

DUAL STUDIES AS A RESPONSE FOR THE NEEDS OF THE CONTEMPORARY MARKET

Jadwiga GRABOWSKA

Silesian University of Technology, Faculty of Organization and Management, Department of Logistics;
jadwiga.grabowska@polsl.pl, ORCID: 0000-0001-6596-2217

Purpose: Dual studies, a modern educational programme combining conventional academic classes with professional work, they are enjoying a growing popularity among students and companies. Dual studies are an alternative form of obtaining employees by employers. Employers during the work placement they have the opportunity to offer to the students the internships and employment in their company. For the students it is a chance to gain the experience. The research presented in the article are referring to the dual studies at the Faculty of Organization and Management at the Silesian University of Technology in the field of Logistics 2nd rank. These studies began in February 2019 and it will take three terms. The purpose of the article is to answer for the questions if dual studies are the best answer for the requirements of the contemporary labor market and if dual studies are the optimal model of graduate education. The research will be conducted in 4 steps: after the 1st term and terminated work placement; after terminated internship; after the third term and after one year from the defense of the master's thesis.

Design/methodology/approach: In this article were used the interview and questionnaire method. Interviews and questionnaire were conducted with both students and companies where the practice and internships taken place.

Findings: Obtained results provide preliminary information regarding to the effects of the first term, usefulness of classes, use of the knowledge gained during the work placements and internships. The results of the research present the expectations of the employer towards graduates in scope to their competences: knowledge from the field which they are studying, and soft competences in the scope of teamwork or communication.

Originality/value: Dual studies are a new form of education, having a practical nature and combining the acquisition of knowledge and experience at the same time. Students are theoretically prepared, thanks to which they can find themselves in the industry in practice. Dual studies are a source of potential benefits for various groups of stakeholders (universities, employers, students). Dual studies are presented in the article as a form of development of entrepreneurial attitudes and professional competences of students (including social competences highly valued in the labor market). These studies are a great opportunity to prepare for the requirements posed by the labor market for each graduate.

Keywords: logistics, dual studies, modern educational model, trainings, market requirements.

Category of the paper: general review.

1. Introduction

Defining quality and quality assurance in the context of higher education presents significant challenges. The literature review confirms that there is no consensus on one definition of quality (Green, 1994; Schindler, 2015). The quality of education can be defined, inter alia, as the degree of meeting the requirements for the education process and its effects, formulated by stakeholders, taking into account internal and external conditions (Grudowski, Lewandowski, 2012). The growing pressure to deal with quality issues in higher education resulted in various national and international initiatives focused on developing recommendations and procedures for ensuring the quality of education (Hrnčiar, Madzík, 2013). The topic is becoming more and more topical, especially in the era of Industry 4.0. Graduates of universities not only must have the appropriate amount of knowledge, skills or competences, and they must be precisely matched to the needs of the market (Chmielecka, 2019). The issue of the quality and connection of education with practical requirements is one of the central topics of extensive discussion. The Constitution for Science emphasizes the need to improve the quality of education. Graduates leaving the university walls must be equipped with the skills and competences necessary on the labor market (Ostoj, 2016). One of the best methods of effective higher education is to involve the socio-economic environment in the process.

The Constitution for Science defines dual studies as a type of alternate education in which - apart from the university - also the employer participates¹. Undoubtedly, the aim of this study model is for students to reach another milestone in their studies. Part of the learning outcomes is achieved through the student's work in the company. So dual studies bring benefits to all parties. The student gains practical knowledge and experience, and the entrepreneur has a real influence on the development of the future employee (Bura, 2014). In this model, universities and companies become equal partners, aware of the responsibilities and benefits of dual studies for the science sector, employers, students and their contribution to the economic development of the region (Bielecka, 2019). Many reports on the employment needs of employers and competency requirements for the employees sought indicate the need, among others, of increasing work experience while studying². These studies are created in response to the reported demand by companies for the profile of a graduate of the studies. It is worth noting that dual studies have been practiced for a long time in Germany and the concept of these studies was also developed there (Deissinger, 1997). It is popular with students as it provides academic education as well as hands-on experience (www.mygermanuniversity.com/..., www.daad.de/..., www.alumniportal-deutschland.org/...). The advantages of dual studies go far beyond academic

¹ Constitution for Science - ACT of July 20, 2018 Law on Higher Education and Science.

² Including report "Who do the employers want to employ?" PARP 2012; Analysis of the demand for competences in the economy and the labor market along with the study of the target value of the joint long-term POWER indicator in the area of higher education, NCBIR 2019.

or practical relevance and include contractual relationships between companies and the students they employ over a period of time ([www.studying-in-germany.org/...](http://www.studying-in-germany.org/)). The aim of this article is to present the concept of dual studies in the field of Logistics of the second-cycle study as a form of combining higher education with the acquisition of professional experience, which prepares future graduates to smoothly enter the labor market and continue to effectively compete in the requirements declared by employers.

The subject of the research was to find answers to the questions whether dual studies are the best answer to the needs of the labor market and whether it is an optimal model for educating graduates. This article uses the interview method and the survey method. Interviews and surveys were conducted with both students and employers in enterprises where students undergo internships and internships. The study covered 26 students of dual studies and 6 representatives of enterprises participating in the implementation of dual studies.

2. Implementation of dual studies on the example of the faculty of organization and management of the Silesian University of Technology

The basic idea behind the creation of dual studies at the Faculty of Organization and Management at the Faculty of Logistics of the 2nd degree was to increase the competences of people participating in higher education, corresponding to the needs of the economy, labor market and society. The opportunity to achieve this plan was the launch of a competition for the creation of dual studies by the National Center for Research and Development (NCBR). The "Dual Studies" competition is another initiative of the National Center for Research and Development, which was aimed at increasing the competences of people participating in higher education. Its aim was to adapt the curricula to the expectations of future employees and their potential employers ([https://archiwum.ncbr.gov.pl/...](https://archiwum.ncbr.gov.pl/)).

The main objective of the proposed project was to improve the competences of students of the 2nd degree Logistics major, with broad practical skills, with the acquired specialist theoretical knowledge in the field of logistics³. Thus, increasing the competitiveness on the labor market, through the participation of students in dual studies in the field of alternate education in parallel in the form of didactic classes at the Faculty of Organization and Management and practical classes at employers from the transport - forwarding-logistics industry as well as in production and commercial enterprises, taking into account implementation of all learning outcomes provided for in the education program of a specific

³ The project lasted from July 2018 to September 2020. Dual studies in the field of Logistics of the second degree were carried out during three semesters. The first and third semesters were conducted at the university as part of didactic classes. The second semester was carried out as an internship in a company. Students acquired a total of 9 months of practical experience (as a 3-month internship from June to August 2019 and as a 6-month internship, carried out from September 2019 to February 2020). 26 people participated in the project.

field of study with a practical profile. Research on academic entrepreneurship conducted for over 10 years at the Silesian University of Technology shows that the awareness of graduates is growing that in the knowledge-based economy, intellectual resources determine the competitiveness of a region and even a country. On the other hand, intellectual property is treated as a scientific achievement without attaching importance to its market value. This attitude is undoubtedly changed by studies conducted in cooperation with the socio-economic environment. The more so that in the changing market realities, the Department of Organization and Management, on the basis of signed cooperation agreements and as part of the Faculty's Stakeholder Council, has been cooperating for several years in the field of improving production, logistics and organizational processes with enterprises. In addition, representatives of these companies are actively interested in the possibility of acquiring new ideas for the development of their activities as part of the internships and internships carried out, as well as in the employment of young, creative graduates of the Faculty. For this reason, the target group were students who, after completing dual studies in the field of Logistics, will have knowledge, skills and competences corresponding to the expectations of employers. As part of the studies, these students are to be prepared for professional work by achieving learning outcomes in the field of skills and social competences as a result of performing specific tasks in the work environment. This form of education is to enable the theoretical knowledge acquired at the university to be verified under working conditions at specific job positions in enterprises. The defined main goal of the project thus translates directly into the tasks that will be carried out within the entire project.

As part of the project, support was provided to a group of 26 people who met the formal criteria related to the recruitment procedure. The project was directed, on the one hand, to people who require professional activation, but on the other hand, who want to raise their qualifications by acquiring knowledge and skills to match the requirements of future employers. Detailed skills and competences have been defined within the framework of the candidate's profile, developed taking into account the requirements set by enterprises that are organizers of internships. The target group consisted of people who graduated from first-cycle studies, who were not participants of other studies or training financed by the ESF, currently not working professionally, not having the status of an unemployed person, not running their own business. The project was addressed to both women and men, respecting the principle of equal opportunities and gender, and taking into account people with disabilities (Report Women...). The choice of the target group resulted primarily from the requirements of employers from the logistics industry (including experience, IT competences, specialist knowledge and skills, higher education, the ability to solve problems independently), analysis of job advertisements and many reports, e.g. Labor market seen through the eyes employers (Kacprzak, Król, 2015; [www.parp.gov.pl/...](http://www.parp.gov.pl/)).

Graduates of the 1st degree engineering studies (with a logistic or related profile, e.g. transport, production engineering), choosing the 2nd degree studies, expect a strong adaptation of knowledge and skills to the needs of the labor market. In particular, the need for contact with the industry is emphasized, ensuring the acquisition of experience and broadening the practical skills of future graduates.

Recruitment for studies was carried out in accordance with the adopted rules and respecting the principle of equal opportunities, gender and taking into account disabled people. Due to the fact that the number of places for studies was limited - the person applying for admission had to have first-cycle qualifications and competences necessary to continue education in full-time second-cycle studies in Logistics. In order to carry out the recruitment process efficiently, regulations have been prepared, specifying the detailed requirements for candidates for studies and the procedure for conducting the recruitment process. The qualification procedure included two stages of the procedure, which were aimed at defining the competences of the candidates and allowed them to be adapted to the requirements of enterprises implementing internships. These include: the use of the prepared electronic application form with the questionnaire, interviews with the recruitment committee of the company organizing the internship. In order to enroll for studies, candidates are first asked to send their CV and cover letter to the e-mail address provided. Then the recruitment committee verified the applications - the condition of the title of engineer, then representatives of the internship company conducted recruitment interviews and selected appropriate candidates. After confirming admission to the company, candidates applied in the recruitment system to study at the Silesian University of Technology. The condition for admission to dual studies was a positive result from both stages of recruitment.

3. Dual education from student's perspective

Candidates pointed to the need to gain practical experience both in companies from the TSL industry as well as in production and trade companies in the area of planning, organizing and controlling material flows. The database of partner companies declaring their participation in the project undoubtedly provided such a wide spectrum of gaining skills and experience in logistics. Through dual studies, students were given the opportunity to improve their qualifications while carrying out logistic projects for profit, which was and is a response to the contemporary needs of many people undertaking second-cycle studies and is an excellent alternative to part-time studies. The candidates' expectations include, first of all, the availability of logistics, production and commercial companies declaring their willingness to accept students for paid internships and engaging them in specific logistic tasks, allowing them to gain experience and practical skills related to planning, organizing and controlling material flows.

Additional needs reported by students was the access to specialized computer laboratories, allowing for the simulation of logistic processes. Conducting the initial research among candidates for dual studies, they asked about the barriers that students may encounter while pursuing this type of studies. Among the most frequent responses it was noted:

- Barrier at the recruitment stage - it is necessary to pass an interview with one of the project partners' companies. The students were concerned as to whether they would pass the interview well enough to be able to complete an internship in a company of their choice.
- The second barrier was related to the limits of internship places in individual enterprises. Enterprises involved in the project declared their willingness to employ one or two people for an internship.
- Another barrier resulted from the different locations of partner companies. The companies joining the project were located in the Śląskie and Opolskie voivodships. This, in turn, was associated with mobility and availability.
- Students also showed uncertainty as to the connection of rigid requirements arising from the organization of the academic year, which do not facilitate the study together with internships in enterprises. The work of some companies (sending on business trips) could be difficult to reconcile with the academic calendar.
- Some students also indicated difficulties in communicating in a foreign technical language. There was an issue of insufficient knowledge of a foreign technical language.
- Another barrier to undertaking this type of studies was the necessity to give up the period of the inter-semester break (vacations) in favor of the internships and internships.
- Students also pointed out that dual studies may be too difficult to implement, due to the too high level of education for them (students), the spectrum of new subjects of a more practical than theoretical nature and the requirements for the verification of theoretical knowledge acquired during studies with the employer.

The needs and barriers were determined on the basis of a survey conducted among a group of 200 students of the last semester of the 1st degree of Logistics and Management and Production Engineering at the Faculty of Organization and Management. The results of these surveys were used to clarify (modify) both the study program, the internship program, invitations to cooperate with well-known companies from the industry, and to create an appropriate advertising offer encouraging students to undertake this type of study as an opportunity to gain academic knowledge with practical experience. It is worth noting that the guaranteed remuneration for the internship was a great motivator to undertake this type of studies. This remuneration was financed by the project. Additionally, enterprises offered students paid internships. Subsequent studies on the implementation of the course of studies were carried out after the first semester and practice. The students were asked the difficulties in implementing the first semester as well as the internship. The results of the questionnaires were

very optimistic, as all participants did not indicate any difficulties in implementing the study program and successfully completing the first semester. In the case of several students, the place of internship was changed and another company was selected for the internship. This change resulted from the student's willingness to change the type of enterprise (e.g. from production to transport) and to acquire other competences and skills.

The next questionnaire survey among students was conducted after the completion of the internship. Students had to answer, *inter alia*, to questions regarding the degree of mastering the ability to apply the knowledge acquired in solving specific practical problems, the degree of involvement in solving tasks/works/projects carried out in the enterprise, the scope of duties assigned to the intern, success in the implementation of projects during internships and a proposal to obtain further employment in an internship company⁴.

The results of the received questionnaires were very positive. Students emphasized that they had acquired knowledge about the workplace and its principles of operation, taking into account the practical aspects of the entity's operation in a given sector. They had the opportunity to see:

- with the management methods used in the enterprise, as well as the criteria for assessing the efficiency of the organization's functioning,
- with the implemented strategy,
- with methods of influencing customers,
- with order fulfillment processes,
- with group discussions on problem solving and involving trainees in solving them.

Students emphasized the possibility of acquiring practical skills in diagnosing and solving problems in a given area. They also emphasized the possibility of shaping practical skills of effective communication, negotiation and teamwork, as well as shaping specific professional skills related directly to the place of internship. Each of the students could receive the necessary information and materials to prepare their diploma thesis. Many students emphasized the fact that the implementation of the 3-month internship and the 6-month internship was a great challenge for them and they are glad that they managed to do it. Noteworthy is the extraordinary happiness that dual students had during the internships. The internships lasted until the end of February 2020, and there was a lock down in March.

The penultimate research was conducted after the defense of the thesis. They concerned, *inter alia*, the form of the written master's thesis - was it analytical or practical? and expressing an opinion on this type of studies and professional activity. Master's theses were analytical and practical in nature and solved a real problem that arose in the enterprise. All students expressed their satisfaction with the completion of this type of studies, and the completed studies with a "very good" degree prepared them to enter the labor market. They expressed the opinion that they would make the same choice again - that is, they would choose a dual mode of education.

⁴ Similar questions about the scope, method, form of internship and the type of tasks entrusted to students to be solved and the degree of acquiring new skills and competences were asked by trainees' supervisors in enterprises.

When it comes to professional activity, 92% of students were employed. The only drawback of the implementation of the study plan, which the students pointed to, was the lack of language classes during the second semester. 75% of the surveyed students assessed the acquired knowledge "very highly" during their studies. When it comes to the assessment of the acquired skills, over 70% of graduates assessed the acquired skills "highly" and "very high".

The last research was conducted three months after the end of education and concerned professional activity on the labor market. The results were very optimistic, because despite the pandemic that befell the graduates of dual studies, all people were professionally active (in internship or other companies). The change of the place of employment, as emphasized by the graduates even in the pandemic conditions, did not pose a major problem for them, because their professional experience was undoubtedly a great asset. The graduates emphasized in their statements that during the internship they learned the practical side of the knowledge acquired during their studies and expanded their knowledge of logistics in the enterprise and acquired practical skills as future specialists in the industry.

In summary, it can be written that the objectives of the project, and thus the objectives of the dual studies (which was to educate graduates of the Logistics of the 2nd degree, with broad practical skills, with the acquired specialist theoretical knowledge in the field of logistics, and thus increasing their competitiveness on the labor market) were achieved. Thanks to the implementation of dual studies, the competences of graduates were raised, corresponding to the needs of the economy, labor market and society.

4. Dual education from the perspective of employers

The need to create this form of studies, in addition to what has already been mentioned above, resulted from inquiries regarding the possibility of establishing dual studies at the Faculty of Organization and Management by companies cooperating with the Faculty. These enterprises willingly engaged in discussions on the plan and program of this type of study. In the process of creating the study plan, companies were asked to list the most important competences needed to work in a specific position. Three types of competences have been mentioned as the most important:

- self-organizing - related to skills such as: management, sometimes independence, decision-making and showing initiative, resistance to stress and willingness to work,
- professional - specific skills necessary to perform tasks appropriate for a given job position,
- interpersonal - the ability to contact people, be communicative, cooperate in a group, as well as solve interpersonal conflicts.

The developed plan and program of studies as well as the internship program took into account the possibility of acquiring these skills.

Like the students, the internship supervisors were also asked questions about the internship and the achievement of the learning outcomes by the students. During the interviews with the trainees' tutors, the following questions were asked, inter alia, o mastering the ability to apply the knowledge possessed by trainees in solving specific practical problems, establishing direct contacts with potential employers or educating trainees in the ability to identify emerging problems. In the opinion of the trainees' supervisors, the enterprises created appropriate conditions for deepening the knowledge acquired during the classes and confronting it with practice, they made it possible to develop skills and gain experience that contributed to the achievement of specific competences of the graduate. The vast majority of trainees broadened and deepened the knowledge acquired during their studies and developed the skillful use of it. Also, according to the tutors, the trainees had the opportunity to develop the skills necessary for their future professional work, including skills: analytical, organizational, teamwork, networking, negotiation, etc. According to the tutors, the trainees were well prepared for independent work and responsibility for the tasks entrusted to them, as well as for effective and ethically responsible activities in social and professional life. Thanks to the internships, students had the opportunity to shape personal and social competences, subjectivity and individual activity, and to develop the skills of cooperation and creativity in solving problems. It is worth emphasizing that 92% of interns found employment in enterprises where they carried out internships.

Representatives of partner enterprises emphasized that dual studies are a very good solution in the current market situation, because companies increasingly face the challenges of acquiring qualified employees with a technical profile. Such a system of education creates great opportunities and prospects for both students and employers. It will give young people the opportunity to acquire practical technical skills already during their studies and get to know the industrial sector closely, and employers the opportunity to train and acquire qualified employees in accordance with their needs. The justification for conducting dual studies for the second degree full-time studies is the fact that employers are looking for fully educated people with experience and specialist knowledge. During the interviews, employers were asked whether they were generally satisfied with the competences of their employees (interns). More than half of the employers were very satisfied with the skills of their employees. Those employers who were not completely satisfied with the competences of their employees or who admitted that it is still worth training them, were asked about "what missing skills and competences can be developed more in the current employees". As it turns out, according to employers, the most worthwhile is to raise those competences that were considered the most useful and, at the same time, missing for trainees: self-organizing, interpersonal, linguistic, computer.

5. Conclusive remarks

Dual studies are certainly a good form both for the development of entrepreneurial attitudes among students and their professional competences. Therefore, it is reasonable to launch this form of education at selected fields of study of universities in Poland. The dual study program allows for the acquisition of substantive and practical knowledge, which prepares participants to meet the growing requirements of employers. Studies give the opportunity to gain experience, knowledge and contacts, which in the future will certainly make it easier to find a suitable job. It can also be said that dual studies allow you to be an employee that all employers are looking for - a young person with higher education and many years of experience in the industry. Dual studies are an opportunity not only for students who will have the opportunity to combine the acquisition of academic knowledge with practical experience, but also for companies that will obtain staff perfectly prepared for their work. The recipe for success is to effectively combine learning with work, possible thanks to the implementation of alternate education programs, which assume the simultaneous participation of students in didactic classes at the university and their employment in the company. The result of such activities will be closer and closer cooperation between the sectors of science, business and administration, which will translate into the development of innovative areas of the national economy.

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