

Dual Training and Coronavirus: A Research in the Light of Digital Education Experience

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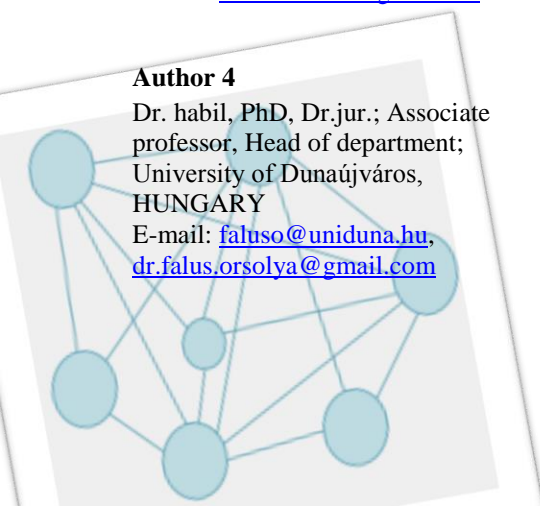
Abstract

The Dual Training System is a mode of training delivery which combines theoretical and practical training. It is called “dual” because the training happens in two venues – the university and the company. Within the framework of the EU-project EFOP-3.5.1-16-2017-00006 for the development of dual training at the University of Dunaújváros (UOD) in the period 2017-2021, a questionnaire survey was conducted in connection with the efficiency of the dual training of the University of Dunaújváros. The questionnaire was answered by the university’s dual training partners, faculty members and students. Based on the findings of research conducted during the COVID-19 epidemic, the researchers formulated proposals for the university that include a partial application of the digital form of education. The present study draws on the results, findings and lessons to be learned for the future in order to improve the quality of training, taking into account epidemiological considerations.

Keywords: Dual Training System; EU- project; efficiency; COVID-19; digital education.

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INTRODUCTION

The concept of dual training is defined in the Section 108 1.b. point of Act CCIV of 2011 on National Higher Education (hereinafter referred to as: Nft.). According to this, "dual training" means a special form of training in a demanding undergraduate course in the field of technical, informatics, agricultural, natural or economic sciences, or a master's degree in that field, in which the full-time, containing specific provisions for the training period, training methods, lesson, assessment of the acquired knowledge, according to the curriculum within the framework defined by the Dual Training Council, and the practical training takes place, at a qualified educational institution." Also the Nft. fixes the rules of student work, the remuneration of students (Section 44 of the Nft.); and the concept of a practice-intensive course [Section 85 (3)]. This practice-oriented, bachelor-level training, which was developed in Germany (Szabó 1997: 7.) aims to enter the world of work immediately, without several years of further training and without additional financial expenditure. In Hungary, this form of training quickly became popular due to the growing demand of the labor market, also due to the fact that it has a detailed and appropriate legal background. The domestic and international literature on the topic is also rich and constantly expanding (Berács 2017: 46–50., Graf, Powell, Fortwengel, Bernhard 2014: 55-57.). However, as a result of the COVID-19 pandemic, new circumstances have arisen in the course of training, which also offer the opportunity to outline new directions for training.

1. Research in the University of Dunaújváros

1.1. The responses of the dual partners

University of Dunaújváros (before 2016: College of Dunaújváros) is located in Hungary. Education center in Dunaújváros offers bachelor course Computer Engineer BSc, Engineering Business Management BSc, Communication and Media BA, Business Administration BA, Material Engineering BSc, Mechanical Engineer BSc, and master course Teacher of Engineering degrees. Nowadays our university is considered as one of the most dynamically developing higher educational institutions in Hungary. On national level UOD became the centre of higher education in the surrounding region, and as a results of our internationalization strategy followed over the past years, our institution is proud to have a wide international relations network in Europe and all around the world. Currently we offer 6 bachelor and 2 master programs entirely taught English, and nearly 10% of the total number of or students are international students arriving from all corners of the world.

One of the most important basic goals of the University of Dunaújváros is that its educational program and research activities primarily serve the satisfaction of the needs of the region's workforce and innovation needs. Based on the expectations of industrial partners and the labor market, the most important aspect is to strengthen practice orientation. The development of the training of the participants in the training takes place on a theoretical and practical level in a

complex system, in a coordinated and scheduled manner. The common set of the trainer and the participant in the training is to improve the professional quality of the created physical and mental result. Its strength is its regional embedding, which is manifested especially in its cross-sectoral cooperation with key companies. The university maintains close relations with industry partners, which organizations can be involved in the review of training programs, actively participate in the educational process. The University of Dunaújváros has a Dual Training Center, whose task is to promote training in the lives of students and companies within the university. Creates posters, leaflets and also organizes events for advertising purposes (Section 4 of the Rules of Procedure of the Dual Training Center).

In order to examine the effectiveness of training with an industrial background, a questionnaire was prepared for the external training partners of UOD in the spring of 2020 in the framework of the EU-project EFOP-3.5.1-16-2017-00006 (Development of Dual Training at the University of Dunaújváros in 2017-2021). The research team, which also involved our motivated student doing an internship at the Office of Studies, addressed the university's dual partners and asked about their experiences during the dual training.

Based on the opinion of the respondents (questions 1-5) the number, position and highest level of education of the instructors delegated to the training show a heterogeneous picture 87% of the professional mentors involved are men. In terms of their position, it can be said that the largest number of engineers, foremen, plant managers and maintenance managers are asked to perform mentoring tasks.

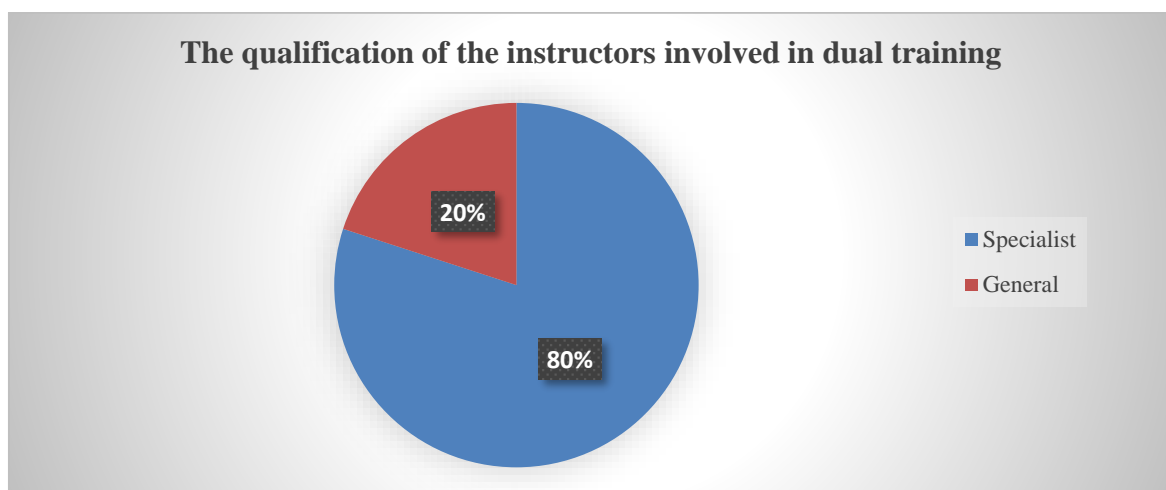


Figure 1. The qualification of the instructors involved in dual training

The specialist qualifications of the instructors are 80% in line with the basic period of the students participating in the dual training, and the positions are filled by higher-level professionals in the case of the employers concerned. The contact system of the trainers is extensive: in addition to the University of Dunaújváros, students of the University of Óbuda, the University of Pannonia, the University of Pécs, the University of Miskolc and the Corvinus University are also employed.

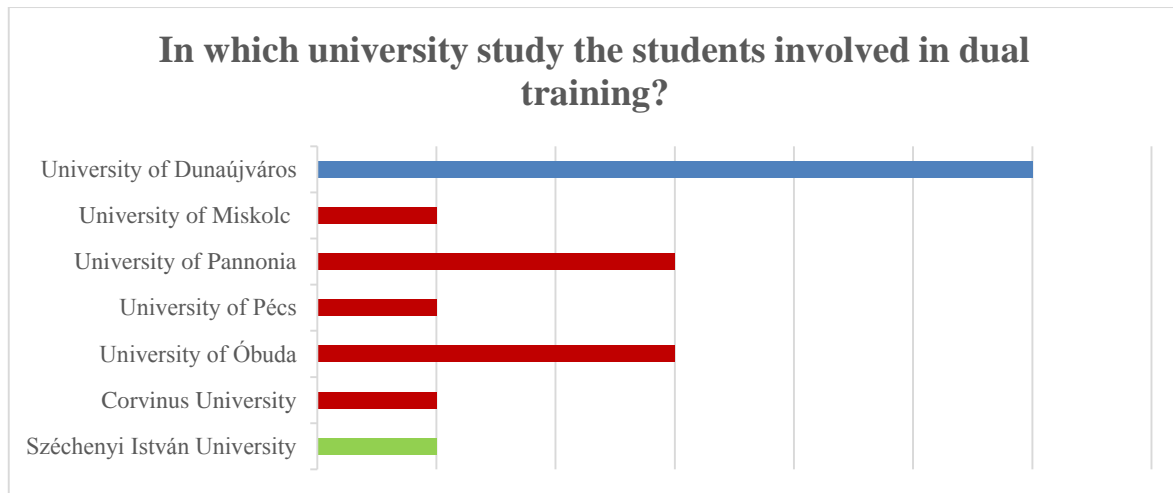


Figure 2. In which university study the students involved in dual training?

According to the professional partners, 90% of the students successfully integrated into the organizational unit of the chosen dual training institution.

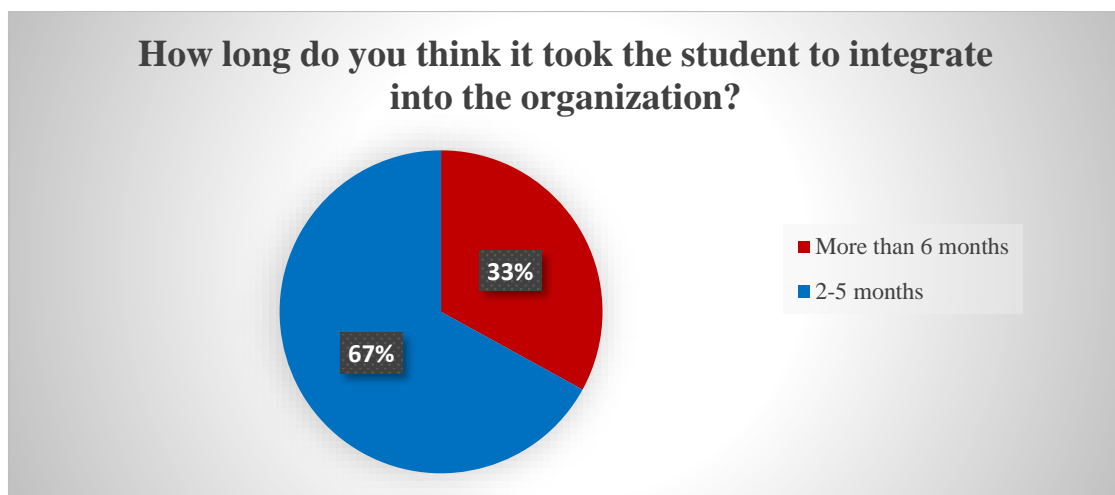


Figure 3. How long do you think it took the student to integrate into the organization?

When asked how long the delegated student needed to be able to do independent work, the majority of respondents chose the “6 months” alternative, however, in one case, the answer “at least 3 semesters” also appeared.

Question 11 of the questionnaire concerned the professional conditions of independent work. Respondents stated that 90% of the students were able to perform fully professional, independent work with mentoring coordination.

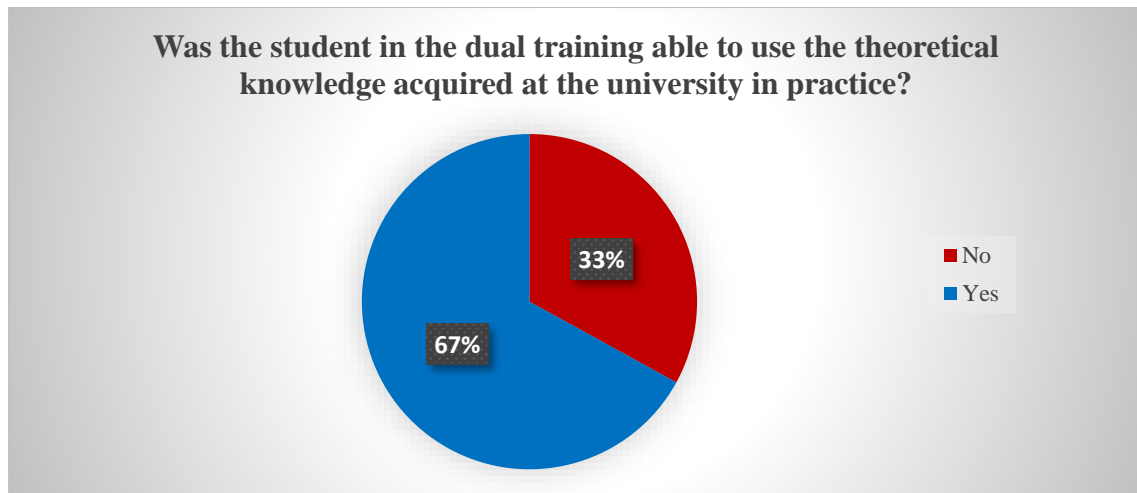


Figure 4. The practical application of the theoretical knowledge of a student in dual training

In response to question 17 of the questionnaire, it was stated that students will be able to use the knowledge gained in practice. In the field of IT, the respondents indicated the areas of computer network knowledge, UNIX basics and software development. The professional competencies of the students involved were strengthened in the use of tools, development processes, software architecture and teamwork.

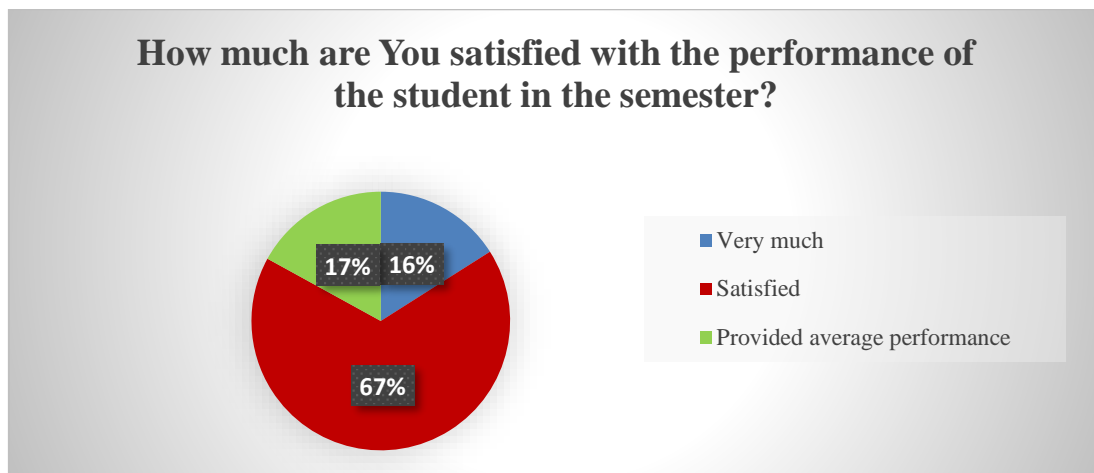


Figure 5. The satisfaction of the dual partner with the performance of the student

The training partners were predominantly (67%) satisfied with the performance of the students during the semester. 16% were very satisfied, while 17% said they were able to provide average performance. In their opinion, 67% of the students made adequate use of the knowledge acquired at the university. In line with the satisfaction of the training partners 100% of the respondents answered yes to the question of whether they would continue to employ participants in dual training.

In the dual training area, the instructor works with the trainees as a mentor. To the question of whether the mentoring process takes place during working hours or overtime, 100 % of the respondents chose the first alternative. It can be said that the education of the students participating in the dual training resulted in an additional benefit for the mentors, up to the amount of HUF 10,000 to HUF 81,000 on a semi-annual basis.

To the question of the chances of the dual training place being able to employ trainees full-time after the successful completion of their studies, respondents gave heterogeneous answers. However, the answer “definitely yes” was marked by only 10% of them. Dual training partners indicated a clear difference in the knowledge of dual and undergraduate students. While no significant difference was observed between students at the beginning of the training period, as the training time progressed, the difference increased in direct proportion in favour of participants in dual training. When asked how and to what extent the dual training partner felt that the level of knowledge of the students participating in the dual training had changed based on the experience of recent years, 67% of the respondents indicated the answer “showing an improving trend”.

1.2. Students' opinions on the possibilities of increasing efficiency

The questions asked to the students participating in the dual training focused on the professional requirements of the dual training partners, the quality and accuracy of the information provided by the training institution, and the assessment of the student's independent work. 42% of respondents felt that they were able to perform tasks that required self-employment relatively easily. 29% of them rated their own abilities in that field as average, while 29% thought it was not at all difficult for them to work independently. Only 43% of students found the professional requirements imposed on them by the training site to be particularly high. The opinion of the young people also showed that students would like to report to their university lecturers about the knowledge they have acquired in the training place, which would allow them to pass on knowledge about a topic to their peers, thus acquiring important skills such as independent opinion formation, communication skills, educator approach, the existence of which is a competitive advantage in the labour market today.

1.3. Evaluation of the responses of university lecturers participating in dual training

The lecturers of the University of Dunaújváros were asked about their opinion about the performance and workload of the students participating in the dual training, the advantages of the dual training form, and how the current epidemiological situation affects the mentioned training. According to the lecturers students in dual training are fully able to meet the requirements imposed on them as they study with their peers in the traditional training order. They are concerned, that that dual training is a so-called “plus opportunity” for students, which has existed since the beginning of their studies, as they can participate in the daily life of a company from the very first semester, seeing how it works. Thanks to this, students can deepen the theoretical knowledge acquired at the university through practical examples, and their acquired labor market knowledge makes it easier to complete related courses, such as Business

Economics, Entrepreneurship, Labor Market Knowledge and Management. University lecturers, without exception, saw that the performance of students in dual training at the university was clearly positively influenced by regular practical training. However, better performance comes at a price: a student in dual education is more burdened than his or her peers in traditional undergraduate education, as these students must also work for the dual partner, complete the assignments there, and meet their university study obligations. Lecturers had to list in general some of the advantages that they thought were more worthwhile for a graduating high school student to choose the dual form of training rather than general education. In addition to the acquisition of technological knowledge, the most frequently repeated benefits were the possibility of gaining professional experience, cash benefits, the establishment of an employment relationship, and contact capital.

In the study, we were also curious about whether the COVID-19 epidemic affects dual formation. Based on the unanimous opinion of the respondents, it can be said that the current circumstances do not simplify the meeting of the expected requirements. However, they all agreed that this is a highly employer- and work-area-dependent problem.

For those students whose work area or tasks can be solved by “home office” type work, the training place will presumably provide an opportunity for further employment in this form. However, there are also areas where practical tasks (such as machine maintenance) partially or completely preclude working from home. In other fields, on the other hand, there is no significant difference in the place of work - for example, in the case of an IT student, working from home is fully feasible.

We also looked for an answer to the question of what problems the students might encounter in the current epidemiological situation along the practical expectations. Without exception, the lecturers highlighted the cases when the students could not stay with the machines, measuring instruments and equipment in the factories of the training partners as a result of the factory shutdown, so they were not able to perform these tasks either.

The last question to the lecturer colleagues sought suggestions for improvement, but with a specific focus on the current epidemiological situation. Respondents were of the same opinion when they stated that during this extraordinary period, both the students concerned and their peers in general training need to be flexibly assisted in the effective acquisition of the expected skills and competences.

1.4. Recommendations based on the study

Students in dual training should be allowed to share their practical experience gained at the training site with their peers as part of the practical training. Within the framework of the Scientific Student Circle Conference course, it is necessary to allow space for independent research in addition to online consultation. It is worth exploring the possibility of which courses can be taken online, thus helping to ensure that going to the institution does not mean a waste

of time for students. The possibility of digital education was brought to the surface by the current epidemiological situation, which worked within the framework of the University of Dunaújváros in accordance with our experience, and so therefore it would be useful to incorporate this method into education permanently. If education is provided in digital form, for students in dual training, it is a company-specific question whether those involved need to participate in face-to-face consultations with their mentor at their training partner, or from home thanks to the “home office” option. If the answer is yes, not only can students save on travel costs between home and training, but they also meet the requirements of an environmentally conscious lifestyle, gain time for further study and research, and reduce the potential for further spread of the virus in the event of a subsequent epidemic.

CONCLUSION

In the case of specifically practice-oriented and problem-solving training, attempts have been made in the United States and Australia to reduce the number of hours of frontal education since the second half of the 1990s (Harisim, Starr, Teles, Turoff 1995) and then from 2000 to digital education. forms specifically in dual training (Hart 2000, Gilding, Martino 2001: 201-215). The COVID-19 pandemic proved the viability of the experiments. The domestic legal background is available, and the dual training partners, students and university lecturers all find it useful and want to finalize this good practice.

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