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Experiences of the Dual Training Based on the Opinion of Students Participating in the Training at the University of Debrecen

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Abstract

Dual training is a special form of practice-oriented higher education training with cooperation between higher education and business entities. The advantage of dual training is that students are able to acquire company-specific and up-to-date knowledge and the practice-oriented education helps them to integrate more easily into the labour market. The aim of the present work is to assess the opinions of students on this type of training. A questionnaire survey was conducted among the students of the University of Debrecen in order to identify the factors that could improve this training type. The questionnaire was completed electronically by students on a voluntary basis. Responses were received from a significant proportion of the dual training programmes at the University of Debrecen. The questions included formulated statements, which belong to the closed question type group, within which several sub-types can be found in the questionnaire. In the questionnaire, single-answer questions were also formulated and Likert-scale questions have been included as well. When processing the questionnaires, not only the answers to each question were examined separately, but also the correlations between the different variables. In the scope of the analysis, Kruskal-Wallis test, Dunn's post-hoc test and Chi-square test were applied to detect correlations.

Keywords: dual training, practice-oriented education, dual partner, company-specific knowledge, soft-skills.

1. Introduction

The skills of professionals have always followed the technological evolution of industry. At the beginning of the industrial era, in the late 18th century, many unskilled workers and

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craftsmen were required. At the beginning of the 19th century and with the introduction of assembly lines – the so-called 2nd industrial revolution – many unskilled workers who were trained for only a few steps were needed. As the complexity of manufacturing processes increased, skilled workers had to take care of critical production steps. The training of these skilled workers around the world follows a specialised path – dual vocational training, which laid the foundations for university dual training (Jacques, Langmann, 2016). Dual training is a specialised, practice-oriented form of higher education, in which students can directly experience the world of work during their training, participate in work processes and spend much more time practising professional skills than in traditional courses (Balázsné, Zsupanekné, 2019). The advantage of dual training is that students can acquire company-specific and up-to-date knowledge and practice-oriented education helps them to integrate more easily into the labour market (Varga, 2018). It is very important for companies that fresh graduates are aware of the latest technology, because this knowledge can improve the quality of work. Through the participation of companies, the training of employees in industries is based on industry needs. Thus, it can be concluded and also agreed by the companies that there is a link between increasing productivity and dual training (Asnul, Salina, 2017). By means of their curricular content, structure and the increased number of hours spent at companies as well as the obtained work experience, practical trainings spent at professionally qualified companies enhance the professional competence, company knowledge and culture of students. In the case of dual training, the partner company also formally trains the students in a pre-defined way, closely linked to the curriculum of the higher education institution. This training system produces a workforce that is able to enter the world of work immediately, without years of further training and without additional financial burdens. It is thus a rapid and effective way to address the shortage of high-quality employees (Balázsné, Zsupanekné, 2019).

Taking a closer look at the practice of the dual model in higher education, some key components of the model can be identified, which are the following:

- A close link between theory and practice, with the practical part being a compulsory part of the learning process;

- The opportunity to explore actual situations and cases from the experiences of partner organisations in the practical sessions and then re-enact them on-site;

- The partner organisation is involved in the development of the curricula and the topics for term papers and dissertations;

- The performance of students is assessed by a company that serves as a practical training base, which enables a rapid response to the needs of the labour market and helps to make the educational programme flexible, mobile and efficient;

- Students engage in real communication with the target groups, which enables them to acquire, in addition to the relevant professional qualifications, the basic social and communication competences that will help them build successful careers in the future (Lebid, Shevchenko, 2020).

This form of training is favourable for two reasons: on the one hand, the system produces confident professionals, and on the other, it gives companies the opportunity to nurture their own talent and mould their future employees to their own needs before they graduate. The driving force for companies partnering in dual training is to attract well-qualified, value-creating professionals who understand innovative processes (Homicskó et al., 2021). The dual training system is unique in a sense that it creates a partnership between the student and the employer, governed by the student employment contract, which regulates the rights and obligations of students and employers in relation to the practical training. An important aspect of the dual training system is the contractual relationship between the employer and the educational institution, which takes the form of a dual training contract (Papcunová et al., 2022).

Dual training, which represents a close interconnection between higher education and the labour market, is also receiving increasing attention in the field of educational science. This form of learning, where the acquisition of theoretical knowledge occurs simultaneously with practical experience, enriches educational science in numerous ways.

The following are some important contributions:

1. Deepening practical knowledge

- Building bridges between theory and practice: In the scope dual training, students can immediately apply theoretical knowledge in practice, thereby gaining a deeper understanding of educational processes.

- Developing problem-solving skills: By solving practical tasks, students learn how to flexibly apply their knowledge and handle unexpected situations
- 2. Strengthening competence-based education
 - Developing 21st century skills: In the scope of dual training, students acquire key competences that are essential for a successful career, such as communication, collaboration, creativity and critical thinking.
 - Facilitation of independent learning: by solving practical tasks, students learn to conduct research, gather information and make decisions independently.
 - Encouragement of continuous improvement: in the scope of dual training, students receive regular feedback from their mentor, which helps them identify their strengths and areas for improvement.
- 3. Supporting research in education science
 - Formulation of more realistic research questions: in the scope of dual training, students and researchers can jointly identify practical problems that research can address, which is one of the aims of the present research.
 - Practical application of research findings: in the scope of dual training, research findings can be immediately integrated into pedagogical practice.
 - Stimulating innovation: the dual training allows students and their mentors to develop new methods and tools in the field of education.
- 4. Renewing the training of teachers
 - Training more aligned with labour market demands: dual training provides students with competences that are in high demand on the labour market.

Dual training is an innovative solution in the field of educational science that serves to deepen practical knowledge, strengthen competence-based education, support educational research, and renew teacher training.

However, dual training is a challenge for all participants, an extra task and a long-term commitment for both the company and the student.

Business professionals express their needs in terms of the knowledge they wish to acquire from the university by referring to their day-to-day operations and industry-specific processes, while the university aims to provide a comprehensive, multi-purpose set of competences, taking into account the relevant educational regulations, the available scientific literature and the teaching and working experience of the university lecturer. Due to these different approaches, the divergence of views between the participants – academic stakeholders and participating companies – is reasonable and understandable. In the alignment process, specific, profession-driven or company-specific requirements should be integrated into the set of competences and skills in such a way that they do not overwhelm the overall requirements. A healthy balance is needed as universities need to prepare students for different company profiles (Juhász et al., 2022).

Studies have found that dual students have significantly higher university entrance grades, a more positive self-image in terms of mathematical skills, economic skills and problem-solving skills, and they rate the interdisciplinary competences of willingness to learn and autonomy higher (Weich et al., 2017).

Dual training was introduced in Hungary in 2015, based on the German example.

In Germany, the main feature of the dual, practice-oriented training was the alternation of 3-month phases: students learned theoretical concepts at the university and received practical training in an enterprise or social institution (Gerloff, Reinhard, 2019). In Hungary, dual training involves students studying at an external partner organisation alongside the higher education institution during their training period, based on a predefined curriculum. At the company or external institution, students acquire specialised professional knowledge and work experience specific to the activities of the given company, which enables them to enter the labour market as professionally and personally more qualified employees after completing their higher education studies – even employed by the partner organisation (Balázs, Zsupanek, 2019).

Since the start of the global financial crisis, but especially since the debt crisis of 2011–2013, there has been a resurgence of enthusiasm for dual training in Europe. Dual training has traditionally been a feature of craft and industrial training in some northern European countries, but over the past decade it has become part of the standard portfolio of EU policy recommendations, from reducing skills gaps and youth unemployment to improving Europe's global industrial competitiveness and promoting social cohesion (Homicskó et al., 2021).

In the case of dual training, there are many examples of transfer of the German model at the level of individual stakeholders and organisations: transfer at this level can combine elements from the training system of the country of origin with elements from the host country's system in a flexible and demand-oriented way. Therefore, there is a need for international comparative research approaches that combine the perspectives of individual actors, such as companies, with the analysis of a broad range of training systems and stakeholders, reflecting the interaction between the different training and employment systems in German and national systems (Pilz, Wiemann, 2021). The emphasis on improving the match between labour skills and labour market demand is not a new approach. The promotion of work-based learning, for example in the context of lifelong learning, has long been part of the Lisbon Treaty, which is moving Europe towards a 'knowledge economy' (Šćepanović, Artiles, 2020).

The literature review has identified a number of studies that use questionnaires and interview tools to assess how participants evaluate the period since 2015.

2. Materials and methods

The database for the analysis was compiled through a questionnaire survey, which measured student experiences of dual training in the first semester of 2022.

The questions included formulated statements, which belong to the closed question type group, within which several sub-types can be found in the questionnaire. In the questionnaire, single-answer questions were formulated, such as questions on the main activity of the enterprise and revenue, and on the definition of the students recruited. Likert-scale questions were applied, on the skills of the dual students and the usefulness of the knowledge they acquired at the university. The Likert scale is a measurement scale between two extreme values. In the present case the extreme values were defined from 1 to 5, and a value of 0 represents the answer "I don't know". In addition to the statements, the respondents have to select the answer that is real in their case from the range between "burden for the company" and "considers important", "does not have" and "does have", and "not developed" and "developed" by using numbers.

In order to examine the reliability of the questionnaire, the analyses focused on exploring the structure of the questionnaire and the reliability of the variable blocks, for which the Cronbach's alpha index was applied. Cronbach's alpha is a method of assessing reliability that compares the amount of common variables, or covariance, among the numerous items that make up the instrument to the amount of total variables. If the instrument is reliable, there should be a lot of covariance among all items relative to the variance.

Calculated for Likert-scale responses, this means 20 variables and 153 respondents (blanks are excluded). Cronbach's alpha: 0.934, which means excellent internal consistency. Thus, it can be concluded that internal consistency was satisfactory.

The questionnaire was filled in electronically by the students on a voluntary basis.

The majority of students who completed the questionnaire were accounting MSc students (nearly 20 %), followed by management and organization MSc students (14.7 %). There were equal proportions of electrical engineering and supply chain management students (10.2 %), while there were also a larger number of chemical and mechanical engineering students (9.6 % and 7.0 %). The remaining students were mixed across other courses.

Of the 156 respondents, 45 % were women, 47 % were men, while the remaining nearly 8 % were unspecified or did not respond. Most lived in a city or county seat (34-35 %), while 18 % lived in a village. The father's education was predominantly secondary (59 %), while in the case of mothers, higher education degree was the most frequent (50 %). 2.6% of parents had primary education.

When processing the questionnaires, not only the answers to each question was examined separately, the correlations between the different variables were also evaluated.

1. Statistical analysis

There are several aspects to consider when selecting the appropriate statistical test:

1. What is the measurement level of our variables?
2. Sample size of the statistical test?
3. Is our sample matched, paired, or independent?

Kruskal-Wallis test, Dunn post-hoc test and Chi-squared test were applied to analyse associations, while processing the responses to the questionnaire questions.

– When using the Kruskal-Wallis test, it is examined whether the medians of a variable of at least ordinal level are the same across three or more groups. The Kruskal-Wallis test allows for the evaluation of statistically significant differences between different groups. For example, it was used to explore whether the nature of tasks performed by students is related to how they felt at the dual partner organization (Németh, 2018).

– If the result of the Kruskal-Wallis test is statistically significant, it is advisable to perform a Dunn test to determine exactly which groups differ from each other. The Dunn test conducts pairwise comparisons between each of the independent groups and indicates which groups differ significantly from each other at a certain α level (Ács, 2014).

The Dunn post hoc test uses the same rankings as the Kruskal-Wallis test and applies the same common variance as the null hypothesis of the Kruskal-Wallis test. Thus, it uses the same data as the Kruskal-Wallis test for differences between two groups (Janacsek, 2008).

– The Chi-square test is used for nominal data the objective is to examine correlations and variances; it is also called cross-tabulation analysis. For nominal data, it is the only test that can be used, regardless of the type of research. Observations must be independent, which means that no respondent can be included in two or more categories/cells at the same time (Németh, 2018).

3. Results

In the scope of the questionnaire survey, general questions were asked first about the student (gender, place of residence, level of education of parents). The inquiries were regarding the potential correlation between parental education and entry into dual training. Questions were asked about the motivation of the students regarding the training form, the criteria used in their decision to participate, and the reasons for choosing a specific company.

Overall, the aim was to assess the satisfaction of students who participate in dual training with their decision to enter this training form, and factors related to the organisation and establishment of dual training were also examined.

Decisions on dual training were mainly influenced by professional (123 responses) and financial (71 responses) factors. Recommendations from friends and acquaintances (47 responses), the influence of open days and fairs (47 responses), school (31 responses), parents (27 responses) and the opinion of siblings (7 responses) played a significantly smaller role

For the question "Who made the actual decision?", the answers are clear: 91 % of the students made the decision themselves, 8 % together with their family and only 1 respondent said that the family made the decision.

34 % of students said that they found the company they chose as a dual partner on the faculty website, while 25 % said they found it through their own search. Of the students, 24 % were recommended the company serving as the location for dual training by a friend or relative, while 15 % heard about them at a university open day, and 3 % at a high school career orientation day.

Respondents were asked to rate the extent to which they thought their university education provided a basis for dual training. On a scale of 1 to 5, they were asked to evaluate the knowledge they received, where 1 means not at all, while 5 means to a full extent. Basically, half of the students considered that university education provided a good basis for dual training (56 % gave a rating of 4 or better) (Figure 1).

The degree to which students feel themselves significant at the company is considered an important factor in the success of the dual training. They were also asked to rate on a scale of 1 to 5 how important they consider themselves at the company, where 1 means that they are a burden to the company and 5 means that they feel important. Over half of the students said they felt important to the company (63 %) (Figure 1).

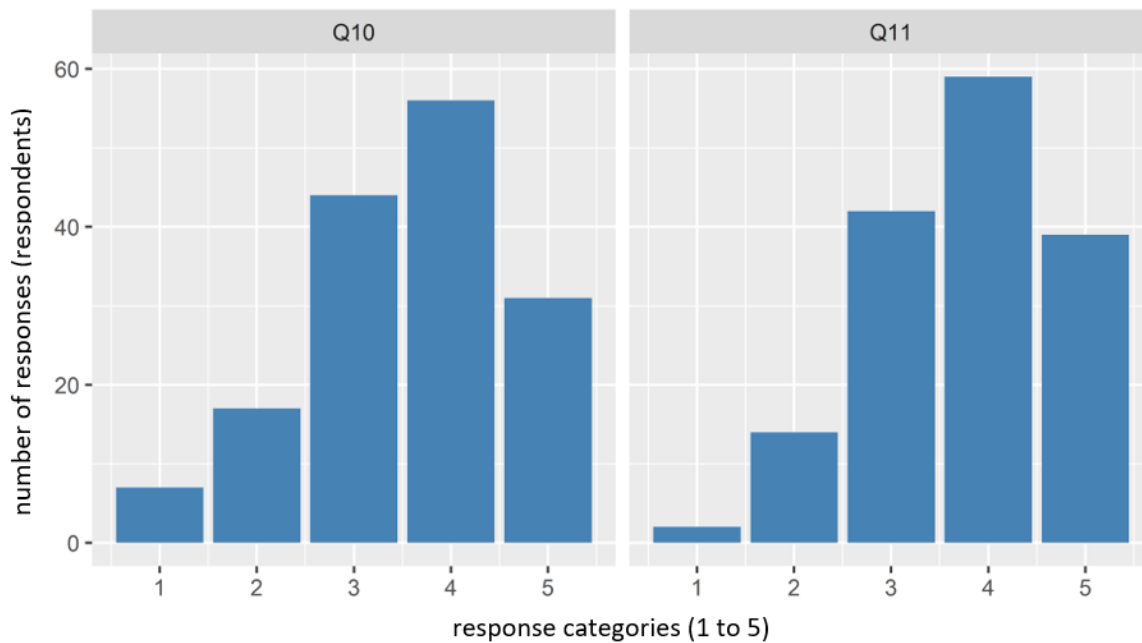


Fig. 1. Q10 = 10. To what extent does university education establish your dual training? And Q11 = 11. How important do you feel yourself at the company? Distribution of questions by response category

Notes: N = 155 persons

It has been assumed that the way in which a company deals with students is relevant to a successful dual training, therefore this area was also examined. It was asked of the students if they had a mentor at the company. The following response options were given: 1 – We are dealt with by a separate department,

2 – I have my own designated mentor, 3 – I always have a different colleague dealing with me.

53 % of students had their own designated mentor at the company, while 29 % said they were always assigned to a different colleague. In the case of approximately 18 % a separate, dedicated department appeared in the responses.

In terms of satisfaction, it is also worth to examine the type of tasks students are assigned to during their dual training at the company. Half of the students (54 %) had specific professional tasks, 22 % project tasks and 24 % administrative tasks.

Performing tasks may be related to how important the students feel themselves to the company (Q11). The Kruskal-Wallis test shows that there is only a difference between the Q11 ratings at 10 % significance level ($p = 0.0789$). The Dunn post-hoc test showed a difference between groups 2 and 3, i.e. between those who performed specific professional tasks and those who only performed administrative tasks. In contrast, there was no difference between the ratings of specific professional work and project work. On average, this means that project and specific professional work received a rating of 3.7 and 3.9 respectively, while administrative work received a rating of 3.4. For this reason, project and technical work were subsequently grouped together.

Students were asked to assess whether they had developed certain skills during their dual training. Different skills were listed and they were asked to rate their progress on a scale of 1 to 5. On the scale, 1 was for "not improved" and 5 for "improved". The results show that the average scores ranged from 3 to 4.5. For factors with a favourable rating, the error range was narrower, while for factors with a less favourable rating, the error range was larger. This suggests that the unfavourable ratings were more dispersed. According to the students, their ability to work independently has improved the most, as well as accurate work, practical professional skills, interpersonal and communication skills, the ability for teamwork and a strong work capacity. The least favourable scores were for improving foreign language skills, social skills, the ability to solve calculative tasks and to navigate the internet (Figure 2).

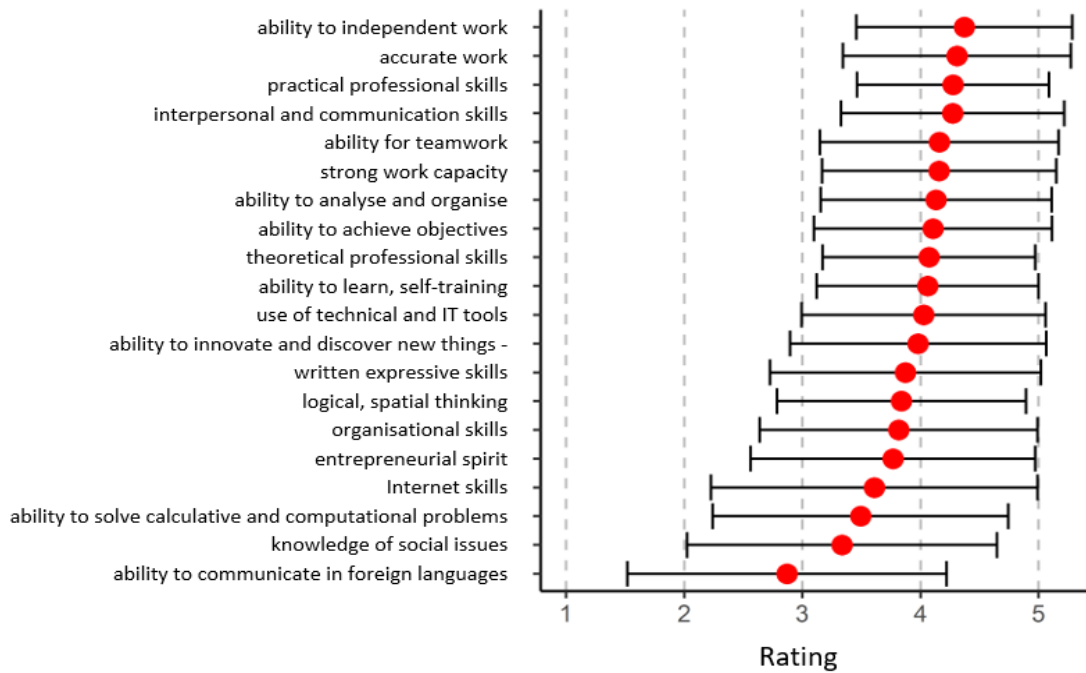


Fig. 2. Please rate whether the dual training has improved your following skills

One of the main indicators is whether the student would still choose the dual training option. A significant proportion of students (68 %) would still choose dual training, would do it again and would choose the same company. In contrast, 26 % would start again, but not with their current company. Only 5.8 % said that they expected something else in terms of dual training.

They were also asked about their plans for the future. 53 % of the students intend to stay with their current company after graduation, while 13 % would like to stay with the company but also have plans for further education. 4.5 % of students do not want to stay with the company for reasons of further education, while 29 % want to work elsewhere.

It was examined whether there was a correlation between how important the student felt at the company and whether they would like to stay with the company after graduation (Table 1).

Table 1. Comparison of the results of questions "How important do you feel yourself at the company?" and "Would you like to stay at this company after graduation? / What plans do you have for the future?"

Group (1)	Group (2)	N1	N2	test statistics	p-value
would stay	would not stay	103	53	4183	0.000

Notes: would stay = yes, I would like to stay with them and yes, but I would also like to continue my studies; would not stay = no, because I would like to continue my studies and no, I would like to work elsewhere

At the same time, the results showed that there was no difference in the average rating of the question "How well does university education establish dual training?" between those who would stay in their current company after graduation and those who would not. This is because the average ratings were 3.66 and 3.37 (would stay vs. would not stay) (Table 2).

There was a significant correlation with Would you still choose dual training now? And Would you like to stay at this company after graduation? / What plans do you have for the future? The reason for that was there were more people than expected who would stay at the company after graduation and who would choose dual training again with the same company, and more people than expected who would not stay after graduation and who would choose dual training again, but with a different company. However, for the question, "Would you still choose dual training now?", there were only two answer options: "yes, I would do it again, and I would choose the same company" and "yes, but probably not at this company", because the answer "no, I expected

something else, I was thinking of another training form" was chosen by only 9 people. These 9 people were not taken into account for this part of the analysis. This may have contributed to the significant correlation (Table 3).

Table 2. Comparison of the questions "How well does university education establish dual training? and "Would you like to stay at this company after graduation? / What plans do you have for the future? (would stay vs. would not stay)

Group (1)	Group (2)	N1	N2	test statistics	p-value
would stay	would not stay	103	52	3045	0.148

Notes: would stay = yes, I would like to stay with them and yes, but I would also like to continue my studies; would not stay = no, because I would like to continue my studies and no, I would like to work elsewhere

Table 3. Correlation of the questions "Would you still choose a dual training form now?" and "Would you like to stay at this company after graduation? / What plans do you have for the future?"

χ^2	df	p-value
54.837	1	0.00

Notes: The categorisation here was also the following: would stay = yes, I would like to stay with them and yes, but I would also like to continue my studies, would not stay = no, because I would like to continue my studies and no, I would like to work elsewhere.

It is also worth examining how the development of skills is related to the tasks the students have performed in the company. The groups were the following: professional or project work vs. administrative work. In most cases, there was no clear pattern as to which factors were significantly different in their assessment. In all cases, the differences were due to the fact that students who were involved in a project or had a professional job rated their skill development higher (Table 4).

Table 4. Please rate how your dual training has improved your skills in the following areas compared to the answers to question a "What kind of tasks do you perform in the company?" (administrative tasks vs. project or professional tasks)

Name	N1	N2	W	p-value
accurate work	35	97	1325.000	0.032
ability for independent work	35	97	1350.500	0.041
high work capacity	35	97	1414.500	0.116
ability for teamwork	35	97	1504.000	0.280
ability to achieve objectives	35	97	1343.000	0.050
theoretical professional skills	35	97	918.000	0.000
ability to learn, self-training	35	97	1441.000	0.159
use of technical and IT tools	35	97	1590.500	0.558
practical professional skills	35	97	1042.500	0.000
interpersonal, communication skills	35	97	1428.500	0.123
ability to analyse and organise	35	97	1338.000	0.046
ability to solve calculative and computational problems	35	97	1501.500	0.299
internet skills	35	97	1339.000	0.055
ability to innovate, to discover new things	35	97	1258.000	0.017

Figure 3 shows the average response values for the different factors (linked to Table 4). In all cases, it can be seen that students perceived that their skills improved more when they were involved in a project or professional work than when they were doing administrative work. This was also true in cases where there was no significant difference between the two groups of questions (Figure 3).

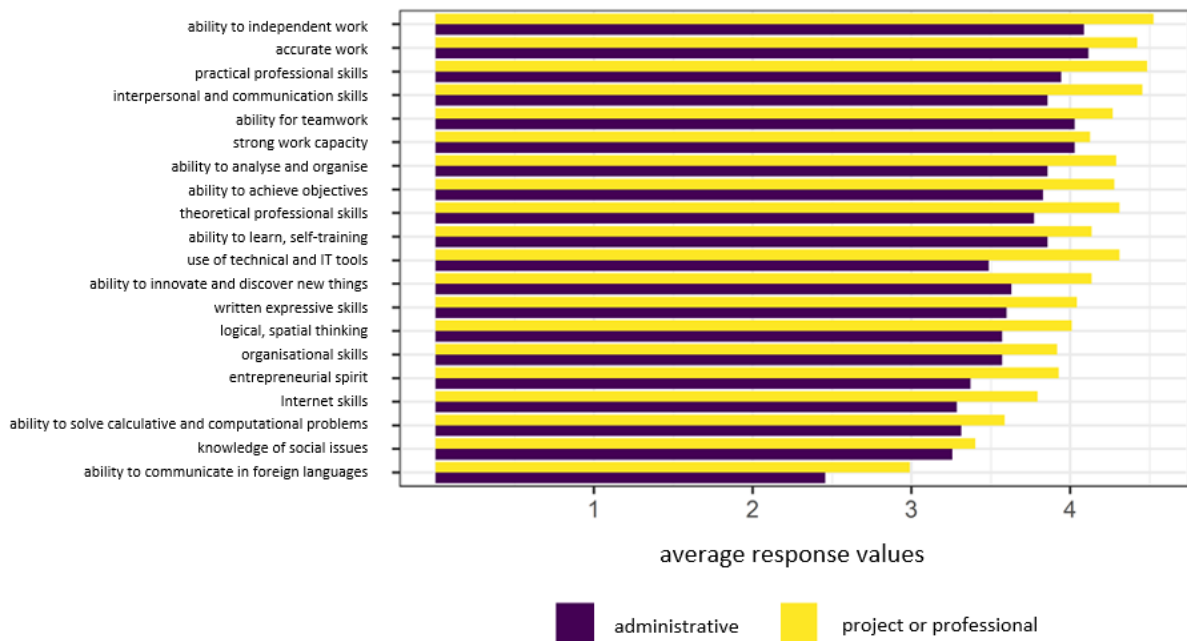


Fig. 3. Average values of the question "Please rate whether the dual training has improved your skills in the following areas" based on the question group "What kind of tasks do you perform in the company?" (administrative tasks vs. project or professional tasks)

Skills development was also compared according to whether the student intended to stay at the company. In most cases there was a significant difference between those who wanted to stay with the company and those who did not. No clear pattern can be detected, but in almost all cases the difference was significant.

Figure 4 shows the average responses between those who would stay with the company and those who would not. The results clearly show that the significant difference is that those who would like to stay with the company all rated their skills development higher (Figure 4).

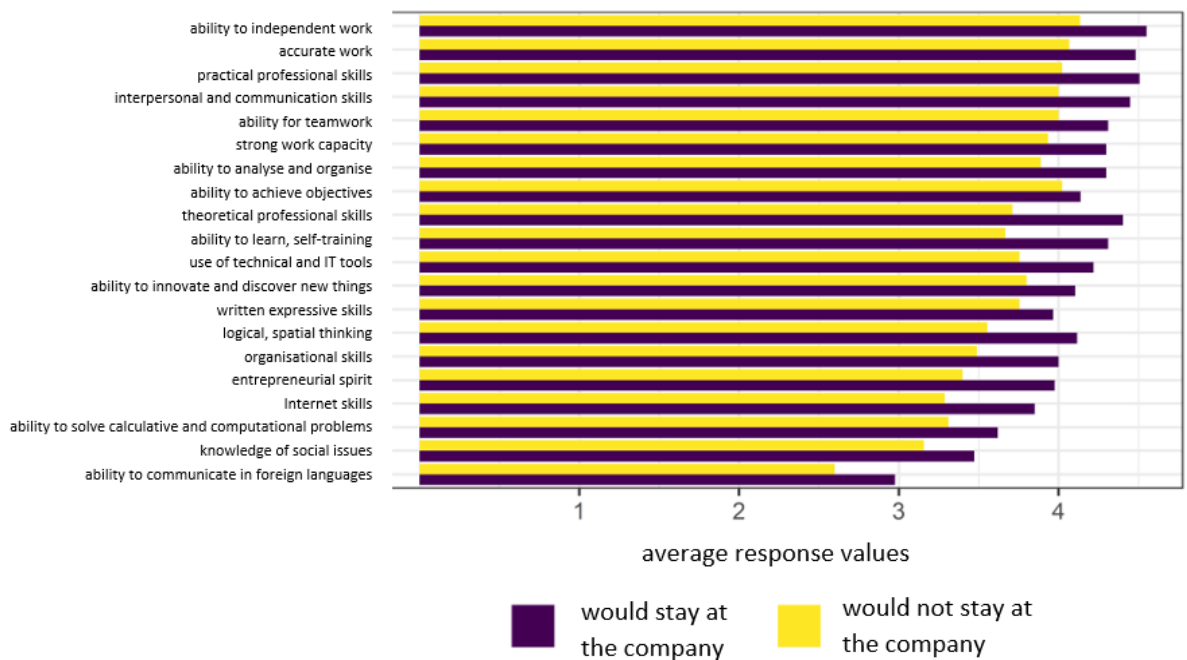


Fig. 4. Average values of the question "Please rate whether the dual training has improved your skills in the following areas" based on the question group "Would you like to stay at this company after graduation? / What plans do you have for the future?" (would stay at the company vs. would not stay at the company)

4. Discussion

The period since 2015 has been the subject of several case studies in institutions where this type of training has been introduced. The results of the reviewed studies have a number of common features. Research has included students who have completed and are currently enrolled in dual training, with non-dual students as a control group. The partner organizations of the dual training, typically industrial companies, were surveyed; their HR specialists, mentors, and engineers were interviewed. Some studies collected and analyzed the experiences of higher education institutions. (Kerülő, Nyilas, 2019; Kocsis, 2020)

In the section of the study introducing dual training and the current situation, the characteristics of dual training and the experience gained so far have been reviewed.

In the scope of the questionnaire survey, general questions were asked first about the student (gender, place of residence, parents' level of education). The aim was to reveal whether there was a correlation between the education level of the parents and the enrolment in dual training. Respondents were asked about their motivation in relation to this type of training, what made them decide to enter, why they chose the company they did. Overall, the aim was to confirm whether students in dual training were satisfied with their decision to enter this form of training, and they were also asked about factors related to the organisation and establishment of their dual training.

In analysing the responses of the students who responded, it was found that the proportion of men and women was almost equal, mainly living in urban or county areas, and that parents dominantly had secondary and tertiary education backgrounds.

An important question was the reasons why the students chose the training and whether they made their choice independently or were influenced by someone. The main reason for applying for dual training were the labour market opportunities, and professional, financial factors. More than 90 % of students made the final decision themselves.

The analysis by other authors of students' opinions shows that dual students interviewed applied for dual training primarily because they wanted to gain work experience during their studies by acquiring practical knowledge (Kerülő, Nyilas, 2019; Kocsis, 2020).

As for longer-term plans, almost half of the respondents expect to be able to find a job at the training place or in a position that is advantageous from all points of view (professional, financial, and social) after completing the training, with the work experience gained (Kocsis et al., 2017; Kerülő, Nyilas, 2019).

Experience shows that students tend to have positive experiences in larger companies, where there is an opportunity to dedicate human resources to work with dual students as company coordinators, and where students have a dedicated mentor in the company who is responsible for their professional development. In smaller companies, dual students are managed by the HR department and one of the managers, who often do not have enough time to mentor them. However, even in smaller companies, there are many success stories because students here are given more serious professional assignments sooner, which motivate students with high aspirations, and they are also expected to become a full-fledged employee in the last two years of their studies (Kocsis, 2020; Fenyves et al., 2020).

In general, large companies are better prepared to take on trainees and may have a separate internal training department to support in-house trainers or hire trainees directly. In contrast, small and medium-sized companies operate in a less structured and more informal way. Differences in size may also affect the future prospects of trainees entering the labour market after completing their training, as small enterprises seem to focus on the current benefits of 'helping' trainees, while larger enterprise chains often link dual training to potential long-term employment (Marrero-Rodríguez, Stendardi, 2023).

The results of our survey it was typical that students of companies with a larger number of employees completed the questionnaire in higher proportions. As dual training can be organised in a classical or hybrid way, they were also asked about the way in which their training is organised in the partner organisation. It was found that three quarters of the respondents were training in a hybrid format, spending 2 days a week at the company.

One of the important factors of an effective and successful dual training is how the partner organisation engages with students and helps them progress. More than half of them had their own mentor in the company, while nearly 80 % had a specific professional or project assignment in the company. Students who did specific professional or project work felt more important in the company than those who did administrative work.

Basically, half of the students felt that university education provided a good basis for dual training (56 % gave a rating of 4 or better). A similar proportion felt that they were important for the company (63 %).

For several courses and institutions, the questionnaire survey also confirmed that partner institutions play a significant role in developing soft skills such as openness, commitment, responsibility, and autonomy. Additionally, skills related to the professional field, such as professional knowledge and management skills, developed slightly less among students. This may be attributed to the fact that they are part of university education. This underscores the essence of dual training, which aims to harmonize and align university education with market demand.

An important factor is the students' perception of the dual training, whether they feel successful in their participation and whether they regret their choice. Based on the results obtained, the nature of the tasks they were given and how they were handled can be determined. Students who were involved in a project or who had a professional task were almost always considered to have developed their skills better, in contrast to those who had an administrative task. Furthermore, those who would like to stay with the company all rated their skills development as higher.

Students felt that their ability to work independently was the most improved, and that accuracy and practical professional skills were also important.

The results of Kozák's research indicate that dual students understood what they were undertaking with this new form of training and what they expected to achieve. They aimed to acquire high-quality professional skills and practical work experience alongside their theoretical training, to familiarize themselves with company life, and to gain additional work experience. However, in addition to positive outcomes, students also reported negative experiences during the surveys: overload, conflicts with the mentor (due to the mentor's personality, overly strict requirements, and deteriorated mentor-student relationships), and difficulties in meeting the expectations of progression according to the model curriculum (Kozák et al., 2020).

A significant proportion of students (68 %) would still choose dual training, start again and choose the same company. In contrast, 26 % would start again, but not with their current company. 53 % of students would like to stay with their current company after graduation, while 13 % would like to stay with the company but have plans for further studies. Those who felt important at the company were more likely to say they would like to stay there after graduation.

The survey was based on the opinions of students who, at the time of the survey, had an active dual student status. Thus, it does not reflect the views of those who did not complete their studies for various reasons (such as termination of student status, contract termination with the company, etc.) and also does not reflect the opinions of those who have already successfully completed their studies. To further develop the dual training format, surveying the opinions of these currently excluded target groups may be the next step.

5. Conclusion

In processing the questionnaire, the following findings can be summarized:

The students were nearly evenly split between men and women, primarily living in urban areas or county seats, and the parents predominantly had middle or higher education background. The primary reasons for applying to the dual training program were labour market opportunities, with professional and financial considerations being decisive. More than 90 % of the students made the final decision themselves.

Three-quarters of the students spent two days a week at the company, more than half had their own mentor at the company, and nearly 80 % were involved in specific professional or project tasks at the company. Essentially, half of the students felt that university education provided a good foundation for dual training (56 % gave a rating of 4 or better). A similar proportion felt valued at the company (63 %).

Students who performed specific professional or project work felt more valued at the company than those who did administrative work. The students felt that their ability to work independently improved the most, along with precise work performance and practical professional skills being important. The least favourable evaluation was given to the improvement of foreign language skills. A significant portion of the students (68 %) would choose dual training again and would choose the same company. In contrast, 26 % would start again but not at the current company. After graduation, 53 % of the students would like to stay at the current company, while

13 % would like to stay but also have plans for further education. Those who felt valued at the company were more likely to say they would like to stay after graduation. Students involved in the project or performing professional tasks almost always felt that their skills developed better compared to those doing administrative work. Moreover, those who would like to stay at the company always rated their skill development higher

Overall, it was found that a significant proportion of students rated their dual training positively and experienced significant skills development. They made their decision independently, which the majority do not regret and would choose this form of training again. Whether or not companies provide a dedicated mentor to the student was an important factor, as it reinforced the sense of importance. The assignments given were also found to be a relevant factor contributing to a positive perception.

Evaluating the responses to the questionnaire will help to further develop this relatively young form of training by taking into account the experiences of the participating students. In the future, in cooperation with the companies involved in the training, an area for improvement is to provide a mentoring system and to strengthen the training with appropriate professional tasks. One way to achieve this could be to place greater emphasis on developing a joint curriculum and on the company's professional contribution to the training during the preparation phase of the collaboration. Universities should strive to assist the company in providing students with professional and project tasks that are appropriate to the students' knowledge and that develop their existing knowledge and skills. It is also worth considering the possibility of creating a program to develop the professional and pedagogical skills of corporate mentors. This could also enhance the development of competencies and satisfaction of students participating in this training format. At the same time, the partner institution could gain access to a more skilled and motivated workforce.

In terms of the promotion of dual training it has been confirmed that it is necessary to address future students directly, approach dual training from a professional perspective and reach potential applicants through professional events and open days. Students choose dual training primarily for professional and labour market reasons, therefore universities, together with companies, should reinforce this aspect at open days and enrolment events.

It is very important to make this new form of training as widely known as possible, offering university students a choice.

Although the process has only been launched a few years ago and many positive effects can already be experienced, it is certain that in the long run this form of training is able to trigger changes that will affect the entire economy and society.

References

- Ács, 2014 – Ács, P. (szerk.) (2014). Gyakorlati adatelemzés [Practical data analysis]. Pécs, Magyarország: Pécsi Tudományegyetem Egészségtudományi Kar (PTE ETK), 295 p. [in Hungarian]
- Asnul, Salina, 2017 – Asnul, D., Salina, M. (2017). Government-link companies in the national dual training system programme: An analysis of perception, factors constraints, and resolution. *Advances in Social Science, Education and Humanities Research*. 102: 301-305.
- Balázsne, Zsupanekne, 2019 – Balázsne Dr. Lendvai, M., Zsupanekne Dr. Palányi, I. (2019). A duális képzés fenntarthatósági vonatkozásai, Lépések a fenntarthatóság felé. [Sustainability aspects of dual training, Steps towards sustainability]. 24: 2: 10-11. [in Hungarian]
- Fenyves et al., 2020 – Fenyves, V., Dajnoki, K., Dékán Tamásné Orbán, I., Harangi-Rákos, M. (2020). Gyakorlatorientált képzések megítélése a vállalati szférában [Practice oriented training from the business sphere's aspect]. *Acta Medicinæ Et Sociologica*. 11: 31: 164-183. [in Hungarian]
- Gerloff, Reinhard, 2019 – Gerloff, A., Reinhard, K. (2019). University Offering Work-Integrated Learning Dual Study Programs. *International Journal of Work-Integrated Learning*. 20(2): 161-169.
- Homicskó et al., 2021 – Homicskó, Á., Kissné Horváth, M., Kajdy, J., Kárpát, Kinga (Szerkesztő) (2021). Duális képzéssel a munka világában [Dual training in the world of work]. Budapest, Magyarország: Magyar Kereskedelmi és Iparkamara. [in Hungarian]
- Jacques, Langmann, 2016 – Jacques, H., Langmann, R. (2016). Dual study: A smart merger of vocational and higher education, 2016 *IEEE Global Engineering Education Conference (EDUCON)*, Abu Dhabi, United Arab Emirates. Pp. 434-437.
- Janacsek, 2008 – Janacsek, K. (2008). Statisztika [Statistics]. In: Krajcsi, Attila Kísérletvezérlés és adatelemzés a kognitív tudományban [Experimental design and data analysis in

cognitive science]. Szeged, Magyarország: Szegedi Egyetemi Kiadó – Juhász Gyula Felsőoktatási Kiadó. 204 p. Pp. 163-182. [in Hungarian]

Juhász et al., 2022 – Juhász, T., András, G., Gál, L., Csekő, K. (2022). Competitiveness Experiences of Dual Training in a University of Higher Education in Economics. *European Journal of Contemporary Education*. 11(3): 778-790.

Kerülő, Nyilas, 2019 – Kerülő, J., Nyilas, O. (2019). A duális képzés jellemzői, ahogy kilenc magyarországi felsőoktatási intézmény látja [Characteristics of dual training as seen by nine higher education institutions in Hungary]. In: Varga, Aranka; Andl, Helga; Molnár-Kovács, Zsófia. Új kutatások a neveléstudományokban 2019 Neveléstudomány: Horizontok és dialógusok I. KÖTET. [New Research in Education 2019 Education: horizons and dialogues I.] PTE BTK Neveléstudományi Intézet, Pécs. Pp. 153-166. [in Hungarian]

Kocsis et al., 2017 – Kocsis, I., Bácsné, B.É., Fenyves, V. (2017). A duális gépészmérnöki képzés eredményességének vizsgálata [Examining the effectiveness of dual training in mechanical engineering]. In: Kerülő, Judit; Jenei, Teréz; Gyarmati, Imre (szerk.) XVII. Országos Neveléstudományi Konferencia: Program és absztrakt kötet [XVII National Conference on Education]. Nyíregyháza, Magyarország: MTA Pedagógiai Tudományos Bizottság, Nyíregyházi Egyetem. P. 547. [in Hungarian]

Kocsis, 2020 – Kocsis, Z. (2020). A duális képzés hatékonysága és a képzéssel való elégedettség egy komplex kutatás tükrében [The effectiveness of dual training and training satisfaction in the light of a complex research]. ÚJ MUNKAÜGYI SZEMLE I. évf. 2020. 3. szám. Pp. 64-77. [in Hungarian]

Kovács, Török, 2016 – Kovács, Z., Török, E. (2016). Duális képzés: Az együttműködésen alapuló képzési forma [Dual training: a collaborative form of training]. In: Fodorné Dr. Tóth Krisztina. Felsőoktatás, életen át tartó tanulás és az ENSZ fenntartható fejlesztési célok megvalósítása. Pécs: MELLEARN. Pp. 209-215. [in Hungarian]

Kozák et al., 2020 – Kozák, A., Csugány, J., Tánczos, T. (2020). A duális képzésben részt vevő hallgatók gyakorlati kompetenciáinak mérési és értékelési lehetőségei [How to measure and assess the practical competences of students in dual training]. *Educatio*. 29(1): 125-134. [in Hungarian]

Lebid, Shevchenko, 2020 – Lebid, A.Y., Shevchenko, N.A. (2020). Cultivation of the skills of design thinking via the project-based method as a component of the dual model of learning. *European Journal of Contemporary Education*. 9(3): 572-583.

Marrero-Rodríguez, Stendardi, 2023 – Marrero-Rodríguez, J.R., Stendardi, D. (2023). The Implementation of Dual Vocational Education and Training in Spain: Analysis of Company Tutors in the Tourism Sector. *International Journal for Research in Vocational Education and Training*. 10(1): 90-112.

Németh, 2018 – Németh, A. (2018). Adatelemzés statisztikai módszerekkel [Data analysis using statistical methods]. Szeged, Magyarország: Szegedi Tudományegyetem (SZTE). [in Hungarian]

Papcunová et al., 2022 – Papcunová, V., Vöröšová, D., Levický, M., Tej, J. (2022). Dual Education as Part of Improving the Quality of Human Resources (Case Study). [Electronic resource]. URL: https://www.researchgate.net/publication/366622537_Dual_Education_as_Part_of_Improving_the_Quality_of_Human_Resources_Case_Study

Pilz, Wiemann, 2021 – Pilz, M., Wiemann, K. (2021). Does Dual Training Make the World Go Round? Training Models in German Companies in China, India and Mexico. *Vocations and Learning*. 14: 95-114.

Renkó, Beke, 2018 – Renkó, Z., Beke, A. (2018). A magántőke bevonásának hatásai a felsőoktatási képzési rendszerre. A duális képzési rendszer tapasztalatai. Az Állami Számvevőszék elemzése [The impact of private capital on the higher education system. Experiences of the dual training system. Analysis by the State Audit Office]. [in Hungarian]

Šćepanović, Artiles, 2020 – Šćepanović, V., Artiles, A.M. (2020). Dual training in Europe: a policy fad or a policy turn? *Transfer*. 26(1): 15-26.

Varga, 2018 – Varga, A. (2018). A duális képzés szerepének megítélése a 21. században: a minőségi munkaerő utánpótlás feltételrendszerének alakulása [Perceptions of the role of dual training in the 21st century: the evolution of the conditions for a quality workforce]. *Dunakavics*. VI. évfolyam XII. szám. Pp. 17-28. [in Hungarian]

Weich et al., 2017 – Weich, M., Kramer, J., Nagengast, B. et al. (2017). Studienstart: Dual oder normal? *Z Erziehungswiss*. 20: 305-332. [in German]