

**INT VET DUAL**  
Introduction of Vocational Education and Training

Evaluation of the survey:

**Identification of Labour Market Needs for Vocational Education and Training (VET) in the Slovak Republic**

Within the ERASMUS+ program

**National Authorities for Apprenticeships: Introduction of Elements Dual VET Slovak Republic**



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## 1 INTRODUCTION

The Slovak-German Chamber of Commerce and Industry (SNOBK) completed a survey named: *"Identification of Labour Market Needs for Vocational Education and Training (VET) in the Slovak Republic"* within the EURASMUS+ European programme project named: *National Authorities for Apprenticeships - Introduction of Elements Dual VET Slovak Republic*. The project's partners were involved in drafting the contents of the survey questionnaire, specifically the Ministry of Education, Science, Research and Sport of the Slovak Republic, the State Vocational Education Institute (SIOV), the State Ministry for Finance and Economic Affairs of Baden-Württemberg, Germany, Esslingen Regional Academy (Landesakademie Esslingen), Germany, the Austrian Economic Chamber (WKÖ) and the Federal Institute for Vocational Education and Training, Germany (BIBB).

Industrial companies in Slovakia were the target group of this survey focused on technical professions. Employers in the SNOBK internal database were contacted, while the Federation of Employers' Associations of the Slovak Republic and the WKÖ were involved in the distribution of questionnaires and the Slovak Chamber of Industry and Commerce (SOPK) also disseminated information on its website. These efforts resulted in the formation of a sample of 72 companies used to obtain relevant results from the survey of employer needs. However, the majority of those respondents are already committed to vocational training. According to the latest figures released by the Ministry of Education SR<sup>1</sup>, 130 companies - mainly from the production sector - intend to introduce dual vocational as of September 2015. Overall, there are 3,685 industrial companies giving work to 10 or more employees.<sup>2</sup>

Company representatives were asked to respond to open questions and multiple choice questions focused into four thematic areas:

- *basic company details* (name, primary business activities and size of the company);
- *labour force education and composition* details (attained level of education, a school with the best qualified graduates, under-qualified vocations and causes thereof and the need for re-qualification);
- *company apprenticeships* (existing cooperation with schools and its form, conditions for delivering on-the-job practical instruction and training);
- *dual education in Slovakia* (interest among employers in participating in a dual education system and related information).

The survey was conducted from 23 February 2015 to 16 March 2015. Employers could respond anonymously or provide the name of the company and a contact email address.

The purpose of this research is to better adapt vocational education to company practices and the needs of employers in Slovakia. The results of this survey are to contribute to comprehensive reform of the vocational education and training system at the system level and support for pilot projects building on practical experience from industry in Slovakia.

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<sup>1</sup> Ministry of Education SR <http://www.minedu.sk/zamestnavatelia-do-dualu-ziadaju-1-800-ziakov/>

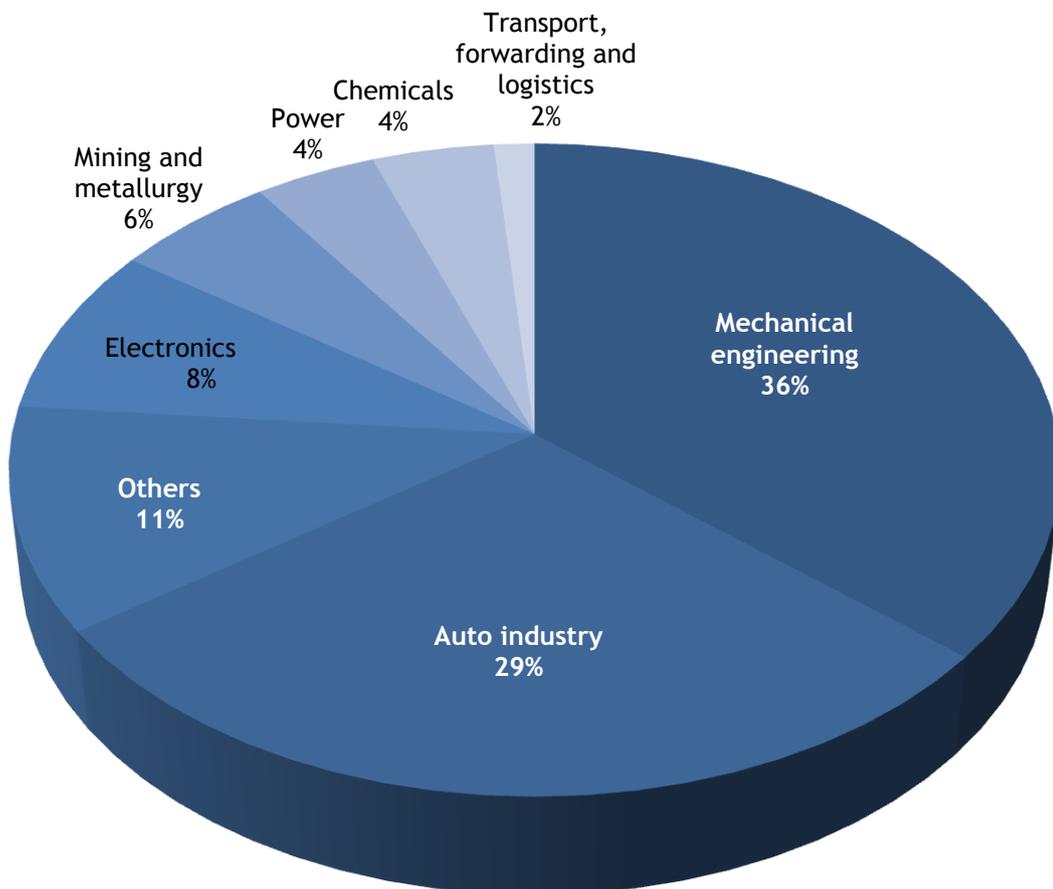
<sup>2</sup> Statistical Office of the Slovak Republic, 04/2015

## 2 BASIC COMPANY DETAILS

### 2.1 Companies by sectors

The *mechanical engineering* sector accounted for 36% of all respondents, the largest individual group in the survey of employer needs. The *auto industry* at 29% was the second largest group, followed by other companies that did not fit into a category defined in the survey, such as the *wood industry*, *construction industry*, and *textile or garment industry and retail sector*. These were followed by companies in sectors such as *electronics* (8%), *mining and metallurgy* (6%), *power* (4%), *chemicals* (4%) and *transport, forwarding and logistics* (2%).

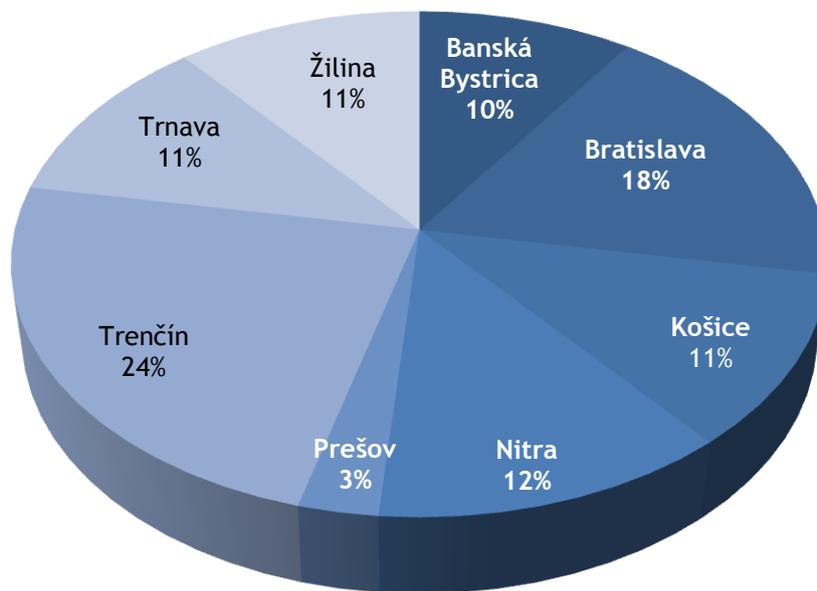
Chart 1: Companies by sectors



## 2.2 Companies by region

The largest group of companies involved in the survey were companies from the *Trenčín Region* (24%), followed by companies from the *Bratislava Region* (18%), the *Nitra Region* (12%), the *Trnava, Žilina and Košice Regions* (all at 11%), companies from the *Banská Bystrica Region* (10%) and the fewest respondents were from the *Prešov Region* (3%).

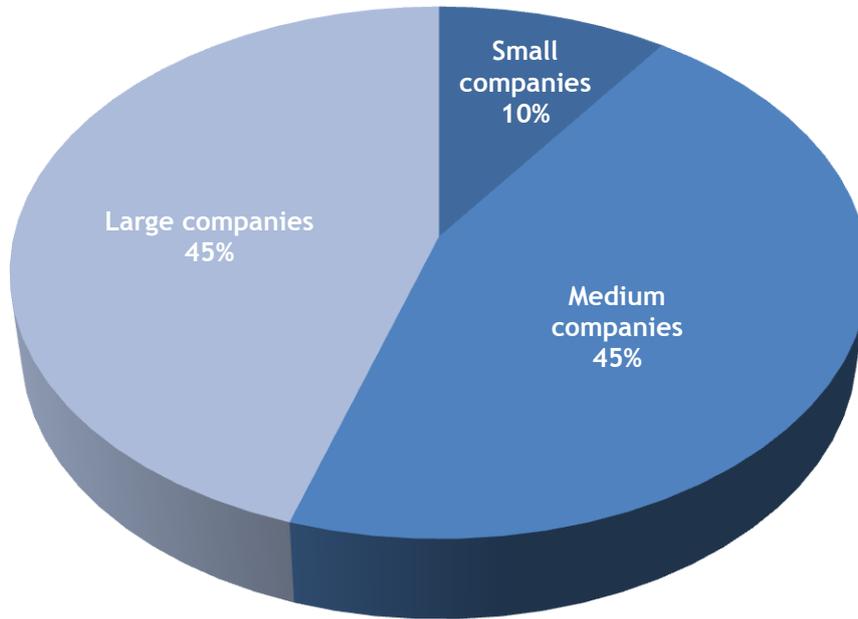
Chart 2: Companies by region



## 2.3 Size of companies by number of employees

The same number of *medium enterprises* (50 - 249 employees), and *large enterprises* (250 and more employees) participated in the survey (each accounting for 45%). *Small enterprises* (up to 49 employees) accounted for the remaining 10%.

Chart 3: Companies by size

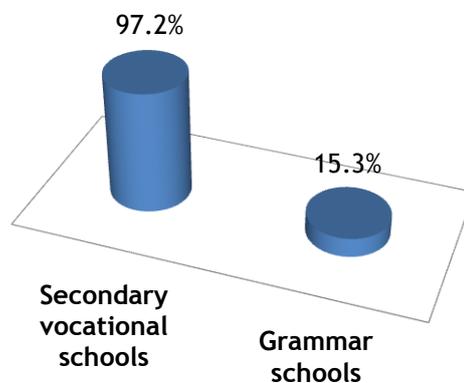


### 3 LABOUR FORCE

#### 3.1 Employee education and training

A clear majority of companies was formed in answering the "From what schools do you recruit your labour force?" question. 97.2% of companies recruited their labour force from secondary vocational schools. Some of them also reported grammar schools (secondary schools preparing students for university-level studies) (15.3%).

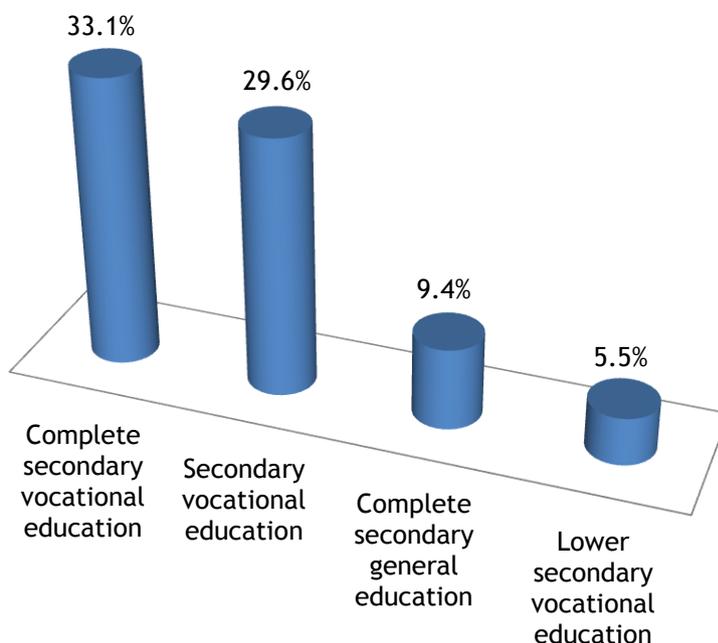
Chart 4: Labour force education and training



#### 3.2 Secondary education

The structure of employees with secondary vocational education among contacted companies was as follows: most employees have *complete secondary vocational education* (4 to 5-year education program with graduation alternatively with vocational certificate) (33.1%), followed by employees with *secondary vocational education* (3 to 4-year education program with vocational certificate) (29.6%), employees with *complete secondary general education* (4 to 8-year grammar school with graduation) (9.4%) and the smallest portion of employees with *lower secondary vocational education* (2-year education program with leaving examination) (5.5%).

Chart 5: Secondary education of employees



### 3.3 Verified schools

The following schools were most frequently mentioned in answers identifying the schools from which companies had the best experience:

- SPŠ Nové Mesto n. Váhom (secondary industrial school)
- SPŠ elektrotechnická Bratislava (secondary industrial school, specialised in electrical engineering)
- SOŠ Handlová (secondary vocational school)
- SOŠ technická Šurany (secondary vocational school, specialised in technology)
- SOŠS Kysucké Nové Mesto (secondary vocational school, specialised in mechanical engineering)
- SPŠ strojnícka Košice (secondary industrial school, specialised in mechanical engineering)
- SOŠ polytechnická Prievidza (secondary vocational school, specialised in polytechnics)
- SOUS Považská Bystrica (secondary vocational school, specialised in mechanical engineering)

### 3.4 Vocations with insufficient qualifications

Companies reported the greatest difficulties in finding qualified graduates with secondary education in the vocations of *tool setter* and *electrician* while the fewest problems were encountered in the vocations of *coach-builder* and *auto body painter*. The ranking of other vocations is shown in the table below.

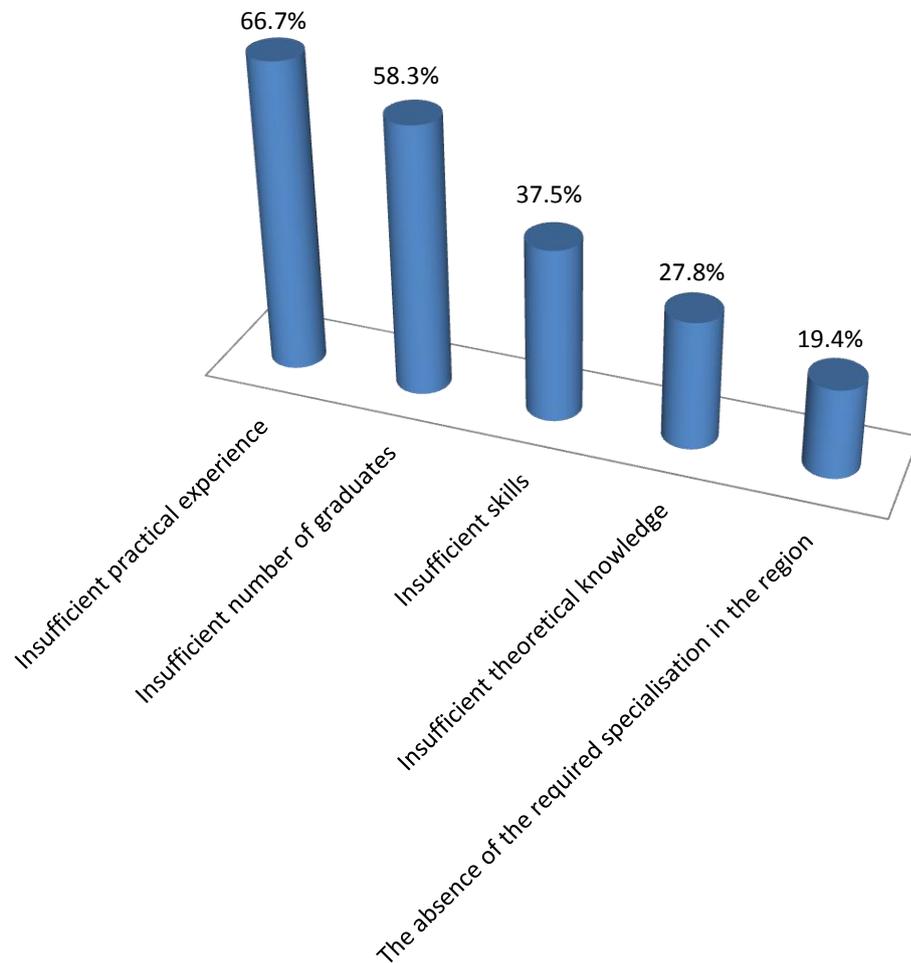
**Table 1: Vocations with insufficient qualifications**

Overview of vocations	
1.	Tool setter, electrician
2.	Mechatronics technician
3.	CNC/NC operator
4.	Tool maker
5.	Machinery and equipment programmer
6.	Machinist
7.	Form builder
8.	Auto mechanic, auto electrician
9.	Coach-builder, auto body painter

### 3.5 Causes of insufficient qualification

Companies reported *insufficient practical experience* as the greatest cause of insufficient qualification (66.7%) followed by *insufficient number of graduates* (58.3%), *insufficient skills among graduates* (37.5%) and then *insufficient theoretical knowledge* (27.8%). *The absence of the required specialisation in the region* was the least reported reason for insufficient qualifications among graduates (19.4%).

**Chart 6: Causes of insufficient qualification**



### 3.6 Insufficient knowledge

Companies reported that knowledge in the area of *machines and equipment*, followed by *metal processing and machining technologies* and then knowledge of *electronics and electrical engineering* were insufficient in graduates. Insufficient knowledge is ranked by specific thematic areas in the table below.

**Table 2: Insufficient knowledge**

Overview of knowledge	
1.	Machines and equipment
2.	Metal processing and machining technologies
3.	Electronics and electrical engineering
4.	Technical drawing
5.	Tools and jigs
6.	Properties of materials
7.	Applied informatics, work with software
8.	Health and safety at work

### 3.7 Insufficient skills

Companies reported skills in the areas of *machinery and tool set-up and maintenance*, followed by *knowledge of standards and technical documentation* and then *operating machinery and instruments* as insufficient in graduates. Insufficient skills are ranked by specific skills in the table below.

**Table 3: Insufficient skills**

Overview of insufficient skills	
1.	Machinery and tool set-up and maintenance
2.	Knowledge of standards and technical documentation
3.	Operating machinery and instruments
4.	Programming machinery
5.	Assembling and disassembling equipment
6.	Methods of measurement
7.	Hand working and machining materials, quality control
8.	Information and communication technologies

### 3.8 Demand for graduates in individual vocations

Companies responded that they most need graduates with secondary education in the vocations of *tool setter*, followed by *electrician* and *CNC/NC operator* on an annual basis. The ranking of other vocations for which there was increased demand from companies for graduates is shown below. We also noted increased demand for vocations not included on the questionnaire, specifically *industrial mechanic*, *machinery and equipment mechanic*, *miner* and *seamstress*.

**Table 4: Ranking of the most in-demand vocations**

Overview of vocations	
1.	Tool setter
2.	Electrician
3.	CNC/NC operator
4.	Machinist
5.	Tool maker
6.	Mechatronics technician
7.	Machinery and equipment programmer
8.	Form builder
9.	Auto mechanic
10.	Auto body painter
11.	Auto electrician
12.	Coach-builder

### 3.9 Employee re-qualification

Companies provided a clear differentiation with respect to the question regarding the need for the re-qualification of employed graduates. Re-qualification was needed at 51% of companies and not needed at the remaining 49%.

**Chart 7: Need for employee re-qualification**



### **3.10 Duration of re-qualification**

The companies that reported the need for re-qualification when employing graduates (51% of contacted companies) said that such re-qualification took from 3 months to 2 years; however, a period of *6 months or 1 year* was mentioned most frequently.

### **3.11 Employees from socially-disadvantaged backgrounds**

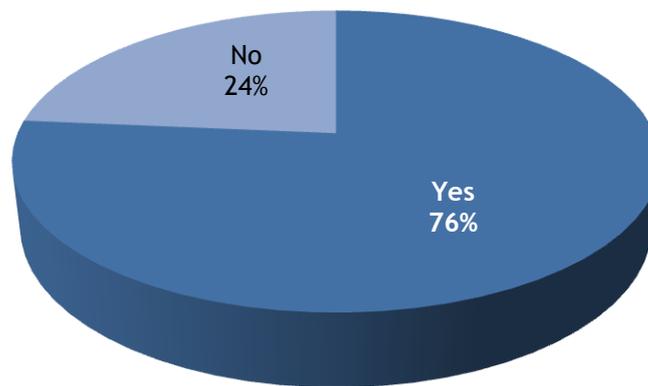
60% of the contacted companies did not maintain specific records involving this topic or did not respond to this question. The remaining 40% of companies reported an average of 6.3% of all its employees were from socially-disadvantaged backgrounds.

## 4 PRACTICES IN YOUR COMPANY

### 4.1 Cooperation with secondary vocational schools

Up to 76% of companies reported on-going cooperation with secondary vocational schools. The remaining 24% did not engage in such cooperation.

Chart 8: Cooperation with secondary vocational schools



### 4.2 Forms of cooperation

Companies reported various forms of cooperation with secondary vocational schools. Some are involved in a *pilot project* and provide *premises for the practical component of instruction*. They serve as *training companies* and provide *summer apprenticeships, re-qualification courses or continuing education for teachers* and even *lectures for students*. Companies reported that they supported secondary vocational education to some extent, both *materially and in the form of financial sponsorship*, while also organising various *lectures and open houses* in their facilities.

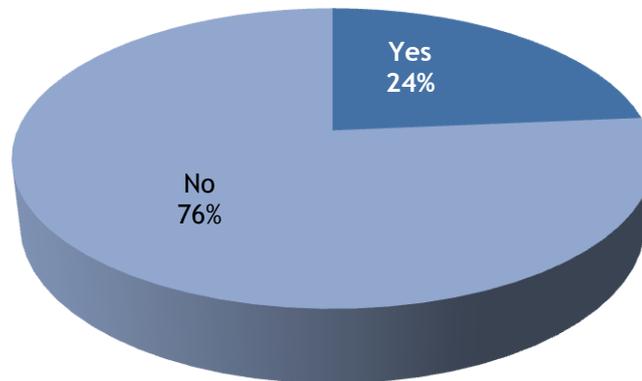
### 4.3 Employing apprentices after completing education and training

58.3% of the total number of queried companies responded to this question. These companies reported that 47.9% of graduates, on average, could be employed after successfully completing vocational education and training.

### 4.4 VET facilities in companies

Most of the queried companies did not have a dedicated VET facility. Only 24% of companies responded affirmatively to this question.

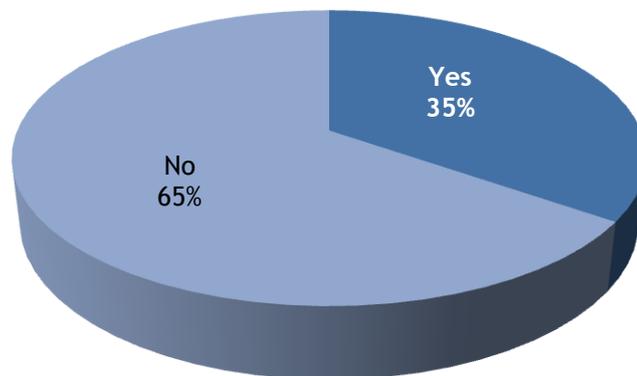
**Chart 9: Dedicated VET facilities in companies**



#### 4.5 Special VET masters/apprenticeship teachers/instructors in companies

35% of companies reported that they had special VET masters, apprenticeship teachers or instructors.

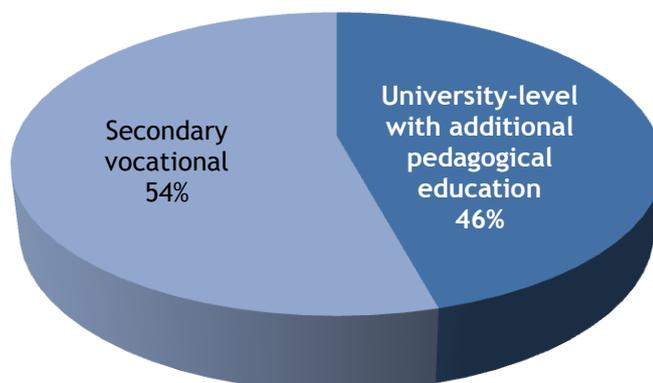
**Chart 10: Special vocational education masters, apprenticeship teachers, instructors in companies**



#### 4.6 Educational level of vocational education masters, apprenticeship teachers and instructors in companies

54% of companies with special vocational training masters, apprenticeship teachers or in-house instructors reported that these staff members had *secondary vocational education and training*. The remainder of specialised staff members at these companies had university-level education with additional pedagogical education.

**Chart 11: Education of vocational training masters, apprenticeship teachers and instructors in companies**



#### **4.7 Education of vocational training masters, apprenticeship teachers and instructors**

All companies with specialised staff members (35% of companies) reported these specialists were involved in continuing education in 100% of cases.

#### **4.8 Continuing education of vocational training masters, apprenticeship teachers and instructors**

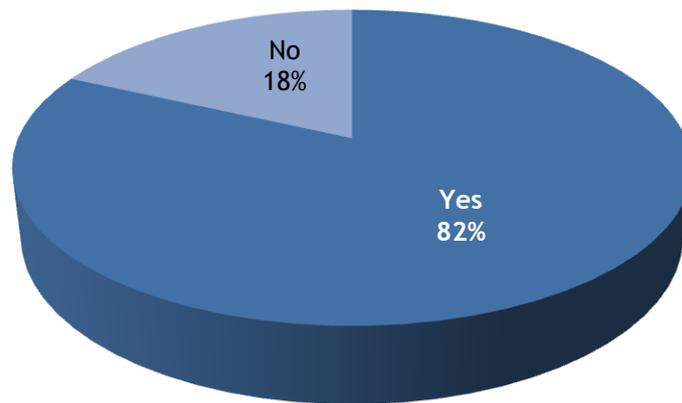
Continuing education for these specialised staff members takes place inside companies using unspecified *re-qualification trainings, courses and workshops*.

## 5 DUAL EDUCATION IN SLOVAKIA

### 5.1 Interest in dual education among companies

Up to 82% of all queried companies reported an interest in being involved in dual education.

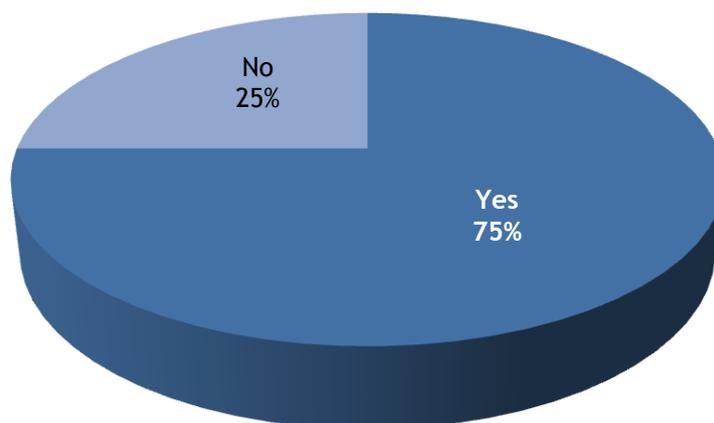
Chart 12: Interest in dual education



### 5.2 Financial support for dual education from companies

Of the 82% of companies that expressed an interest in dual education, 75% of them also reported that they were willing to participate financially in dual education. This option was precluded by the remaining 25%.

Chart 13: Interest of companies to participate financially in dual education



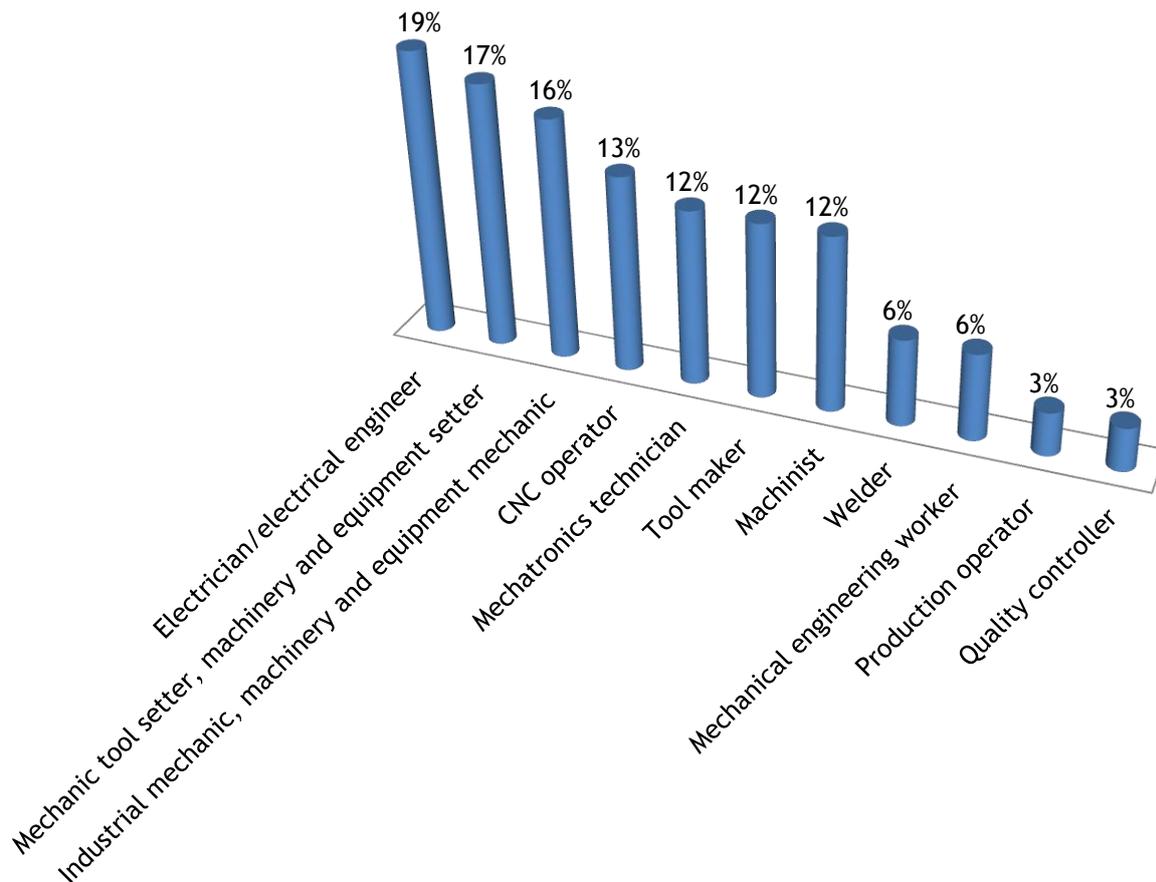
### 5.3 Number of positions for dual education students

86.1% of queried companies responded to this question. These companies are able to create 13 positions for dual education students on average and per year.

#### 5.4 Vocations for which companies are able to create positions for dual education students

Nearly 19% of companies reported being able to create positions for dual education students for the vocations of *electrician/electrical engineer* while 17% were able to do the same for the vocations of *mechanic and tool setter* with the same number reporting for the vocation of *machinery and equipment setter*. 16% of companies could create positions for the vocations of *industrial mechanic* and *machinery and equipment mechanic*. 13% of companies could create positions for dual education students in the vocation of *CNC operator*. 12% reported the same for the vocations of *mechatronics technician*, *tool maker* and *machinist*. 6% reported the willingness to create positions for *welders and mechanical engineering workers* with 3% of companies were able to create positions for dual education graduates in the vocations of *production operator* and *quality controller*.

Chart 14: Vocations





## 6 CONCLUSION

The mechanical engineering (36%) and auto industry (29%) were the two largest groups involved in the survey to identify labour market needs for vocational education and training (VET) in Slovakia. The largest groups of contacted companies were in the Trenčín (24%) and Bratislava Regions (18%). Large and medium enterprises in terms of number of employees (each accounting for 45%) were the largest groups involved in the survey.

A vast majority of companies, 97.2%, draw their labour force from secondary vocational schools and a majority of their employees have complete secondary vocational education (33.1%) and secondary vocational education (29.6%).

Companies have the best experience with graduates from secondary vocational schools such as SPŠ Nové Mesto nad Váhom, SPŠ elektrotechnická Bratislava, SOŠ Handlová, SOŠ technická Šurany, SOŠS Kysucké Nové Mesto, SPŠ strojnícka Košice, SOŠ polytechnická Prievidza and SOUS Považská Bystrica.

Companies reported the most difficulty in finding qualified graduates with secondary education in the vocations of tool setter and electrician, mechatronics technician, CNC/NC operator and tool maker. Companies consider insufficient practical experience the greatest cause of insufficient qualification, while the absence of the given specialisation in the given region was considered the least significant cause of insufficient qualification. Companies highlighted insufficient knowledge of machinery and equipment as the primary deficiency among graduates. The skills that graduates lack the most include machinery set-up and maintenance skills. The lack of graduates in the vocations of tool setter, electrician, CNC/NC operator and machinist was most felt by companies on a year-to-year basis. More than half of companies reported that employed graduates required re-qualification, which in most cases lasted anywhere from 6 to 12 months. Most companies did not record any classification of employees on social or national grounds.

Three quarters of companies confirmed on-going cooperation with secondary vocational schools. These companies are involved in a dual education pilot project or provide premises for the practical component of instruction. They serve as training companies, provide summer apprenticeships, re-qualification courses or continuing education for teachers, lectures for students and even provide material and financial support to schools.

Companies that provide the practical portion of education are able to employ nearly half (47.9%) of graduates who successfully complete such training and education. Almost one quarter (24%) of the queried companies had practical training facilities in their company. 35% of companies have specialised staff members (vocational education masters, apprenticeship teachers or instructors) while companies confirmed their continuing education in the form of re-qualification training, courses or workshops.



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82% of companies that participated in the survey expressed an interest in involvement with dual education, with three quarters of the companies willing to participate financially in dual education. These companies are able to create 13 positions for dual education students on average and per year. Most of these positions would be in the vocations of electrician, tool setter mechanic, machinery and equipment setter, industrial mechanic, machinery and equipment mechanic, CNC operator, mechatronics technician, tool maker and machinist. Lower demand was noted for the vocation of welder and definitively for the vocations of production operator and quality controller.



## Annex 1

### Employer Questionnaire: Identification of Labour Market Needs for Vocational Education and Training (VET) in the Slovak Republic

#### INTRODUCTION

Dear Madam/Sir,

We seek your cooperation in a survey within the EU's ERASMUS+ called "National Authorities for Apprenticeships: Introduction of Elements Dual VET Slovak Republic". The project aims to contribute to comprehensive reform of the vocational education and training system at the system level and support for pilot projects building on practical experience from industry in Slovakia.

The Slovak-German Chamber of Commerce and Industry (SNOBK) is one of the project's partners and it has been tasked to identify labour market requirements, focusing on the requirements of employers for skills. The questionnaire was prepared for this purpose. Industrial companies in Slovakia are the target group of this survey.

We would be glad to make the results of the questionnaire available to you. If you so request it, the processed results will be e-mailed to you.

#### Completing the questionnaire:

*The questionnaire contains different types of questions. For yes/no questions, choose one of the answers. Where questions provide a choice, you can mark several options. Tick your answers. If a question does not include the desired option, please write it separately. For open items, please provide your own answer.*

#### GENERAL INFORMATION ABOUT THE COMPANY

• Name: \_\_\_\_\_ optional\*

• Contact person and e-mail: \_\_\_\_\_ optional \*

• In what area(s) does your company operate?

- |  |   |
|--|---|
| <input type="checkbox"/> Mechanical Engineering              | <input type="checkbox"/> Information Technology |
| <input type="checkbox"/> Security and Protection             | <input type="checkbox"/> Chemicals              |
| <input type="checkbox"/> Auto Industry                       | <input type="checkbox"/> Mining and Metallurgy  |
| <input type="checkbox"/> Transport, Forwarding and Logistics | <input type="checkbox"/> Other... _____         |
| <input type="checkbox"/> Electrical Engineering              |   |
| <input type="checkbox"/> Power                               |   |



• In which region (HTU) does your company operate?

- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Banská Bystrica | <input type="checkbox"/> Bratislava |
| <input type="checkbox"/> Košice          | <input type="checkbox"/> Nitra      |
| <input type="checkbox"/> Prešov          | <input type="checkbox"/> Trenčín    |
| <input type="checkbox"/> Trnava          | <input type="checkbox"/> Žilina     |

• How many people are employed by your company? \_\_\_\_\_

## LABOUR FORCE

• From what schools do you recruit your future labour force?

- Secondary vocational schools  
 Grammar schools (secondary schools preparing students for university-level studies)

• How many people employed at your company have a secondary education? Of which:

Lower secondary vocational education  
(2-year education program with leaving examination) \_\_\_\_\_

Secondary vocational education  
(3 to 4-year education program with vocational certificate) \_\_\_\_\_

Complete secondary general education  
(4 to 8-year grammar school with graduation) \_\_\_\_\_

Complete secondary vocational education  
(4 to 5-year education program with graduation alternatively with vocational certificate) \_\_\_\_\_

• Name the school with whose graduates you have had the best experience. \_\_\_\_\_

• In which professions have you had the greatest difficulties finding qualified graduates with secondary education?

- Mechatronics technician  
 Tool setter  
 Electrician  
 Form builder  
 CNC/NC operator  
 Machinery and equipment programmer  
 Auto mechanic  
 Auto electrician  
 Coach builder  
 Auto body painter  
 Tool maker  
 Machinist  
 Other... \_\_\_\_\_



• Why?

- Insufficient practical experience
- Insufficient theoretical knowledge
- Insufficient skills
- Insufficient number of graduates
- Absence of the required specialisation in the region
- Other... \_\_\_\_\_

• In which areas were graduates lacking knowledge?

- Machines and equipment
- Metal processing and machining technologies
- Technical drawing
- Tools and jigs
- Properties of materials
- Electronics and electrical engineering
- Applied informatics, work with software
- Health and safety at work
- Other...

• In which skills were graduates lacking?

- Operating machinery and instruments
- Assembling and disassembling equipment
- Machinery and tool set-up and maintenance
- Hand working and machining materials
- Methods of measurement
- Programming machinery
- Quality control
- Knowledge of standards and technical documentation
- Information and communication technologies
- Other... \_\_\_\_\_

• How many secondary school graduates do you need in these professions each year?

- Mechatronics technician \_\_\_\_\_
- Tool setter \_\_\_\_\_
- Electrician \_\_\_\_\_
- Form builder \_\_\_\_\_
- CNC/NC operator \_\_\_\_\_
- Machinery and equipment programmer \_\_\_\_\_
- Auto mechanic \_\_\_\_\_
- Auto electrician \_\_\_\_\_
- Coach builder \_\_\_\_\_
- Auto body painter \_\_\_\_\_
- Tool maker \_\_\_\_\_
- Machinist \_\_\_\_\_
- Other... \_\_\_\_\_



- Did employed graduates require re-qualification?

Yes       No

- If yes, how long on average? \_\_\_\_\_

- What percentage of your employees is from socially-disadvantaged backgrounds?

\_\_\_\_\_

## PRACTICES IN YOUR COMPANY

- Do you cooperate with secondary vocational schools?

Yes       No

- If yes, in what form? \_\_\_\_\_

- What percentage of the total number of apprentices do you employ after they complete education? \_\_\_\_\_

- Does your company have a dedicated VET facility?

Yes       No

- Does your company have special VET masters, apprentice teachers or instructors?

Yes       No

- What education do they have? \_\_\_\_\_

- Are they involved in continuing education? \_\_\_\_\_

Yes       No

- If yes, how? \_\_\_\_\_

## DUAL EDUCATION IN SLOVAKIA

The new law on vocational education lets companies enter into the dual education system starting from 1 September 2015.

*The dual VET system involves students preparing for a profession, occupation or professional activities according to employer's specific requirements and needs. A student completes practical instruction directly at the employer's workplace based on a sample curriculum. At least 50 % of the total number of instructional hours should be spent on practical training.*

- Are you interested in becoming involved in such practice-oriented education?

Yes       No



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- Would you be willing to participate financially in apprenticing your future employees?  
 Yes       No

• How many positions can your company create for VET students annually? \_\_\_\_\_

• For what vocations? \_\_\_\_\_

May we contact you in case of questions? (If yes, please tick the box)

If yes, at what e-mail address: \_\_\_\_\_

Thank you for your time spent completing this questionnaire.