context, we share the opinion of a group of researchers (N. Svitailo, O. Kuppenko, V. Dementov) on the need for higher educational institutions to plan and implement various forms of work in their educational process, which would not change it radically, but would fit within the approved curriculum and ensure the acquisition by students of the necessary practical skills and competencies, give future professionals necessary professional experience, strengthen ties with employers. We also agree with L. Krymchak [10], who notes that the introduction of dual forms

of higher education should be meaningful and take into account Ukrainian traditions and customs, ensuring the level of increase of practical significance in the higher education system of Ukraine.

To determine the importance of each of the abovementioned organizational and methodological tools we developed criteria, indicators and levels of development, and in accordance with them conducted diagnostic research (summative and control ones). As a result of the conducted study significant changes were revealed in the qualitative indicator of *the orientation on social and pedagogical work* in institutions of early social rehabilitation. Changes took place at all levels of development, the quantitative indicators of the high level increased significantly by 10.8% (from 0% to 10.8%) and the average level – by 27.02% (from 2.7% to 29.7%). There is also a positive trend in the growing quality of *the stability of motivation* to work in early social rehabilitation. There are also changes at all levels of development: the high level increased by 5.4%, and the sufficient level increased by 32.43% (from 5.4% to 37.83%). Quantitative indicators of *systematic character and the scope of knowledge* of early social rehabilitation have also undergone significant changes. Here significant changes occurred in the high level of development which increased by 27.02% (from 0% to 27.02%), and in the sufficient level which also increased by 32.4% (from 5.4% to 37.8%). Less pronounced, but also significant changes occurred in the qualitative indicator of the *productivity of future social educators' skills* in early social rehabilitation. Here the high level increased by 13.5% (from 0% to 13.5%) and the sufficient level increased by 21.6% (from 18.9% to 40.5%). There is also a positive trend in the quality of future social educators' *ability to tackle the technological issues* of early social rehabilitation. Shifts occurred in the following percentages: the high level of development increased by 10.8% (from 0% to 10.8%), the sufficient level increased by 24.3% (from 0% to 24.3%). Significant changes are also observed in the indicator of future social pedagogues' *readiness for creative self-realization* in the domain of early social rehabilitation: high level increased by 10.8% (from 2.7% to 13.5%) and the sufficient level – by 29.7% from 5.4 to 35.1%).

To find out a wider range of effects than those that were singled out in our study, we analyzed the published results of researches on the problem of dual education by other Ukrainian and foreign scholars. Thus, according to studies by Brahimy et al. [2] students who participate in dual education have *higher average scores*. These findings are supported by the results of an empirical study by Z. Kocsis, G. Pusztai [7], who found out that 74.4% of students studying by the dual form of education show higher average academic performance compared to only 55.6% of such students among those who studied by the usual form of education.

Subjective assessment of student performance also shows quite positive results, as more than half of students (56%) believe that they have become much more successful at university, but 23% of respondents believe that their performance has increased only in practical forms of work. 31% of teachers who participated in the survey also noted that students in dual education were more efficient and successful than other students who were engaged in the traditional form of education. Z. Kocsis, G. Pusztai identify another effect of dual learning – *the growth of students' cognitive interest* and the desire to continue their studies, especially in the master program. According to E. Török (2015) [23], students of dual form of education seek to improve their knowledge. Dual education as an innovative form of training specialists in higher educational institutions helps to increase the *level of students' motivation to study* [11].

Some researches show a significant impact of dual education on the development of non-cognitive skills. D. Autor, F. Levy, R. J. Murnane [1] concluded that the constant increase in the number of tasks that primarily require social and non-cognitive skills is a resource for developing students' abilities, in particular, modeling high quality interpersonal interaction and understanding of the social environment. Among the effects of dual learning, researchers also note *getting acquainted with corporate culture, interaction in the workplace, teamwork* [14], *emotional regulation, moral sensitivity and communication* (Campbell 2018) [4].

Z. Kocsis and G. Pusztai note that students gain experience in developing various *soft skills* by conducting semi-structured interviews with students (n = 10) and employees of partner companies (n = 11). For instance, they quote the interviewees: "After the first semester, they communicate more, *become more confident, fit in better with the team*. There is a student who at first had a cursory idea of technical drawings and now has his own project" (mentor); "At a certain level I was ready for the future working life, knew how to allocate my time, how to take responsibility, if I promised to do something, I would have to do it" (student) [7].

Thus, by analyzing the results of diagnostic and empirical research, we have identified positive significant effects from the implementation of dual education for higher education students. These positive effects are academic success, development of a number of cognitive skills, professionally significant non-cognitive skills and soft skills. However, our review of scientific papers also allows us to outline the range of issues and possible difficulties in the organization of higher education on the principles of duality.

Thus, according to L. Martseniuk and O. Gruzdiev [12], it is negative for students to receive a lower salary when performing the same duties as experienced workers; lack of a guarantee of employment from the employer after the end of the training also has some negative impact. The empirical research by Z. Kocsis and G. Pusztai also revealed the problem of

conflicting attitudes of some students towards dual learning. The survey (n = 286) proved that 14% found it difficult to focus on learning because they had some additional workload associated with the dual form of education. So, when mastering the educational program of the specialty they prefer the usual form of education.

For institutions and organizations, the challenge may include the appointment of mentors for students or the probable decline in the image of the institution or organization due to poor performance of duties by students. In our opinion, for a better understanding of the view of employers, it is important to refer to the results of a study conducted as part of a pilot project on the introduction of dual education in Ukraine. O. Buchynska, O. Davlikanova, H. Hofstetter, L. Lylyk [3] presented the results of a survey of institutions and organizations (n = 400) and found that 80% of all respondents see some benefits of dual education, but as of the year 2020 46, 7% of respondents are not ready to become partners of educational institutions for the implementation of dual education, while only 27.5% are ready to do so. 6.25% of respondents do not see any obstacles that could hinder the introduction of dual education. Others listed several challenges, namely, the volatile situation in the country; low quality of education provided by universities; lack of guarantees that students will remain working in the company or even stay in the country; reluctance of employers to participate in time-consuming initiatives.

The challenges for higher educational institutions comprise the necessity of a global revision of curricula and study schedules, creation of new educational and methodological complexes in the situation when standards for their creation are absent; the threat of excluding certain general intelligence subjects from the list of disciplines provided by educational programs; possible reduction of the staff of scientific and pedagogical workers; the need for independent search for partner institutions and organizations.

We can also point out some risks that the state may face when introducing dual education. Since the introduction of a dual education system requires an increase in the number of training institutions in the professions that are needed in accordance with regional development strategies [15, 6], on the one hand, the problem will be to address the issue of "unclaimed" educational institutions. It will be necessary to decide whether they should be closed or transferred to another region or whether they will have to change their profile. On the other hand, it is important to find resources for the formation and discovery of the necessary specialties for the region. But can such regulation be considered as a restriction of the students' right to education in accordance with their interests and preferences?

## Conclusions

In the current situation when it is necessary for graduates to meet the requirements of the labor market and we may observe the growing value of having competencies rather than just possessing a diploma, there is a need to understand the capabilities of higher educational institutions to organize the educational process on the principles of duality. It seems to us that this process will be different in terms of its organization and content from dual learning used in vocational and technical education. After all, a specialist with higher education is expected not only to have specific skills in the workplace, but also the ability to professionally assess an atypical situation, implement management functions, carry out long-term planning, assess and respond to market changes, etc. Therefore, the set of possible tools for the organization of higher education should be as wide as possible and should not be limited to the dual form only. This form of learning should be in demand by higher education students in accordance with their professional interests and preferences; it should also meet the needs of their specialization. The means of implementing the principles of dual education (practice, internships, dual training courses, research work, socio-cultural activity, etc.) considered in the article are already integrated in the methodological system of higher educational institutions and demonstrate excellent prospects for expanding practice-oriented learning. Our review of the results of diagnostic and empirical research which aimed at determining the effects of dual education for students (academic achievement; development of a number of cognitive skills, professionally significant non-cognitive skills and soft skills; a strong interest in continuing education, especially for master programs, etc.) is a valid argument for continuing to study the organizational and methodological capabilities of higher educational institutions to implement the principles of dual education. They should be systematic and organized, taking into account the national characteristics and needs of each specialization. In addition, clarifying the specific features of the dual process in higher educational institutions of Ukraine can be the basis for determining more accurate terminology (dual system, elements of dual education, elements of dual form, principles of dual education, etc.), which will essentially define this process.

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