

**Costs and Benefits**  
**of Employers**  
**resulting from**  
**practical training**  
**of students**  
**in secondary**  
**vocational**  
**education in**  
**the Republic of**  
**North Macedonia**



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Agency for Development  
and Cooperation SDC





SKOPJE, 2020

# Costs and Benefits of Employers resulting from practical training of students in Secondary Vocational Education in the Republic of North Macedonia

(EMPLOYERS' PERSPECTIVE)

A DOCUMENT TO SUPPORT THE PROCESS OF DEVELOPING  
PUBLIC POLICIES AND ADVOCACY FOR GREATER INVOLVEMENT  
OF EMPLOYERS IN SECONDARY VOCATIONAL EDUCATION

---

This research is part of the activities of the Swiss project Education for Employment at North Macedonia (E4E@mk) and the European Training Foundation (ETF) to support the North Macedonia Government and the Ministry of Education and Science in their efforts towards more market-oriented and inclusive Vocational Education and Training.

The authors express their gratitude to the companies that answered the questionnaire and participated in discussion during the interviews, to Dana Biskoska (Ministry of Education and Science) for providing information about the VET schools and the companies they are cooperating with, to Aneta Atanasovska (Chamber of Crafts Skopje) for providing contacts and information for piloting the questionnaire and to Natasha Janevska (Economic Chamber of Macedonia) for the support in achieving better response rate.

**Authors:**

Katerina Shapkova Kocevaska  
Borce Trenovski

**Translation on English and verification:**

Julijana Jankulovska  
Sofija Glavinova Jovanovska

**Professional support:**

Anica Aleksova (E4E@mk)  
Stefan Tomas (ETF)

**Editing and printing:**

KOMA

**Technical support:**

Kristijan Kozeski  
Hristina Stojanoska

**Number of copies: 50**

The positions expressed within this document are the sole responsibility of the authors and do not necessarily represent the opinions and the policy of the Project, the project implementing partners and the donor.

---

CIP - Каталогизација во публикација  
Национална и универзитетска библиотека «Св. Климент Охридски», Скопје

377.354-052:[331.5:330.322.5(497.7)](047.31)

SHAPKOVA Kocevaska, Katerina

Costs and benefits of employers resulting from practical training of students in secondary vocational education in The Republic of North Macedonia : (employers' perspective) / [authors Katerina Shapkova Kocevaska, Borce Trenovski ; translation on English Julijana Jankulovska, Sofija Glavinova Jovanovska]. - Скопје : Образование за вработување во Северна Македонија, 2020. - 50 стр. : илустр. ; 30 см

Библиографија: стр. [49]

ISBN 978-608-66427-3-0

1. Trenovski, Borce [автор]

а) Стручно образование -- Ученици -- Практична обука -- Трошоци и придобивки за работодавачите -- Македонија -- Истражувања

COBISS.MK-ID 52703237

---

---

## Explanation of used key terms

The VET system in the Republic of North Macedonia uses different wordings to refer to teaching and learning processes conducted at the employer's premises:

- ➔ The reformed four-year (technical) vocational education envisages that students perform a **work-based learning** (throughout the school year) and **summer practice**. In the still unreformed second, third and fourth year, the terms that are used are **practical teaching** and **summer practice**.
- ➔ In the vocational education for occupations (3-year VET) the students have **practical teaching** during the school year and a **summer practice**.
- ➔ In the vocational training (2 years VET) students have **practical training** during the school year and **summer practice**.
- ➔ In the so-called "dual education" students have **practical training** during the school year and **summer practice**.

**For the needs of this document the following specific terms will be used:**

**Work-based learning:** for students' educational activities/processes that are conducted at employer's premises during the school year.

**Summer practice:** for students' educational activities/processes that are conducted at employer's premises during the vacation period.

**Practical training** as general term: for students' educational activities/processes that are conducted at employer's premises during the school year and/or vacation period.

---

## List of tables

**Table 1.** Main Economic Sector of the employers/companies

**Table 2.** Practical training specifics in formal VET

**Table 3.** Total and average number of students that have attended practical training in the company

**Table 4.** Acquired skills and knowledge by the students in the vocational school

**Table 5.** Impact of the practical training on the remaining employees in the company

**Table 6.** Long-term benefits from the practical training

## List of figures

**Figure 1.** Forms of practical training in the companies

**Figure 2.** Influence by the employer on the curriculum

**Figure 3.** Preparation and adjustment of the working places for the practical training

**Figure 4.** Selection of activities and tasks for the students during the practical training

**Figure 5.** Percent of responses for the method of selection of students for practical training

**Figure 6.** Opportunities to influence the student selection process

**Figure 7.** Students' skills and knowledge acquired in the vocational school

**Figure 8.** Students' productivity in relation to the employees' productivity at the same working position in a different period of their education

**Figure 9.** Impact of the practical training on the remaining employees in the company

**Figure 10.** Student participation and assistance in the job activities

**Figure 11.** Students' contribution in raising the company innovation

**Figure 12.** Providing conditions for admission of students to practical training

**Figure 13.** Change in the individual categories of costs for the company after introducing the practical training

**Figure 14.** Amount of compensation for the student

**Figure 15.** Assessment of the reasons for accepting students in practical training

**Figure 16.** General opinion for the costs vs. the benefits from the practical training

<b>EXECUTIVE SUMMARY</b>	<b>6</b>
<b>1. INTRODUCTION</b>	<b>9</b>
<b>1.1 BACKGROUND</b>	<b>9</b>
<b>1.2 THEORETICAL FRAMEWORK OF THE RESEARCH</b>	<b>10</b>
<b>2. METHODOLOGY</b>	<b>13</b>
<b>3. RESEARCH RESULTS</b>	<b>16</b>
<b>3.1. ORGANIZATION OF THE PRACTICAL TRAINING PROCESS</b>	<b>16</b>
<a href="#">3.1.1</a> Forms of practical training and scope of students	
<a href="#">3.1.1.1</a> Discussion with the interviewed respondents about their involvement in the practical training	
<a href="#">3.1.2</a> The relation of the Curriculum to the company's processes and the working position	
<a href="#">3.1.3</a> Quality and selection of students for practical training	
<a href="#">3.1.3.1</a> Discussion with the interviewed respondents about their collaboration with the schools	
<b>3.2. BENEFITS OF PRACTICAL TRAINING</b>	<b>23</b>
<a href="#">3.2.1</a> Prior preparation of students – knowledge and skills acquired in school	
<a href="#">3.2.1.1</a> Discussion during the interview on the previous knowledge of students	
<a href="#">3.2.2</a> Students' productivity and their impact on other employees in the company	
<a href="#">3.2.2.1</a> Discussion during the interview about students' productivity and impact	
<a href="#">3.2.3</a> Long-term effects and benefits from accepting students for practical training	
<a href="#">3.2.3.1</a> Discussion with the interviewed respondents about the long-term benefits	
<b>3.3 COSTS RELATED TO THE PRACTICAL TRAINING</b>	<b>32</b>
<a href="#">3.3.1</a> Provision of conditions by the employer	
<a href="#">3.3.2</a> Costs for implementing the practical training	
<a href="#">3.3.2.1</a> Discussion with the interviewed respondents about the costs for implementation of the practical training	
<a href="#">3.3.3</a> Compensation for student work	
<a href="#">3.3.3.1</a> Discussion with the interviewed respondents regarding the student compensation	
<b>3.4 COSTS VS. BENEFITS OF THE COMPANY</b>	<b>40</b>
<b>4. CONCLUSIONS</b>	<b>42</b>
<b>5. RECCOMENDATIONS</b>	<b>45</b>

---

# EXECUTIVE SUMMARY

## OBJECTIVE OF THE RESEARCH

The objective of this research is to identify the costs and benefits that employers are experiencing in their active involvement in the processes of realization of the practical training of students in secondary vocational education.

## METHODOLOGY

The data on the costs and benefits that employers have been facing in the Republic of North Macedonia in engaging in practical training were collected using two instruments: a survey and in-depth structured interviews with a selected representative group/sample of employers. The selection of employers was made on the basis of consultations with the secondary vocational schools in the country and the Ministry of Education and Science, as well as the Chamber of Crafts and the Economic Chamber of Macedonia (the structure of the employers' companies was taken into account - size, activity, number of students involved in the process, regional representation, etc.). There were 22 respondents (response rate - 29%) to the electronic survey and 8 (response rate - 40%) to the in-depth structured interviews. The questions were answered by the persons in charge of the organization/implementation of the practical training, and in the case of micro-companies, the answers were provided by the owners.

The data collection tools were two separate but complementary questionnaires (one for electronic survey and one for in-depth interview) which contained questions related to: organizing the process of practical training with employers, identifying the benefits and costs of employers, selection processes of students who attended a certain form of practical training in the employer's company, the selection of mentors who work with the students, as well as other organizational aspects regarding the practical involvement of students in the company.



## KEY FINDINGS

The main finding / message from this research as follows:

- ➔ *The prevailing opinion among employers is that the benefits they have from accepting students for practical training outweigh the actual costs.*
- ➔ *About 2/3 of the respondents clearly stated that involvement in the practical training is NOT a cost.*

More detailed and specific findings are organized in 3 topics: organization of the practical training, companies' benefit, and companies' costs, presented in the table below. The findings below are combined from the survey and the interviews conducted.

### ORGANIZATION OF THE PRACTICAL EDUCATION/TEACHING

The cooperation with the employers on the admission of students mainly takes place through the realization of work-based learning and summer practice. Employers need to be encouraged to be more involved in making systemic solutions, decisions (especially in 4-year VET and dual approach) that will provide greater commitment and a sense of ownership.

- About ¾ of the respondents answered that they have a certain influence on the curricula, which is a positive signal for the development and deepening of the cooperation between the schools and the companies (between the public and the private sector).
- Employers need to be included in the selection process of the students they accept.
- Employers are open to modification of jobs for the needs of the practical training/ the needs of the students.
- In general, employers have no problem to organize practical training and provide the required conditions.

### BENEFITS

- The productivity of the students during the work-based learning is lower in I (first) and II (second) year, but a productivity growth can be observed in the higher years and during the summer practice;
- Employers, in general, agree that students assist mentors and other employees in the company by performing simple work processes, maintaining the workplace and taking care of work materials, machines and tools.
- Students contribute less in introducing new knowledge, using new operation methods as well as using new technologies in cooperation with the mentor and other employees in the company.
- Employers agree that they have or would have long-term benefits such as: reducing the costs of recruiting new employees, reducing the costs of training new employees, making it easier to find people with the right skills for the job, positive impact on the organizational climate and productivity of other employees, etc.

### COSTS

- Employers report to have a slight increase in costs after the company's involvement in practical training for the following: supervising and monitoring the student's work, tools and work materials (which can sometimes be significant depending on the activity); administrative costs; as well as costs for health and safety at work.
- For most employers, the risk of possible mistakes students make in practical teaching is acceptable.
- For many employers, it is not a problem to cover the costs for: selecting mentors to work with students, training mentors; providing adequate space and equipment; and workplace safety.
- 37% of the respondents pay compensation to the students, and the compensation they pay usually amounts up to 20% of the average salary of the employees in the same jobs in the company / sector.
- Most of the respondents who currently do not pay compensation to students, believe that the amount of compensation should be up to 20% of the average salary of the employees. They believe that the payment of the compensation should be supported by the Ministry of Education and Science or the school.

---

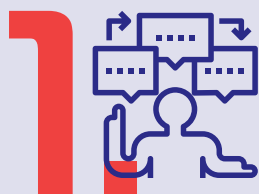
## KEY CONCLUSIONS AND RECOMMENDATIONS

### A TRUE PARTNERSHIP IS NEEDED

- In the development of curricula and programs for the practical training;
- Flexible organization of the practical training which will be jointly decided by the company and the school;
- Early inclusion of students in companies;
- Better counseling and guidance of students (including soft skills) before they start with practical training in company;
- Joint commitment by teacher and mentor to the students, mutual trust, cooperation and true involvement;
- Attractive joint training and incentive for the teacher and the mentor;
- Joint promotion and information for VET by the schools and companies with the support of the central/ local government, chambers, associations.

### THE BENEFITS OUTWEIGH OR ARE EQUAL TO THE COSTS, BUT...

- Companies, especially micro and small enterprises, need support for the materials, and schools need support for the equipment of the special classrooms;
- Financial support to companies or joint investment from the public and private sector for the compensation of the students' work in the first two years of the practical training;
- Support for mentors after the training (for example networking and opportunity to exchange experiences with other mentors from the same / related economic sectors).



# INTRODUCTION

## 1.1 BACKGROUND

In March 2018, with the support of the Swiss Agency for Development and Cooperation (SDC), in the Republic of North of Macedonia, Helvetas in partnership with the Macedonian Civic Education Center (MCEC) and the Economic Chamber of Macedonia (ECM) launched the Education for Employment Project (E4E@mk). The main objective of the project is that more young people gain quality vocational education and training as well as develop skills that contribute to decent employment. The project focuses on reducing the mismatch between the skills provided through formal and non-formal education and training and the labor market needs. The specific objectives of the project are: better offer of vocational trainings through non-formal education, secondary vocational education and labor market-oriented training through enhanced cooperation and effective partnership between educational institutions and employers, as well as improved legislation that provides better conditions and access to market-oriented formal and non-formal vocational education and training.

One of the interventions of the E4E@mk Project is aimed at better utilization of resources for vocational education and training and improving the funding allocated by the public and the private sector. In 2018, the project made Resource Analysis in Vocational Education and Training (VET)<sup>1</sup> with the following main findings:

1. Vocational schools are mainly financed through transfers from the public sector i.e. the central and local government, 96.6% of the total revenues;
2. Schools have earmarked funds for salaries and allowances for their employees (65 percent), purchase of goods and services (33.5 percent), capital expenditures (1 percent), and subsidies, transfers and interest payments (0.5 percent).
3. 72 percent of the students in the four-year vocational education have realized practical training in more than 500 employers.
4. 96 percent of the students in the vocational education for occupation (three years) realized practical training with nearly 350 employers.
5. The schools stated that they did not have an insight into the amount of costs related to the educational process and the liabilities for implementing the practical training with an employer which are borne by the employer and/or the parents;
6. A small number of schools allocate minimal financial resources for attending or organizing practical training with an employer.

<sup>1</sup> .....  
 Dokmanovic M., Spasevski D., Shapkova Kocevaska K., Gicevska S.(2018). *Legal framework and resources in the vocational education and training in the Republic of North Macedonia*. Skopje: E4E@mk. Available at: <https://www.e4e.mk/wp-content/uploads/2019/05/Analiza-Pravna-ramka-i-resursi-ENG.pdf>

---

The systematic organization of the practical training of students from the secondary vocational education at a company, as well as the different models were, and still are, part of the significant reform processes in the education system in R. North Macedonia. This should have a significant impact on the main aspects of the educational process, but also on the labor market - contributing to: better and more relevant VET, more efficient and financially sustainable educational process, strengthening the links and cooperation between educational institutions and the business sector, higher productivity of employers, greater labor mobility, a workforce with appropriate and advanced skills, higher earnings and job satisfaction, reduced unemployment, reduced costs and time to balance the supply and demand in the labor market, etc.

According to the Law on Vocational Education and Training (Article 13), employers can provide practical training for students, if they meet the requirements for space, equipment and appropriate staff prescribed by the appropriate chambers. The chambers verify the fulfillment of the conditions at the employers. So far, the largest Chamber of Commerce of Macedonia has 25 registered employers.

In Republic of North Macedonia there are 75 secondary schools that provide vocational education and training (46 are VET schools, and 29 are schools that offer general schooling and vocational education). The total number of students attending vocational education and training in the school year 2020/21 is about 42,000. In the school year 2021/22 there should be a places for more than 25,000 students for the practical training (this is especially important for the reformed four-year vocational education and training, that is usually attended by over 90% VET students and for which the realized ferial practice is a mandatory condition for transition from one year to another).

In December 2019, E4E@mk together with the European Training Foundation (ETF) started an activity for support of the Ministry of Education and Science (MoES) in creating new and improving the existing funding models in vocational education and training (VET), with emphasis on practical training with an employer which is a mandatory part of the process of education of young people in vocational schools.

One element of this activity is to identify the perceptions about the costs and benefits of employers from their involvement in the practical training of students. This is especially important in identifying bottlenecks and gaps that may exist, providing information, creating appropriate policies and measures to improve the **process of practical training of students in secondary vocational education in the Republic of North Macedonia with greater involvement of employers.**

## 1.2 THEORETICAL FRAMEWORK OF THE RESEARCH

One of the key parts of this research is to identify the employers' positions about the benefits they can have if being actively involved in the process of education by providing on-the-job/practical training for students in secondary vocational education in their companies.

The research identified several parameters based on which the benefits of practical training were evaluated, including: knowledge and abilities/skills of students, productivity of students and other employees, potential savings of the employer, and long-term effects of the involvement in these processes.

---

Participating in and organizing practical training and learning with an employer inevitably creates costs for both companies and students, their families, educational institutions, the local community and the general public. The focus of this research is to determine and analyze the costs incurred by the companies in their involvement in these processes. This is a relatively heterogeneous group of various direct and indirect costs (providing conditions and materials for work, compensation for student labor, etc.). However, it has to be mentioned that determining the costs and benefits of practical training is associated with a number of variables and specifics that make this process particularly complex: the specifics of each business sector that is associated with specific costs and the specifics of the whole process, direct association of the practical training system with the impact on employer's productivity / sales volume/profits (usually there is no separate financial/accounting system to provide such results), labor market mobility and the possibility of further upgrading students' skills (which are of a long-term nature and difficult to quantify).

The use of cost-benefit analysis as a methodological tool for assessing the effects on employers involved in the implementation of practical training of students in vocational education, should be followed or monitored with great attention. The main reason for this is the fact that cost-benefit analysis presupposes the identification and then monetization of all direct and indirect costs and benefits associated with a particular activity or project, which may not always be possible when evaluating projects and policies in the field of education. However, there are several previous researches that come to interesting findings regarding the experiences of different countries in the world, in terms of the involvement of companies in various forms of practical training (work-based learning, practical training, and higher technical education).

- Thus, research on the effects of work-based learning in companies involved in the Swedish vocational education and training system (Karlson&Persson, 2015)<sup>2</sup> shows that there are significant net benefits for companies. The benefits primarily originate from the reduced costs of recruiting interns and future employees, as well as the positive effects on the skills of mentors and other employees in the company, but also the benefits associated with the brand and social commitment and responsibility. According to this study, the long-term benefits unequivocally outweigh the short-term costs associated with the time-consumption of monitoring the students.
- Another comparative study examines the costs and benefits of companies from Austria and Switzerland offering apprenticeship training (Moretti et al., 2017)<sup>3</sup>. This study shows that although the practical training systems in the two countries have many similarities, there are significant institutional differences. Thus, on average, companies in Switzerland generate a net profit of 3400 euros per student and per year of training, while Austrian companies record a net loss of 4200 euros. Such differences are due to the different models for determining the apprentice pay, organization of collective bargaining processes, the existence of subsidy opportunities, competitiveness among secondary vocational schools and others.

---

<sup>2</sup> Karlson, N., & Persson, K. (2015). *Effects of work-based learning on companies involved in VET education. Ratio Working Paper No. 258. The Ratio Institute, Stockholm.* Available at: [http://ratio.se/app/uploads/2015/09/nk\\_kp\\_work\\_based\\_learning\\_258.pdf](http://ratio.se/app/uploads/2015/09/nk_kp_work_based_learning_258.pdf) [Accessed on June 07, 2020]

<sup>3</sup> Moretti, L., Mayerl, M., Mühlemann, S., Schlögl, P. & Wolter, S.C. (2017). *So Similar and Yet So Different: A Comparative Analysis of a Firm's Cost and Benefits of Apprenticeship Training in Austria and Switzerland.* Bonn: Institute of Labour Economics.

- 
- A more extensive study examines the effects of the involvement of companies in Italy in projects related to higher technical education (Italian: Istruzione Tecnica Superiore) (Education System and Human Capital Unit, 2017)<sup>4</sup>. This form of education was introduced in 2011 and is a form of training in the tertiary system that targets the needs of companies for high quality innovative skills. According to this study, companies involved in this model of education have a series of benefits, such as reducing recruitment and staffing costs, reducing training costs, reducing indirect costs as missed business alternatives, providing easier contact, and access to adequate young workers, development of new specific skills, transfer of models and tools for technological, organizational and social innovation, reputation benefits, etc. The benefits for the companies are at different organizational levels and therefore cannot be evaluated strictly from an economic perspective.

Taking into account the previous experiences and methodological approaches that have been generally applied, with the support of international expertise on work-based learning and practical training from ETF, an effort has been made to create an acceptable and sustainable methodology that will determine the general benefits and costs of the whole process. This is one of the initial researches that can be further upgraded by specific penetration in different economic sectors or deeper in the individual elements of costs/benefits.

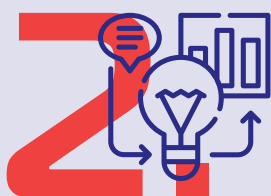
The second part of this document shows the research methodology, and the third part presents the results, organized in four sections:

- ➔ Organization of the practical training process;
- ➔ Benefits of practical training;
- ➔ Costs related to practical training; and
- ➔ Costs vs. benefits in practical training.

The conclusions, findings and recommendations are set out in the last part of the document.

---

<sup>4</sup> Education System and Human Capital Unit (2017). *Costs and benefits of company involvement in ITS projects*. Available at: <https://www.assolombarda.it/servizi/formazione/monografie/ricerca-costs-and-benefits-of-company-involvement-in-its-projects> [Accessed on June 07, 2020]



## METHODOLOGY

In this research, the data on the costs and benefits concerning the employers in the Republic of North Macedonia in engaging in practical training were collected by using two methods: a survey with a selected sample of employers and in-depth structured interviews with some of the employers - in order to complete the overall image and provide more information/data. The selection of employers approached in the survey was made based on consultation with the secondary vocational schools in the country through the Ministry of Education and Science, and social partners. Furthermore, the research considered the structure of the companies - size, activity i.e. area of work, number of students involved in the process, regional representation, etc. The selected employers are the ones that had experience in practical training – the employers that do not provide training were not included in this research.

The initial version of the basic instrument<sup>5</sup> was piloted with three micro, one medium and one large company, in consultation with representatives of the Chamber of Crafts - Skopje and the Economic Chamber of Macedonia.

For the needs of the survey and the interviews, the research team developed two separate questionnaires in coordination with an international expert for work-based learning and practical training from the European Training Foundation. The two questionnaires were complementary and contained questions related to the organization of the practical training process in the companies, questions related to the identification of the companies' costs and benefits, the selection processes for students attending certain form of practical training, the selection of mentors working with the students, as well as other organizational aspects regarding the practical involvement of students in the companies. The questions were answered by representatives of the employers' companies who are responsible or involved in the practical training and cooperation with the schools.

**The Survey** was conducted electronically, from May 19 to June 8, 2020. Out of the total 76 invited employers, 22 respondents answered the survey (the response rate is 29%).

The survey included companies of different sizes (shown by the number of employees) and was responded by:

- 22.7% of respondents, who have up to 10 employees (micro company),
- 4.5% respondents with up to 50 employees (small company),

<sup>5</sup> The draft questions for the survey were prepared by the ETF Expert and afterwards supplemented and/or localized by the national experts/the research team and authors of this report. After the piloting phase, the before mentioned prepared a final version of the instruments.

- ➔ 27.3% of respondents with more than 50 and less than 250 employees (medium company), and
- ➔ 45.5% of respondents with more than 250 employees (big company).

The survey was designed to include employers from various sectors, in order to gather information specific to the different areas of work. Employers from 14 economic sectors were invited to participate, according to the division of the occupations in vocational education and training system<sup>6</sup>, and answers were collected from employers in 10 different sectors/occupations. Detailed overview by sectors, the number and the percentage of employers/companies that responded to the survey is provided in Table 1.

**Table 1.** Main Economic Sector of the employers/companies

SECTOR	NUMBER OF COMPANIES	PERCENT
Geology, mining, metallurgy	3	13.6%
Construction and geodesy	1	4.5%
Health related activities	5	22.7%
Agriculture, veterinary	1	4.5%
Personal services	3	13.6%
Electrotechnics and machinery	4	18.2%
Traffic and transport	1	4.5%
Textile and leather industry	1	4.5%
Hospitality and Tourism	1	4.5%
Other	1	4.5%
Printing/graphic design	1	4.5%

**The structured interviews** that were conducted after the electronic survey follow the structure of the already conducted survey, with a request for additional and specific information. The employers were contacted before each interview to agree on a date for the interview and share the key issues that were to be discussed during the interview. The duration of each interview was in average 45 minutes with employers from different sectors: mechanical, electrical, geology-mining, medical, printing, personal services, etc. Out of 20 employers that were contacted the interview was completed with 40% (8 employers) of them, using zoom/telephone/Viber (the interviews with the employers were in the period June 10-19, 2020 during the state of emergency in the Republic of North Macedonia related to Covid-19 pandemic).

In addition, the results from the survey will be presented for each part, supported with the relevant information from the interviews.

6 <http://csoo.edu.mk/pocetna/struki/>



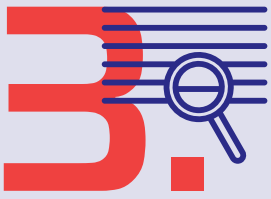
---

## LIMITATIONS IN THE REALIZATION OF THE RESEARCH AND THE USE OF THE FINDINGS

Initially, the survey was planned to be conducted through an in-depth interview with 10-15 employers in the period from April to May 2020. However, due to the Covid-19 pandemic, the introduced state of emergency, the need to reduce physical contact and the difficulties in the functioning and the regular operation of some companies, the researchers decided to carry out the interviews using electronic communication, by applying two methods: electronic questionnaire through the platform Survey Monkey, as well as in-depth interviews through the Zoom platform /telephone/Viber.

The health and economic difficulties that were in an upward trend at the time also affected the degree of responsiveness of the planned number of respondents. The researchers made serious efforts to communicate with employers that would answer the electronic questionnaire. A special challenge was interviewing the employers which took more than two weeks just to schedule a meeting/interview. However, in the given situation and under the circumstances, an optimum was achieved both in terms of the sample and the quality of the information provided. Although the percentage of respondents who provided answers is relatively high, their structure in terms of economic sectors and number of employees does not allow to make generalizations and draw specific conclusions by sectors, which will remain a task for a future survey to be conducted in this area.

Having in mind the above, we can conclude that the results of the research, however, give a clear picture of employers' perception regarding the implementation of practical training, the employers' costs and benefits, as well as the differences and similarities between employers/companies from different economic sectors and of different sizes.



## RESEARCH RESULTS

This part of the document presents the research results in three logical units, i.e. areas: *Organization of the practical training process*, *Benefits of the practical training* and *Costs related to the practical training*. **This part of the document is prepared in an integral way, i.e. it contains the results of both the electronic survey and the in-depth interviews.**

### 3.1. ORGANIZATION OF THE PRACTICAL TRAINING PROCESS

#### 3.1.1 Forms of practical training and scope of students

The system of secondary vocational education and training (VET) in the Republic of North Macedonia includes the following “sub-systems”: four-year vocational education (unreformed and reformed so called “technical”), three years vocational education for occupations, one or two years vocational training, and “dual education” which in the academic year 2019/2020 was carried out experimentally in 7 vocational schools and 16 mainly larger companies.

There are different forms (and terms) of the involvement of employers in the educational process i.e. in the practical training of VET students. The table below gives short overview and specifics of the student’s practical training in the Republic of North Macedonia.

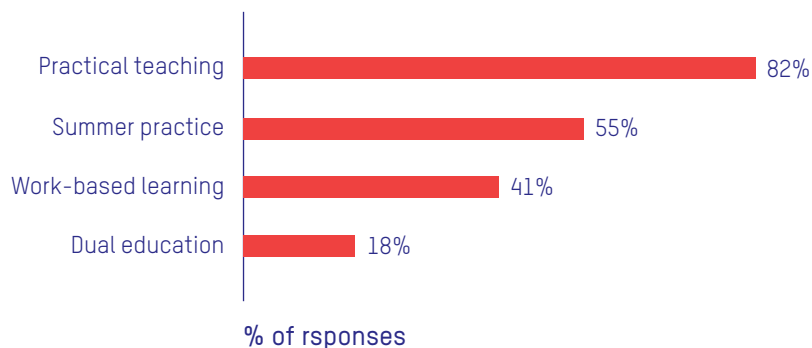
**Table 2.** Practical training specifics in formal VET

VET sub-system	SPECIFICS FOR PRACTICAL TRAINING DURING THE SCHOOL YEAR	SPECIFICS FOR SUMMER PRACTICE REALIZED
4 year reformed (technical)	<p><b>Work-based learning</b> is compulsory and organized in companies or real school companies with 4 classes per week in year III and 6 classes per week in year IV.</p> <p><b>Practical teaching / exercises</b> in years I to IV are realized in school or in company (school decision) with duration between 3 to 6 classes per week depending on occupation and year of study.</p>	5 to 20 days (for year I, II and III) depending on occupation and year of study
4 year (not reformed)	<p><b>Practical teaching</b> in years II to IV is realized in school or company with duration between 2 to 11 classes per week depending on occupation and year of study.</p> <p><b>Professional practice</b> for agriculture (in years I to III) and forestry-wood processing occupations (in years II to IV) with 10 days in school real company, farms and companies.</p>	10 to 20 days (for year I, II and III) depending on occupation and year of study.
3 year	<b>Practical teaching</b> in years I to III is realized in school premises or company (school decision) with duration between 6 to 16 classes per week depending on occupation and year of study.	10 to 20 days (for year I, II) depending on occupation and year of study.
2 year	<b>Practical training</b> in years I and II with combined realization in school and in company with duration of 14 classes per week.	10 days in year II.
Dual approach	<b>Practical training</b> with 5 to 11 classes per week in year II to year IV realized in school or company.	As agreed with the company.

In this document, the training of students outside the schools i.e. at the employers' will be referred to as **practical training**, except in the cases when it should be explicitly mentioned: work-based learning for the training in company during the school year and summer practice.

Figure 1 below shows the percentage of respondents who provide a specific form of practical training.

**Figure 1.**  
Forms of practical training in the companies



**Note 1:** The sum of the percentages is bigger than 100% because more than 70% of the companies have more than one type of practical training.

The number of students involved in educational processes with an employer in the last academic year was 1431. The most frequent implemented form (largest number of students) is the practical teaching, while the dual education process covers the least number of students. The following table (Table 3) presents the total and the average number of students who attended various forms of practical training last year. The calculation is based on the answers received from the employers who answered this question.

**Table 3.** Total and average number of students that have attended practical training in the company

TYPE OF TRAINING	NUMBER OF EMPLOYERS	NUMBER OF STUDENTS	AVERAGE NUMBER OF STUDENTS
Practical teaching	17	844	50
Summer practice	11	162	15
Work-based learning	9	295	33
Dual education	6	130	22

**Note:** The total sum of employers is more than 22, because some of the employers have more than one type of practical training.

---

According to the size of the employer:

- ➔ micro and small companies accept in average 5 students per year;
- ➔ medium-sized companies accept around 15 students per year; and
- ➔ large companies accept about 90 students per year - regardless of the type of training.

### 3.1.1.1 Discussion with the interviewed respondents about their involvement in the practical training

During the interviews, the respondents showed particular interest in the introductory question - *How is your company involved in the practical training processes?* The respondents gave a wide range of different responses to this question, which provided important information about the role and the manner of involvement of the company and the connection with other stakeholders in the process.

- ➔ Many employers, especially micro and small companies, have elaborated that they are particularly happy to work with students and that is one of the initial motives for their participation in the practical training:

**We are quite fond of the students; we do not limit ourselves in terms of costs and we work with the students with pleasure**

(MEDIUM COMPANY - PERSONAL SERVICES).

- ➔ Some of the interviewed representatives of the companies are aware that the practical training is extremely useful for creating a quality workforce in addition to the formal education, which they consider to have limited capacities, and are happy to provide support:

**We know that in school, students do not get all the necessary knowledge and we gladly include them in our practical activities**

(MICRO COMPANY - PERSONAL SERVICES).

**The school is limited with materials and there are not enough real practical activities for the students; even though the schools have some equipment, it is outdated; our company plans to fund purchase of supplies for the school cabinets**

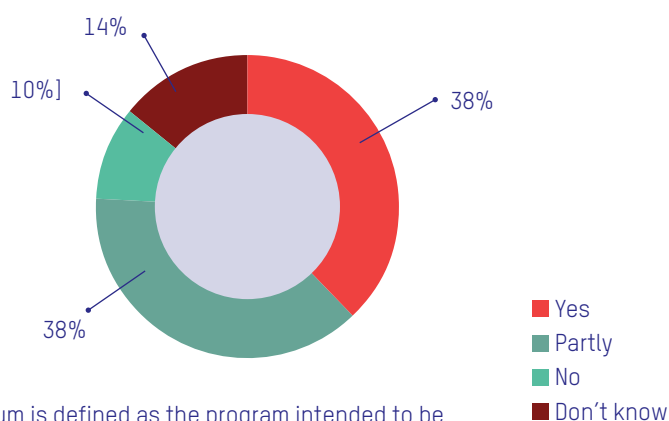
(LARGE COMPANY - GEOLOGY/MINING AND METALLURGY).

### 3.1.2 The relation of the Curriculum to the company's processes and the working position

The involvement of companies in the development and modernization of curricula in order to bring the work processes closer to the students is essential. According to the respondents' answers, 76% of the employers have adjusted or partially influenced the curriculum, i.e. the program that the students are supposed to/should learn in school and/or at work; 10% of respondents answered to have not had any influence on the curriculum (Figure 2). All respondents from companies that are involved in the process of dual education answered to be involved in the development of the curricula.

This distribution of answers is a positive signal for the development of the cooperation between the schools and the employers.

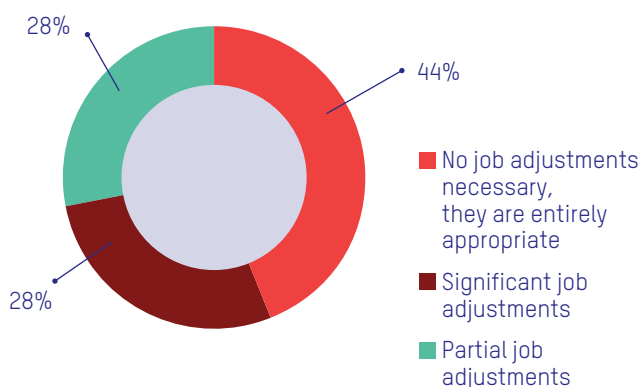
**Figure 2.**  
Influence by the employer on the curriculum



**Note:** The term Curriculum is defined as the program intended to be learned by the students at school or at the employer's company.

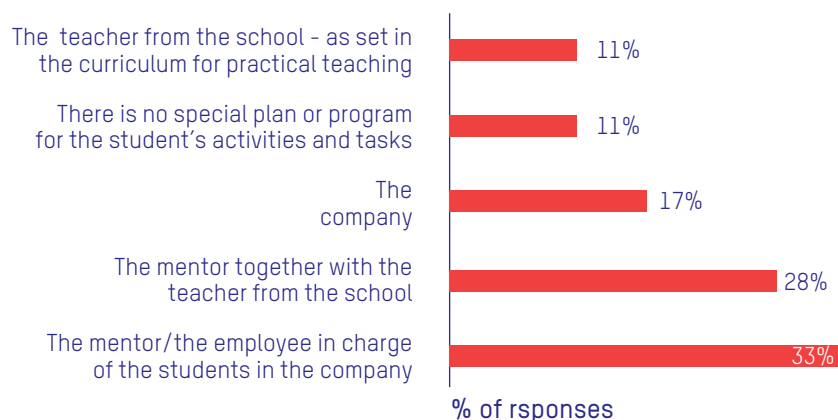
The answers to the question regarding the degree to which they prepare i.e. adjust the jobs/premises for the practical training shows that nearly half of the companies do not make any modifications to the jobs/working places - they think that the working place is appropriate. But, 56% of the respondents stated that they make adjustments to the working places/premises in order to achieve optimal practical training (Figure 3).

**Figure 3.**  
Preparation and adjustment of the working places for the practical training



The answers to the question on the selection of activities and work tasks for the students are a signal for good involvement of the companies. Half of the respondents stated that the choice of activities and work tasks is made by the company, the mentor or the employee who is in charge of the respective student/s, and additional 28% answered that this process is carried out by the mentor in cooperation with the school teacher. Detailed answers are presented below (Figure 4).

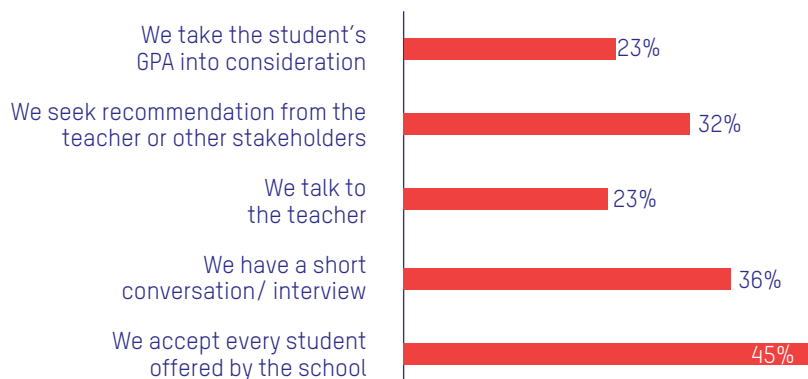
**Figure 4.**  
Selection of activities and tasks for the students during the practical training



### 3.1.3 Quality and selection of students for practical training

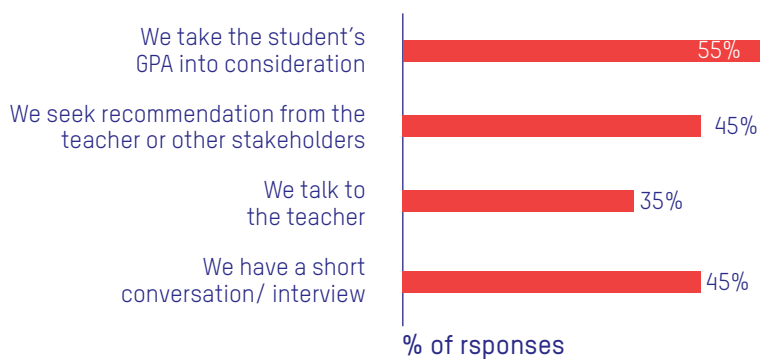
Apart from the development i.e. the modification of the Program for students, the employers consider that the participation of the company in the selection of students who would attend the practical training is important. The question "How do you select the students who attend practical training in your company?" was answered by all respondents. From the answers, it was concluded that almost half of the respondents accept all students offered by the school, without considering other additional criteria for the selection of candidates. However, in number of cases there is a (pro) active approach and certain positive practices such as: involvement and organization of short conversations (interviews) with students, taking into account or seeking recommendations from the teacher or other stakeholders, conversations with the subject teachers. Respondents also believe that the school grades of the students are important and they take them into account. Part of the employers answered that they use more than one approach in selecting/accepting the students. Figure 5 shows the detailed responses.

**Figure 5.**  
Percent of responses for the method of selection of students for practical training



Employers also show a willingness to engage in activities that could further increase their impact on the student selection process (see Figure 6): setting criteria and posting announcements, setting application periods, limiting groups of students who can apply, as well as sharing information and data about the company in order to attract students.

**Figure 6.**  
Opportunities  
to influence  
the student  
selection  
process



### 3.1.3.1 Discussion with the interviewed respondents about their collaboration with the schools

During the interviews, most of the respondents stated that they have good cooperation with the school, teachers and students.

- ➔ Nearly 2/3 of the respondents use personal contacts and connections to provide better groups of students who would participate in their practical training. Related to this, the statement of a respondent from a large company indicates the following:

**We needed to motivate these kids, we think that the whole structure of education must be changed, the students' consciousness must be changed, we had to explain them why it is necessary to have practical training in company, that it is not only a formal process – the Ministry of Education and other institutions should have a serious influence and greater role in this process.**

- ➔ Half of the interviewed employers added that – in addition to the number and the quality of the students, the time schedule of the practical training is of importance, as well as employers involvement in time schedule synchronization jointly with the school:

**The practical training requires continuity meaning that the students have to come to work continuously 3-4 days a week.**

- ➔ The interviewed respondents have also indicated the role of the school in the process of practical training and most of them believe that the school should make greater adjustments and have a greater impact on increasing efficiency and discipline of the students in the company. The following statements were shared:

**The relation between the company mentor and the school teacher does not always work, because most often they bring the students to us and the teacher only checks (occasionally 3-4 times) whether they are present (MEDIUM COMPANY - PRINTING/GRAPHIC).**



The teacher just brings the students without being present in the laboratory. Whoever from our colleagues/ laboratory technicians is present, he or she works with the students; There is no specific organization or program for the activities, it is actually up to us/the colleagues at that working position

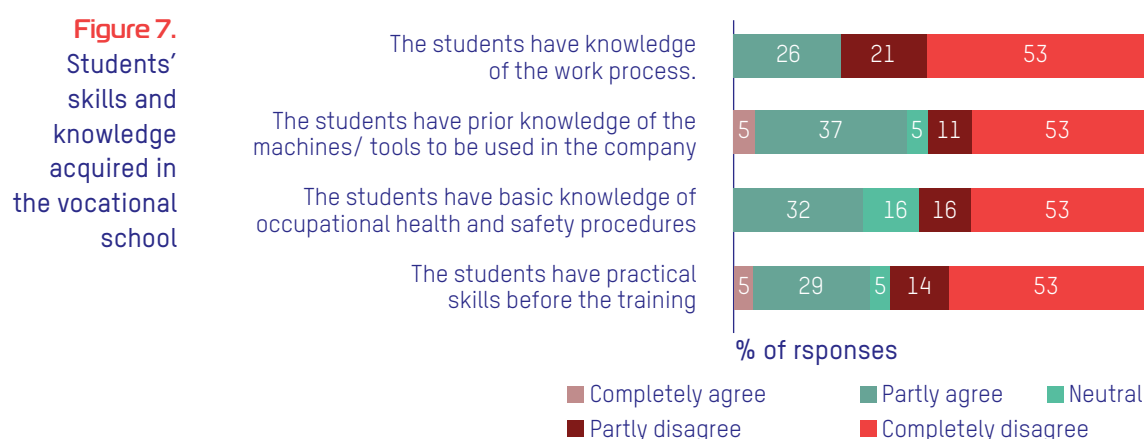
(MEDIUM SIZE INSTITUTION - HEALTH /LABORATORY).

## 3.2. BENEFITS OF PRACTICAL TRAINING

One of the two main parts of this research was to identify the employers' position on the benefits they can have from their active involvement in the educational processes of the students in the vocational education through practical training. To that end, several parameters were identified based on which the benefits of practical training are evaluated, including: students' knowledge and skills, the productivity of the students and the other employees in the company, the potential company savings, and the long-term effects of involvement in these processes. The questions used refer to the short-term and long-term benefits for the employer/company.

### 3.2.1 Prior preparation of students – knowledge and skills acquired in school

Before starting a practical training in a company, the students acquire knowledge and skills in school that they should use at their jobs (through specific subjects, through exercises and learning in the school classroom/workshop). Employers expect students to have sufficient prior knowledge to be able to adjust or get involved in work process faster - which is related to the benefits of the company. The following figure (Figure 7) presents the respondents' answers to specific skills and knowledge acquired by students in the vocational school before coming to the company. The received answers show where schools can improve.



Most of the respondents answered that the students do not demonstrate/have any practical skills or basic knowledge before coming to the company for training (i.e. they do not agree at all or they partially agree with the statement that the students have previous knowledge/skills).

The answers are expressed on a scale from 1 to 5, where 1 indicates that they completely disagree with the statement and 5 meaning that they completely agree with the statement. Thus, average grades were obtained related to the students' previous knowledge and skills acquired in school (Table 4). The students demonstrate some previous knowledge of machines and tools, and occupational safety and protection. The weakest is the knowledge of the work processes, which implicitly affects their productivity.

**Table 4.** Acquired skills and knowledge by the students in the vocational school

STATEMENT	AVERAGE GRADE
Students have practical skills before attending the training	2.1
Students have basic knowledge on occupational safety and protection	2.4
Students have prior knowledge of the machines/tools to be used	2.5
Students have knowledge of the work processes	2

### 3.2.1.1 Discussion during the interview on the previous knowledge of students

The respondents in the interviews emphasize that the knowledge and skills students have at the beginning of the practical training are one of the main factors for successful practical training. For this topic, despite the large number of complaints about the students' prior knowledge and skills, the conversations led to the conclusion that employers are to a certain point satisfied with the cooperation with both the students and the school. Yet, almost all statements lead to the conclusion that students counselling and guidance needs to be improved.

- ➔ As in the survey, most employers point to the modest knowledge and skills that students have:

**Students have very little prior knowledge - some have completed 3 years and do not know how to read a technical drawing/ documentation - it is rare to find a good student"** (A MEDIUM-SIZED COMPANY - GRAPHIC PRINTING; AND A LARGE COMPANY - MACHINERY).

- ➔ Some of the respondents related the "quality" of the students to their interest and motivation:

**As many as 30-50% of students do not know why they come to the practical training and are completely lost - but we enroll children who want to work with vehicles - some of them have parents working in the same industry and want to learn - that is why we have better students**

(MEDIUM COMPANY - MECHANICAL/ELECTRICAL; SIMILAR STATEMENT FROM MICRO COMPANY - MECHANICAL GARAGE).

**It mostly depends on the students, it is not always up to the school or the mentor - some do not show any interest in the job, while others learn quickly, only need few instructions and they can work on their own** (MEDIUM COMPANY - PERSONAL SERVICES/CARE AND BEAUTY).

---

### Only 10% of the students are really interested - after graduating from vocational school, the others get jobs elsewhere

(MICRO COMPANY - PERSONAL SERVICES).

- ➔ Respondents also explained that sometimes it depends on the entire class and that they have had good and bad generations. What they emphasized is the program and the organization in groups regarding the attendance of students in the company, which they also consider to be very important for the success of the process. Respondents indicated that students learn from each other and that it is especially important to set the practical training on a solid basis from the initial years of education:

### After the 3rd year, it is difficult to make changes among the students, so it is better to put them in the right mindset from the first year of VET – after that we lose control and the efficiency of the students is lower

(LARGE COMPANY – MECHANICAL SECTOR).

- ➔ A significant part of the interviewed respondents also consider that the commitment of the mentor is especially important, as well as the cooperation with the teacher in the realization of the practical training. 2/3 of the respondents explained that they have established a good program and method to find a suitable position for every student and provide benefits for both the students and the company. However, one of the key factors (previously mentioned) for a successful practical training process is the close contact/communication with the school:

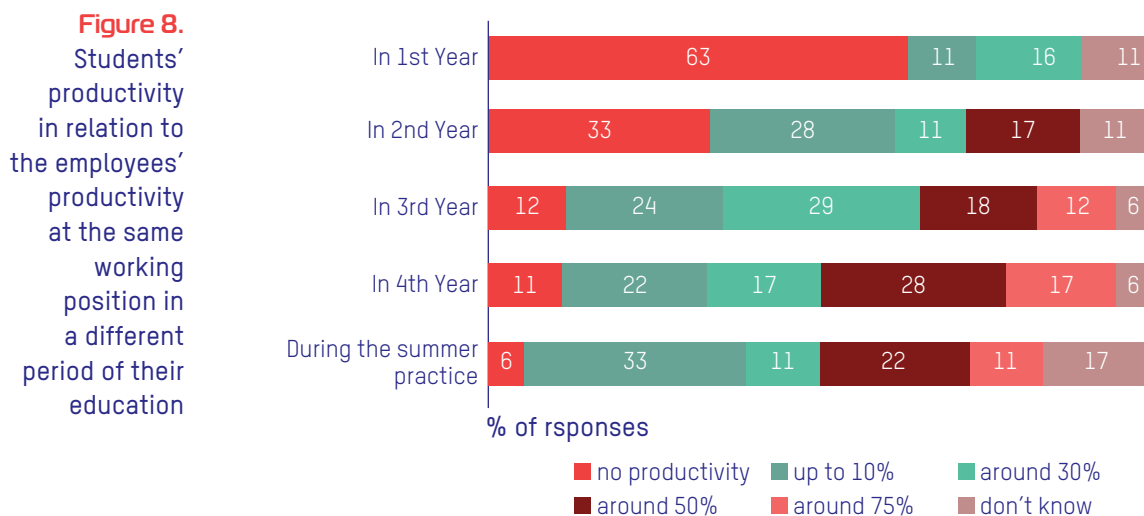
### We have good cooperation with the school and that is why they provide us with better students who come regularly. Otherwise, the process would not be successful, and all kinds of students may come - we have many years of experience and we can manage well

(MEDIUM COMPANY – MECHANICAL SECTOR, AND BIG COMPANY – ELECTRICAL SECTOR).

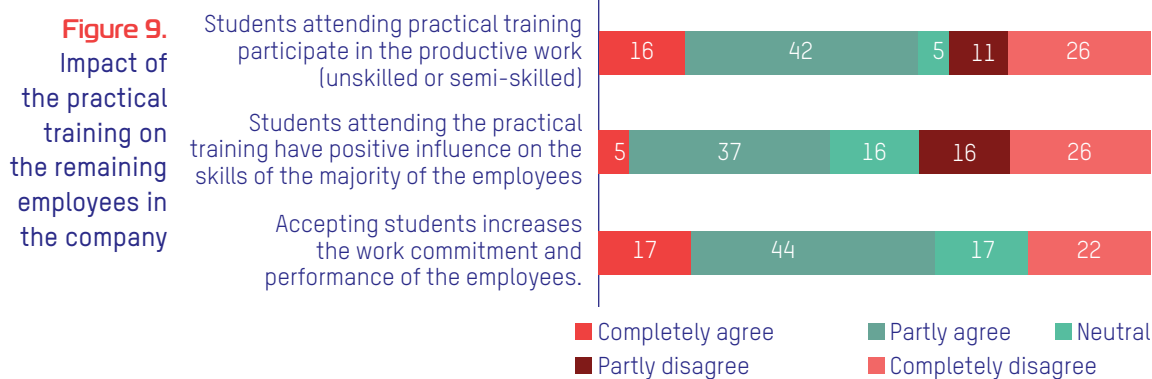
## 3.2.2 Students' productivity and their impact on other employees in the company

The survey showed that employers also recognize the link between the students' experience and their productivity. Respondents mostly answered that the students in the first and second year in VET have very low productivity or are not productive at all (compared to the employees who perform the same tasks). However, there are positive impressions for the students from the higher classes (year three and four) and for the ones attending the summer practice. According to the respondents, the productivity of the students in third and fourth year and during the summer practice, is on average around 30% of the productivity of the employees in the same jobs.

Figure 8 shows the distribution of the obtained responses regarding the student productivity.



Although the respondents assessed the students' prior acquired knowledge and skills as weak, they still notice a positive effect of their engagement, partly on productivity and other workers. The answers presented in Figure 9 and the average grades in Table 5, bring the conclusion that 58%<sup>7</sup> of the respondents believe that students who attend practical training contribute and participate in unskilled or semi-skilled productive work of companies. Furthermore, employers agree that students influence the improvement of employees' skills (42% of respondents)<sup>8</sup>; the highest average score is for the impact on increasing the commitment and the performance of the employees (61% of respondents).



**Table 5.** Impact of the practical training on the remaining employees in the company

STATEMENT	AVERAGE GRADE
Accepting students increases the employees' commitment and performance.	3.3
Students who attend practical training also improve the skills of most employees.	2.8
Students attending practical training participate in productive work (unskilled or semi-skilled).	3.1

<sup>7</sup> 42% of the employers that have answered the question partly agree, while 16% of the employers completely agree in reference to the students' contribution in the productive work.

<sup>8</sup> 37% of the employers that answered the question partly agree while 5% of the employers completely agree with this finding.

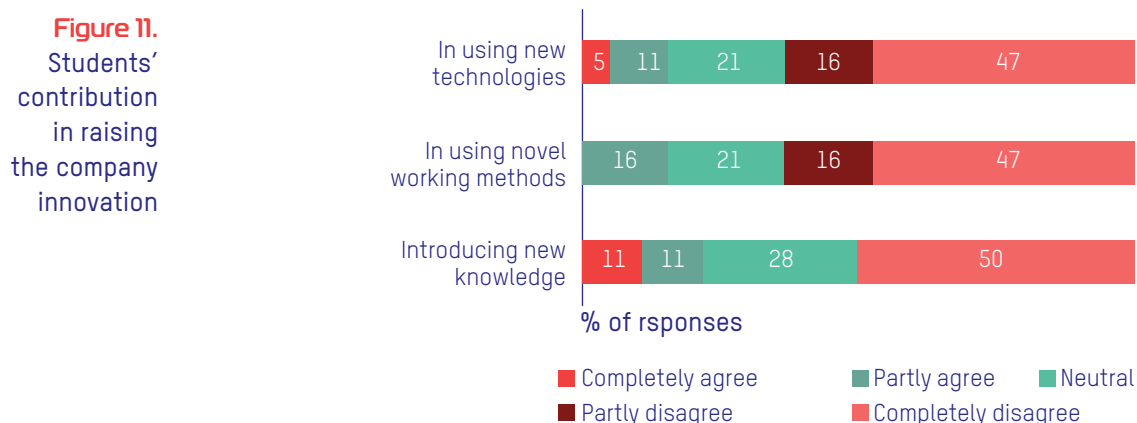
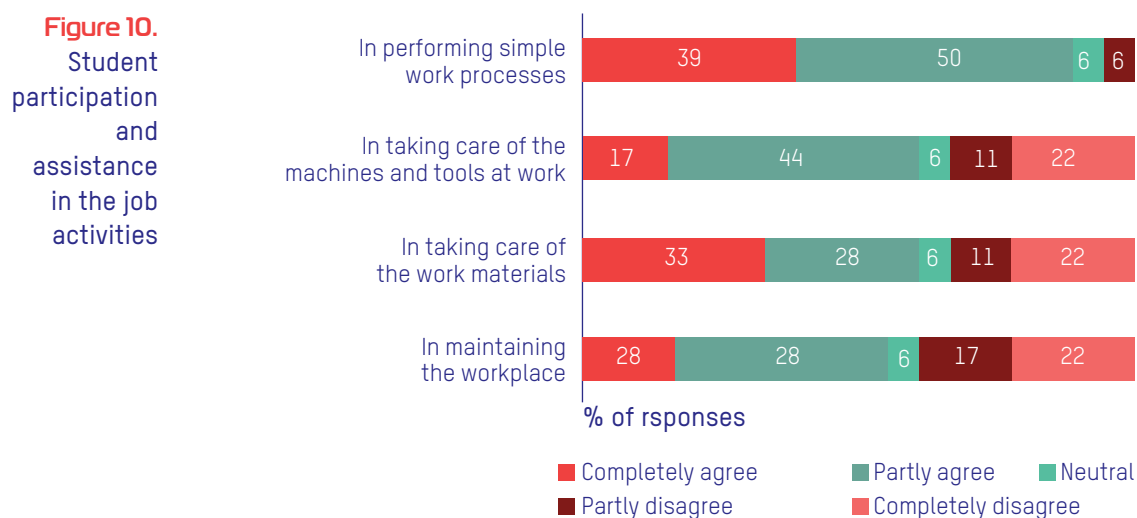
The mentor or a specific employee in the company is the person who is directly responsible for cooperation with students and has the greatest interaction with them. Almost two-thirds of the respondents confirmed that the process of teaching and supervising the students within the practical training is useful not only for the students, but for the mentors as well (65% of respondents explicitly confirm that the active involvement and mentors work with the students contribute to improving the work skills of the mentors themselves).

The Survey responses show that in addition to productivity, employers identify other benefits such as:

- ➔ the assistance that students can provide to the mentor and the employees in performing simple work processes (almost 90% of the responses);
- ➔ the assistance provided in maintaining the working place and taking care of the work materials, machines and tools (61% of the responses).

However, the students contribute poorly in introducing new knowledge, using novel working methods, as well as in using new technologies in cooperation with the mentor and other employees in the company. Over 50% of the respondents answered that in these processes there is no students' contribution, or the contribution is at an unsatisfactory level.

The results regarding these benefits are presented in Figures 10 and 11.



### 3.2.2.1 Discussion during the interview about students' productivity and impact

The results of the survey were confirmed by the discussions with the employers' representatives. The students have a positive influence:

Naturally, it increases the commitment, some of the employees have been competing among themselves and positive competition has occurred. We have an age structure, where the older employees are sometimes slower and accept changes more slowly, but they also experienced positive effects - efficiency has increased, as well as productivity

(LARGE COMPANY IN GEOLOGY-MINING AND METALLURGICAL).

It depends on the character of each employee, but in general, students' impact is positive

(MEDIUM COMPANY - ELECTROMECHANICAL SECTOR).

"We leave a positive image among the customers and they are more satisfied"; "The work efficiency increases when we work with students"; It positively affects other employees, raises their competitiveness, and influences the overall performance"

ETC. (SEVERAL COMPANIES FROM DIFFERENT INDUSTRIES).

### 3.2.3 Long-term effects and benefits from accepting students for practical training

The research has shown that the employers/respondents find it easier to identify long-term than short-term benefits.

The questions about the long-term benefits were answered by 86% of the respondents. Table 5 presents the percentage of responses (from those who answered the question) about the level of consent with the provided statements. The average scores range from 3.6 to 4.5.

For the statements that students would influence the organizational climate and employee loyalty (3.6), as well as that the company would cut the costs for recruiting new employees (3.9), the scores are relatively low. This is understandable taking into account that for example, employers claim that administrative and employment costs are not big burden on them (see 3.3.2).

The scores for the other long-term benefits are relatively high (from 4.3 to 4.5) - the highest average scores are related to the statements that these students as future employees would perform better when involved in the work processes (more than 2/3 of the respondents "completely agree" with the statements 1, 3 and 4 in Table 6).

**Table 6.** Long-term benefits from the practical training

STATEMENT	I ABSOLUTELY DISAGREE	I PARTLY DISAGREE	NEUTRAL	I PARTLY AGREE	I COMPLETELY AGREE	I DON'T KNOW	AVERAGE
1 Involving and providing practical training for students facilitates or would facilitate finding new employees in the future.	5.3%	0.0%	10.5%	10.5%	68.4%	5.3%	4.4
2 Involving and providing practical training for students reduces or would reduce the company's costs of recruiting new employees (e.g. costs of announcing a Vacancy Call, selecting candidates, interviewing, etc.).	10.5%	0.0%	15.8%	26.3%	42.1%	5.3%	3.9
3 If the students who have attended practical training, are employed in the company, they will be better acquainted with the employer and the work process, compared to employees who have not previously attended practical training in the company.	0.0%	5.3%	10.5%	15.8%	68.4%	0.0%	4.5
4 Accepting students for practical training increases the likelihood that the company will hire or employ a person with skills that are appropriate to the needs of the workplace / related to the sector of work of the company.	0.0%	5.3%	15.8%	10.5%	63.2%	5.3%	4.4
5 Accepting students for practical training reduces the risk of hiring a person who lacks the specific job skills that a company needs.	0.0%	5.3%	10.5%	31.4%	52.6%	0.0%	4.3
6 Accepting students for practical training has a positive effect on the organizational climate and contributes to employees' loyalty.	10.5%	10.5%	26.3%	10.5%	42.1%	0.0%	3.6
7 Accepting students for practical training contributes to a better image of the companies.	5.3%	0.0%	10.5%	26.3%	52.6%	5.3%	4.3

### 3.2.3.1 Discussion with the interviewed respondents about the long-term benefits

The long-term benefits of the practical training were discussed in detail during the interviews with the employers. The questions were related to the new employments, productivity of new employees, training of new employees, etc., but from the position of employing the students who had previously been on practical training in the company.

- ➔ Almost all respondents agree that having students for practical training significantly helps in the selection process for employment of new employees in the future. Respondents state that students attending practical training are their potential new employees.

**I already know exactly which students of the last generation I can employ, and are quite ready to work**

(SMALL AND MEDIUM COMPANIES IN PERSONAL SERVICES).

- ➔ The respondents explain that the students already know the employees in the company, they know the job, they know what environment they come into, while on the other hand the company knows what to expect from the new employee:

**The practical training is helping us to a great extend and for three years in a row we have been employing one student annually**

(MEDIUM AND LARGE COMPANIES IN MECHANICAL AND ELECTRICAL SECTOR).

**We have already employed former students / trainees, we already know them, they are partially ready and adapted to work in the company** (LARGE COMPANY IN GEOLOGY-MINING AND METALLURGY SECTOR).

- ➔ There was also extended consent among the respondents that practical training will be necessary in the future in most companies in order to ensure adequate workforce. In this regard the respondents from personal services sector stated that more than 50% of "their students are already employed or will be employed in their respective company.
- ➔ Another long-term benefit noted by the respondents was the difference in productivity or commitment of the person who was in practical training compared to a new employee who did not attend practical training in the company. Most of the statements of the respondents were in the direction that the practical training helps much further in the work and that those employees (who were in practical training) are definitely more productive considering that they do not need additional training, and they adapt quickly which provides savings for the employer:

**There is a difference in productivity - we already know the person, the person knows the employees, he/she knows the work, he/she knows its capacities and we are acquainted with the student**

(MEDIUM COMPANY IN ELECTROMECHANICAL SECTOR).



---

**It depends on the generation - but without a doubt they are more productive and more prepared than any other new employee**

(MEDIUM COMPANY IN PERSONAL SERVICES).

- ➔ The benefits in terms of the company savings for additional training of new employees are quite clear. Almost all respondents noted that practical training allows them to save time and funds to prepare the workers - they are immediately productive and bond faster with other employees:

**The savings are large, because we do not have to train them, we do not have to pay someone for several months in order to gain the same qualifications, experience and we trust the former student**

(LARGE COMPANY IN ELECTROMECHANICAL SECTOR).

- ➔ A large mechanical company that is involved in the process of dual education gives a slightly different aspect on savings for additional training of new employees:

**Generally, there are no savings, because we are investing 3-4 years in one student. So, the cost is identical, it is only distributed over a longer period. The total training costs per working position for the company reaches nearly 1500 euros.**

- ➔ Respondents also discussed about building a positive / good reputation of the company in the society and highlighted it as particularly important. In addition, some of the respondents stated the following:

**Building mutual trust is important, we can rely on students because lately it has been difficult to find good workers - so this is a good opportunity**

(MICRO-COMPANY IN MECHANICAL SECTOR).

**The students feel happy and accomplished – they are productive, they feel hopeful and they know why they work**

(LARGE COMPANY IN GEOLOGY-MINING AND METALLURGY, AND A SIMILAR STATEMENT FROM A MICRO COMPANY IN PERSONAL SERVICES).

---

### 3.3 Costs related to the practical training

Participating in and organizing practical training inevitably creates costs for both businesses and students, their families, educational institutions, the local community and other stakeholders. This research also focuses on the costs incurred by companies involved in these processes. In this respect, we refer to relatively heterogeneous group of different categories of direct and indirect costs.

#### 3.3.1 Provision of conditions by the employer

The first group of costs is connected to the provision of the conditions for organizing the practical training as provided under the Law on Vocational Education and Training<sup>9</sup>: providing mentors to work with students, training mentors, providing adequate space and equipment, ensuring occupational safety. The provision of these conditions can create a financial burden for the employer, but the analysis of the answers obtained from the survey showed that over 50% of the employers fulfill these conditions relatively easy i.e. without any problems.

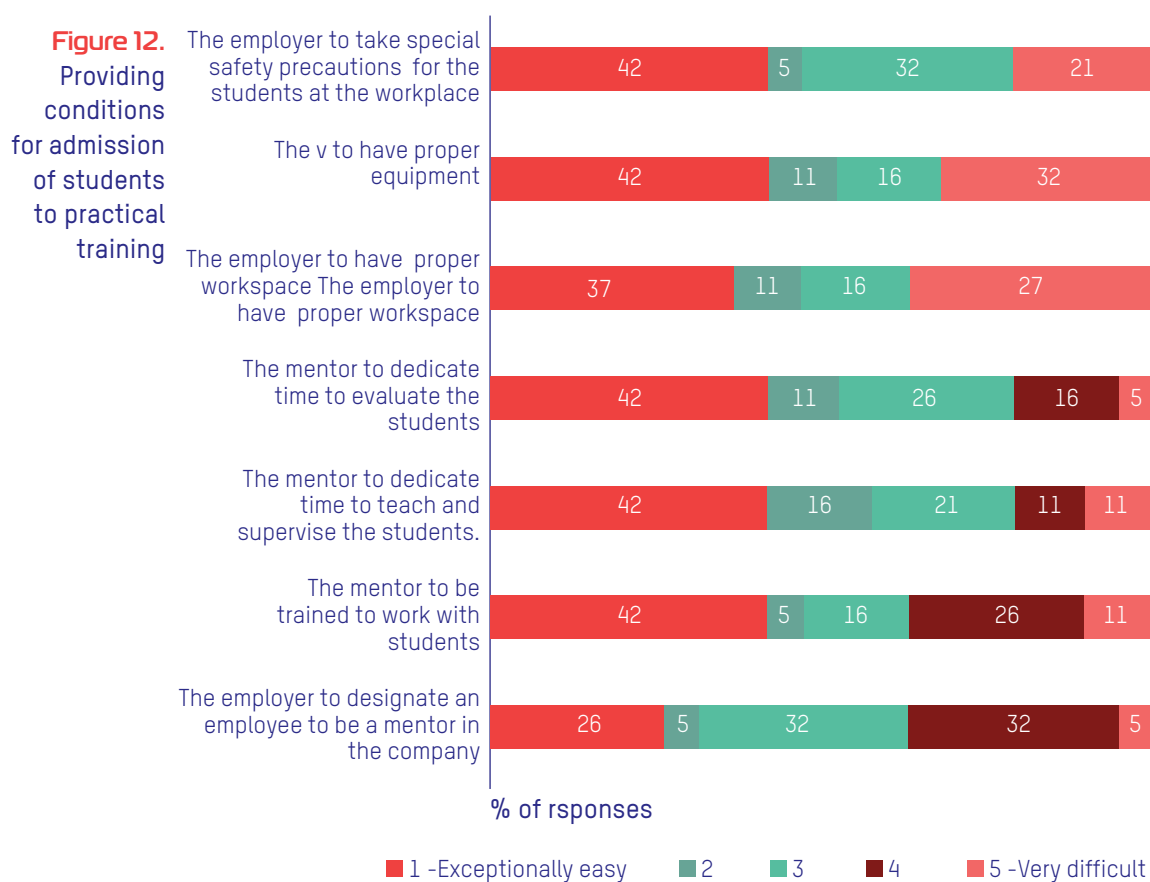
The companies face greater challenge in finding an employee who would mentor the students (especially in terms of the time of the mentor for the students and the training of the mentors):

- ➔ Just 29% of companies stated that they can easily find an employee who would mentor and supervise the students during the practical training;
- ➔ 65% of the companies answered that they face difficulties in identifying/ finding the mentors, but they manage to organize themselves emphasizing that their employees want to work with/ teach/ support/ supervise the students who attend practical training;
- ➔ 5% of the companies explicitly stated that they are not in position to have a specific person to work with the students.

---

<sup>9</sup> Article 13 and Article 15 from the Law on Vocational Education and Training [„Official Gazette of Republic of Macedonia“ no. 71/2006, 117/2008, 148/2009, 17/2011, 24/2013, 137/2013, 41/2014 and 145/2015], <http://mon.gov.mk/stored/document/za-kon-za-strucno-obrazovanie-i-obuka.pdf>

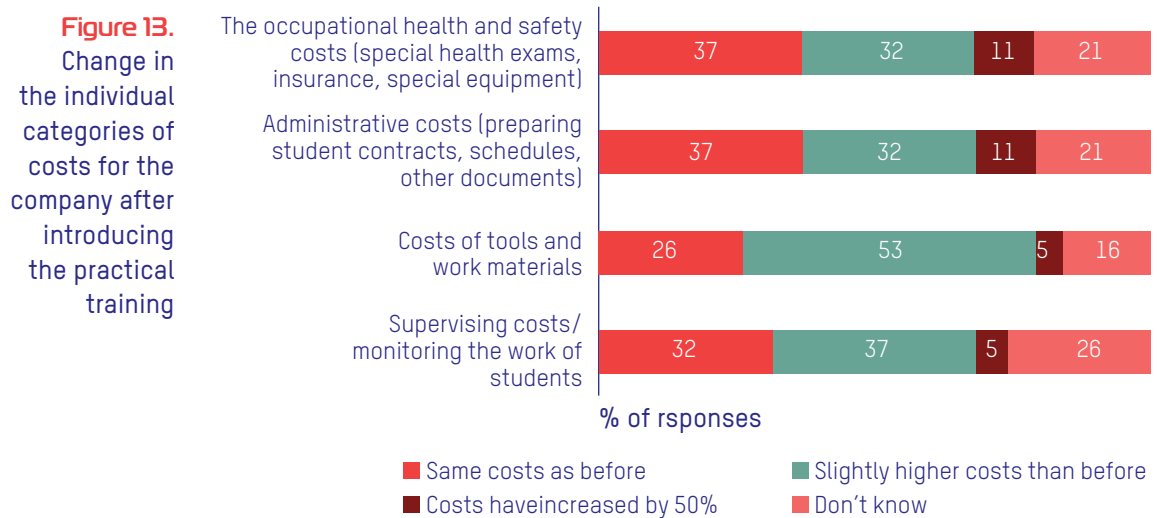
Figure 12 shows the distribution of responses from the surveyed companies for each of the individual types of costs.



### 3.3.2 Costs for implementing the practical training

The second group of the costs that were examined were the costs that companies have for the realization of the practical training: time/costs for monitoring and supervision of the students' work, for working tools and materials, administrative costs, as well as costs related to health and safety at work.

The general impression, based on the obtained answers, is that more than 2/3 of the employers had either identical costs or a slight/insignificant increase in costs compared to the situation before engaging in practical training. Figure 13 gives the detailed results of the answers to this question.



#### Cost related to possible mistakes

In terms of the risks and the costs related to possible errors made by students during the practical training, almost half of the respondents said that there is a risk of errors, but it is acceptable to the employer. While 18% of companies stated that there is very little risk of error and costs, almost ¼ companies stated that there is a serious risk but that they can manage the risk, and for 12% there is no risk of errors and additional cost caused by errors.

#### Mentor's time and efforts

The mentor or the employee in charge of the students is a person who, within his/her effective working time (for the salary she/he earns at her/his job), allocates time/knowledge for teaching, supervising and supporting the students. Regarding this cost, the largest percentage of respondents (45%) answered that the mentor spends less than 2 hours during the work day; 20% of the respondents answered that the mentor spends about half of the working time, and the rest claim that working with students does not take time at all. Only one respondent from a large company answered that the mentor dedicates all of his/her working day to the students.

### 3.3.2.1 Discussion with the interviewed respondents about the costs for implementation of the practical training

#### Mistakes by students

The discussions with the interviewed respondents are generally consistent with the survey findings – that the costs incurred by an error made by a student are quite rare and acceptable to the companies, students usually respect and listen to their mentors and mistakes occur very rarely. They also clarified that students are often not allowed to get involved in the work independently before learning the processes, or before the mentors are sure that the students have learned (tried together) to do the task.

#### Time spent for supervision/teaching the students

In terms of costs, as it was expected, particularly interesting topic was the time spent for supervising or teaching the students. This is especially important given the different activities and different capacity of the companies to provide staff that would be involved in monitoring/teaching. The employers, mainly due to the nature and the complexity of the tasks, have different views on the time they allocate for this purpose, yet there is a general perception among the respondents that the time spent for supervision/teaching the students is more of an investment than cost.

- ➔ Some interviewees were able to pinpoint the time required for supervision / teaching:

**We spend up to 50% of the work hours of the person that does the supervising /teaching**  
(MEDIUM COMPANY IN PRINTING/GRAPHICS SECTOR).

**We must have a jobposition/employee for teaching (meaning 8 hours a day). In two years from now we will need to have one employee who will be solely dedicated to this, for now we have one engineer and 2-3 supervisors / workers that do the teaching**  
(LARGE COMPANY IN MECHANICAL SECTOR).

- ➔ Other respondents had a difficulty to determine the time required for supervision / teaching:

**It is not possible to accurately measure the loss of time. During the practical training, it may happen that at the same time we actually work on a real vehicle and the net loss in time for teaching and supervision is compensated – however, the student can also contribute and compensate for the time spend by the mentor**  
(MEDIUM ELECTROMECHANICAL COMPANY, AND A SIMILAR STATEMENT BY A MECHANICAL MICRO-COMPANY).

It increases the costs because there must be someone supervising the students all the time. That person is not able to do his/her regular working tasks (in our case, our employees are always explaining the processes and are truly making an effort) and for the same salary they get to have more obligations. For these reasons, when the working process implies that the employees must focus on their primary work tasks, we cannot dedicate ourselves to the students - and in such cases, the students are passive and only observe.

I am entirely committed to the students and that is why I am booking the first group of students till 10 a.m. in the morning and during these hours I don't schedule clients

(SMALL COMPANY IN PERSONAL SERVICES)

We dedicate nearly 2 hours a day to work with one group of students (we have 2 groups of students per day), however it also depends on the daily business work. Some days are very busy and there are many clients, so students only observe, and we explain them during the process (but they are not involved in practical activities)

(MEDIUM COMPANY/LABORATORY IN HEALTH SECTOR).

### Costs for tools and materials

Respondents in the interview were quite clear that the practical training has a corresponding impact on the costs for tools and materials, and these costs vary depending on the activity of the company and number of students they accept.

- ➔ A significant share of respondents stated that it is often quite difficult to provide funding for materials and that this affects practical training, but they deal with it in different ways:

Due to this particular reason, sometimes students only observe, they do not work practically, and I choose who can work with the materials in practice

(MEDIUM COMPANY - LABORATORY IN HEALTH SECTOR)

The costs are high and I am very sorry that I cannot provide a chance to all the students to be part of the practical training. It is a special challenge and a big cost for us, we cannot always afford it and therefore it would be good if part of the material costs is funded from outside

(SMALL COMPANY IN PERSONAL SERVICES).

- ➔ During the interview, certain respondents tried to give monetary estimate for their costs for materials/tools during the practical training:

**In order to function normally, the minimal costs on a monthly basis are 100.000 MKD for working with (30) thirty students (SMALL COMPANY IN PERSONAL SERVICES).**

**Based to our estimates, the costs per student for 4 years with materials and all associated costs is nearly 2500 euros (LARGE COMPANY IN MECHANICAL / AUTOMOTIVE SECTOR).**

**The biggest cost is equipping a room in the company for education of students with appropriate machines and size. In addition to the initial investment, these investments can range from 10.000 - 200.000 euros. We are currently planning to equip such a room with old machines, which will cost us almost 60.000 euros (LARGE COMPANY IN MECHANICAL SECTOR WHICH IS INCLUDED IN THE DUAL APPROACH).**

### **Administrative costs and costs related to occupational health and safety**

The dominant part of the respondents did not give much importance and monetary value to the administrative costs and stated that such costs are acceptable, as well as the costs related to the occupational health and safety (safety at work) of the students:

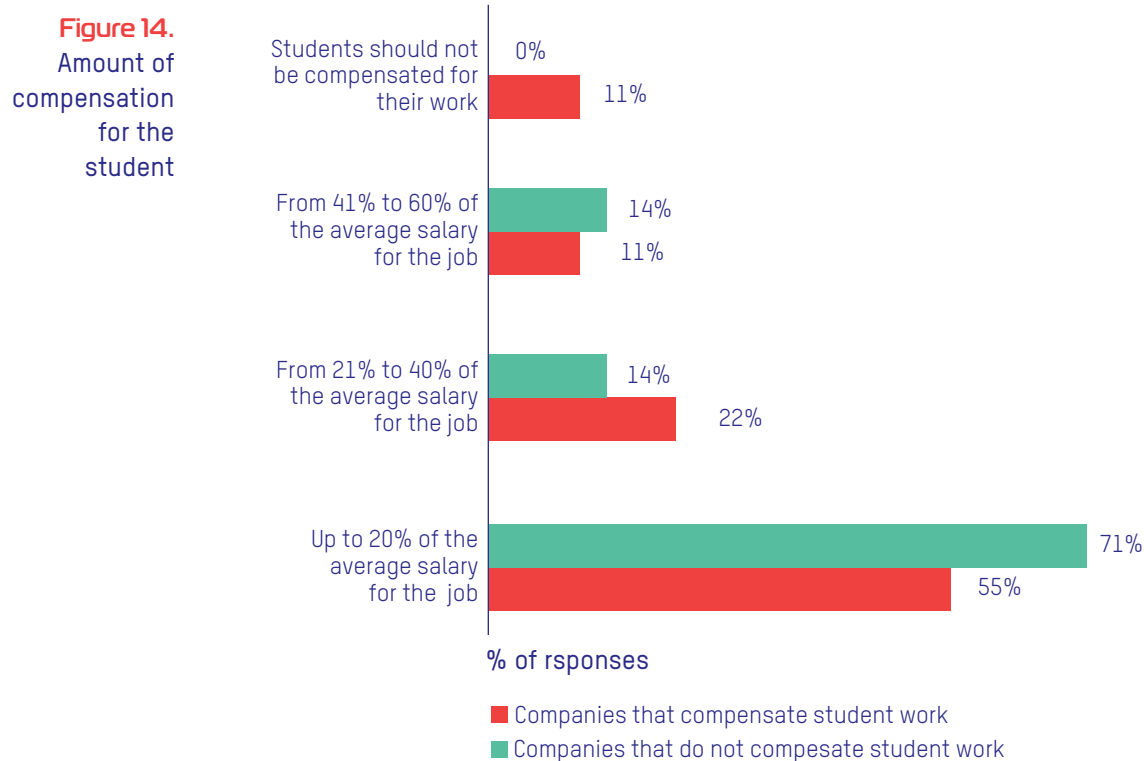
**Students undergo a type of health and safety training at school and then training in our company, where first and foremost they get instructions on how and what to do, what to pay attention to. For this training we hired a special company, however, this is an acceptable cost (LARGE COMPANY IN GEOLOGY-MINING SECTOR).**

### **3.3.3 Compensation for student work**

One of the potential costs that are most easily identified by the employers is the compensation for the work performed by the student. There are different interpretations of whether the employer has a formal (legal) obligation to pay the student a compensation for the engagement<sup>10</sup>. This research includes companies that allocate funds and pay for students work and companies that do not pay students

.....  
10 According to Article 15 of the Law on Vocational Education and Training (Official Gazette of Republic of Macedonia no. 71/2006, 117/2008, 148/2009, 17/2011, 24/2013, 137/2013, 41/2014, 145/2015, 55/2016 and 64/2018 and Official Gazette of Republic of North Macedonia no.275/2019), the employer is obliged to provide compensation for the student work in accordance with the conditions stipulated in the Training Contract. The Training Contract is signed by and between the Institution for vocational education and training, the employer and the student i.e. the parent, and it stipulates the training conditions, the work itself and the compensation for the work (Article 15). However, the law is not fully and explicitly clear whether the Employer is obliged to foresee a payment of a compensation for the student work in the Training Contract i.e. is the payment of a compensation for the student work an obligation of the employer, in case when this is not foreseen with the Training Contract.

for their work. The figure below shows distribution of the answers from both: companies that allocate and companies that don't allocate funds for payment of students.



- ➔ 71% of the companies that allocate funds for student compensation believe that the amount should be up to 20% of the average salary of the employee in the respective job and this opinion is shared by 55% of the companies that do not compensate students work.
- ➔ Small percentage of companies agree with the statements that student's compensation should be between 21% to 60% of the average salary of the employee.
- ➔ Just 11% of the respondents (and just companies that do not compensate students work) stated that "students should not be compensated for their work".

Respondents from 7 companies answered that they regularly pay compensation to students for their work, 5 of them pay compensation up to 20% and 2 companies<sup>11</sup> pay 40% to 60% of the average salary for the respective job position. For all small and medium and half of the big companies the allocation of funds for this purpose is not a financial burden, but they also answered that they need financial support from other organizations/institutions for the realization of the practical training.

The respondents from the companies that do not allocate funds for student compensation have explicitly answered that the compensation should be borne by the Ministry of Education and Science or the school (55% of the respondents), yet 27% of respondents answered that the company should be involved in the payment of the student's work jointly with the school.

.....  
11 Both companies are medium size companies, with 50 to 250 employees.



### 3.3.3.1 Discussion with the interviewed respondents regarding the student compensation

The interviews also showed that the allocation of funds to cover the compensation for the students' work for the duration of the practical training is one of the main challenges for the employers. In this respect, we have to consider their opinions about students' productivity and the period when students are more productive.

- ➔ Almost all respondents agree that students should be provided with funds/compensation for some basic expenses (e.g. transportation and food):

**We can provide the funds, we already have them allocated in the budget and we think that every company should provide compensation at least for food, transportation and other costs**  
(LARGE COMPANY IN GEOLOGY-MINING AND METALLURGY SECTOR, SIMILAR ANSWERS ALSO PROVIDED BY A MEDIUM SIZE COMPANY IN ELECTROMECHANICAL SECTOR).

- ➔ Others pointed out that the companies should pay adequate compensation which would motivate the students in practical training:

**In order to attract students, we have to pay them, because most of them are in a difficult financial situation and poor**  
(MICRO COMPANY IN PERSONAL SERVICES).

- ➔ Significant part of the respondents stated that it would not be a problem for them to allocate funds in their budget (some are already doing so), but the students should also contribute to the work:

**It is not an issue to allocate funds, the problem is that we do not have enough quality and serious students who come to the trainings, and in this direction the educational process should be seriously changed**  
(MEDIUM SIZE COMPANY IN PRINTING / GRAPHICS SECTOR).

- ➔ About 1/3 of the interviewees said that assistance / support in providing compensation for students would be welcome:

**Sometimes it is difficult to provide compensation, so it would be of great assistance if the state or the school helps us at least at the beginning/early years of schooling**  
(MICRO COMPANY IN MECHANICAL SECTOR, AND SMALL COMPANY IN HEALTH SECTOR);

**It is difficult to provide sufficient funds and it would be desirable to have a measure/subsidy that would facilitate and motivate the students to be more involved and more interested**  
(MEDIUM COMPANY IN PERSONAL SERVICES).

### 3.4 Costs vs benefits of the company for its involvement in the practical training

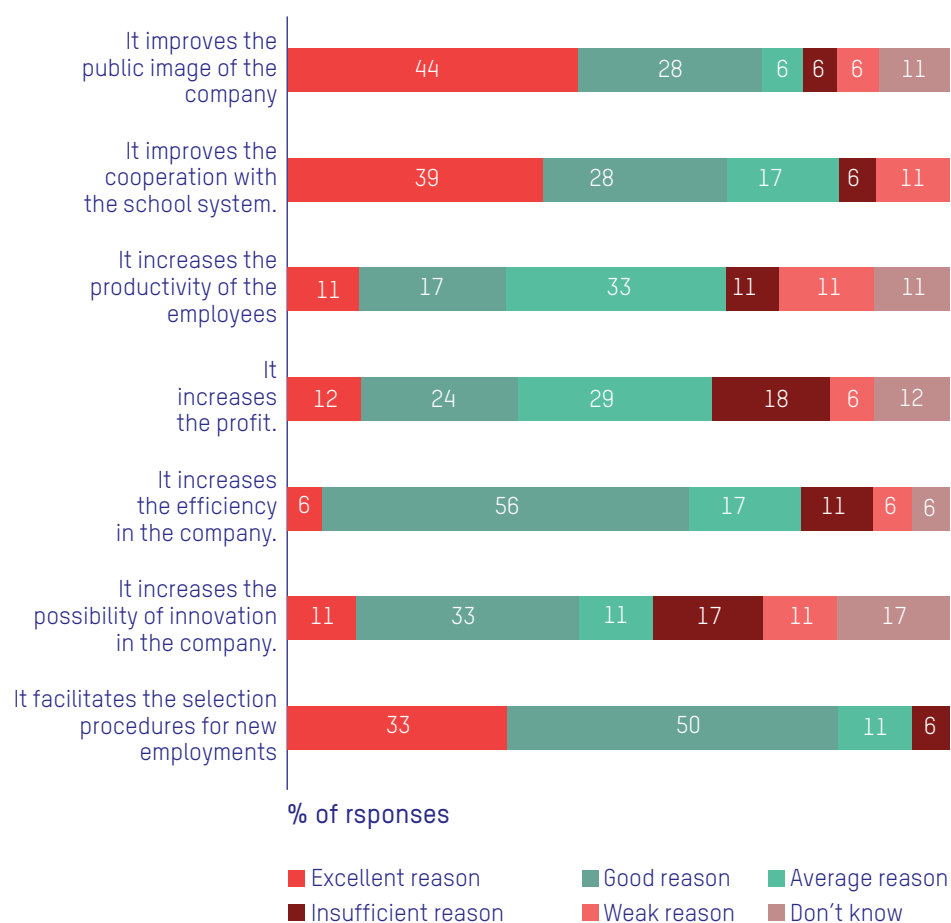
The last part of the questionnaire used in the electronic survey contained a set of questions related to the identification and ranking of specific reasons why employers would be willing to accept students for practical training and participate in the process of shaping their education. Regarding this:

- ➔ The respondents singled out the following excellent reasons: improving the reputation of the company, improving the cooperation with the educational system and the school, as well as facilitating the procedures for new employments.
- ➔ The respondents singled out the following good reasons: increase of the company efficiency and the facilitation of the selection procedures for new employments.
- ➔ The respondents indicated the following average reasons: increasing employee productivity and profits.

It is also interesting to note that none of the respondents considers that the facilitation of the selection procedures for new employments is a weak reason.

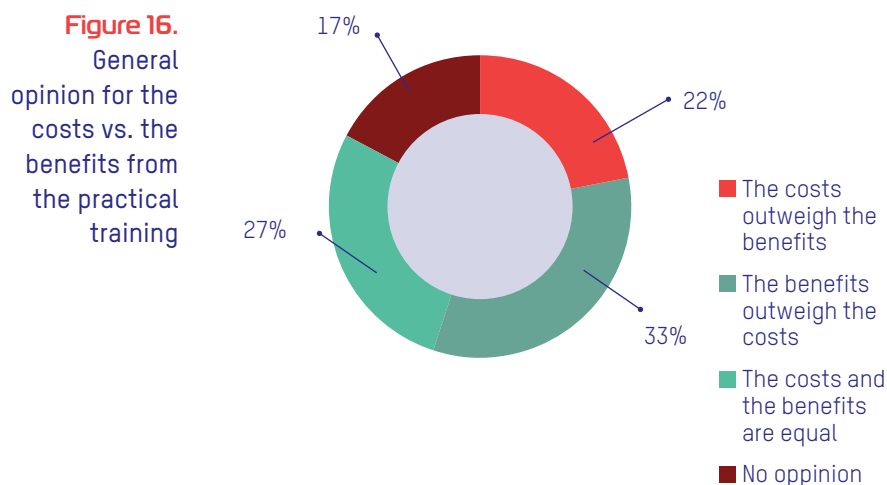
The assessments of the respondents of all potential reasons for the involvement of the employers in the practical training of students from the secondary vocational schools are presented in Figure 15.

**Figure 15.**  
Assessment  
of the  
reasons for  
accepting  
students  
in practical  
training



At the end of the questionnaire, the respondents were asked to give a general opinion on the benefits and costs associated with the admission of students in practical training. The respondents had different answers (Figure 16), but for 61% of the respondents - their involvement in the implementation of the practical training is not a cost (they have more benefits than costs or the costs and benefits are equal).

The comparison of the answers among different size companies shows interesting finding - that for micro and small companies the costs are equal or outweigh the benefits. But, the respondents from the companies that are piloting the dual approach jointly with the schools stated that the benefits outweigh the costs.



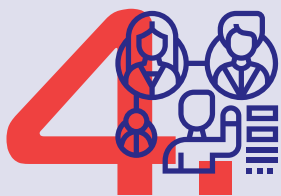
The interview with the representatives of the companies in this case also confirmed the findings of the survey - namely:

- ➔ The answers that there is a balance between costs and benefits were dominant:

**It is difficult to answer whether the benefits outweigh the costs, but I think it is somewhere around 50%/ 50%**  
(E.G. LARGE COMPANY IN GEOLOGY-MINING AND METALLURGY SECTOR).

- ➔ A significant part of the respondents explicitly said that there are costs and benefits, but:

**If the process works properly, the benefits are much greater.**



## CONCLUSIONS

*This research was carried out in order to identify the opinions of the employers about the benefits and costs they have with their active involvement in the implementation of practical training of students from the secondary vocational education.*

*The research identified several parameters on the basis of which the usefulness of the practical training was evaluated, including benefits related to: knowledge and skills of students, productivity of students and other employees, potential company savings and long-term effects of involvement in these processes.*

*Participating in and organizing the practical training inevitably creates costs for the businesses as well as for students, their families, educational institutions. The focus of this research were the costs incurred by companies such as: tools and materials, administrative costs, possible students' errors, compensation for student work, providing a mentor / mentors and more.*

### Organization of the practical training process

- ➔ Most of the respondents provide practical training for students (82% of the respondents), and 18% of the respondents are involved in experimental dual education. All employers generally make a distinction between the forms of training performed during the school year and the summer practice, but it is more difficult to separate them in terms of terminology (it will be beneficial if there is a terminological harmonization) practical teaching / practical training / work-based learning.
- ➔ Many employers, especially small companies, indicate that it is a special pleasure for them to work with students and that is one of the initial motives for their acceptance of students for practical training.
- ➔ Most of the respondents stated that they have solid cooperation with the school, teachers and students. What is particularly interesting is that almost 2/3 of the interviewed companies indicated that they also use personal contacts to get better students who would participate in the practical training in their company.
- ➔ For ½ of the respondents, it is important to organize the practical training as continuous activity where the students would come to work for several days a week, which indicates the need for better flexibility in the education system and freedom in negotiating the cooperation between schools and companies.

- 
- ➔ About ¾ of the respondents stated that they have some influence on the curriculum that is implemented in their company, which is a positive signal for good cooperation between schools and companies involved in the research.
  - ➔ Nearly two thirds of the respondents answered that the choice of activities and work tasks of the students during the practical training is carried out by the mentor or the employee, or the mentor in cooperation with the teacher.
  - ➔ Almost half of the respondents state that their company accepts all the students that the school will offer them, without using other additional selection criteria. However, there is also a (pro) active approach and involvement by some companies in the selection of students (organizing short conversations - interviews with students, seeking recommendations from the teacher or other stakeholders, conversations with subject teachers).

## Benefits of the practical training

- ➔ Most of the respondents consider that the students do not have sufficient or don't have any practical skills or basic knowledge before coming to training in the company.
- ➔ Regarding the students' contribution: 58% of the respondents think that the students contribute and participate in the unskilled or semi-skilled productive work of the companies; 42% that students influence the improvement of the skills of most employees; 61% that students influence the increase of commitment and work of the employees. In the interviews there were explicit statements about the impact on employees (positive competition appeared, dedication and productivity increased).
- ➔ Companies recognize the link between students' experience, expressed through school achievements, and their productivity at the employer's. Thus, employers generally agree that first- and second-year students have low productivity or are not productive, and there is increased productivity among higher class students. Companies point out that it is certainly better when students start with practical training earlier and more intensively.
- ➔ One of the most important benefits for the company is the assistance that students can provide to the mentor and staff - especially in performing simple work processes (almost 90% of companies stated that this is a benefit), as well as in maintaining the workplace, taking care of work materials, machines and tools.
- ➔ Students contribute poorly in introducing new knowledge, using new ways of working, as well as using new technologies when cooperating with the mentor and other employees in the company.
- ➔ Companies are more likely to identify long-term benefits including: facilitating the search for new employees in the future, reducing the cost of recruiting new employees, making it easier to find people with the right skills for the job, positively impacting the corporate organizational climate and improving employees' loyalty, etc.

---

## Costs related to practical training

- ➔ The general impression, based on the answers received regarding the costs incurred by the companies after the introduction of the practical teaching (costs for supervision and monitoring of the students' work, costs for tools and materials for work, administrative costs, as well as costs related to health and safety at work) is that they face identical costs or a slight / insignificant increase compared to the situation before being included in the practical training of students. Interestingly, this research shows that the mentor costs are quite unnoticeable compared to other countries. The cost-benefit researches show that in most dual training systems the mentor costs and student salaries are 80%-90% out of total employers' costs related to the students practical training.
- ➔ In terms of risk and costs associated with possible errors that students make in practical training, almost half of respondents answered that there is a risk of errors, but it is acceptable.
- ➔ One of the potential costs that are most easily identified by employers is the compensation for the student work. Most of the companies that allocate funds for this purpose stated that the amount of the student compensation is not more than 20% of the average salary for the job. Given that the amount of compensation is a minor percentage of the salary for the job, for a significant part of the companies that pay compensation this does not represent a large financial burden and does not need financial support from other organizations or institutions.
- ➔ Regarding the level of the compensation that should be paid to the students during the practical training, as many as 56% of the respondents answered that the compensation should be up to 20% of the average salary for the job.
- ➔ Most of the companies (55%) answered that the fee that would be paid to students should be borne by the Ministry of Education and Science or the school, but 27% consider that it should be a combined effort of the school and the employer. The remaining 18% stated that the employer should pay the student only if it has an effect/if the student is productive.

## Costs vs. Benefits of practical training

- ➔ Most of the respondents (33%) consider that they have bigger benefits than costs as a result of their involvement in the practical teaching;
- ➔ 28% of the respondents think that costs and benefits are equal;
- ➔ Nearly 25% of companies claim that the costs associated with practical training outweigh the benefits.



## RECCOMENDATIONS

---

*The researchers believe that this part of the report should emphasize some of the recommendations provided by the respondents that are aimed at improving the whole process of practical training with an employer of students from secondary vocational education.*

*Well-designed and well-implemented practical training, with well-prepared and motivated students, supported by strong cooperation between schools and employers, would certainly lead to increased benefits and reduced costs for employers.*

The respondents, who were interviewed, at the end of the conversation were asked to provide recommendations that would be particularly relevant in increasing the benefits, reducing the costs and improving the whole process of cooperation with schools for practical training of students. Summarized, the recommendations referred to the educational processes in general – the schools, the promotion of the vocational education and training, as well as the needs of the companies.

The employers recommend the following:

- ➔ The curricula should be adjusted - it is better to start earlier with the practical training (from the first year or second semester in the first year) and to have continuity of several days a week during the school year instead of few hours or a day; Better management is needed in VET schools in terms of creating a school climate and in terms of conditions for the quality teaching/learning; In addition to changing the educational process, there is a need of greater discipline and serious-

---

ness for the students to be better prepared for practical training, better counselling and guidance of students; The school should have better control over the knowledge and skills of the students entering the company; Vocational school classrooms/cabinets need to be better equipped; There should be flexibility and opportunity for simpler procedures for arrangements for practical training between the school and the company rather than waiting for guidance from institutions; Joint training for the teachers and mentors have to be organized to create their mutual responsibility and trust.

- ➔ Through campaigns and promotion, the students should be made aware that vocational education and schools can provide them with easier employment; Employers need support from both the central and the local government for enrolling more students in the vocational schools; Primary schools must also be involved: *“It was difficult for us to find students for the vocational class that we established together with the school, and we visited all the primary schools in the region.”*
- ➔ There should be financial support for companies, primarily for materials, and even for certain compensation for students, at least in the first two years of their schooling.
- ➔ It is good to provide support for equipping special workplaces/classrooms for students in the company, which can be quite expensive.

All respondents expressed concern about the realization of practical training in a pandemic situation. They emphasized that they expect support from all institutions (government, ministries, and chambers):

**We will need a lot of support to conduct practical training in the time of Covid-19 like: health and safety protocols specific for student’s, schedules for smaller groups, appointments, etc.**

**Working in such conditions is really difficult - we maintain hygiene at the workplaces and have cleaning and hygiene supplies. Another problem that we are facing is/will be the parents’ lack of confidence or trust for the safety and health of the students during the practical training in times of Covid-19.**

---



---

## REFERENCES

Dokmanovic M., Spasevski D., Shapkova Kocevaska K., Gicevska S.(2018). *Legal framework and resources in the vocational education and training in the Republic of North Macedonia*. E4E@mk, Skopje. Available at: <https://www.e4e.mk/wp-content/uploads/2019/05/Analiza-Pravna-ramka-i-resursi-ENG.pdf>

Karlson, N., & Persson, K. (2015). *Effects of work-based learning on companies involved in VET education*. Ratio Working Paper No. 258. The Ratio Institute, Stockholm. Available at: [http://ratio.se/app/uploads/2015/09/nk\\_kp\\_work\\_based\\_learning\\_258.pdf](http://ratio.se/app/uploads/2015/09/nk_kp_work_based_learning_258.pdf)

Moretti, L., Mayerl, M., Mühlemann, S., Schlögl, P. & Wolter, S.C. (2017). *So Similar and Yet So Different: Comparative Analysis of a Firm's Cost and Benefits of Apprenticeship Training in Austria and Switzerland*. Institute of Labor Economics, Bonn. Available at: [https://www.dcdualvet.org/wp-content/uploads/2017/Moretti-et-al\\_So-similar-and-yet-so-different-costs-benefits-CH-and-Austria.pdf](https://www.dcdualvet.org/wp-content/uploads/2017/Moretti-et-al_So-similar-and-yet-so-different-costs-benefits-CH-and-Austria.pdf)

Education System and Human Capital Unit (2017). *Costs and benefits of company involvement in ITS projects*. Available at: <https://www.assolombarda.it/servizi/formazione/monografie/ricerca-costs-and-benefits-of-company-involvement-in-its-projects>

Schläpfer B., Troxler R. (2019). *A cost-benefit ratio analysis of in-company training in Pakistan. Return on investment or an investment without return?* Global Project Build4Skills, Boon. Available at: <https://www.semanticscholar.org/paper/A-cost-benefit-ratio-analysis-of-in-company-in/7681d10aeef2e616f98281e25c0ee17f041b0105>

