METHODOLOGY
AND INSTRUMENTS FOR
ANALYSING THE NETWORK
OF SECONDARY VOCATIONAL
SCHOOLS IN THE REPUBLIC
OF MACEDONIA

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List of Abbreviations

EARM	Employment Agency of the Republic of Macedonia
GDP	Gross Domestic Product
BDE	Bureau for Developmentof Education
VNFIL	Validation of non-formal and informal learning
HE	Higher Education
HPS	Higher Professional Specialization
SSO	State Statistical Office
NEC	National Examinations Centre
NEI	National Education Inspectorate
LLL	Life-Long Learning
ECVET	European Credit system for vocational education and training
EPR	European peer review
EQAVET	European quality assurance in vocational education and training (previously EQARF)
ETF	European Training Foundation
EU	European Union
AULSG	Association of units of local self-government
ME	Ministry of Economy
M&E	Monitoring and evaluation
MCE	Master craftsman exam
MES	Ministry of Education and Science
MLSP	Ministry of Labour and Social Policy
MF	Ministry of Finance
NAEEPM	National agency for European educational programmes and mobility
NFIL	Non-formal and informal learning
HEAEB	Higher Education Accreditation and Evaluation Board
SEN	Special Educational Needs
LM	Labour Market
VET	Vocational Education and Training
SE	Secondary Education
SVE	Secondary Vocational Education
SVE-2y	Secondary Vocational Education of two years
SVE-3y	Secondary Vocational Education of three years
SVE-4y	Secondary Vocational Education of four years
SVS	Secondary Vocational Schools
SS	Secondary Schools
TVE	Technical Vocational Education
CEDEFOP	European Centre for the Development of Vocational Education and Training
AEC	Adult Education Centre
VETC	Vocational Education and Training Centre

1. Background

The commitment to gradually adapt the network of vocational schools to the needs of the local economy and the local development plans has a special focus in the Strategy for vocational education and training in thelife-long learning context 2013-2020.The Strategy emphasizes that "the Network of SVS has to be in line with the economic, demographic and cultural environment. The evaluation to develop the workforce and theskills should logically be based on the relevance of the local development and the local economy that will lead to the economic development of the country. The planning of occupational profiles and skills that would be needed in the future should primarily be based on local needs and development plans".

In the *Action Plan* which is part of the Strategy, within priority areas*C: Quality and relevance – a guarantee for competitiveness* and area *C3: Vocational education and training relevant for the labour market*, measure number 7 refers to *boosting the relevance and functionality of the network of secondary vocational education with an operational plan for gradual adaptation to the needs of the local economy and the local development plans.* The target groups are secondary vocational schools, companies and the local self-government.

One of the activities mentioned in the Action Plan refers to *putting togethera Study on the relevance and functionality of the secondary vocational educationnetwork.* Institutions responsible for this activity are the Ministry of Education and Science, the Ministry of Labour and Social Policy, the Ministry of Economy, the Vocational Education and Training Centre and the municipalities. The Action Plan envisages that this activity is carried out in 2013 and 2014.

Consequently, having in mind the significance of this activity and the adopted timeframe in the Action Plan, a *Memorandum of Understanding* between the Ministry of Education and Science and the British Council in Macedoniawas signed in September 2013. The Ministry of Education and Science approved this project to serve as support in deliveringpart of the activities contained in the Strategy for Development of Vocational Education and Training in life-long learning context 2013-2020 and as an opportunity for general improvement of secondary vocational education in the Republic of Macedonia. Then, the Vocational Education and Training Centre and the British Council in Macedonia signed an Agreement for Cooperation on the project titled "*Support to the Vocational Education and Training Centre for implementation of two components (A4 and C3.7) of the Action Plan of the Strategy for Vocational Education and Training 2013-2020*". One the Project's components refers to the implementation of part of the activity C3.7 of the Strategy's Action Plan. More precisely, it refers to *developing a Methodology and instruments for analysing the compliance of the network of vocational schools to the needs of the labour market.*

To implement this activity, the Vocational Education and Training Centre also received the support of the Council for Vocational Education and Training, which as an advisory body, in cooperation with the municipalities, is competent to submit to the Ministry a proposal for developing the network of institutions for vocational education and training"[1].

2. Why should the network of vocational schools be streamlined?

Today's global economic crisis has caused and is further expected to cause additional pressure on vocational education and training in our country. It is expected that VET willface a big challenge in terms of how much the people who lose their jobs are prepared to adapt to the new situation, and whether VET is prepared to provide themwith sufficient competencies and ability for mobility from one job to another. In addition, another challenge for VET will be the provision of sufficient competencies and mobility to young people and adults who are or will be part of the learning process in schools. To what extent will VET be able to perform its new tasks will primarily depend on the educational policy. However, it will also depend on the dedication and the capabilities of those who implement the best solutions and the ability to efficiently use the resources and capacities that the country has at its disposal.

In addition to the challenges of integration, the Republic of Macedonia faces the challenges of globalisation. In regard to the rapid growth of knowledge and the variable demands of the labour market, the Republic of Macedonia should base its development on strengthening the knowledge, the skills and the development of the abilities of the individuals. In these circumstances, the Republic of Macedonia is forced to introduce changes in the entire education system, especially in the system of vocational education and training.

In the last two decades, the system of vocational education and training in the country has been subject to reforms and is under constant social and market pressure for further modernisation. The implementation of the defined goals in the National Programme for Development of Education has constituted the framework ofundertaken interventions in VET. Consequently, the following interventions have been made:
- The Law on Vocational Education and Training was adopted and mandatory secondary education has been introduced;
- The Strategy for development of vocational education and training 2013-2020 was adopted;
- The concept for the state matura, the school matura and the final exams in secondary education has been adopted;
- The concept for vocational training for up to two years was adopted;
- The concept for VET occupations was adopted;
- The concept for post-secondary education was adopted as well;
- The Vocational Education and Training Centre and the Council for Vocational Education and Training were established, as well as the Adult Education Centre and the Council for Adult Education;

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[1] Law on Vocational Education and Training

- Training was introduced for candidates applying to become secondary school principals, followed byexaminations for principals;
- Some of the syllabi and curricula for occupational profiles in technical education were synchronised; practical training was increased to 20% in the technical educationprogramme; as a continuation of the Phare reform in the technical education, vocations(from 24 to 14) and occupational profiles (from 64 to 45) werereviewed and revised;
- The Methodology on occupational standards was also developed; 30 standards for occupations in technical education and 52 standards for VET occupations and vocational training of up to two years were drafted;
- The Methodology on development of educational programmes has been adopted; standards have been developed for students' practical training with employers;
- The process of modernisation of the curricula for secondary vocational education for occupations and vocational training of up to two years is underway. The Methodology on developing occupational standards (2009), based on which the occupational standards for 13 vocations were developed, is a novelty in VET. This new methodology applies a competencies-based principle through a dynamic process of social dialogue among numerous key partners at national level and has a special focus on the demands of the labour market in the upcoming period.[2]This approach is in accordance with the country's efforts to implement the standards used in the European Union and the efforts to modernise secondary VET;
- Changes have been made in the structure of vocational education and training by:
    - Increasing the duration of mandatory education by introducing mandatory secondary education,
    - Introducing curricula of various duration and various levels of qualifications,
    - Introducing adult education as an integral part of the general education system,
    - Expanding the network of public educational institutions with privately owned institutions,
- State matura and external evaluation have been introduced;
- The process of defining the National Qualifications Framework is underway;
- Decentralisation in management and leadership has been introduced and competencies and responsibilities have been transferred from central to local level;
- The system of financing has changed;
- Efforts are made to improve the equipment and the physical capacities in SVS;
- Training of teachers in vocational secondary education has been intensified;
- Efforts are being made to create inclusive schools;

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[2] See: Vocational and Educational Training Centre (2012): Резултати од Твининг проектот „Поддршка за модернизацијата на системот за образование и обука"

- Efforts are made to improve the social dialogue by involving relevant concerned parties in the decision making and development process;
- Inflow of private capital in vocational education and training has been made possible.

The aim of vocational education is to develop the individuals' professional competences that will meet the standards of a modern, competitive and flexible labour market. Furthermore, it will be prepared for rapid changes, and will support the success of individuals on such labour markets. This imposes the need for projecting a new network of vocational schools which will ensure easier employability and greater readiness to respond to the employers' new demands.

The necessity to convert knowledge into skills will mean that the workforce will not only possess specialised knowledge relevant for employment, bit it will also possess developed generic knowledge and skills that will allow it to adapt to the new technologies and change the reality they are demonstrated in. Now, more than ever, it is of key importance for all citizens to receive good quality education and training so that they acquire the necessary competences for their employability, thus improve their lives in general.

Thenetwork of secondary vocational schools in the Republic of Macedonia has been undergoing constant changes in the last twenty years. This comes a result of the changes in the systemstructure of secondary education, the new concept solutions for certain types of secondary education, the redefining of occupational profiles, and the frequent changes of syllabi and curricula. Moreover,changes have also been evident in the decreased number of students in vocational education, the slow process of establishing small and medium sized enterprises, the unrealistic estimates of some units of local self-government, etc. During this time, it was estimated that the network of secondary schools did not correspond to the needs of the economic market. The network was also characterised by a rapid and irrational expansion, overlapping of capacities in certain regions and municipalities, fragmentation, irrational use of space, equipment and teaching staff, and certain weaknesses and difficulties in achieving the aims and tasks of vocational education and training. The fact that the situation is the same or similar even today has been confirmed by the latest research on the development of the *Strategy for development of vocational education and training in life-long learning context 2013-2020*, which identified a big discrepancy between the expectations from vocational education and the results it produces.

The research undertaken so far has shown that planning and curriculum designare complex processes which should involve constant interaction amongsecondary vocational schools and social partners. Therefore, the existence of mechanisms that would transfer information from social partners to institutions responsible for the development of curricula (VETC, MES) is more than necessary. This transfer of information is the best indicator of whether the changes undertaken have an effect, whether they are timely

and whether they achieve the set goals. The main focus in developing a curriculum, from the aspect of young generations who attend secondary vocational education, should be in accordance with the requirements and demands of the labour market and higher education on one hand, and the demands for a good quality social and individual life on the other. This is the ideal picture that everyone desires, but most often it is different from what realistically happens.

The primary task of secondary vocational education is to meet at least the basic demands of the vocation and its social partners. Hence, focus should be put on increasing the importance of vocational education and reinforcing students' training for the current and future demands of the labour market and life in general.

The main starting points to improve the curriculum, and subsequently meet the requirements, would be to develop students' competencies in accordance with the post of employment and higher education. This means that it is necessary to restructure the existing mechanisms of cooperation between schools, companies and higher education institutions, which should be based on partnership, development and quality.

Nowadays, we speak of decentralized education and responsibilities of the local self-government.However, practice shows that the local self-government does not possess sufficient information and SVET is rarely part of its priorities. The local self-government needs mechanisms and instruments for monitoring the changes that happen in the labour market, in society and in the social environment so that it can react timely in the processes of human resources development. The local self-government is the centre that should unite the interests of education, companies, the non-governmental sector, the professional educational institutions for adults, the support systems, etc.

The network of secondary vocational education creates additional problems. For example, young people in some smaller towns do not have the opportunity to choose between grammar schools and vocational education or to choose a vocational school that is of their interest since only one type of vocational school exists in the place where they live. These students could choose to commute or relocate to a different place where there is a secondary school that suits their interests. However, in a situation when families have lower income, most of these young people enroll in the school in their area, even though this does not appeal to them. This occurrence has a further negative impact on the transition of students to higher education. Usually these students choose study programmes that do not correspond to the secondary school they attended, but reflect their real interest in studying. Despite the positive measures undertaken to compensate for this occurrence (free transportation, free textbooks, accommodation in student housing, scholarships, etc.), it is still present in the country. This opens up the issue of the existing secondary schools in smaller towns and the programmes that attract a small number of students.

The restructuring of the VET network and its capacities is a complex process that could cause a series of negative effects in secondary vocational schools because teachers face the possibility of losing their jobs, there will be a need for retraining, hiring new staff, providing new equipment, additional finances, etc. However, the apparent difference between the students' interests, the educational offer and the demand for certain profiles should be reviewed and analysed. It is necessary to see to what extent the entire school network of vocational education and training corresponds with the interests and needs of young people and the economy, and its financial profitability. The advantages that this process ensures are far greater than the negative effects.

3. Structure of SVE

3.1. Organisational Structure

From a systemic point of view, secondary education is an organisational cycle that links primary and higher education in the sole (global) education system in the Republic of Macedonia.

Based on the system and the legislation, the basic institutional and organisational solution for secondary education is *the school for secondary education.* This means that, as a rule, secondary education takes place in schools for secondary education which get their specific names in accordance with the status of their ownership and the predominant programme.

According to the ownership status, *state secondary schools* as *public schools* founded by the state are predominant in the Republic of Macedonia. In addition to these, in accordance with the Law on Secondary Education, the municipalities and the City of Skopje can establish *municipal*, i.e. *city public secondary schools.* Apart from the public schools, there are several successful *private secondary schools* in the Republic of Macedonia.

In terms of the scope of programmes, there are *homogenous secondary vocational schools*, i.e. secondary vocational schools for one particular vocation (e.g. state secondary school of applied arts, medical school and others) and *heterogeneous secondary vocational schools,* i.e. secondary schools that offer several vocations or programmes. Homogenous secondary vocational schools are located in the major urban centres. Their number is smaller than those of the heterogeneous secondary vocational schools that are located in smaller towns and they are established in accordance with the labour market demands. *Grammar schools* are seen as separate secondary schools*,* although this type of education in a certain number of secondary schools is carried out together with vocational education.

There are also *schools for secondary education for special educational needs students* and *secondary schools of arts* (art schools, schools of music and ballet).

The initial vocational education leads to a secondary school diploma. This type of vocational education can be carried out in a school, in a company or can be a combination of the two (as in a dual system).

Education and qualifications inSVE are acquired through vocational training of up to two years and secondary vocational education of three and four years.

The lowest level of vocational training is job skills training for adults that provides low levels of qualifications or training for jobs. Beneficiaries of this offer are usually persons with no qualifications. In 2011, 163 persons attended this type of vocational training, i.e. 0.29% of all those who attended VET that year.

The basic platform that the VET system is built on is the secondary vocational education of four (TVE) and of three years (SVE), while the two-year SVE is currently in the stage of development following the new concept.

Secondary education in the country is carried out in 99 public (10 state schools, 21 schools of the City of Skopje and 68 municipal schools) and 13 private schools.[3]

According to the curricula applied in the public schools, 16 schools are comprehensive general schools, 40 are vocational, 34 are both comprehensive general and vocational schools, 4 are schools for special educational needs students, while 5 are arts schools.[4]

The number of vocational secondary schools by vocations are[5]: agriculture-veterinary medicine -11, forestry and woodworking – 8, geology, mining and metallurgy – 7, mechanical engineering – 25, electrical engineering – 20, chemistry and technology -15, textile and leather – 17, graphic arts – 7, personal services – 9, construction and geodesy – 8, traffic technology – 11, tourism and hospitality -12, economics, law and commerce – 17, medicine – 16, sports -3, arts – 6.[6]

There are 13 private secondary schoolsin the Republic of Macedonia, 6 of which offer vocational education (economics, law and commerce, private services, healthcare, traffic technology and tourism and hospitality).[7]

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[3] In accordance with the Open Call for enrolment of students in public secondary schools in the academic 2012/2013 in the Republic of Macedonia, Ministry of Education and Science
[4] Idem
[5] In accordance with the Open Call for enrolment of students in public secondary schools in the academic 2012/2013 in the Republic of Macedonia, Ministry of Education and Science
[6] The number of schools shows the schools where curricula for particular vocations are applied. In one school there could be curricula for several vocations.
[7] State Statistical Office of the Republic of Macedonia, Elementary and secondary schools at the beginning of the academic 2011/2022, 2.4.12.04/718

The low educational level of part of the country's population and the large number of students who leave school after the compulsory primary education, forced the Government of the Republic of Macedonia in 2006 to introduce compulsory education that would include the levels of secondary vocational education.

The law on VET envisages two forms of post-secondary vocational education and training, such as the *Master craftsman exam (MCE)* and *Specialisation (SP)*. Having completed a Master craftsman exam (2 yeartraining), the individual gains the right to train students in formal SVE. However, the Master craftsman exam has been inactivefor several years now and is used increasingly less as a way to build upon education. The specialisation (1 year training) ensures deepening of vocational knowledge and acquiring sets of operational skills. This type of education has been showing numerous deficiencies for some time and is carried out in line with thecurricula developed in 1989. The most usual reason for using this type of post-secondary education is the opportunity the individual receives in regard to promotion or finding a better job.

In post-secondary vocational education, 449 persons (45 women) received specialist educationin 2011.[8]There is no dataon the Master craftsman exam, however the process of broader consultations showed that after the procedures were outlined in 2010, not a single Master craftsman exam has been held.

3.2. Impact factors

The programme structure of secondary vocational education in the Republic of Macedonia in the last 20 years has been developed under the influence of the following two groups of factors: direct and indirect.

The direct impact factors are formally and declaratively scientifically accepted and normatively determined. The *primary factors* in this group are the variables of the labour market, the indicators of which are collected and processed by two key institutions at state level: the Employment Agency of the Republic of Macedonia and the State Statistical Office. Although these indicators mainly refer to the quantitative needs of the labour market, they are still the only available indicators that the competent bodies can use and with their interpretation design solutions in the programme structure of secondary vocational education.

In practice,we use *secondary* or *tertiary* sources as indicators for the content structure of the curricula when referring to the changes that happen in the labour process. These are general findings of research carried out to gain information on the changes in labour (secondary sources) for other purposes (economic, technological, etc.) or more frequently, findings about the general tendencies in the world that are published in literature (tertiary sources).
In addition to these direct influences on the labour market, in practice there is quite a strong influence of *indirect factors* which could be further divided into two categories:

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[8] State Statistical Office, Press Release, 2012

- The impact of globalisation on the global economic market, i.e. the impact of the globalisation on the global labour market. This phenomenon for secondary vocational education in the Republic of Macedonia is taken into account because of the following two occurrences: firstly, the opportunity for staff with secondary vocational education to compete on the global labour market, and secondly, the inflow of capital and management of global companies in the Macedonian economy;
- The impact of the strategic commitment of the Republic of Macedonia to European and Euro-Atlantic integration. This commitment determines the necessity of aligning the concept and the content of the curricular structure with the solutions of the European Union countries.

The curricular structure of secondary vocational education reflects the long-term qualitative impact of the labour market on secondary vocational education. On the other hand, the network structure could reflect the mid-term impact the labour market has on thesecondary vocational education. As a short-term solution, the enrolment policy that exists within the current network together with the curricular structure should directly influence thesecondary vocational education offer on the labour market. Since official indicators for the quantitative indicators of supply and demand exist on the labour market, it is natural to expect that they are the primary factor for the development of the secondary vocational education network. However, in practice, the indicators for the supply and demand on the labour market are mainly used for opening new professions (occupations) in the secondary vocational education network. The impact of the demographic factor is dominant in the development of the secondary vocational education network via the enrolment policy. The main reason for this situation is the very small demand and the enormous supply of staff with secondary vocational education on the labour market. However, inonly a few cases will the state and the educational organisations propose a reduction ofvocations or profiles for which there is no interest.If this happens, the key regulator for reduction of capacities comes as a result of the decision of the candidates not to enroll in these vocations, which can be illustrated with the large number of empty places in these vocations.

An indirect impact of the factor of the European and Euro – Atlantic integrations also exists in the development of the secondary vocational education network. This can be seen through the involvement of schools with vocations and profiles that will continue to existin the local and the European market, as vocations that will be given technical assistance.

3.3. Educational mobility

In terms of the vertical mobility/transition of the VET trainees, individuals have the possibility toprogressvertically (from a lower to a higher level of education) having met certain criteria, i.e. after taking particular exams. For

example, students who have completed a three year vocational education have the opportunity, after taking certain exams, to continue their education in a four-year vocational education. Later they could also take the state matura or the final exam, which makes it possible for them to apply to a university.

Horizontal mobility in secondary education is problematic because of the lack of mechanisms that will facilitate this process. Consequently, many students do not have the possibility to transfer from vocational to general education and vice versa. The curricula in secondary education are not modular and are not designed in accordance with the credit system. This presents an obstacle for those students who would like to change the type of education. This is quite time and money consuming, as the knowledge acquired in the previous education is often not recognized.

Horizontal mobility in higher education is possible with the recognition of credits. Unlike secondary education, there is a more transparent and more dynamic process of mobility at national and international level.

The transition from secondary to higher education until 2006 was 46%. The number of students who enrolled at universities rose to 85% in 2009 (according to a Press release from the Ministry of Education and Science dated 29 July 2009), and according to the latest data, this numberexceeded 90% in 2012. This increase is also a result of the state's educational policy, which increased the number of higher education institutions in the country. Several private universities and vocational colleges were established during this period. The main reasons for the improved rates of students' transition from secondary to higher education comes as a result of the expansion of the higher education institutions' network and the measures of the Government/ the Ministry of Education and Science to reduce tuition fees.[9]

3.4. Scope and network of secondary vocational education

Table 3 shows that the four-year secondary vocational education cycle is the most appealing to students (85.85%), whereas the three-year secondary vocational education cycle shows a trend ofdecline. Compared to 2007[10], when 7052 students were enrolled in this type of education, in 2011 there was a drop by 28.2% to 5058 students. In post-secondary vocational education the number is very small and appears only in the specialist education, while the master craftsman exam was not taken at all in 2011.

Table 3: Review of students in vocational education and training in the Republic of Macedonia[11]

[9] ETF (2010) : Collaborative evaluation of the influence of reformed 4-year SVE, Skopje
[10] State Statistical Office: primary and secondary schools at the end of the academic 2006/2007, Statistical review no. 2.4.8.03, Skopje, June 2008
[11] State Statistical Office: primary and secondary schools at the end of the academic2010/2011, Statistical review no. 2.4.12.06/720, Skopje, June 2012

Levels	Types of vocational education and training	Number of students	%
Secondary vocational education	Vocational training	163	0.29
	3 year SVE	5058	8.88
	4 year SVE	48882	85.85
	Special secondary schools	287	0.50
Post-secondary vocational education	Specialist education	449	0.79
	Master craftsman exam	0	0
Higher vocational education[12]	Vocational colleges	2102	3.69
Total		**56941**	**100.00**

Based on the review of the number of students in the VET system,one can conclude that there is a weakness in the part of *post-secondary vocational education*. The two forms of this subsystem show weaknesses and are evidently not sufficiently appealingto both young people and adults.

In 2001, the ratio of students in vocational and general education was 70% to 30% in favour of vocational education. In the meantime, the interest and the number of general education classes have increased, so the ratio is now much smaller. Currently, the ratio is 58.39% to 40.45% in favour of vocational education.[13]

Table 4: Students in secondary education by type of education

Type of education	2007/2008[14] Total	2008/2009[15] Total	2009/2010[16] Total	2010/2011[17] Total	2011/2012[18] Total
Secondary education/total	94545	93843	95343	94155	93064
General education	38214	38373	38527	38013	37646
Arts	854	1015	1221	1071	1080
Vocational education	55477	54455	55595	55071	54338
VET students as % of total	58.7%	58.0%	58.3%	58.49	58.39

In the last decade there has been an evident trend of increased interest and pressure for students to enroll in general education. However, due to the limited quota in general schools and the fact that some of the students do not succeed in securing a place mostly because of their poor marks, they tend to enroll insecondary vocational schools. Since the secondary schools' network is dominantly designed for vocational education (a relic of the past), the public volumes are limited to 1390 classes for general and 2047 classes

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[12] The part on higher vocational education does not include students enrolled in vocational study programmes at universities and those who are not part of the students at vocational colleges

[13] State Statistical Office of RM, Press release: Population and social statistics, 2.4.12.04/718

[14] State Statistical Office of RM, Primary and secondary schools at the start of the academic year (for 2008, 2009 and 2010)

[15] Idem, 2009

[16] Idem, 2010

[17] State Statistical Office of RM, Press release: Population and social statistics, 2.4.12.04/683

[18] State Statistical Office of RM, Press release: Population and social statistics, 2.4.12.04/718

for vocational education.[19]Should there be more places for enrolment in general education, it would be logical to assume that the ratio between general and vocational education would be in favour of the general one.

With the exception of the medical and economic and law vocations, the other vocations are slightly less appealing to young people. This is especially important for the shorter (2 or 3 years) programmes in vocational education. The fact that these qualifications are not very valued on the labour market makes young people enroll in technical programmes with the intention of continuing their education. A strong economy can make lower qualifications attractive, but a weak economy has a negative effect on their appeal.

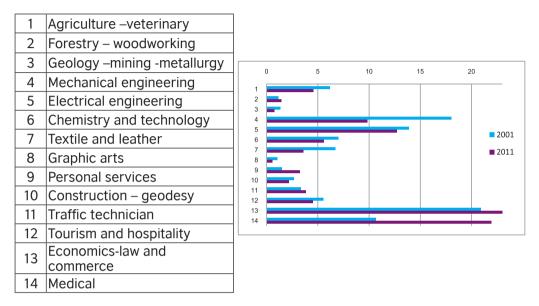Table 5: Regular secondary schools, classes, students and teachers

| | Schools | Classes | Students | | | | Teachers | | | | | |
			total	Female students	Graduate students all	Graduate students women	total all	total women	Full time all	Full time women	Part time all	Part time women
1998/1999	96	2902	89775	43653	21510	-	5557	3012	-	-	-	-
2003/2004	96	3032	93791	44887	23621	11341	5863	3278	4891	2716	972	562
2004/2005	100	3134	94053	44701	24225	11312	5946	3375	5107	2875	839	500
2005/2006	101	3184	93908	44530	25588	11763	6136	3432	5277	2930	859	502
2006/2007	104	3219	93763	44334	25629	11794	6280	3541	5311	2961	969	580
2007/2008	107	3237	92753	44387	24700	11463	6438	3714	5529	3149	909	565
2008/2009	110	3295	93164	44643	24210	11543	6832	3953	5810	3342	1022	611
2009/2010	111	3372	95343	45820	25345	11941	7008	4041	6001	3404	1007	637
2010/2011	114	3 441	92848	44773	24846		7197	4225	6113	3574	1084	

Source: State Statistical Office, 2001, 2009, 2010, 2011, 2012. Data refer to regular secondary schools

[19] State Statistical Office of RM, Primary and secondary schools at the start of the academic year 2011/2012, Press release 2.4.12.04/718

The number of schools increased in the period between 1998 and 2011, while the number of students, with certain fluctuations, stayed stable. The ratio between male and female students shows a higher proportion of female students of 45-48% during the entire period. The number of teaching staff increased simultaneously with the expansion of the SS network.

Chart 2: Students in secondary vocational schools by vocations and period[20]

1	Agriculture –veterinary
2	Forestry – woodworking
3	Geology –mining -metallurgy
4	Mechanical engineering
5	Electrical engineering
6	Chemistry and technology
7	Textile and leather
8	Graphic arts
9	Personal services
10	Construction – geodesy
11	Traffic technician
12	Tourism and hospitality
13	Economics-law and commerce
14	Medical

The data shows that the majority of students enroll in the medical, economics, law and commerce, electrical engineering and the mechanical engineering vocations. However, this does not have to imply that they are more appealing to students than the other vocations. This could be due to the volumes available for a certain vocation. The mechanical engineering vocation prevails and has the largest number of allocated places for enrolment in the school network. However, the interest for enrolment in this vocation has witnessed the greatest decline. There is also visible decline in interest for agriculture-veterinary, geology-mining-metallurgy, graphic arts, chemistry-technology, construction-geodesy and partly the electrical engineering vocations, and a slight increase in interest for the personal services sector, traffic technicians and the forestry-woodworking vocations.

When secondary education was made compulsory in 2008, the effect was positive not only on the rates of those who continued to secondary education (which improved significantly to 95% in 2011), but also on the reduced rates of drop-outs from secondary education. The data for 2010/2011 shows that 1496 (1.61%) students dropped out from secondary education[21]. This is between 4% and 5% on a multigenerational level for

[20] State Statistical Office: Situation 2001 and 2011
[21] State Statistical Office of RM, Primary and secondary schools at the end of the academic year 2011/2012, Skopje, June 2012

one cycle of education[22]. Having in mind that the amendments to the Law on Secondary Education call for fines for parents who do not enroll their children in secondary education and the positive measures for support offered to groups at risk (free transportation, scholarships, free textbooks, etc.) this decline in the drop-out rates has been expected.

However, despite the efforts made to reduce the number of students who cease their education, such as improvements to the school infrastructure, providing free textbooks and scholarships and conditional cash transfers for vulnerable students and their families, the trend of not reaching all students and the school drop-outs, although reduced, continues to be a burden to the VET system.

4. Economic, demographic and educational context

Vocational education and training operates in an environment that is influenced by numerous factors. These factors pose various challenges to its transformation and improvement.

The greatest problem the state faces is the high unemployment rate. According to the Labour Force Survey (as defined by ILO), the official unemployment rate in 2012 was 30.6%[23]and it is the highest in Europe.

Table 2: Key indicators for the labour market in Macedonia[24]

Year	Able-bodied population	Active population			Rate of activity	Rate of employment (15-64)	Rate of unem-ployment
		total	employed	unemployed			
2004	1594557	832281	522995	309286	52.2	32.8	37.2
2005	1607997	869187	545253	323934	54.1	33.9	37.3
2006	1618482	891679	570404	321274	55.1	35.2	36.0
2007	1628635	907138	590234	316905	55.7	36.2	34.9
2008	1633341	919424	609015	310409	56.3	37.3	33.8
2009	1638869	928775	629901	298873	56,7	38,4	32,2
2009/IV	1642360	921534	622720	298814	56.1	37.9	32.4
2010/IV	1652026	954928	659557	295371	57.8	39.9	30.9
2011/IV	1659180	937326	639340	297986	56.5	38.5	31.8
2012/III	1670550	940657	652498	288159	56.3	39.1	30.6

Source: State Statistical Office

In the third quarter of 2012, the rate of active participation in the workforce was 56.3%, while the gender gap amounted to 22.2%.[25]In the third quarter of 2012, the percentage of women who were actively involved in the workforce, out of the whole population of the Republic of Macedonia, was 38.9%, while the percentage of men was 61.1%. The activity rate of women

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[22] Drop-out students are those students who are documented to have withdrawn from school during the academic year.
[23] State Statistical Office (2012): Labour Market, Active Population in the Republic of Macedonia, Results of the Labour Force Survey, III quarter
[24] Idem.
[25] Idem.

is lower than that of men, mostly as a result of the traditional family role of women in society, especially among ethnic minority women, whose rate of employment is far lower than the employment rate of men (47.4%) and amounts to 30.8%.[26]

Unemployment is the highest among young people between the ages of 15 and 24 andtotals 52.1%.[27]

Most numerous unemployed individuals are the ones who have completed 4-year secondary education (42.00%) and individuals with a lower educational level[28] (42.27%).[29]Unemployment is especially high in urban areas (65.75%)[30]which is understandable, since the economic crisis and the transition have had the greatest impact on major industries that employed the biggest part of the workforce. Also, the greatest percentage of unemployed individuals encompasses those who have low skills (63.0%), while the percentage of persons with high skills is smaller (37.0%).[31]

According to the length of unemployment, 82.6% fall under long-term unemployment; 62.21% of the unemployed have been waiting for employment for more than 4 years.[32]According to data from the end of 2009, this percentage is the highest for individuals who have not completed their primary education (72.40%) and individuals who have no education (61.16%).[33]

A serious problem occurs for those individuals who do not take up further education as this leads to rapid outdating of knowledge, plus the inability to keep up with the fast technological developments. Long-term unemployment also plays its part as it results in outdated competences, i.e. in reduced working ability. The percentage of long-term unemployment is significantly higher than the average in the countries of Central and Eastern Europe – 55.3% in 2002 and the EU average – 40.2%. It is quite worrying that almost two thirds of the unemployed population has been waiting for employment for more than 4 years. From the aspect of their work competence and employability, this is very unfavourable.

In 2011, the rate of employment of persons who have completed tertiary education dropped by 1.5% compared to 2010. The rate of employed persons with completed secondary education, which is considered the minimum level for successful participation in society, amounted to 58.3%, while the lowest rate of employed individualsrefers to persons who have completed primary education at most, 34.3%.[34]

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[26] Idem.
[27] Idem.
[28] Refers to persons with 3-year secondary education, primary, incomplete primary education and persons with no education.
[29] Source: State Statistical Office, Labour Market, Situation 12/2012
[30] Source: Employment Agency of the Republic of Macedonia, Situation from 8 January 2010
[31] Source: Employment Agency of the Republic of Macedonia, Situation from 31 October 2012
[32] Source: State Statistical Office,Situation 16 October 2012
[33] Source: Employment Agency of the Republic of Macedonia, Situation from 31 December 2009
[34] State Statistical Office, Sustainable Development 2012, Skopje 2012

Most of the employed persons (51.86%) work in the services sector, whereas 29.04% are employed in the industry and 19.09% in the agricultural sector.[35]Although there is lack of precise data, it is generally thought that many of the registered unemployed persons are unofficially employed in the so-called "grey economy". The research of the National Employment Agency showed that many of the unemployed register only for social benefits.

The educational structure of <u>employed persons</u>shows that 24.50% of the workers have completed primary education at most; 12.36% have completed 3-year secondary education, 42.17% have completed 4-year secondary education, while 20.096% of the employees have a college or higher degree.[36]Compared to 2009 and 2010, there has been an increase of employees who have completed 4-year secondary education and higher education, unlike those with a lower educational level.

Lately, the private sector has been offering very few opportunities for employment which creates a sense of uncertainty among the employees. Although the employment rate in the private sector increased from 41.6% in 1999 to 74.34% in 2011,[37]the private sector did not manage to employ the persons who lost their jobs as a result of the economic crisis and the transition.

According to the number of employees, the companies with 1-9 employees account for 78.51%. This is followed by companies with no employees (or the companies have not reported information about having any employees) with 14.24%, the companies with 10-19 employees with 3.29%, the companies with 20-49 employees with 2.08%, the companies with 50-249 employees with 1.6%, and the companies with more than 250 employees with 0.27%.[38]The majority of companies have 1-9 employees, with a significant concentration in commerce, crafts and services sectors.

The territorial distribution of population shows a clear disproportion; 57.8% of the total population live in cities (34 in total), with the greatest concentration in the capital of Skopje (20.5%). Many of the rural settlements (1728 in total are either completely uninhabited (141 settlements) or have an exceptionally small number of inhabitants and very soon, due to their old population, will quite likely remain without any inhabitants (455 settlements have less than 50 inhabitants, while additional 180 have less than 100 inhabitants). On the other hand, in a relatively small number of villages (mostly located in the western and northeastern parts of the country), there is a big concentration of population.[39]

In terms of the aging of the population, in the period from 2000 to 2010, the young population (0-14 years) decreased from 22.3% in 2000 to 17.4% in 2010, while the old population (65 years and over) increased from 10% in 2000 to 11.7% in 2010.[40]

[35] Calculated according to: State Statistical Office, Labour Market, Situation 2010
[36] Calculated according to: State Statistical Office, Labour Market, Situation 04/2011, No: 2.1.12.05
[37] Idem.
[38] State Statistical Office, Business Entities, Situation: 25 February 2011
[39] State Statistical Office, Macedonia in numbers 2011
[40] State Statistical Office, http://www.stat.gov.mk/OblastOpsto.aspx?id=2from 17 June 2012

A large proportion of the population over the age of 15 (41.67%) have an unsatisfactory educational level, i.e. 2.24% have no education at all; 8.01% have not completed their primary education, while 31.41% have completed only primary education. Out of the remaining, 9.42% have completed 3-year and 34.39% 4-year secondary education, while only 2.47% have a college degree and 12.05% higher education degree.[41]In the period between 2002 and 2012, the number of persons who had a low educational level decreased by 8.23%, while the number of persons with a completed higher educationincreased by 5.02%. On the other hand, the share of unemployed persons who had completed their higher education increased by 8.23%, while the share of persons with a low educational level decreased by 11.05%.[42]This trend clearly shows that the persons who possess high skills will exert a stronger pressure on the labour market and the employment processesin the forthcoming period.

5. Objectives of the methodology

The objective of the Methodology is to define the approach, the procedures and the instruments for undertaking an analysis of the secondary vocational schools network set-up in the Republic of Macedonia and to establish a system for continuous monitoring and aligning of the vocational schools network to the requirements of the labour market. This paper emphasizes the need for analysing the current and establishing a new network of vocational schools in the Republic of Macedonia.

With its content, the Methodology and the instruments should meet the interests of various beneficiaries: educational policy makers, the institutions that support and develop the vocational education, the vocational education institutions, employers, employment, professional information and orientation, statistics and other entities interested in vocational education.

This methodology is applied in order to get a clear insight into the secondary vocational education. This means researching and collecting data on:

- − Changes in the structure of the 3 and 4 year secondary vocational schools;
- − Changes in the number of teachers;
- − Demographic changes;
- − The adequacy of occupational profiles for the needs of the labour market at local and national level;
- − Accessibility of schools;
- − School capacities (human and physical).

The streamlining of secondary vocational education should ensure a structure of vocational secondary education that will:

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[41] State Statistical Office , MAKSTat Base: Able-bodied population according to economic activity, gender and education; Situation 4 December 2012
[42] Idem.

- Be appealing for the young people,
- Ensure smooth transition of young people into higher education,
- Ensure successful transition of young people to the labour market,
- Be of high quality and will be efficient.

5.1. Methodology tasks

- Defining the theoretical and methodological approach to determine the content of the analysis of the vocational schools' network;
- Operationalisation of concepts and relations in the area of vocational education and the labour market;
- Determining principles, criteria and indicators of the vocational schools' network set-up;
- Determining the method of data collection;
- Determining the procedure for collection, processing and analysis of data;
- Determining the principles and procedures for aligning vocational education with the needs of the labour market.

5.2. Techniques and instruments
The following techniques and methods are being applied on a given sample of research:

- Document analysis;
- Analysis of the educational offer;
- Interviews with big employers;
- Interviews with small employers;
- Interviews with the local self-government;
- Interviews with the VET management;
- Interviews with providers of informal education for adults;
- Focus groups with interested parties;
- Survey of students and teachers;
- COST – BENEFIT analysis (after the research is completed).

The following instruments will be used:
- Survey questionnaire;
- Interview protocol;
- Focus group protocol.

5.2.1. Document analysis

Various analyses should be carried out with the help of this technique, such as:
- Analysis of the general spatial and demographic features
  - o At national level
  - o At regional level
  - o At municipal level

- Analysis of the economic development
  - Macro-economic development
  - Economic development of the region
  - Economic development of municipalities
- Analysis of the strategies for economic development
  - Strategy for economic development of the country
  - Strategies for development of individual economic sectors
  - Strategies for development of regions
  - Strategies for local economic development
- Analysis of the employment/unemployment situation
  - Employment/unemployment situation in the country
  - Employment/unemployment situation in the municipalities
- Analysis of the labour market
  - Situation on the labour market at national level
  - Situation on the labour market in municipalities
- Analysis of the vocational schools' network and the educational offer
  - Secondary schools for vocational education (pure, mixed, homogenous, heterogeneous)
  - Vocational schools' network in the region
  - Vocational schools' network in municipalities
  - Vocations, profiles and occupations
- Analysis of schools' capacities
  - space
  - equipment
  - teachers
  - students
  - school organisation
  - development plans for the school
  - distance of schools
  - student housing on school premises
- Social dialogue analysis
  - Cooperation between the schools and the local self-government
  - Cooperation between the schools and employers providing students with practical training
  - Declaration of the educational needs by the local community
  - Graduate students' destinations
- Analysis of good practices in other countries in the area of VET and the labour market.

5.2.2. Interview

By using this technique and the interview protocol, qualitative data will be collected that willfurther be subject to analyses. The research would comprise numerous interviews with big and small employers, the local self-government, educational institutions' management and the providers of informal education. These interviews should be carried out with individuals from the big and small employerson a 'one-to-one' basis, as well as with representatives from the informal sector of education.

5.2.3. Focus groups

The Methodology proposed focus groups as another technique for collating data. However, focus groups have certain weaknesses. The pilot stage of the methodology development showed that focus groups are not sufficiently efficient and effective from the aspect of data collection. Usually there are a small number of participants and many of those invited do not attend. In some cases, participants are representatives who are not familiar with the topics discussed. Leading focus groups is in direct correlation with the status of the social dialogue in the country. It is obvious that the economic councils in the municipalities should be strengthened and that sector qualifications councils should be established as soon as possible. In this way, feedback from the business sector and other interested parties would be more frequent, and the dialogue among the interested parties would be of better quality.

In order to receive valuable and timely information from the business sector, the following could be applied:
- Over the phone or on-line research of employers via a representative sample of sector representatives;
- Establishing national and regional sector working groups of employers.

5.2.4. Survey

The survey allows for quick and quantitative collection of relevant data. In this methodology it is used for collecting a large number of data from educational institutions, to gain insight into the opinions of teachers and students in VET-4 and VET-3. Even though a large number of data asked for in the survey is given in the annual school reports, this method ensures a concentrated collection of relevant data.

6. Research areas and databases

This methodology allows for thorough analysis of the existing strategic and programme documents at national and local level, of plans for development, labour market research, business sector research, etc. The analysis should be particularly focused on two key areas:

a) Area of educational services providers
b) Area of employers/business sector

a) in the **area of educational services providers** the focus in the research should be based on the distribution of schools in the secondary vocational education network, which includes numerous indicators, such as: type of school, number of schools, average number of students and average number of first year students. The main indicators should give us a clear picture of schools that operate under a minor or a major risk. This implies collecting data at a five-year interval in order to have a clear insight into the trends of increased or decreased interest for enrollment into a certain type of secondary school. This data collection should be made available at national, regional and municipal level in separate and interactive databases. (**Base 1)**

Tab.1: Distribution of secondary vocational schools

Municipality	Type of school	Number of schools	Number of schools	Average number of students	Average number of first year students
		2008	**2013**	**2008-2013**	**2008-2013**
	VET 4 years				
	VET 3 years				
	Mixed				
	General				
	Arts				
	Total				

Base 2 should list all vocations and occupational profiles for the three and four year vocational education that the schools offer and that are verified by the Ministry of Education and Science, regardless of whether there are enrolled students or not. Data should be collected in order to determine the current situation and the trend of interest for a given profile. Subsequently, the collated results should be compared with the employment opportunities (occupations) for those particular profiles. This type of database also makes it possible to gain a clear picture about the appeal of VET-4 versus VET-3 and to see the trend of old and new profiles in a five-year cycle. By comparing this data and the data collected that refers to employers, the number and type of employed and unemployed individuals from the same profile, there is a possibility to see whether the distribution of a certain profile corresponds with the present and future demand at national, regional and municipal level.

Base 2: Distribution of vocational profiles at municipal level and field of work (2008/2013)

Municipality	Profile		VET 4	VET 3	Field of work
	2008	**2013**			

Base 3 collects data on existing profiles, the number of students in a given profile, the field of work, the type of school, the number of students enrolled in the first year and the total and average number of students for a given profile in VET-3 and VET-4. This base allows us to monitor the trend of students' increased and/or decreased interest to enroll in the profiles offered in secondary vocational schools.

Municipality	Profile		VET 4 VET 3	Field of work	Number of schools	Number of first year students		Total number of students		Average number of students
	2008	**2013**			**2008** **2013**	**2008**	**2013**	**2008**	**2013**	**2008/2013**

Base 4 collects similar data, plus dataon the number of classes and the number of students per class in VET-3 and VET-4. The purpose of the base is to gain insight into whether it is worthwhile to maintain the number of classes and the possibility for streamlining.

Base 4: Profiles, number of schools, number of students, number of classes (2008/2013)

Municipality	Profile		VET 4		VET 3		Field of work
	2008	2013	No. of students	No. of classes	No. of students	No. of classes	

Base 5 collects data about profiles and occupations and the number of students. This base can be used for gaining insight into the attractiveness not only of certain profiles, but of the occupations within those profiles as well. This is an in-depth analysis that should measure the functionality of the offered profiles, i.e. occupations. The analysis has great significance in determining the number of places that will be allocated in the open calls for enrolment of students.

Base 5: School, profiles, students, classes (2008)

Municipality	School	Profile	Occupation	VET 4		VET 3	
	2013	2013	2013	No. of students	No. of classes	No. of students	No. of classes

Base 6 presents the distribution of schools, profiles, occupations, the number of students and classes, faced with the differences in a five year cycle. Very oftenopen calls for enrolment of students are announced in certain profiles or occupations which are then filled with a minimum number of students or no students at all. This base should provide data asto where it is necessary to intervene to reduce the offer so that it responds to the real demand.

Base 6: School, profiles, students, classes (2013)

Municipality	School	Profile	Occupation	VET 4		VET 3		Difference 2008/ 2013
	2013	2013	2013	No. of students	No. of classes	No. of students	No. of classes	

Bases 7 and 8 contain data that result from the data collected during the previous stage. These bases give us the opportunity to identify profiles that are under risk from the aspect of their attractiveness for students. This base gives a review of schools which offer less than 10 or less than 20 profiles within VET-4 and VET-3. The schools are categorised according to the number of offered profiles and the number of students enrolled in those profiles. The schools that offer less than 10 profiles and have less than 20 students on average enrolled in those profiles fall under the category of schools at risk. Schools that offer less than 5 profiles and have less than 15 students on average enrolled in these profiles fall under the category of schools at great risk. This base is in direct correlation with the creation of the Developmental Programmes at school, municipal, regional and national level. This base should send an alarm about the profiles that are dying out and raise the issue of their irrational existence in the schools' offer. The final decision should result in closing down of certain profiles in those schools and should encourage initiatives for the introduction of new profiles that are more appealing to students or are instigated by the demand of the labour market.

Base 7: Profiles at risk (2013)

Municipality	School	Profile			
		VET 4		VET 3	
		< 10 profiles	< 20 Students per profile	< 10 profiles	< 20 Students per profile

Base 8: Profiles at great risk (2013)

Municipality	School	Profile			
		VET 4		VET 3	
		<5 profiles	<15 Students in group	<5 profiles	<15 Students in group

Base 9 and **Base 10** contain in-depth data about occupations within certain profiles in secondary vocational schools. This base should serve as afoundation that would show the attractiveness not only of profiles, but of occupations as well. This base serves as a correction to the previous one. Namely, a certain profile might not be appealing to students, but a certain occupation/qualification in the frames of that profile might be more attractive compared to other occupations in that profile. These data help us to get a clear picture about the attractiveness of all offered occupations in a school with the possibility for their streamlining. Schools that offer less than 10 occupationsand have less than 20 enrolled students on average in these profiles fall under the category of schools that offer occupations at risk, while schools that offer less than 5 occupationsand have less than 15 students on average per occupationfall under the category of schools that offer occupations at great risk.

Base 9: Occupations at risk (2013)

Municipality	School	Profile			
		VET 4		VET 3	
		< 10 occupations	< 20 Students per occupation	< 10 occupations	< 20 Students per occupation

Base 10: Occupations at great risk (2013)

Municipality	School	Profile			
		VET 4		VET 3	
		<5 occupations	<15 Students per occupation	<5 occupations	<15 Students per occupation

Base 11 contains data about schools, profiles, occupations and teachers. This base serves as a foundation to gain insight into the number of teachers in certain profiles and/or occupations and the ratio of students and teachers for each profile/vocation. This base should provide information on whether the staff available can adequately cover the offered profiles/occupation.

Base 11: School, profiles, occupations, students, teachers (2013)

Munici-pality	School	Profile	Occupa-tions	VET 4			VET 3		
	2013	2013	2013	No. of students	No. of classes	Teachers	No. of students	No. of classes	Teachers

Base 12 contains data from the two areas of operation (the education sector and the industrial sector). This base responds to the number of employed and unemployed individuals according to their qualifications in the municipality, the region and the country, how many students are enrolled to receive the same qualifications and how many have graduated. These data are of exceptional importance from the aspect of planning the development of human resources at micro and macro level and from the aspect of building developmental strategies. This review gives an insight into the absence of and excess of specific qualifications at micro and macro level.

Base 12: Profiles/qualifications (at national / municipal level)

Municipality	Field of work	Qualifications		Enrolled in first year	Graduates	Total students
		Employed	Unemployed	2013	2013	2013

In addition to the above mentioned databases, it is necessary to collect data about the demographic landscape of the municipality (base 13). It collects data about the birth rate, migration, the number of students attending school in the municipality, the number of students attending school outside of the municipality and the number of students who come from other municipalities.

Base 13: Demographic landscape on municipal level

Municipality	Birth rate	Migration	No. of students attending school in the municipality	No. of students attending school outside of the municipality	No. of students coming from other municipalities

Base 14 refers to the quality of the educational offer. It contains data about the current situation of thesecondary vocational schools in terms of:

– Review of teachers per subject area and number of syllabi. Numerical data are input only about teachers who carry out instruction and practical training in the three/four year vocational education;
– Review of teachers' participation in trainings and their work in subject departments that reflects the knowledge of teachers who teach and participate in the development of subject departments in vocational education;
– Organisational conditions that exist in the school that show the currentsituation in which vocational education is carried out;
– Spatial and technical conditions that exist in the school that reflect the state of spatial and technical conditions where vocational education is carried out;
– Necessity to reform vocational education that reflects the opinion of the employees about the need to reform vocational education;

- Staff proposals about closing down and/or redefining existing and/or introducing new occupational profiles in the three and four year vocational education;
- Employees' proposals for closing down of existing occupational profiles;
- Employees' proposals for redefining current occupational profiles (change of name, content, duration, etc.) and reasons for it;
- Employees' proposals for introduction of new occupational profiles and reasons for it.

These data will be obtained via a questionnaire which every municipality should distribute in its educational institutions andwill serve as additional data to the one already collated on the educational offer. Itwill alsohave an impact on the decisions and solutions for streamlining the school network.

b) in the **area of employers** it is necessary to make an in-depth analysis of the demand, via:
- Labour market analysis;
- Types and sub-types of industry;
- Annual business research;
- Research on employment/unemployment;
- Skills research;
- Educational research;
- Demographic trends.

In this part it is necessary to geta complete insight into the economic trends at national, regional and local level. It is necessary to maintain a clear picture on the economic priorities of the country, the region and the municipalities. This data should be compared with the current situation in terms of the educational offer, especially when it comes to the vocational secondary schools network. One should also see whether it is in line with the developmental priorities and whether the educational offer and its quality should change in the future.

One should take into account all research about the national and international trends in the industry, as well as the analyses of the required skills in the industry. In addition, of great importance are the analyses of employment/unemployment – expressed by sectors according to occupational profiles and qualifications, the analyses of the demographic movements (birth rate, mortality rate, emigrants and immigrants, age of population, educational structure of population), the analyses of profiles and occupations(not enough of them or too many of them)at national and local level, and the analyses of the efficiency and the results of the social dialogues.

Base 15 presents the qualitative and the quantitative data collected from the business sector. It contains information on the employers' views about the relevance of certain profiles and/or occupations offered by the education sector, and their quality. It also presents the proposals for introducing new profiles and/or qualifications as well as developing skills in the existing educational offer that are required by the labour market.

7. Streamlining

The streamlining of the secondary vocational schools' network should be the result of all the analyses of collected data. The realistic picture of the current context should lead to decisions that would improve the network and raise it to a more efficient level in relation to the needs of the industry, the educational transition and life in general.

The Cost Benefit analysis should provide the final indicators necessary for the implementation of thestreamlining process. This analysis should determine:
- The direct financial impact of closing down certain schools, profiles and/or occupations;
- The direct financial impact of introducing new profiles and/or occupations;
- The economic effects of new employments, the development of certain types of qualifications and the way they reflect the labour market, equipping new study rooms and laboratories, etc.;
- Pedagogical implications (additional training or retraining of teachers in cases when profiles and/or occupations at risk are closed down or new ones are introduced);
- The social effects/implications (how many teachers would lose their jobs, how many teachers would be hired, what the reaction of employees and schools as a whole would be, etc.).

8. Instruments for analysing the secondary vocational schools' network in the Republic of Macedonia

The research instruments which serve as a toolkit that should allow for gathering a broad data base that may be used at municipal, regional and national level in the processes of permanent improvement of the educational offer in VET are an integral part of the Methodology.

8.1. QUESTIONNAIRE
for principals, deputies/assistants and expert associates in schools

Dear associates,

The purpose of this questionnaire is to gather realistic information about the current situation in vocational education and training in the Republic of Macedonia and based on the results, to detect the most adequate solutions that would contribute to improving its efficiency and compatibility with the labour market.

This research is carried out in cooperation with principals, students and teachers in vocational secondary education, representatives of employers, representatives from the social partners (employment agencies, ministries, trade unions, chambers and others) and representatives from higher education institutions. These individuals play a significant role in the design and development of vocational education and training in the country and are in direct relation with vocational education and training. Based on the previous analyses and experience in vocational education and training, the questionnaire contains several groups of statements, i.e. certain qualities preferred in the working sphere.

In order to be able to evaluate the verity of those statements, please estimate and state your opinion in regard to their acceptability and adequacy based on your knowledge and experience.

The questionnaire is anonymous and the results will only be used to strengthen the network of vocational education and training in the Republic of Macedonia.

The questionnaire is filled in electronically. There is an explanation on how to fill in each question or a group of questions.

(Items 1, 2, 3 and 5 to be filled in in the space provided)

1. Name of educational institution/school: _____
2. Place: _____
3. Municipality: _____

(For item 4, please mark in red the entire statement under a, b, c or d, which you feel is appropriate)

4. Position – function:

   a) principal
   b) deputy principal
   c) assistant principal
   d) expert associate

5. Work experience: _____ years

6. **On a scale of 1 to 5, please evaluate the elements that characterise your school:**
   (1 –strongly disagree; 5 –strongly agree)

(Please respond to each statement by assigning a number from 1 to 5. Put **X** to the right of the statement under the number you believe is the most adequate)

a)	CURRICULA AND SYLLABI	1	2	3	4	5	Do not know
a	The curriculum is up-to-date						
b	The syllabi are up-to-date						
c	The syllabi content corresponds with advanced technology						
d	The material to be studied is too extensive						
e	Memorization and learning factsdominate lessons						
f	The syllabi are in line with the criteria for enrolment in a faculty						
g	There is a balance between general and vocational education						
h	There is good practical training						
i	Only the students' knowledge is assessed, not the ability to apply it						
j	The content of the syllabi is in line with employers' needs						

b)	CONDITIONS AND ORGANISATION	1	2	3	4	5	Do not know
a	Good physical (spatial) conditions for studying						
b	Sufficient number of teaching materials and aids/computers						
c	Small number of students per class						
d	Sufficient number of study rooms						
e	Equipped laboratories						
f	Equipped working rooms (for practical training)						
g	Equipped library						
h	Good internet access						
i	Good hygiene						
j	Good teaching staff						
k	Good organisation in the school						
l	Good school management						
m	Cooperation with the local community						
n	Cooperation with students' families						
o	Cooperation with businesses/companies						
p	Good interpersonal relations						
q	Career centre available						
r	Professional and career counselling available for students						
s	Parents participate in designing school activities						

c)	TEACHERS	1	2	3	4	5	Do not know
a	Teachers are highly motivated to work						
b	Teachers apply contemporary models of teaching instruction						
c	Teachers apply interactive models of teaching instruction						
d	Teachers respect students' rights						
e	Teachers respect the students' opinion when making decisions						
f	Teachers are good experts						
g	Teachers have a friendly relationship with students						
h	Students are assessed based on the quality of their knowledge and skills						
i	Teachers have successful communication with parents						
j	Classes are well organized						
k	Students' interests and needs are respected						
l	Students' individual potentials are developed						
m	Teachers guide and encourage the skills of talented students						
n	Teachers work with students who achieve poor results						
o	Teachers are familiar with the contemporary way of functioning of the work process in companies						

d)	STUDENTS	1	2	3	4	5	Do not know
a	Students' rights are respected						
b	Students' opinion is respected when making decisions						
c	Students' interests and needs are respected						
d	Students participate in creating school activities and work						
e	Students are assessed based on the quality of their knowledge and skills						
f	There is friendship and cooperation among students						
g	There is respect and cooperation with teachers						
h	Students' individual potentials are developed						
i	There is competitiveness in studying						
j	Students are successfully trained to learn and work						
k	Students are familiar with work opportunities after the completion of education						
l	Students are familiar with the possibilities for continuation of their education after they complete secondary vocational education						

7. **To what extent are students' qualities, skills and abilities developed in your educational institution/school**

(Please respond to each statement by assigning a number from 1 to 5. Put **X** to the right of the statement under the appropriate category (**not developed at all, slightly developed or developed a lot)** which you believe is most adequate).

Students' qualities, skills and abilities	Not developed at all	Slightly developed	Developed a lot
General vocational competences			
Vocational competencies specific for the job			
Driving abilities			
Problem-solving abilities			
Good communication skills			
Knowledge of a foreign language			
Time management skills			
Loyalty to the profession			
Strong work ethic			
Work experience/practical knowledge and skills			
Ability to think logically			
Obedience			
Broad general knowledge			
Entrepreneurial knowledge and skills			
Error recognition skills			
Teamwork ability			
Creativity			

Math skills				
Flexibility				
Independence				
Professional attitude toward work				
Positive attitude				
Confidence				
Ability to accept criticism and learn from it				
Adaptability				
Ability to work under pressure				
Presentation skills				
Professional ethic				
Research skills				
Interpersonal skills				
Initiative				
Self-learning skills				
Project work				
Competitive spirit				
Leadership skills				
Ability to cope with stressful situations				
IT knowledge and skills (general)				
1	Basic concepts			
2	Working with data files			
3	Text processing			
4	Spreadsheet			
5	Data bases			
6	Presentations			
7	Using the internet			

8. **In your opinion, what changes should be made a priority in the vocational education and training in the country in the forthcoming period?**

(For question 8, mark the entire statement that is adequate for you in red. Multiple answers are possible. Please state the reasons for the priority changes you circled).

1.   Quality;
2.   Evaluation and exams;
3.   Monitoring;
4.   Accreditation and certification;
5.   Occupational profiles;
6.   Occupational standards;
7.   Qualifications;
8.   Key competences;
9.   Curricula and syllabi;
10.   Textbooks and equipment/didactic materials;
11.   School network (public and private);
12.   Teacher skills and professional development;
13.   School budget;
14.   School management;

15.   Strategies and models for learning;
16.   Practical classes/cooperation with the business sector;
17.   Assessment and certification of skills;
18.   Adult education;
19.   Management at national level;
20.   Financing;
21.   VETC (Vocational Education and Training Centre)
22.   BDE (Bureau for Development of Education)

Explain why: _____

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Thank you for your cooperation!

8.2. QUESTIONNAIRE
for the students in the first and last year of vocational education in duration of three and four years

Dear students,

The purpose of this questionnaire is to gather realistic information about the current situation in vocational education and training in the Republic of Macedonia and based on the results, to detect the most adequate solutions that would contribute to improving its efficiency and compatibility with the labour market.

This research is carried out in cooperation with principals, students and teachers in vocational secondary education, representatives of employers, representatives from the social partners (employment agencies, ministries, trade unions, chambers and others) and representatives from higher education institutions. These individuals play a significant role in the design and development of vocational education and training in the country and are in direct relation with vocational education and training. Based on the previous analyses and experience in vocational education and training, the questionnaire contains several groups of statements, i.e. certain qualities preferred in the working sphere.

In order to be able to evaluate the verity of those statements, please estimate and state your opinion in regard to their acceptability and adequacy based on your knowledge and experience.

The questionnaire is anonymous and the results will only be used to strengthen the network of vocational education and training in the Republic of Macedonia.

1. Name of educational institution/school: _____
2. Place: _____
3. Municipality: _____
4. Student in the _____ year
5. Occupation_____
6. Occupational profile _____
7. Gender: a) male   b) female
8. Ethnicity:
   a) Macedonian   b) Albanian   c) Romany   d) Serbian   e) Turkish
   f) Vlach, g) other_____

9. **On a scale of 1 to 5, please evaluate the elements that characterize your school:**
   (1 –strongly disagree; 5 –strongly agree)

(Each statement should be given only one mark from 1 to 5. Put **X** to the right of the statement under the mark you believe is the most adequate)
(Please respond to each statement by assigning a number from 1 to 5. Put **X** to the right of the statement under the number you believe is the most adequate)

a)	CURRICULA AND SYLLABI	1	2	3	4	5	Do not know
A	The curriculum is up-to-date						
B	The syllabi are up-to-date						
C	The syllabi content corresponds with advanced technology						
D	The material to be studied is too extensive						
E	Memorization and learning factsdominate lessons						
F	The syllabi are in line with the criteria for enrolment in a faculty						
G	There is a balance between general and vocational education						
H	There is good practical training						
I	Only the students' knowledge is assessed, not the ability to apply it						
J	The content of the syllabi is in line with employers' needs						

b)	CONDITIONS AND ORGANISATION	1	2	3	4	5	Do not know
a	Good physical (spatial) conditions for studying						
b	Sufficient number of teaching materials and aids/computers						
c	Small number of students per class						
d	Sufficient number of study rooms						

e	Equipped laboratories					
f	Equipped working rooms (for practical training)					
g	Equipped library					
h	Good internet access					
i	Good hygiene					
j	Good teaching staff					
k	Good organisation in the school					
l	Good school management					
m	Cooperation with the local community					
n	Cooperation with students' families					
o	Cooperation with businesses/companies					
p	Good interpersonal relations					
q	Career centre available					
r	Professional and career counselling available for students					
s	Parents participate in designing school activities					

c)	TEACHERS	1	2	3	4	5	Do not know
a	Teachers are highly motivated to work						
b	Teachers apply contemporary models of teaching instruction						
c	Teachers apply interactive models of teaching instruction						
d	Teachers respect students' rights						
e	Teachers respect the students' opinion when making decisions						
f	Teachers are good experts						
g	Teachers have a friendly relationship with students						
h	Students are assessed based on the quality of their knowledge and skills						
i	Teachers have successful communication with parents						
j	Classes are well organized						
k	Students' interests and needs are respected						
l	Students' individual potentials are developed						
m	Teachers guide and encourage the skills of talented students						
n	Teachers work with students who achieve poor results						
o	Teachers are familiar with the contemporary way of functioning of the work process in companies						

d)	STUDENTS	1	2	3	4	5	Do not know
a	Students' rights are respected						
b	Students' opinion is respected when making decisions						
c	Students' interests and needs are respected						
d	Students participate in creating school activities and work						
e	Students are assessed based on the quality of their knowledge and skills						
f	There is friendship and cooperation among students						
g	There is respect and cooperation with teachers						
h	Students' individual potentials are developed						
i	There is competitiveness in studying						
j	Students are successfully trained to learn and work						
k	Students are familiar with work opportunities after the completion of education						
l	Students are familiar with the possibilities for continuation of their education after they complete secondary vocational education						

10. **To what extent are students' qualities, skills and abilities developed in your educational institution/school**
(Please respond to each statement by putting **X** to the right of the statement under the appropriate category (**not developed at all, slightly developed or developed a lot)** which you believe is most adequate).

Students' qualities, skills and abilities	Not developed at all	Slightly developed	Developed a lot
General vocational competences			
Vocational competencies specific for the job			
Driving abilities			
Problem-solving abilities			
Good communication skills			
Knowledge of a foreign language			
Time management skills			
Loyalty to the profession			
Strong work ethic			
Work experience/practical knowledge and skills			
Ability to think logically			
Obedience			
Broad general knowledge			
Entrepreneurial knowledge and skills			
Error recognition skills			
Teamwork ability			
Creativity			

Math skills			
Flexibility			
Independence			
Professional attitude toward work			
Positive attitude			
Confidence			
Ability to accept criticism and learn from it			
Adaptability			
Ability to work under pressure			
Presentation skills			
Professional ethic			
Research skills			
Interpersonal skills			
Initiative			
Self-learning skills			
Project work			
Competitive spirit			
Leadership skills			
Ability to cope with stressful situations			
IT knowledge and skills (general)			
1) Basic concepts			
2) Working with data files			
3) Text processing			
4) Spreadsheet			
5) Data bases			
6) Presentations			
7) Using the internet			

11. **In your opinion, what changes should be made a priority in the vocational education and training in the country in the forthcoming period?**

(Circle the number of the listed changes. Multiple answers are possible. Please state the reasons for the priority changes you circled).

1. Quality;
2. Evaluation and exams;
3. Monitoring;
4. Accreditation and certification;
5. Occupational profiles;
6. Occupational standards;
7. Qualifications;
8. Key competences;
9. Curricula and syllabi;
10. Textbooks and equipment/didactic materials;
11. School network (public and private);
12. Teacher skills and professional development;
13. School budget;
14. School management;
15. Strategies and models for learning;

16. Practical classes/cooperation with the business sector;
17. Assessment and certification of skills;
18. Adult education;
19. Management at national level;
20. Financing;
21. VETC (Vocational Education and Training Centre)
22. BDE (Bureau for Development of Education)

Explain why: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Thank you for your cooperation!

a. QUESTIONNAIRE
for teachers of general education subjects, vocational and theoretical subjects and practical training in vocational schools

Dear teachers,

The purpose of this questionnaire is to gather realistic information about the current situation in vocational education and training in the Republic of Macedonia and based on the results, to detect the most adequate solutions that would contribute to improving its efficiency and compatibility with the labour market.

This research is carried out in cooperation with principals, students and teachers in vocational secondary education, representatives of employers, representatives from the social partners (employment agencies, ministries, trade unions, chambers and others) and representatives from higher education institutions. These individuals play a significant role in the design and development of vocational education and training in the country and are in direct relation with vocational education and training. Based on the previous analyses and experience in vocational education and training, the questionnaire contains several groups of statements, i.e. certain qualities preferred in the working sphere.

In order to be able to evaluate the verity of those statements, please estimate and state your opinion in regard to their acceptability and adequacy based on your knowledge and experience.

The questionnaire is anonymous and the results will only be used to strengthen the network of vocational education and training in the Republic of Macedonia.

The questionnaire is filled in electronically. There is an explanation on how to fill in each question or a group of questions.

(Items 1, 2, 3 and 5 are filled in in the space provided)

1. Name of the educational institution/school: _____
2. Place: _____
3. Municipality: _____

(For item 4, mark in red the entire statement under a, b, c or d)

4. Status:
   a) teacher of a general education subject
   b) teacher of a vocational-theoretical subject
   c) teacher of practical training/classes
   d) teacher of vocational-theoretical subjects and practical training/ classes

5. Work experience: _____ years

   (For items 6 and 7, mark in red the entire statement that is appropriate for you)

6. Gender   a) male   b) female

7. Ethnicity:
   a) Macedonian   b) Albanian   c) Romany   d) Serbian   e) Turkish
   f) Vlach, g) other_____

REFORMS
(For questions 8 to 16, mark in red the entire statement that is appropriate for you. Answer each question individually and mark only one statement per question)

8. **The fundamental goal of vocational education and training is to support social and economic development by adapting vocational education and training to the needs of the labour market. In your opinion, to what extent is this goal achieved?**

   a) Fully achieved
   b) Achieved to a large extent
   c) Partly achieved
   d) Achieved a little
   e) Not achieved at all

9. **What is your assessment of the reformed syllabi in secondary vocational education?**
   a)   Fully successful
   b)   Successful to a large extent
   c)   Partly successful
   d)   Not very successful
   e)   Not successful

10. **The pedagogical-didactic benefits you get from delivering lessons in laboratories and working roomsis:**
    a)   very big
    b)   big
    c)   small
    d)   there are no benefits at all

11. **To what extent does the school succeed in developing students' key competences, so that they could always be successful in the current and future trends on the labour market?**

    a)   fully developed
    b)   developed to a large extent
    c)   partly developed
    d)   developed a little
    e)   not developed at all

12. **The training you had for effective and efficient implementation of the new syllabi was:**
    a)   fully successful
    b)   successful to a large extent
    c)   partly successful
    d)   not very successful
    e)   was not successful

13. **You apply the competences you acquired during the training for effective and efficient implementation of the new syllabi in your regular work:**
    a)   always
    b)   frequently
    c)   sometimes
    d)   rarely
    e)   never

14. **How do you evaluate the advanced training you attended on the usage of ICT equipment:**
    a)   fully successful
    b)   successful to a large extent
    c)   partly successful
    d)   not very successful
    e)   was not successful

15. You apply the competences you acquired during the advanced training on usage of ICT equipment regularly:
a)   always
b)   frequently
c)   sometimes
d)   rarely
e)   never

16. Closer cooperation has been established between all institutions and key stakeholders in the process of designing and developing vocational education, along with a more extensive exchange of information.
а)   fully agree
б)   agree
в)   partly agree
г)   do not agree

(In question 17, each statement should be given only one value. Put **X** to the right of the statement under the adequate category (**often, occasionally, rarely or never)** which you believe corresponds most).

17. In order to improve the quality of teaching in your school, the following are implemented:

		often	occasionally	rarely	never
a	Individual mentoring activities				
b	"Mini-trainings" at school level				
c	Activities for dissemination of results in other vocational schools				
d	Continuous training for teachers through open classes				

(For question 18, each statement should be given only one value. Put **X** to the right of the statement under the adequate category (**fully, very, not very or dissatisfied)** which you believe corresponds most)

18. To what extent are you satisfied with:

		fully	very	not very	dissatisfied
a	Structure of occupational profiles in your schools				
b	The syllabi for four year technical vocational education				
c	The syllabi for three year vocational education for occupations				
d	The concept for state matura and final exam				
e	The mentorship and counselling of the teachers at school				

f	The training for implementation of new syllabi					
g	Extracurricular activities included in the school's curriculum					
h	Schools equipped according to vocations					
i	The adequacy of the teaching staff of vocational-theoretical subjects and the technical staff at your school					
j	The criteria for enrollment of students in vocational schools					
k	The schools' timely verification and accreditation for implementation of new occupational profiles					
l	The promotion of vocational education and training					
m	The Law on Secondary Education					
n	The Law on Vocational Education and Training					
o	The cooperation with the Vocational Education and Training Centre					

SCHOOL

19. On a scale of 1 to 5, please assess the elements that characterise your school:

(1 –strongly disagree; 5 –strongly agree)

(Each statement should be assigned only one number from 1 to 5. Put **X** to the right of the statement under the number you believe is the most adequate)

a)	CURRICULA AND SYLLABI	1	2	3	4	5	Do not know
a	The curriculum is up-to-date						
b	The syllabi are up-to-date						
c	The syllabi content corresponds with high technology						
d	The material to be studied is too extensive						
e	Memorization and learning facts dominate lessons						
f	The syllabi are in line with the criteria for enrolment in a faculty						
g	There is a balance between general and vocational education						
h	There is good practical training						
i	Only the students' knowledge is assessed, not the ability to apply it						
j	The content of the syllabi is in line with the employers' needs						

b)	CONDITIONS AND ORGANISATION	1	2	3	4	5	Do not know
a	Good physical (spatial) conditions for studying						
b	Sufficient number of teaching materials and aids/computers						
c	Small number of students per class						
d	Sufficient number of study-rooms						
e	Equipped laboratories						
f	Equipped working rooms (for practical training)						
g	Equipped library						
h	Good internet access						
i	Good hygiene						
j	Good teaching staff						
k	Good organisation in the school						
l	Good school management						
m	Cooperation with the local community						
n	Cooperation with students' families						
o	Cooperation with businesses/companies						
p	Good interpersonal relations						
q	Career centre available						
r	Professional and career counselling for students						
s	Parents participate in designing school activities						

c)	TEACHERS	1	2	3	4	5	Do not know
a	Teachers are highly motivated to work						
b	Teachers apply contemporary models of teaching instruction						
c	Teachers apply interactive models of teaching instruction						
d	Teachers respect student rights						
e	Teachers respect the students' opinion when making decisions						
f	Teachers are good experts						
g	Teachers have a friendly relationship with students						
h	Students are assessed based on the quality of their knowledge and skills						
i	Teachers have successful communication with parents						
j	Classes are well organised						
k	Students' interests and needs are respected						
l	Students' individual potentials are developed						
m	Teachers guide and encourage the skills of talented students						
n	Teachers work with students who have poor results						
o	Teachers are familiar with the contemporary way of functioning of the work process in companies						

d)	STUDENTS	1	2	3	4	5	Do not know
a	Student rights are respected						
b	Students' opinion is respected when making decisions						
c	Students' interests and needs are respected						
d	Students participate in creating school activities						
e	Students are assessed based on the quality of their knowledge and skills						
f	There is friendship and cooperation amongstudents						
g	There is respect and cooperation with teachers						
h	Students' individual potentials are developed						
i	There is competitiveness in studying						
j	Students are successfully trained to learn and work						
k	Students are familiar with work opportunities after the completion of education						
l	Students are familiar with the possibilities for continuation of their education after they complete vocational secondary education						

20. To what extent are students' qualities, skills and abilities developed in your educational institution/school?
(Each statement should be assigned only one mark. Put **X** to the right of the statement under the appropriate category (**not developed at all, developed a little or developed a lot**) which you believe is most adequate).

Students' qualities, skills and abilities	Not developed at all	Slightly developed	Developed a lot
General vocational competences			
Vocational competencies specific for the job			
Driving abilities			
Problem-solving abilities			
Good communication skills			
Knowledge of a foreign language			
Time management skills			
Loyalty to the profession			
Strong work ethic			
Work experience/practical knowledge and skills			
Ability to think logically			
Obedience			
Broad general knowledge			
Entrepreneurial knowledge and skills			
Error recognition skills			
Teamwork ability			
Creativity			
Math skills			
Flexibility			

Independence			
Professional attitude toward work			
Positive attitude			
Confidence			
Ability to accept criticism and learn from it			
Adaptability			
Ability to work under pressure			
Presentation skills			
Professional ethic			
Research skills			
Interpersonal skills			
Initiative			
Self-learning skills			
Project work			
Competitive spirit			
Leadership skills			
Ability to cope with stressful situations			
IT knowledge and skills (general)			
1) Basic concepts			
2) Working with data files			
3) Text processing			
4) Spreadsheet			
5) Data bases			
6) Presentations			
7) Using the internet			

(For question 21, mark the entire statement under a, b or c in red)

21. **Your school prepares students <u>the most </u>to:**

    a) continue their education
    b) find employment
    c) continue their education and for employment equally

(For question 22, mark the entire statement appropriate for you in red. Multiple answers are possible.

22. **In your opinion, what are some of the most important reasons for your students' insufficient preparedness to work?**

    a) the content they study at school is not sufficient to meet the requirements of the job;
    b) insufficient practical training at school, i.e. not enough visits to appropriate companies;
    c) forgotten knowledge because they could not find work for a long time;
    d) they are not sufficiently informed about what the job entails;
    e) insufficient help from the superior in the company (the mentor);

f)   they do not have a clear picture about their duties;
g)   theyare not very familiar with modern technologies;
h)   they have insufficient general knowledge;
i)   they have insufficient vocational knowledge;
j)   the school is insufficiently equipped;
k)   the students are not motivated;
l)   some teachers are not sufficiently committed;
m) other _____.

Thank you for your cooperation!

8.4. QUESTIONNAIRE
about the current situation at school

Dear associates,

The purpose of this questionnaire is to gather realistic information about the current situation in vocational education and training in the Republic of Macedonia and based on the results, to detect the most adequate solutions that would contribute to improving its efficiency and compatibility with the labour market.

This research is carried out in cooperation with principals, students and teachers in vocational secondary education, representatives of employers, representatives from the social partners (employment agencies, ministries, trade unions, chambers and others) and representatives from higher education institutions. These individuals play a significant role in the design and development of vocational education and training in the country and are in direct relation with vocational education and training. Based on the previous analyses and experience in vocational education and training, the questionnaire contains several groups of statements, i.e. certain qualities preferred in the working sphere.

In order to be able to evaluate the verity of those statements, please estimate and state your opinion in regard to their acceptability and adequacy based on your knowledge and experience.

The questionnaire is anonymous and the results will only be used to strengthen the network of vocational education and training in the Republic of Macedonia.

The questionnaire is filled in electronically. There is an explanation on how to fill in each question or a group of questions.

I. INFORMATION ABOUT THE SCHOOL

(Items 1, 2, 3, 4 and 5 are filled in in the space provided)
1. Full name of the school: _____
2. Place: _____
3. Municipality: _____
4. Telephone number: _____
5. School e-mail: _____

(For items 6 and 7, mark the entire statement under a or b, appropriate for your school, in red)

6. Type of school (circle):
    a) vocational only
    b) mixed (vocational and general)

7. According to vocations, the school is:
    a) homogeneous(only one vocation)
    b) heterogeneous(various vocations)

(In question 8, each statement should be assigned only category of value. Put **X** to the right of the statement under the appropriate category (**yes or no**).

8. Organisational conditions at school:

	Organisational conditions for lesson delivery	Yes	No
1.	Classes at the school are organised in two shifts		
2.	The school has additional activities		
3.	Part of the classes (practical training) are organised with the social partners		

II. INFORMATION ABOUT VOCATIONS, OCCUPATIONAL PROFILES, ENROLLED STUDENTS AND NUMBER OF CLASSES IN THE ACADEMIC 2008/2009 FOR FOUR AND THREE YEAR VOCATIONAL EDUCATION

(In questions 9 and 10, in the column 'Name of occupation', please fill in only one occupation per number, then list the educational profiles for that particular occupation and the corresponding number of students and classes. For the following number (provided your school has more than one vocation) state the other vocation and fill in the other relevant information as per the previous one. Continue like this for all vocations individually.

9. Information about the four year vocational education

	Name of vocation	Name of occupational profile	Number of students	Number of classes
1.				
2.				
3.				
4.				
TOTAL				

10. Information about the three year vocational education

	Name of vocation	Name of occupational profile	Number of students	Number of classes
1.				
2.				

3.				
TOTAL				

(Questions 11, 12, 13 and 14 are filled in in the space provided)

11. Total number of students enrolled in the academic 2008/2009 in the four andthree year vocational education: _____

12. Total number of classes in the academic 2008/2009 in the four and three year vocational education: _____

13. Total number of enrolled students in I year in the academic 2013/2014 in the four and three year vocational education: _____

14. Total number of classes in the academic 2013/2014in the four and three year vocational education: _____

III. INFORMATION ON TEACHERS

(In tables 15 and 16 and questions 17 and 18 put an appropriate number for each category in each square)

15. Number of teachers in the school in the academic 2008/2009 and 2013/2014

	Teachers by subject areas and number of syllabi	Teacher status			
		Indefinite contract	Fixed term contract	Full class load	Partial class load
1.	Total number of teachers of general education subjects				
2.	Total number of teachers of vocational-theoretical subjects				
3.	Total number of teachers of practical training/classes				
4.	Total number of teachers who teach up to two syllabi in vocational-theoretical subjects and practical training				
5.	Total number of teachers who teach three to four syllabi in vocational-theo-retical and practical training/ classes				

6.	Total number of teachers who teach more than four syllabi in vocational-theoretical subjects and offer practical training				

16. Number of teachers in the school in the academic 2008/2009 and 2013/2014

	Teachers by subject areas	Number of teachers in the academic 2008/2009	Number of teachers in the academic 2013/2014	Difference in the number of teachers
1.	General education subjects			
2.	Vocational theoretical subjects and practical training			
	Total:			

17. Teachers' work experience:
    a) up to 6 years   _____
    b) between 7 and 20 years   _____
    c) between 21 and 30 years _____
    d) over 31 years   _____

18. Teachers' age:
    a) up to 25   _____
    b) from26 to 40   _____
    c) from41 to 55   _____
    d) over 56   _____

(In table 19 each statement should be given only one mark. Put **X** to the right of the statement under the appropriate category (**not at all, insufficient or fully)** which you believe is most adequate.

19. Review of teachers' participation in training and work in subject departments:

	Participation in training and work in subject departments	Not at all	Insufficient	Fully
1.	Teachers participated in training in the last five (5) years			
2.	Subject departments function in your school			

IV. INFORMATION ON EXPERT ASSOCIATES

(Questions 20, 21 and 22 should be filled in with a number per category in the space provided)

20. Total number of expert associates: _____
  a) pedagogue _____
  b) psychologist _____
  c) defectologist _____
  d) sociologist _____
  e) social worker _____
  f) librarian _____

V. INFORMATION ON PREMISES

21. The total school area is: _____ m^2

22. Total number of:
  a) classrooms _____
  b) study rooms _____
  c) laboratories _____
  d) working rooms (premises for practical training) _____
  e) other rooms _____

(For questions 23 and 24, mark in red one of the alternatives under a) or b).

23. Is there a library?
  a) yes
  b) no

24. Is there a gym?
  a) yes
  b) no

(In table 25, both statements should be given only one mark. Put **X** to the right of the statement under the appropriate category (**unsatisfactory, good or excellent**) that you believe is the most adequate.

25. Evaluation of premises and material-technical conditions:

	Spatial and material-technical conditions for class delivery	Unsatisfactory	Good	Excellent
1.	Spatial conditions			
2.	Material-technical conditions			

VI. INFORMATION ON TEACHING MATERIALS, AIDS AND EQUIPMENT

(For question 26, mark in red one of the alternatives under a), b) or c).

26. Is the school fully equipped with teaching materials, aids and equipment to assist the implementation of the syllabi for the occupational profiles taught in your school?

  a) yes   b) no   c) insufficiently

27. If you answered the previous question under b) or c), list the occupational profiles for which there is lack of teaching materials, aids and equipment.
(List only the correct names of the occupational profiles whether they are part of the three or four year vocational education).

_____
_____
_____
_____
_____
_____
_____

28. Name only one occupational profile that has the least teaching materials, aids and equipment.
(Only one occupational profile should be stated, regardless of the number of vocations taught at the school).

_____
_____
_____
_____
_____

29. Which subject areas lack teaching materials, aids and equipment most?
(Mark in red only one answer)
a) the general education subjects/syllabi
b) the vocational theoretical subjects/syllabi
c) practical classes

30. When was the last time that equipment was procured to assist the implementation of vocational-theoretical syllabi or practical classes at your school?

(Mark in red only one answer, regardless of the way the equipment was procured – own funds, donation, etc)
    a) in the period from 2011 to 2013
    b) in the period from 2006 to 2013
    c) before 2006

31. The teaching materials, aids and equipment you have were procured from:
(mark in red only one answer that is most appropriate for the school)
- a) own funds
- b) donations
- c) the majority with own funds, some with donations
- d) the majority with donations, some with own funds

32. Does the equipment work?
(Mark in red only one answer)
- a) yes   b) noc) partially

33. Assess in percentages the equipment's functionality:
(mark in red only one answer that is most appropriate for the school)
- a) less than 30%;
- b) between 30% and 50%;
- c) between 51% and 80%;
- d) between 81% and 100%.

34. Make an assessment of the length of time the equipment has been in use. The school's equipment has been used for:
(mark in red only one answer that is most appropriate for the school)
- a) less than five years;
- b) 5 – 10 years;
- c) 10 – 20 years;
- d) more than 20 years

35. Make an assessment of how old the equipment is. The school's equipment is:
(mark in red only one answer that is most appropriate for the school)
- a) less than 5 years old
- b) 5 – 10 years old
- c) 10 – 20 years old
- d) more than 20 yearsold

36. Is the equipment made by only one manufacturer? (e.g.: all the instruments, machines, apparatuses, devices, etc come from one manufacturer)
(mark in red only one answer that is most appropriate for the school)
- a) yes   b) no   c) partially

37. Who uses the teaching materials, aids and equipment?
(Several answers could be marked in red)
- a) students
- b) teachers
- c) companies
- d) others _____
            (name them)

38. Have the teachers who use the equipment attended training for proper usage and handling of the equipment?
(mark in red only one answer that is most appropriate for the school)
   a) yes
   b) no
   c) yes, the majority of teachershave attended training
   d) no, the majority of teachers have not attended training

39. The maintenance of the equipment is:
(mark in red only one answer that is most appropriate for the school)
   a) continuous with regular technical check-ups
   b) incidental, when necessary, in case of a breakdown

40. The maintenance of the equipment is done by:
(mark in red only one answer that is most appropriate for the school)
   a) the school
   b) the school with the help of other institutions
   c) other institutions only

41. Does the school have a programme/plan to procure new teaching materials, aids and equipment for the forthcoming two or more years?
(mark in red only one answer that is most appropriate for the school)
   a) yes   b) no

(In table 42 each statement should be given only one mark. Put **X** to the right of the statement under the appropriate category (**unsatisfactory, good or excellent)** that you believe is the most adequate.

42. Assessment of the material-technical conditions and the school's supply of textbooks

	Material-technical conditions for class delivery	Unsatisfactory	Good	Excellent
1.	Equipped with teaching materials and aids			
2.	Equipped with study rooms			
3.	Equipped laboratory			
4.	Equipped working rooms			
5.	Students' equipped with textbooks for general education subjects			
6	Students' equipped with textbooks for vocational-theoretical subjects			

VII. PROPOSALS FOR CLOSING DOWN, REDEFINING OR INTRODUCING NEW OCCUPATIONAL PROFILES IN THE THREE AND FOUR YEAR VOCATIONAL EDUCATION:

43. Your proposals for closing down, redefining or introducing new occupational profiles in the FOUR YEAR vocational education:

Instructions on filling in the tables for the FOUR YEAR vocational education

1. Please state your proposals for closing down and/or redefining current and/or introducing new occupational profiles in the four-year vocational education. At the end of the Questionnaire there is a **List of vocations and occupational profiles** in the three and four year vocational secondary schools in the Pelagonija region.

2. In table 43.1 *"Proposals for closing down occupational profiles in the FOUR YEAR vocational education"* fill in your proposals for closing down (striking from the list) current occupational profiles for the corresponding vocation. In the next column state the reasons for your opinion.

3. In table 43.2 *"Proposals for **redefining** current occupational profiles"* fill in your proposals for redefining (change of name, content, duration, syllabi, etc.) the current occupational profiles. In the "**Current occupational profile**" column fill in the current name of the occupational profile, in the "**proposal for redefining the current occupational profile**" column fill in your proposal for changing the name, the content, the duration, the syllabi, etc., while in the next column state your reasons.

4. In table 43.3 *"Proposals for introducing new occupational profiles"*, in the "**Occupational profile**" column fill in your proposals for introducing new occupational profiles. In the next column, "**Reason**," state your reasons.

43.1. Proposals for **closing down** current occupational profiles:

	Vocation	Occupational profile	Reason
1.			
2.			
3.			

43.2. Proposals for **redefining** current occupational profiles:

	Vocation	Current occupational profile	Proposal for redefining the current occupational profile	Reason
1.				
2.				
3.				

43.3. Proposals for **introducing** new occupational profiles:

	Vocation	Occupational profile	Reason
1.			
2.			
3.			

44. Your proposals for closing down, redefining or introducing new occupational profiles in the THREE YEAR vocational education:

Instructions on filling in the tables for THREE YEAR vocational education

1. Please state your proposals for closing down and/or redefining current and/or introducing new occupational profiles in the three-year vocational education. At the end of the Questionnaire there is a **List of vocations and occupational profiles** in the three and four year vocational secondary schools in the Pelagonija region.

2. In table 44.1 *"Proposals for closing downoccupational profiles in THREE YEAR vocational education"* fill in your proposals for closing down (striking from the list) the current occupational profiles for the corresponding vocation. In the next column state the reasons for your opinion.

3. In table 44.2 *"Proposals for redefining current occupational profiles"* fill in your proposals for redefining (change of name, content, duration, syllabi, etc.) the current occupational profiles. In the "**Current occupational profile"** column fill in the current name of the occupational profile, in the "**proposal for redefining the current occupational profile"** column fill in your proposal for changing the name, the content, the duration, the syllabi, etc., while in the next column state your reasons.

4. In table 44.3 *"Proposals for introducing new occupational profiles"*, in the "**Occupational profile"** column fill in your proposals for introducing new occupational profiles. In the next column, "**Reason",** state your reasons.

44.1. Proposals for **closing down**current occupational profiles:

	Vocation	Occupational profile	Reason
1.			
2.			
3.			

44.2. Proposals for **redefining** current occupational profiles:

	Vocation	Current occupational profile	Proposal for redefining the current occupational profile	Reason
1.				
2.				
3.				

44.3. Proposals for **introducing** new occupational profiles:

	Vocation	Occupational profile	Reason
1.			
2.			
3.			

Thank you for your cooperation!

LIST
of vocations and occupational profiles taught in secondary vocational schools in the Pelagonija region

Ordinal number	vocation	Four year occupational profiles	Three year occupational profiles
	Mechanical engineering	- Computer numerical control technician; - Mechanical technician; - Mechanical-energy technician; - Aircraft technician; - Automotive-mechatronics technician.	- Mechanical mechanic
	Electrical engineering	- Electrical technician for computer technology and automatics; - Electrical technician for electronics and telecommunications; - Electrical technician-electrical power.	- Electrical mechanic - Electrical fitter and assembler - Automotive electrician
	Geology-mining and metallurgy	- Geological-mining technician	/
	Mining	/	- Mining equipment operator
	Construction-geodesy	- Survey technician	/
	Traffic	- Road traffic technician; - Transport and freight forwarding technician.	/
	Textile-leather	- Clothing technician.	/
	Textile	/	- Garmenter
	graphics	- Graphics technician	- Typographer.
	Economics-law and commerce	- Economic technician; - Commerce and marketing technician; - Legal technician; - Business secretary; - Banking technician	/
	Agriculture-veterinary	- Farming production technician; - Horticultural technician - Veterinary technician - Agricultural management technician.	/
	Medical	- nurse; - pharmaceutical laboratory technician; - dental technician; - physiotherapy technician.	/
	Personal services	- Ophthalmic technician; - Cosmetology technician.	- hairdresser.

	Forestry-woodworking	- Forestry and landscape architecture technician; - Furniture and interior design technician.	/
	Tourism and hospitality	- Hotel-tourism technician.	- waiter; - cook; - pastry-cook.
	Chemistry-technology	- Food processing technician; - Dietetic technician.	/

8.5. QUESTIONNAIRE
for employers

Dear associates,

The purpose of this questionnaire is to gather realistic information about the current situation in vocational education and training in the Republic of Macedonia and based on the results, to detect the most adequate solutions that would contribute to improving its efficiency and compatibility with the labour market.

This research is carried out in cooperation with principals, students and teachers in vocational secondary education, representatives of employers, representatives from the social partners (employment agencies, ministries, trade unions, chambers and others) and representatives from higher education institutions. These individuals play a significant role in the design and development of vocational education and training in the country and are in direct relation with vocational education and training. Based on the previous analyses and experience in vocational education and training, the questionnaire contains several groups of statements, i.e. certain qualities preferred in the working sphere.

In order to be able to evaluate the verity of those statements, please estimate and state your opinion in regard to their acceptability and adequacy based on your knowledge and experience.

The questionnaire is anonymous and the results will only be used to strengthen the network of vocational education and training in the Republic of Macedonia.

The questionnaire is filled in electronically. There is an explanation on how to fill in each question or a group of questions.

I. Information about the employer
(Items 1, 2, 3, 4, 5, and 6 to be filled in in the space provided)

1 Name of employer/company: _____
2 Main activity: _____
3 Place and address: _____
4 Municipality: _____
5 Phone and e –mail: _____
6 Point of contact: _____

II. Information about the company and the employees
7. Company size:
    a) small (up to 25 employees)
    b) medium (26 to 150 employees)
    c) large (over 150 employees)
    (Mark only one answer in red)

8. Number of employees in the company on:
    a) 31.12.2012: _____ and on
    b) 31.12.2013 _____
    (Answer the question under a) and b) with the adequate number)

III. Inflow and outflow of employees in 2013

9. The total number of employees who left the company in 2013 is:

    _____

(Fill in the table for each occupation with employee outflow)

	Name of occupation	Number of persons	How many due to decreased volume of work

10. The total number of newly hired employees in 2013: _____

(Fill in the table for each occupation with an inflow of new employees. Put **X** in the last column depending on whether your answer is YES or NO)

	Name of occupation	Number of persons	How many of them were employed due to increased volume of work	The new employees have the necessary knowledge and skills	
				YES	NO

IV. Planned inflow and outflow of employees in 2014

11. How many employees in total do you plan to have on 31.12.2014?
Answer: _____

12. How many employees do you envisage will leave the company in 2014?
Answer: _____

(Fill in the table for each occupation where outflow of employees is planned)

	Name of occupation	Number of persons	How many of them would leave the company due to decreased volume of work	How many would leave the company for other reasons

13. How many persons do you plan to hire in 2014?
Answer: _____

(Fill in the table for each occupation where an inflow of new employees is planned)

	Name of occupation	Number of persons	How many would you hire due to an increased volume of work	How many would you hire for other reasons

V. Problems with hiring new employees

14. Did you encounter any problems to fill in job posts due to lack of workforce in 2013?
(Mark only one answer in red)
A) Yes   B) No

If you answered Yes, please go to the next question.

15. In the table list the occupations for which you had trouble finding employees on the labour market to fill the positions in your company and identify the reasons out of those listed below.

Reasons for unsatisfied needs:
a) the occupation is scarce (it exists in the education system, but not on the labour market)
b) the occupation does not exist in the education system
c) the occupation has an inadequate level of education
d) lack of knowledge, skills and key competences
e) lack of work experience
f) inadequate working conditions
g) other reasons_____

(Fill in the table for each occupation individually with the identified reasons)

	Name of occupation	Reason

VI. Lack of specialist knowledge, skills and key competences and need to train the company employees

16. What specialist vocational knowledge, skills and key competences do your employees lack or do not have sufficient training in?
(Fill in the table for each occupation individually with the total number of employees and the identified knowledge, skills and key competences they lack)

	Name of occupation	Number of persons	Specialist knowledge, skills and key competences that employees lack

VII. Occupational profiles

17. Which VET occupational profiles are dominant among your company's employees?

	Occupational profiles

18. According to the opinion of the employees, which VET occupational profiles are you satisfied with?

	Occupational profiles

19. What needs to change in terms of the occupational profiles so that the employees could be more efficient in their jobs?
 (You can mark several answers in red)
A) Level of knowledge
B) Skills
C) Key competences

20. In your opinion, what are the desired skills, abilities and qualities the employees should possess to successfully work in your field?

Each statement should be given only one mark. Put **X** to the right of the statement under the appropriate category (**not necessary at all, somewhat necessary or very necessary)** that is most suitable.

Desired skills, abilities and qualities in employees for successful work in your field	Not necessary at all	Somewhat necessary	Very necessary
General vocational competences			
Vocational competences specific for the job			
Diploma for completed education			
Driving licence			
Problem solving skills			
Good communication skills			
Knowledge of a foreign language			
Loyalty to the company			
Strong work ethic			
Work experience			

Ability to think logically			
Obedience			
Broad general knowledge			
Entrepreneurial knowledge and skills			
Error recognition skills			
Teamwork ability			
Creativity			
Math skills			
Flexibility			
Independence			
Professional attitude toward work			
Positive attitude			
Time management skills			
Confidence			
Ability to accept criticism and learn from it			
Adaptability			
Ability to work under pressure			
Presentation skills			
Professional ethic			
Interpersonal skills			
Leadership skills			
Ability to cope with stressful situations			
IT knowledge and skills (general)			
1) Basic concepts			
2) Working with data files			
3) Text processing			
4) Spreadsheet			
5) Data bases			
6) Presentations			
7) Using the internet			

VIII. PROPOSALS FOR CLOSING DOWN, REDEFINING OR INTRODUCING NEW OCCUPATIONAL PROFILES IN FOUR AND THREE YEAR VOCATIONAL EDUCATION

Please give your proposals for closing down and/or redefining the current and/or introducing new occupational profiles in the three and four year vocational education. At the end of the Questionnaire there is a **List of vocations and occupational profiles taught** in three and four year vocational secondary schools in the Pelagonija region.

21. Proposals for introducing new occupational profiles in the four and three year education for the needs of the labour market

	Vocation	Occupational profile	Reason for introduction

22. Proposals for closing down current occupational profiles in the four and three year education

	Vocation	Occupational profile	Reason for cancellation

23. Proposals for redefining the current occupational profiles in the four and three year education for the needs of the labour market

	Vocation	Occupational profile	Reason for redefinition

LIST
of vocations and occupational profiles taught in secondary vocational schools in the Pelagonija region

	Vocation	Four year occupational profiles	Three year occupational profiles
1.	Mechanical engineering	- Computer numerical control technician; - Mechanical technician; - Mechanical-energy technician; - Aircraft technician; - Automotive-mechatronics technician.	- Mechanical mechanic
2.	Electrical engineering	- Electrical technician for computer technology and automatics; - Electrical technician for electronics and telecommunications; - Electrical technician-electrical power.	- Electrical mechanic - Electrical fitter and assembler - Automotive electrician
3.	Geology-mining and metallurgy	- Geological-mining technician	/
4.	Mining	/	- Mining equipment operator
5.	Construction-geodesy	- Survey technician	/
6.	Traffic	- Road traffic technician; - Transport and freight forwarding technician.	/
7.	Textile-leather	- Clothing technician.	/
8.	Textile	/	- Garmenter
9.	graphics	- Graphics technician	- Typographer.
10.	Economics-law and commerce	- Economic technician; - Commerce and marketing technician; - Legal technician; - Business secretary; - Banking technician	/
11.	Agriculture-veterinary	- Farming production technician; - Horticultural technician - Veterinary technician - Agricultural management technician.	/
12.	Medical	- nurse; - pharmaceutical laboratory technician; - dental technician; - physiotherapy technician.	/
13.	Personal services	- Ophthalmic technician; - Cosmetology technician.	- hairdresser.

14.	Forestry-woodworking	- Forestry and landscape architecture technician; - Furniture and interior design technician.	/
15	Tourism and hospitality	- Hotel-tourism technician.	- waiter; - cook; - pastry-cook.
16.	Chemistry-technology	- Food processing technician; - Dietetic technician.	/

Thank you for your cooperation!

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