



European Training Foundation



How to carry out qualitative local labour market assessments



A handbook for
professional schools
and institutions





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The European Training Foundation is an agency of the European Union which works in the field of vocational education and training in Central and Eastern Europe, the New Independent States, Mongolia and the Mediterranean partner countries and territories. The Foundation also provides technical assistance to the European Commission for the Tempus Programme.

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1. Introduction

The transition from a planned to a market economy in the New Independent States has led to a radically new role for vocational institutions – to train specialists in occupations required by a demand-driven labour market. There is nowadays a permanent need to know and monitor changes in demand, and to ascertain employers' changing requirements for their employees' occupational skills and qualification levels.

In many New Independent States, the development of a well-functioning system for labour market analysis has met with considerable difficulties. There are several reasons for this:

- During Soviet times, some of the republics which later gained independence did not have any capacity for labour market research, and have had to start the development of such a capacity from the beginning;
- The ties between employers and vocational institutions were broken at the start of the transition period, and a general formula for re-establishing the connection has not been found;
- The labour market in the New Independent States is characterised by great uncertainty;
- The difficult financial situation, both for the countries in general, and for possible actors in the labour market analysis field.

For vocational institutions this has meant uncertainty as to which skills a pre-employment trainee should be armed with to be able to compete successfully in the labour market.

The European Training Foundation, an agency of the European Union, has the mission of contributing to the process of vocational education and training reform that is currently taking place within its partner countries and territories in Central and Eastern Europe, the New Independent States and Mongolia as well as the Mediterranean countries and territories. In a number of pilot projects, the European Training Foundation has addressed the issue of developing methods for labour market analysis. The results of these activities show in particular that it is *the absence of a regular dialogue between employers and training providers* which most seriously hampers the supply of an adequately skilled workforce.

This handbook is accordingly offered to support vocational institutions with practical advice on how to create a permanent relationship with employers, and how to carry out qualitative labour market analysis within the framework of this relationship.

It should not be seen as a scientific document. It is based on the author's experience in the New Independent States and on the results of a number of European Training Foundation and EU/Tacis projects, from which most examples and references in the handbook are taken.

Why should single vocational institutions be engaged in labour market analysis?

This question is crucial! The carrying out of labour market analysis in the EU Member States takes a variety of forms and involve different stakeholders to a higher or lesser degree.¹ What incentives could there be for a single vocational institution to carry out labour market analysis exercises? Wouldn't it just be easier to leave everything to the regional or national vocational education and training system or to the Employment Service?

There are at least two main reasons, valid for all New Independent States, which make the involvement of individual vocational institutions in labour market analysis relevant:

- ➡ Financial incentives. With very few exceptions, all public vocational institutions in the New Independent States are under funded and need to find extra-budgetary income. In almost all cases, vocational institutions have the formal right to secure this alternative income, although the rules, including taxation rules, are different in different countries. All experience shows that vocational institutions should concentrate their commercial activities on what they are best at – training². A labour market analysis exercise, concentrating on skill needs assessment for specific occupations, will provide a picture of which skills will be needed in the future by employees, but also which skills are needed today, and the discrepancy between today's needs and the competence profiles of employees. Through such an labour market analysis exercise the vocational institution will provide itself with the information base on which to design and offer in-service training for single enterprises, or, more economically, for groups of enterprises able to offer tailor-made training for their employees. By exploiting the opportunities which are revealed, a vocational institution has the chance to earn a surplus not only covering the resources which have to be invested in the labour market analysis itself, but also providing resources for investment in staff, equipment and premises. For private vocational institutions this need is even more obvious.
- ➡ The labour market in the New Independent States is to a significant degree local: for a number of reasons labour mobility is very low. This makes the local labour market even more important than in EU Member States. Many vocational institutions have the capacity to carry out the limited forms of labour market analysis which is all that a local approach requires, even though local conditions can be very different in the various regions of the New Independent States.

In addition to this, labour market analysis exercises give useful input to development plans and strategies of the vocational institutions. The result of the exercises indicates the need for upgrading personnel, investing in equipment, etc.

1 Appendix 1 provides examples of how labour market analysis is carried out *with involvement of individual education and training institutions* in the EU Member States.

2 See for instance final report of EU Tacis/Bistro project: Strengthening the system of financing vocational education and training in Kazakstan, BIS/97/14.

Objectives: Which kind of labour market analysis exercises should vocational institutions be engaged in?

When formulating the objective, we first of all have to make up our minds as to whether we want to carry out a quantitative or a qualitative investigation. Are we interested in finding out the number of employees in specific occupations, and expected changes in this number, or do we want to find out the skills required by a qualified employee, and the expected changes in this skill profile? Maybe we are interested in both?

Earlier European Training Foundation projects on labour market analysis have almost exclusively been built on one of two approaches (and on tools elaborated on the basis of these approaches). Pilot labour market assessment projects in Belarus, Moldova, the Russian Federation and the Ukraine have been trying to cover both the quantitative and qualitative aspects in a single enquiry (and with one questionnaire; Lehmann *et al*³). Pilot labour market assessment projects in Kazakhstan, Kyrgyzstan, Mongolia, and Uzbekistan have followed the approach outlined in the handbook of Ivanov *et al*⁴, which distinguishes the quantitative and qualitative aspects and proposes different questionnaires and other tools for each aspect.

For an individual vocational institution there are strong incentives to concentrate on the qualitative, skill requirement aspect:

- ➡ Limited capacity. In order to carry out a reliable quantitative analysis, we need a relatively high research capacity, a high number of objects to study, and much external information. The number of employees in specific occupations, even at a local level, is not only decided by the market. Depending on the branch, political decisions and priorities are also influential factors. Usually, an individual vocational institution does not have this capacity.
- ➡ Existing research bodies. In most of the New Independent States, quantitative labour market analysis is being carried out by labour market or vocational education and training research institutes, or by the Employment Service, with a much higher reliability than can be expected from an individual vocational institution.

It could also be asked to what extent a vocational institution, and especially a public, budget-financed vocational institution, can make direct and independent use of the results of such quantitative labour market analysis.

This, of course, does not mean that the individual vocational institution should not be interested in the quantitative aspects of the occupations for which it is carrying out training. It should keep itself regularly informed about the development of different occupations, in particular through:

- regular dialogue with local employers;
- regular contacts with the local Employment Service;
- other sources of information.

3 Dr Hartmut Lehmann: Labour Market Analysis and Vocational Education in Belarus, Moldova, the Russian Federation, and the Ukraine, Final report, July 2000, European Training Foundation and H. Lehmann, C. Manton, L. Andersson: Questionnaire to elicit information on educational and skill demands from employers in selected sectors of the four economies; Pilot project "Labour Market Analysis and Vocational Education in Belarus, Moldova, the Russian Federation and the Ukraine, July 2000, European Training Foundation.

4 S. Ivanov, S.Kuznetsov, E.Salmi, J.Sinkkonen, I.Khokhlov: Labour Market Assessment performed by professional education establishments, St Petersburg, 1999.

The discussions in this handbook, and the examples and advice provided concentrate on the part of labour market analysis, which deals with identification of skill requirements, the skill needs assessment. We will concentrate our labour market analysis exercise on the following objective:

“to determine the occupational skills and knowledge required by employers for X”

X being the occupation(s) we want to concentrate on.

Since, in most cases, the labour market analysis exercise for an individual vocational institution aims to optimise already existing training for specific occupations, we may also want to add a second objective:

“to determine the discrepancy between the level of knowledge and skill of graduates from vocational institutions and the requirements of employers”

For practical reasons we will continue to refer to labour market in this handbook, but the reader should bear in mind that we are concentrating on the part of labour market analysis dealing with the qualitative aspects, the skill needs assessment.

The experience of the following projects has been used for the elaboration of the handbook:

- ➡ European Training Foundation pilot project: Labour Market Analysis and Vocational Education In Belarus, Moldova, Russia and Ukraine
- ➡ European Training Foundation pilot project: Labour Market Analysis In Kazakstan, Kyrgyzstan, Mongolia, and Uzbekistan
- ➡ European Training Foundation pilot project: “Reforming the Professional Education System in Northwest Russia”
- ➡ Phare/Tacis CBC project on Telematerial: Labour Market Assessment Performed By Professional Educational Establishments, Education Committee, St Petersburg, Russian Federation
- ➡ EU/Tacis: “Assistance to the Reform of Vocational Education in Uzbekistan”
- ➡ EU/Tacis: “Assistance to the Reform of the Professional Orientation System in Moldova”
- ➡ EU/Tacis: “Development of Educational Links and Professional and Higher Education Initiatives – DELPHI”

2. Different stakeholders, their objectives and their needs for labour market information

A well-developed system for regular labour market assessment is in the interest of a number of organisations and actors in the labour market and education and training fields. These stakeholders can have different objectives and underlying reasons for being interested in labour market and skill needs assessment; the key is to try to get them all pulling in the same direction, and try to pave the way for making the different objectives coincide. Let us first have a look at the different stakeholders and their interest:

- ➔ Employers, individual as well as in associations, have an interest in having a work force with high and relevant skills. The word **relevant** is a key word here. In transition economies we meet at least two types of production approaches in enterprises: a Tayloristic approach, which encourages very specific and narrow skills including very specific functional and personal skills⁵ such as loyalty, punctuality and similar, and a “post-Tayloristic” approach, in which the employer recognises the increasingly intellectual content of a lot of work and the “de-skilling” of other work, and sees the work force as an asset not only for automatic production of goods and services but also for positive changes and for development of the enterprise in order to keep it successful within the developing market. Such an approach encourages more and diversified skills, in as far as functional and personal skills are concerned. With a more and more developed economy, the latter approach becomes more and more common.
- ➔ Trade unions have an interest in a work force with high, relevant, and transferable skills, and in a reduced inequality and a reduced social exclusion of disadvantaged groups. One should note, however, that although being an important player in the labour market field in EU Member States, trade unions in the New Independent States have historically played a completely different role, and may not be ready to play a visible and active part in the field of labour market analysis.
- ➔ Society has an interest in having citizens:
 - who are well trained with relevant skills, which will contribute to prosperous economic development;
 - who are able to carry on and develop the social and cultural heritage of the society in a democratic way.
- ➔ The individual person, who has an interest in becoming equipped with knowledge and skills to be able to develop himself optimally and enjoy a high level of life quality;

5 Examples of personal skills are endurance, flexibility, etc. Examples of functional skills are problem-solving abilities, organisational ability, etc.

- ➡ Non-governmental and different organisations, which have an interest in promoting skills that will improve the situation for specific groups (women, religious groups, etc.), or will develop society in a specific way (democracy development groups, groups addressing environmental protection, etc) ; and
- ➡ The training providers, who have a mission and an interest to produce graduates with high quality and relevant skills to satisfy the needs and interests of all stakeholders.

Before continuing it is important to notice that there are different training providers. Almost all of the stakeholders mentioned (except for the “individual person”) have their own internal training providers, which basically have to take into account only the interest of the specific stakeholders. Examples of these are in-house training in enterprises, and training institutions of trade unions. Compulsory pre-vocational education and training education can also (in a simplistic way) be seen as a system mainly serving the interest of the stakeholder society.

Some training providers, among them most public and private vocational institutions, must take into account the interest of most stakeholders, although some stakeholders might be seen as more important than others. This also means that a vocational institution must be prepared and able to compete with alternative training providers, regardless of which stakeholder it is offering its services to.

At local level vocational institutions and other labour market analysis stakeholders are all of crucial significance for a democratic social and economic development. A dialogue between the stakeholders should first and foremost be based on this understanding. How can this be done?

One way of achieving a common consensus and starting the dialogue with all stakeholders at local level is to arrange a vision-building meeting. Such an initiative can very well come from a single vocational institution. During such a meeting, a very efficient method is usually to pose one simple question around which to brainstorm, as for example “Imagine that it is the year 2006. If ideally we had an effective system for preparing graduates for the labour market, how would we know it and what would be happening?” A facilitator will then arrange the results of the brain-storming into measurable key result areas, all of which can be broken down into action plans and benchmarked to track progress over time. In order to be able to conduct this exercise there obviously must be at least one person trained in how to facilitate vision-building activities⁶.

If properly conducted vision-building activities will contribute to a consensus on the local economic and social development strategy. In our case the two main concrete results will be:

- a) the creation of a forum for regular discussions on local labour market analysis;
- b) an action plan for a concrete development of a local labour market analysis system with all relevant stakeholders involved.

With this in mind we now turn to labour market analysis development in which we limit ourselves to two stakeholders: the employers and the local vocational institution.

⁶ Appendix 2 provides an example of issues to be considered during a *vision building exercise*, and the role of a facilitator. The example is taken from an Asian Development Bank project “Skills and Entrepreneurship Development” in Kyrgyzstan, 1999, carried out by Education Development Centre, USA, and Lernia, Sweden.

3. The essential basis of labour market analysis: creating, developing and preserving a win-win relationship with employers

As could be seen in the previous chapter, the stakeholders in the field of labour market analysis are not limited to employers and employers' associations and vocational education and training systems, let alone to individual enterprises and individual vocational institutions. Nevertheless, since the main objective of this handbook is to serve as a practical guide for labour market analysis to be carried out by individual vocational institutions, the creation and maintenance of a long-term relationship with local employers by the individual training institutions will form the principal subject of this and further chapters.

The choice of this focus should not however be interpreted as meaning that this relationship, and the analyses carried out in the framework of such a relationship, will give all the answers to the problem of designing an optimal training curriculum. They will not. Furthermore, as is pointed out in the document "Guidance for collection and analysis of labour market information and development of social partnership in the vocational education and training system in Uzbekistan", local employers, the vocational institutions and the trainees and graduates themselves have potentially contradictory objectives:

- Employers tend to concentrate on their own immediate skill shortages and do not (or cannot) afford to look to the longer-term need for trainees to be given a broad competency base;
- Employers' needs may be excessively specific;
- Employers may not be well informed, nor able to forecast;
- Employers have no interest in the needs of the self-employed and the informal sector;
- Employers may not consider the needs of the disadvantaged.

Thus the results of labour market analysis activities carried out by local enterprises and individual vocational institutions always have to be seen as one (important, but nevertheless only one) element in the overall jigsaw that is the information necessary for creating a modern and flexible training curriculum.

In contrast to the integral relationship between vocational schools and state enterprises during the Soviet era, vocational institutions today appear to have only limited relationships with employers. There are few examples of the kind of employer involvement one would expect in EU countries (participating in advisory bodies for curricula and training courses, offering apprenticeship and other forms of work experience, providing equipment and learning materials, providing upgrading and retraining of staff on the latest advances in the field). The lack of this employer involvement is a strong indication that employers in transition economies do not see vocational institutions either as a source of rapid-response training or as a major long-term source of highly skilled employees.

The planning instruments which used to forecast production within the economy (and hence the allocation of labour) are obviously no longer effective in guiding educational content. Ideally, both education and labour market systems should respond to one another's signals to produce a good match between a job applicant and a vacant position. For this correspondence to occur, vocational institutions must give students skills that are valued in the workplace and employers must give weight to educational and training credentials when hiring staff. Vocational institutions need to have information about the labour market and employers' skill requirements. This need calls for greater employer involvement in developing curricula, providing on-site training both to teachers and to trainees, etc.

How then could a long-term, sustainable relationship between employers and a vocational institution be created? The best way is probably for the individual vocational institution to take a *holistic approach* in contacts with employers (individual or associations). Practically speaking this means that the various kinds of contact should not be made in the form of separate and scattered events, but as part of an agreement aiming at long-term, mutually profitable co-operation.

Example: One general problem encountered in most of the New Independent States is the attitude of many enterprises that there is no foreseeable need for recruitment of new staff. On the contrary there still remains a large number of companies which are to be privatised and will probably discharge a good number of employees. Similarly, many prosperous enterprises are in the process of introducing new technologies and a higher level of automation, which on the one hand decreases the total number of employees required, but on the other hand creates different skill requirements and the need for new suitably skilled employees. In these cases, it is often not much use making assessments and only discussing the skills needed by new graduates from the vocational institutions. The needs of current staff, with the clear objective of helping the enterprise raise its competitiveness, should be included in the same discussion. If enterprises can be offered flexible and relatively quick solutions to their current skill needs, there is a higher probability that they will see the point of investing time in the shaping of future employees, and that they will be more willing to establish a dialogue with vocational institutions.

In some New Independent States there seems to be a tendency to base cooperation between enterprises and vocational institutions on the principle "I throw you a bone, and you waste some time to help me out". With this approach, the different parties in an overall relationship are indeed tied together, but on the assumption that the relationship is basically profitable only for one party, and useless for the other.

Example: Practice periods in enterprises for trainees are sometimes described as a good opportunity for them to get a foothold 'which will increase their chances of future employment, even if the work allocated to them has nothing to do with their skill development. The argument is that in this way the companies may benefit in practice from unpaid labour, and should therefore be keener to help out during skill needs assessments, etc.⁷

This approach is not only erroneous, it can in fact cause a lot of damage! Practically all labour market assessment conducted in New Independent States shows that the lack of practical skills is one of the main negative features of vocational education and training graduates in the eyes of employers. Practice periods should therefore be very carefully planned and carried out. It must be recognised by all actors involved that the practice periods are an integral and crucial part of the training process. If vocational institutions use "free labour force" as an argument for practice placement the result will simply be a further deterioration of the reputation of the vocational education and training system. The impression will be given that the trainees on offer are something you can get for

7 "Labour Market Analysis Technology"; Tourism sector: Tourism organiser and tour guide, EU/Tacis DELPHI project.

free, whereas on the contrary they entail, or should entail, a heavy but beneficial investment in human resource development.

A proposal for how to organise practical training in enterprises as an integral part of the entire process is included in chapter 7 “Modification of the training process”. Here it should only be emphasised that practice periods must form an interdependent part of the relationship between employers and vocational institutions. This interdependence can be more readily achieved if the employer is given the opportunity to participate in the matching of trainees and their practice places and to participate and to some extent influence the training process during the training period, even though the main responsibility must always stay with the vocational institution. This approach will increase the probability that the employer will realise the mutual gain in the relationship with the vocational institution.

The practical arrangements for long-term cooperation between individual vocational institutions and local enterprises depend to a high degree on local circumstances. The main approach should be to create both a formal and an informal working relationship. One suggestion is that the vocational institution should invite local enterprises branch by branch (working through the branches which are relevant for the vocational institution) for an initial discussion, with the objective of creating a common platform for further relations. If there are many local enterprises within the same branch, the number of enterprises invited should be limited in order for the discussion to become as solid as possible. (The optimal number of participants in such discussions is about ten in total.) The discussions should be based on a mutual recognition that the vocational institution and the local enterprises are important tools for local economic and social development.⁸

⁸ This approach should obviously be adjusted in accordance with the real situation of the individual vocational institution. Thus, some vocational institutions are covering needs not only for the local market, but also for the regional, and in some cases for the national market (as for example vocational institutions with graphic and printing profiles). In these cases, and in cases where there are local employers’ associations, the discussions should involve associations and organisations of a regional and/or national level. In the following chapters we will take a local approach, and thus concentrate on local employers and other stakeholders.

4. Preparing for labour market analysis

A labour market analysis exercise can in principle be divided into three parts:

- ➡ Preparing the tools for the dialogue with the employers (questionnaires);
- ➡ Carrying out the dialogue with employers, single enterprises or associations;
- ➡ Processing and analysing the information received.

Before this, however, there is a “pre-preparation stage” to be considered. The content and extent of this pre-preparation stage depend to a very high degree on any earlier experience of carrying out labour market analysis and on existing contacts with employers and other stakeholders. The main objectives of the pre-preparation stage are:

- to prepare the persons who will carry out the labour market analysis exercise;
- to ensure that the exercise will correspond closely with the views and interests of the employers and of other stakeholders;
- to prepare the branch-specific employers for the exercise.

In this chapter we will concentrate on the two last objectives. We will return to preparation of the labour market analysis implementers in the next two chapters, where we deal with the tools and the dialogue itself.

The European Training Foundation pilot projects on labour market analysis in Kazakhstan and Kyrgyzstan give good examples of how to prepare for a labour market analysis exercise. They both include clear terms of reference for the exercise, including objectives, content, working procedures and methodology, and roles and responsibilities of different actors of the exercise.

Ensuring coherence with employers' and other stakeholders' views and interests

Before starting to elaborate the tools for the dialogue with the employers in a specific branch we must make sure that we are able to pose the right questions, and that the exercise we are doing is in line with the interests of other stakeholders.

A good way to ensure this is to create two bodies: a reference group and a task force. These two groups will play important roles in the work which follows.

In the ideal case, *the reference group* already exists. This is a body consisting of representatives from stakeholders relevant for the specific branch which will be the focus of the labour market analysis. Examples of such stakeholders are employer associations, representatives from the local administration, representatives from the Employment Service, and if relevant, representatives of NGOs. The main criterion for participation in the reference group is a direct interest and involvement in the specific branch. The main tasks of the reference group are:

- to comment and give advice on the tools to be elaborated;

- to be a “door opener” to employers, if and when necessary;
- to assist in the piloting of a questionnaire and if necessary in the carrying out of the labour market analysis;
- to comment and give advice on the results of the labour market analysis.

These tasks refer directly to the work of the reference group in connection with the labour market analysis exercise. As a permanent body, the reference group should also comment and give advice during implementation of the training curricula elaborated as a result of the labour market analysis. In other words, the reference group acts as a local branch-specific training council. The reason for setting up the reference group, if such a body does not exist, is to ensure that the training, which will eventually take place as a result of the labour market analysis, is coherent with local socio-economic development. As we could see in chapter 3, dialogue with employers alone cannot ensure this.

The *task force* is a temporary body, consisting of not more than 5-6 people; 2-3 people should be carefully selected representatives of key employers in the branch while the other members should be the people from the vocational institution who will carry out the labour market analysis. The main work of the task force is to:

- develop the tool(s) needed for dialogue with the employers.

The criteria for selecting representatives of the key employers to be members of the task force depend on the branch and on local conditions. A non-exhaustive list of criteria could look like this:

- Experience of the occupation(s);
- Size of employer (there is a tendency that employers with small-sized enterprises or organisations require a more diversified competence profile of their employees);
- Awareness of the (probable) development of the branch, including expected changes in technology;
- Awareness and knowledge of the current and future tactics and strategy of employer(s).

Experience from previous participation in labour market analysis exercises can be regarded as an asset, but it should be remembered that we are looking for people with experience from the occupation in question, and not labour market analysis specialists.

The overall goal when identifying members of the task force is that their collective experience should cover as many aspects as possible of the knowledge and skills needed today and tomorrow in the specific branch.

As an example, employers’ representatives could therefore be:

- ➡ 1 skilled worker from a medium or large employer;
- ➡ 1 skilled worker from a small employer;
- ➡ 1 middle or higher manager, preferably with operational experience.

The representatives of the vocational institution in the task force should also have adequate experience of training for the specific occupations. Considering that the representatives of the vocational institutions are the ones, who will actually carry out the labour market analysis exercises, some other abilities might be considered important. The report on labour market analysis from Samara, Russia, elaborated within the DELPHI project, stresses the importance of “representation skills” – the vocational institution employees in the task force will be ambassadors for their organisation. The report from the European Training Foundation pilot project of labour market analysis in Uzbekistan includes “Ability to work creatively” as another useful criterion.

Identifying members of the task force and inviting people to the reference group is one thing, but how do we make sure that they actually turn up, and that they are willing to participate in the work?

Basically there are two ways to go:

- we can pay the individual participants to do the work in their free time, or pay their employers for them to do the work during regular work time;
- we can persuade their employers to cover the cost of the work they will do in the reference group or the task force by giving them the possibility to do the work during ordinary work time without deduction of their ordinary salaries;

A third theoretical option, to pay the individuals fees for work which they are carrying out during their ordinary work time should be avoided as a matter of principle!

In many cases, the financial situation might not allow us to consider the first option. The “persuasion” needed for option two is much more easily achieved if we have established a long-term relationship with all stakeholders in general and with the employers in particular. The work of the reference group is not as time-consuming (their work could be estimated to a few days in total, divided into a number of meetings), and it is therefore less of a problem to attract representatives to this body. But what about the task force? If we don’t manage to attract the people we want or if we even have difficulties in identifying suitable candidates the next step of the pre-preparation phase might help us.

Preparing the branch-specific employers for the exercise

One of the main concerns in labour market analysis exercises carried out within the framework of earlier projects in the New Independent States is the relatively low percentage of answers, and generally low interest amongst employers. This is in fact not surprising, since in most cases these exercises have fallen unexpectedly onto employers. The erroneous approach frequently taken earlier also ignores the very notion of the mission of a service provider such as a vocational institution. It is extremely important to remember always that we are there for the customers and not the other way around. We cannot expect to obtain good results from a labour market analysis exercise, let alone to create a sustainable win-win relationship with the employers, if we impose things without explanation, and even get authorities to issue decrees that the employers have to answer labour market analysis questionnaires, something which has actually taken place in some New Independent States.

Thus, if employers are not predisposed to cooperate through an existing long-term relationship, it is essential to prepare the ground beforehand. An efficient way is to arrange a branch-specific meeting for all local employers in the branch in which we are about to carry out the labour market analysis. This meeting should be arranged in an informal way (a breakfast meeting or similar). A good start to the meeting can be an introduction by a representative of the local authorities, who can talk briefly and in concrete terms about the importance of the branch in the context of local socio-economic development, and what the local authorities are planning to do to support it, and/or an introduction from an external representative, who can say a few words about the expected development of the specific branch. After this a representative of the vocational institution can introduce the labour market analysis exercises (why, how, and when). In this way, the employers will get a full understanding of the objective of the labour market analysis exercise, they will understand what the benefits will be for them, and they will be better prepared to cooperate in achieving an optimal result. The meeting will also help us to identify suitable candidates for the task force, and to “persuade” the employers to release the members from their ordinary work.

It is important to try to reach as many employers within the branch as possible with an invitation to such a meeting. If the vocational institution does not have a complete database of employers in the specific branch, other sources should be consulted:

- the local Employment Service;
- local branch organisations;
- local Chambers of Commerce;
- local authorities for registration of firms.

There is much to be gained if we manage to cover all employers in such an event. Firstly, it will strengthen and broaden the network of the vocational institution. Secondly, it will create ties to new, possible customers for the vocational institution – all events are marketing events! -, and thirdly it creates an excellent platform for the forthcoming labour market analysis exercise – we will have a complete register of all employers in the branch. We can then choose whether we want to approach all of them or not, but the important thing is that we have the information upon which to base our choice.

5. Questionnaires

We are now prepared to start to develop the tools for our labour market analysis exercise. Basically, these tools consist of:

- a questionnaire;
- methodology for carrying out the labour market analysis;
- the labour market analysis implementers.

Ivanov *et al* give a good overview of the various tools for labour market analysis in the handbook on “Labour market assessment performed by professional educational establishments”.

The elaboration process

Methodology. The methodology determines the form of the questionnaire. Principally, we have three possible methods of carrying out labour market analysis with the help of a questionnaire prepared in advance:

- we can send out the questionnaire, with detailed instructions, to all employers, asking them to fill it in and send it back to us;
- we can send out the questionnaire to all employers, asking them to send it back, and then follow up by interviewing all or a selected number of employers;
- we can prepare the questionnaire as a platform for interviews, and work ourselves through it together with employer representatives during interviews.

Generally, the second or third approach is to be preferred at local level. The main reason for this is the important principle stated earlier: labour market analysis should be seen as one moment in a regular dialogue between the vocational institution and the local employers. We should therefore avoid the more impersonal approach of sending out questionnaires and expecting them to be sent back. Another important reason is the principle also mentioned earlier that all events are marketing events, and interviews are excellent marketing opportunities. For vocational institutions which have the formal rights and opportunities to use extra-budgetary financing sources, the results of the exercise can be used in two ways:

- to extend the curricula for regular vocational education and training courses beyond the obligatory requirements;
- to elaborate and offer training and up-grading courses for already employed staff.

The latter is not at all unimportant for employers, and inclusion of such discussions in the interviews will strengthen the ongoing dialogue between them and the vocational institution; it will also contribute to the justification for the vocational institution to invest time and resources in the labour market analysis exercise. It might in the end result in additional income!

Of course there is a limit to how many interviews a vocational institution is actually able to perform. If the number of employers is too big, the first option should be considered, but the basic approach and the importance of well-conducted interviews remains.

A decision to conduct interviews carries two important implications:

- a) The labour market analysis implementers must be very well prepared;
- b) The employers must dedicate sufficient time to the interviews.

The preparation of labour market analysis implementers will be discussed in the next chapter. The question of interview time is easiest dealt with during the information meeting for employers which precedes the labour market analysis exercise. It is worth once again underlining the importance of this meeting, which should create an understanding of the importance of the exercise for the employers: the results of labour market analysis will eventually help to raise their productivity, efficiency, and competitiveness.

Elaboration of the questionnaire

The elaboration of the questionnaire is an intense exercise for the task force. Unfortunately, there are no simple formulas or everlasting questionnaires which can be used at all times and under all circumstances. Nonetheless some basic principles can be indicated:

- We should strive towards an optimal use of the experience both of the employer representatives and of the vocational institution during this exercise. This means that we should try to make the group cooperate in all different parts of the questionnaire, and not divide it up!
- We should always keep in mind that we are primarily trying to determine a “competence profile” for one or more occupations, and avoid thinking in education terms! The question of how we should ensure that the employees will acquire the required skills and knowledge comes later!
- We should try to concentrate and stick to the “KISS” rule (Keep It Simple). It is easy to fall into the trap of including a number of questions, which might or might not turn out to be relevant. Don’t forget: our dialogue with the employers should be regular and of a long-term character. To come back time and time again to points which should be known by the vocational institution gives an unprofessional impression!

Some groups of questions can be distinguished:

General questions

Despite the principle just mentioned of avoiding too many general questions, and matters which should be known beforehand, a few questions of general character might be included. The main reason is not to find out a lot of new facts regarding the situation of the employer, but to create a more relaxed atmosphere and get rid of possible tensions, which both the interviewer and the interviewee might experience. The formula might be “to confirm our information”. Therefore, questions of more quantitative and growth perspective character might be included in this introductory part.

Questions on occupational skills

This group is of course one of the key groups of questions. What we usually want to find out here is:

- the skills and knowledge required;
- their relative importance;
- foreseen changes in the skills and knowledge profile.

Furthermore, we want to isolate the skills which can be learned at the vocational institution and to establish what level the employer desires or expects of new employees with no previous work experience except during practice periods.

There are different ways of preparing this part of the questionnaire, and they all have their advantages and disadvantages. At one extreme we can try, through the work of the task force, to identify beforehand all possible professional skills and knowledge needed for a occupation, and even try to indicate their relative importance beforehand. In this case we will present this list to the employers' representatives during the interview and ask them to check it, to see if it is correct, if something is missing, etc. The advantage of this approach is that much of the work can be done beforehand, and that it makes the interviews easier for all parties. The main disadvantage is that it will hamper the interviewees and tempt them to accept the list as presented without putting much thought into it.

The other extreme of the scale is to present a more or less blank list and ask the interviewees to make their own. The advantages and disadvantages of this approach are more or less opposite to the first approach.

Usually, employers have trouble providing adequate content in their answers in an interview, with either approach. Serious ones will need to take their time to assemble information; some others especially representatives of small enterprises will not have ever given systematic thought to skill needs. In most cases, therefore, questionnaires are based on a compromise of these extremes: an open list of skills and knowledge, to be discussed with the interviewee from different points of view. Preparation of the interviewee through information in advance, as described in chapter 4, is crucial!

Questions on personal and functional skills

Besides the "pure" occupational skills and knowledge there are a number of usually transferable skills, which we usually call personal and functional skills (or sometimes "core skills").

These kinds of skill are coming more and more into focus, and are becoming more and more important for employers acting in a modern economy.

The approach used in earlier European Training Foundation projects has been to list a number of such personal and functional skills and to ask the employers to estimate their importance for specific occupations. Experience shows however that it is not always easy to make use of the results of such an exercise. The probable reason for this is that the interviewees have not previously considered the connection between these skills and professional activities and the questions do not help them to do so. Many of the results received in earlier projects can therefore be divided into two categories:

- a) (less frequent) a classical Tayloristic approach "A welder is a welder, whose work is to weld", for which many personal and functional skills, except maybe endurance and prudence, seem superfluous;
- b) a tendency to inflate the needs of personal and functional skills (everything is important!) This, in turn, might depend on factors such as what the interviewees think and the interviewer is expecting, a sense that "a modern employer should consider these kinds of skill important".

A possible way to overcome this is to relate these skills much more clearly to occupational activities. This is probably easiest done during the interviews. The interviewer can ask the interviewees for concrete examples concerning how a specific personal and functional skill is actually used in the work process. This will help to distinguish "necessary" and "unnecessary" personal and functional skills.

It can also be done the other way around, as proposed by Bob Mansfield in his “Core Skills Paper”⁹. In this paper he gives examples on how to extract core skills from a given work moment. Another interesting example is given in the reports on “labour market analysis technology” for North-West Russia, that came out of the DELPHI project for the transport and tourism sectors. Here, different personal and functional skills have been extracted in advance from a list of professional skills. During the labour market analysis exercise, representatives of the employers have been asked to comment on and confirm this list.

Note that we are all the time discussing personal and functional skills related to occupational activities. It might very well be the case that other personal and functional skills would be important if we included other stakeholders (society, the individual, etc.) in our enquiries.

Questions on present training relevance

We might want to include some questions on how the employers regard present training relevance. This is a help for us when we use the results of the labour market analysis exercise to develop and/or adapt training curricula. These questions should obviously only be posed in cases when the employers have experience of hiring vocational institution graduates.

Questions not to pose

We should in general avoid asking questions which have to do with how skills and knowledge are acquired at vocational institutions. It is hardly within the competence of the employer or of interest to him to discuss how many hours should be dedicated to different subjects in a curriculum, the relationship between theory and practice, etc.¹⁰.

Such questions might be relevant to pose during tracer studies, when we discuss with graduates how in retrospect they value their training in relation to their present occupation. This is important for the process of developing and improving curricula, but is better carried out in a separate exercise.

Pilot testing of questionnaires

Before carrying out the labour market analysis on a broad scale, a pilot exercise is recommended, with a very limited number of employers, in order to check whether the questionnaire works well or should be adjusted, and if the interviews can be carried out in the manner foreseen. A good way to identify employers with whom to do the piloting is to turn to the reference group. After the piloting the task force makes the necessary adjustments before the full-scale exercise is launched.

➡ Questionnaires from previous projects, the one used in the pilot project in Belarus, Moldova, the Russian Federation and the Ukraine, and the one elaborated in the Phare/Tacis CBC project on Telematerial: Labour Market Assessment Performed By Professional Educational Establishments are annexed to this handbook (appendix 3 and 4). These should be treated as examples: to what extent they are useful depends on the individual case, existing relations with the employers, the specific branch and specific professions and of course the objective of the exercise.

9 Bob Mansfield and Hermann Schmidt: “Core skills”, European Training Foundation 2000.

10 Note, that while this is so as regards pre-employment training, the employer is interested in these details with regard to his in-company training and in-service training of employees commissioned from vocational institutions.

6. Interviews

The questionnaire has been elaborated and preferably also piloted. It is now time to turn to the interviews – dialogues – with representatives of employers. Since this is the central part of the labour market analysis exercise we have to make sure that the interviewers are fully prepared for the work.

Preparation of the interviewers

The interviewers should be the same 2-3 employees of the vocational institution who have participated in the task force for elaboration of the questionnaire. This is important since:

- a) they will already be familiar in detail with the questionnaire and the ideas behind it;
- b) the skills and experience of labour market analysis exercises will stay within the vocational institution;

The preparation of the interviewers should therefore concentrate on:

- interview techniques;
- their skills as ambassadors for the vocational institution.

The training in interview techniques should aim at giving the interviewers skills to carry out an interview in a systematic way. The interviewers should be able to ensure that the interview focuses on the prepared questions, and that all of them are covered, but should at the same time be sensitive to the answers of the interviewee, and have enough confidence to go outside the official parameters. If no in-house interview skills are available, local newspapers, TV and radio stations or similar may be able to help with this training, which obviously should be very practical, and should include role plays and similar exercises.

The training in “ambassador skills” is based on the principle mentioned earlier that “all events are marketing events”, and has as its main objective that the interviewers will always keep the holistic approach in mind – that the labour market analysis exercise is a part of a long-term relationship with employers. In other words, the interviewer should focus on the labour market analysis and the questionnaire, but should not ignore ideas and comments which might refer to other parts of the vocational institution–employer relationship.

Example: In labour market analysis conducted earlier within European Training Foundation projects, one of the findings has been that many employers are of the opinion that vocational education and training graduates lack sufficient practical skills and experience. Depending on the existing relations between the vocational institution and an employer who makes this point, the interviewer might take the opportunity to discuss it in more depth. Could for instance the employer consider taking a number of trainees aboard for practice training? Such discussions are of course not directly related to the labour market analysis exercise, but should not be avoided, provided that the interviewer has the ability to return to the main interview track after such an “excursion”.

Selection of companies

Which companies should be selected for the exercise? Given that we are talking about a local approach, the basic recommendation is that as many as possible, preferably all employers within the branch we are interested in, should be included. The experience from earlier projects (the Ukraine, Moldova and the Russian Federation) shows that the number of participating employers has been too small rather than too high. The decision on whether to try to approach all employers or to make a selection depends in the end on the branch and on the local situation, which obviously differs a lot between for example Saint Petersburg in the Russian Federation and Majli-Suu in Kyrgyzstan.

In general, the greatest number of employers which one vocational institution is able to cope with in this kind of exercise is probably 25-30, with a minimum of 15-20¹¹.

If then we have to select, we should use some relevant criteria. Ivanov *et al* propose in the handbook on “Labour market assessment performed by professional educational establishments” such criteria as:

- branch;
- form of ownership;
- size.

For our purposes form of ownership is a less relevant criterion.

Once the criteria are set, the actual selection should be made using the existing data-base of the enterprises (or similar, see chapter 4. Don't forget to make use of the network created as an outcome of the “employer preparatory meeting”!) and the contacts provided through the reference group.

Who should be interviewed?

Since our main objective is to get a full picture of skills and knowledge needed today and tomorrow for specific occupations, the general recommendation is, for each employer, to interview:

- skilled employee(s), possibly at foreman level;
- management representative(s) preferably with in-depth knowledge of the specific occupations, and a view on the likely development of these occupations;

Since we are planning to use our findings to modify the training process, it will be useful to include another category (if represented in the firm):

- graduate(s) from a vocational institution with 2-3 years of working experience.

Execution of the labour market analysis

Some general advice for the interviews:

- ➡ Make sure that there is enough time! In the ideal case, the interviewer will spend half a day or even an entire day with one employer. If the interviewer is previously unfamiliar with the employer, the visit might well include a tour of the premises. The necessity for sufficient time should be carefully explained during the preparatory meeting for the employers;

11 The minimum number 15-20 is mentioned in Ivanov *et al*.

- ➡ Make sure that all questions are covered, but do not turn the interview into a formal exercise, just to be able to tick off all the questions;
- ➡ Make the interviewee feel that his/her input is of real importance to the work you are doing;
- ➡ As an ambassador of your vocational institution, keep your ears and eyes open to different ideas which might arise from the interviews and the visits;
- ➡ Make sure that you keep all possible promises of giving feed-back to the interviewees about the results of the work;
- ➡ Don't forget to give the interviewees your name and contact details, and don't forget to forewarn them that you might contact them again if any clarification is needed;
- ➡ Always follow up the interviews with some form of a "thank you", by letter, e-mail, fax or telephone.

7. Processing and analysing the labour market analysis results

The processing and analysing of the results of the labour market analysis exercise constitute the essential link between execution of the labour market analysis and application of its results. Two principles are important for ensuring that this link is properly constructed:

- the representatives of the vocational institution who have been directly involved in the task force and in carrying out the labour market analysis interviews should also be directly involved in the processing and analysis part of the work. In his conclusions to the labour market analysis pilot projects in the Russian Federation, the Ukraine, Belarus and Moldova, Dr Lehmann stresses the importance of avoiding work segmentation, since it will jeopardise the continuity of the process;
- the processing and analysis procedures should be planned in parallel with the elaboration of the questionnaire.

Data processing

The question: “How are the data going to be processed?” should be kept in mind throughout the entire questionnaire elaboration work. For our purposes (the identification of skills required in specific occupations) we should take the data processing into consideration when we decide what scale to use for defining the importance of different skills. The most common scales used in previous European Training Foundation pilot projects have been a 3-step scale (low, average, high; *Lehmann*) or a 4-step scale (unimportant, not very important, fairly important, very important; *Ivanov*). Sometimes we can also meet a system where different skills (in particular personal and functional skills) are measured against each other: “Rank the following skills from 1 to 10.....”. This method is not to be recommended since the skills can rarely be placed in such a strict order of importance: there is great potential for the result to be misleading.

A frequently raised question is whether the results of the interviews should be processed manually or electronically. A general rule for this is that manual processing is used when the number of questionnaires is limited, i.e. does not exceed 90-100. This has of course to do with labour efficiency: the preparation of computer-based processing takes a lot of time. This is particularly true when we are concentrating on qualitative aspects of labour market analysis. A computer works only with numbers, and we will therefore have to code everything not already expressed in numbers (in our case for example the various skills identified). If we also include a number of “open questions” (questions to which the employer representative can answer freely, in his own words) the preparation of an electronic version will be even longer. Manual processing is therefore recommended for our purposes. We must however be aware of the main disadvantage of manual processing: the human factor. Errors are much more likely to occur with manual processing, and the processed material should therefore be checked and preferably counter-checked.

In the framework of the pilot labour market analysis projects in Belarus, Moldova, the Russian Federation and the Ukraine, an Excel file for data processing was elaborated. This turned out to be

excessive for the limited number of employers questioned, but gives a useful example for scaled-up enquiries with a higher number of research objects.

Data analysis

Analysis of the data received is also part of the link; it should be firmly based on the labour market analysis preparation and execution, but should also point forward to the application. When analysing the data we should always bear in mind the main results expected from the labour market analysis exercise, which in our case are:

- a competence profile for each occupation included in the labour market analysis, reflecting the aggregated view of the employers on the skills needed at present;
- an overview of the discrepancies between this competence profile and the present competencies of the employees;
- a similar competence profile and overview for medium-term needs;
- if we have included vocational education and training graduates as interviewees we should also expect an indication of the discrepancies between the skills needed in the occupation at present and the skill profile of a vocational education and training graduate.

The prerequisites a) that we have carried out interviews, and not just distributed the questionnaires, and b) that we are concentrating on the skills needed for specific occupations, make the analysis part relatively easy, at least in comparison with analysis of quantitative labour market analysis. *Ivanov et al.*, in the handbook on “Labour market assessment performed by professional educational establishments”, give some useful models for computer processing and analysing labour market analysis data, although they are designed for larger quantities of questionnaires.

Two more comments are worth making:

- All earlier European Training Foundation pilot projects without exception have pointed out the great difficulties in getting any information and/or data on which skills can be expected to become more relevant in the medium term; the future is without any doubt difficult to predict for individual employers. This problem is naturally very hard for the individual vocational institution to address. A general recommendation in this respect is that the vocational institution should continue regular discussions with the employers (the labour market analysis exercise is not an isolated or a one-time exercise!), and should try to build flexibility into its training system, which would give it the possibility of adjusting curricula in accordance with the changing skill needs of the employers. This flexibility must of course take into consideration the various national frameworks, including vocational education and training standards, and the possibility of adopting a flexible approach is therefore highly dependent on the situation in each individual country. Another recommendation on how to address uncertainty and rapid change is to offer a broad base of skills and knowledge on which a structure of more specialised learning modules can be built up.
- Dr Lehmann, in his final report on the pilot projects in Belarus, Moldova, the Russian Federation and the Ukraine, underlines the usefulness of trying to extract the skills which can actually be offered by the vocational institution. By way of an example, employers in the machine-building field in Ukraine and in Ryazan region of the Russian Federation, identified such personal and functional skills as attitude to work, ability to work with Information Technology, ability to work with others, as important for the employees. Of these three skills “attitude to work” is probably hard to influence through educational efforts.

From a strictly formal point of view such extraction is really part of the next step of our work, the modification of the training process, since one of the expected results of the analysis is a competence profile reflecting all skills needed in an employee, regardless of how these skills are obtained. In practice however it can already be helpful to start this “distinguishing work” during the analysis phase.

8. Modification of the training content and process

The main reason for an individual vocational institution to carry out an labour market analysis exercise (in our case an analysis of skill requirements for specific occupations) is to be able to adjust the content of the training offered, and/or the training process, in order to make the outcome answer the needs of the client – the employer.

Modification of training content and process are huge topics, a complete overview of which would require handbooks of their own. This chapter should merely be seen as an introduction, shedding light on some of the main points which will require attention.

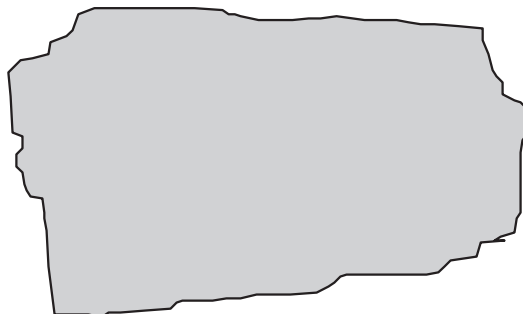
There are two points to bear in mind during our discussion:

- a) The individual vocational institution must always take into consideration regional and in particular national laws and regulations, including national training curricula and educational standards, when a modification of training content and/or process is planned. These regulations have different degrees of flexibility in different countries. In some countries, local versions of curricula can in fact be encouraged, whereas in other countries national curricula and existing standards are much more rigid and allow only modest scope for modification. It is highly recommended, in particular if there are any doubts of the formal modification possibilities, that the individual vocational institution regularly informs the local or regional Committee of Education about planned and ongoing exercises, and tries to reach an understanding and even support from the education authorities. This is also important from the point of view of future dissemination of successful experience.
- b) When modifying the training curricula and the training process we should not excessively analyse the results of the labour market analysis exercise (the competence profiles). These results reflect the views of the employers, but as stated in chapter 2, a vocational institution has more stakeholders than the employers! The view of these stakeholders, including actual or potential trainees, must also be included in discussion of options for change.

Modification of the contents of training curricula

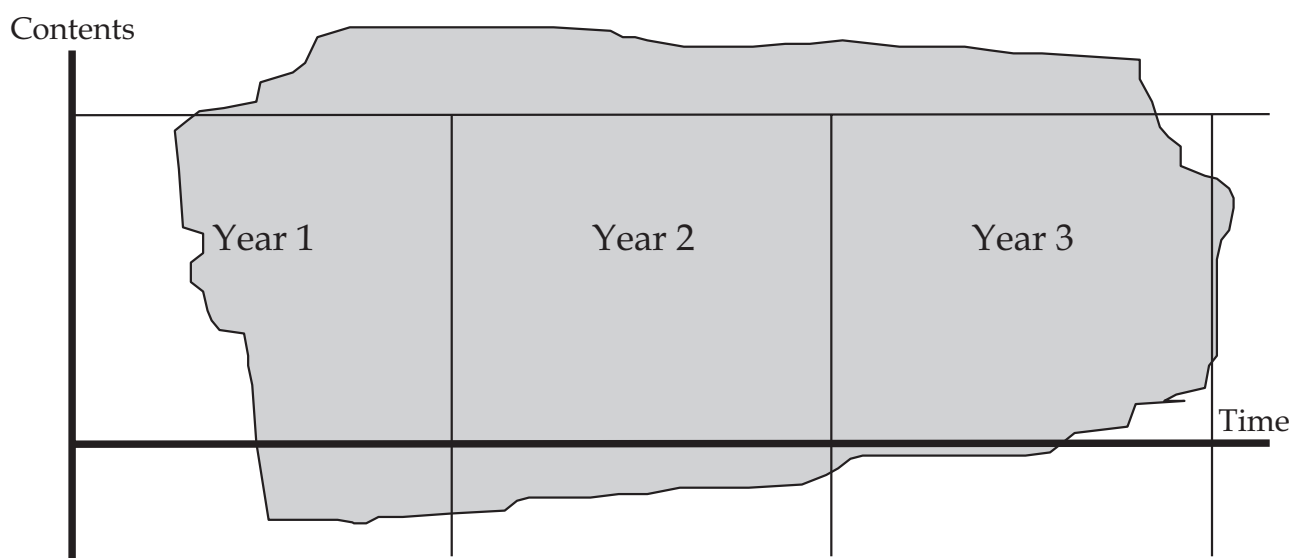
For a specific occupation, the labour market analysis exercise has given us a competence profile - a set of competences - and an indication of the relative importance of these skills.

We can illustrate this with the following picture - the “competence cloud”:



Skills required for a specific occupation in the view of the employers

This competence cloud should be superimposed on the time-based training curriculum:



Skills required for a specific occupation in comparison with the existing training curriculum

This simple figure shows us

- (1) which skills are not covered by the existing curriculum, and
- (2) which skills in the current curriculum are not considered important by the employers.

For skills not covered by the curriculum we can then ask ourselves:

- Is it possible to address these skills in the training process? Should training of such “possible” skills be included in the curriculum?

For the second group we can ask ourselves another question:

- Are any of these skills obsolete in the eyes of our other stakeholders as well, and could they therefore be removed from the training?

- There is of course also a third group of skills – those included both in the existing curriculum and in the “competence cloud”. For this group, the relative importance indicated by the employers might imply a need for modification: maybe some skills are trained too little, or too much emphasis is given to others.

The identification of skill gaps and obsolete skills, and of the necessity to change the relative importance of different skills, is helped by interviews with former graduates with experience of working in the occupation they have been trained for (see above; chapter 6).

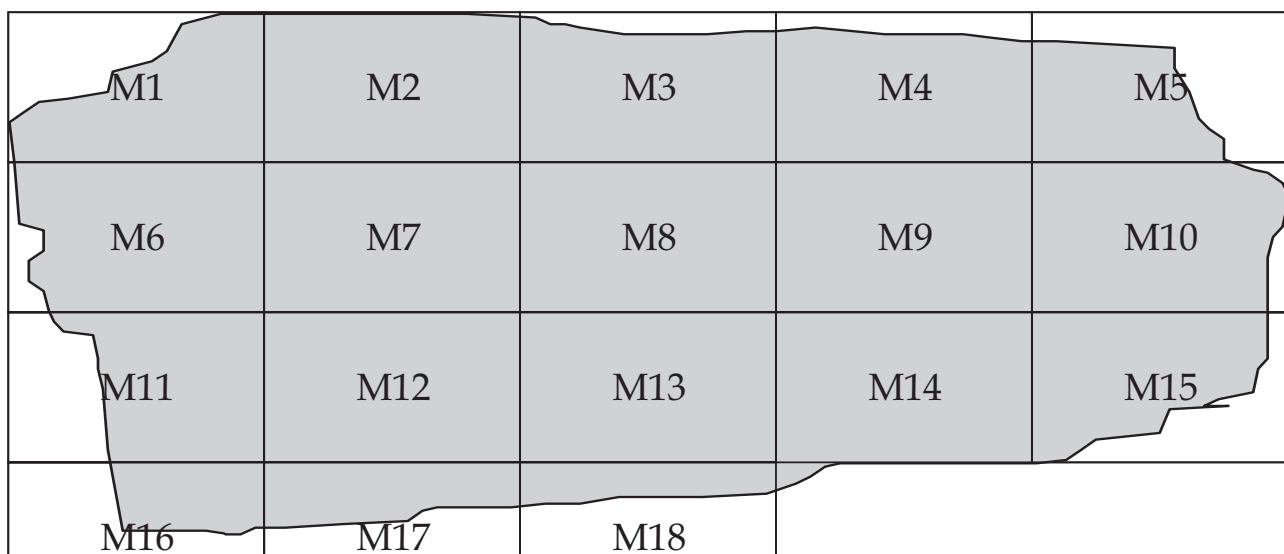
How to modify the training process

The question of how to modify the training process also depends to a high degree on external factors, including educational laws and regulations, regulations on working conditions of teachers and trainers, and others.

It is also important to remember that the training process can be modified for different trainee categories. One distinction can be made between pre-employment training, in-service training of employees, and retraining of the unemployed. In general, in-service training and training of unemployed is less regulated, and the training process therefore easier to adjust. In cases when we want to offer training directly to one or more employers, we do not have to take the interests of other stakeholders into consideration.

Modularisation

One way of modifying the training curriculum which is particularly efficient for introduction of new occupational skills is partial modularisation. In initial vocational education and training, partial modularisation applies, while for adult vocational education and training, full modularisation can be applied. There are a number of definitions for modules, and different methods of modularising a curriculum entirely or partially. Here, it should only be mentioned that according to most definitions a module is a limited part of a curriculum with clearly defined, usually measurable objective(s).



Modularisation of a competence cloud

There are a number of potential advantages to modularisation of at least parts of the curriculum:

- An important principle is that the training should be planned to address the branch and occupations within the branch, not individual employers. In some cases, when a number of employers indicate a need for particular occupational skills, which at the same time can be suspected not to be generally adequate for the professions, local modules covering such skills can be elaborated, and trainees can be given an option to choose such modules. This of course presupposes that the regulations allow a combination of obligatory and optional parts of the curriculum.
- It is generally easier to add new skills and modules to a curriculum than to remove old ones. We therefore risk overloading the curriculum if we try to build in all skills identified by employers. By making a limited part of the curriculum subject to independent choice, more skills could potentially be made available. This system also gives students the platform on which to base complementary training in limited subjects in the future, in order to improve their own competence profile further.
- Modules for pre-employment training (initial vocational education and training) of young people can easily be adjusted to suit adult trainees as well. The individual vocational institution will be able to offer individual modules or groups of modules as upgrading training to employees of a number of employers together, or modules tailor-made for the specific needs of a single employer. Similarly, modules designed for adults can be adapted for young trainees.

Modularisation might also be the answer to how the training process might be modified in countries with very detailed national regulations. A good example of this is the pilot project carried out in Uzbekistan. In accordance with Occupations and Specialities Training Trends Classifier, vocational training in the system of secondary specialised and vocational education in Uzbekistan is carried out in three occupations at one time. When graduating from college, all vocational education and training graduates are awarded the common qualification of 'junior specialist'.

Within the limits of the detailed regulations, modules according to a principle of deeper training in one of three occupations were developed - one of the three occupations were given more hours of training in specific vocational subjects. The training in the other two was to be carried out in parallel. In this case they are considered as accompanying ones.

For example, if the occupation "Operator in Bakery Products Production" is learned in depth, then the other two accompanying occupations: "Operator in Pasta-based Products Production" and "Operator in Confectionery Products Production" will be regarded as accompanying specialities. More hours will be added in the special technological subject "Technology of Bakery Products Production" (in this case, 114 hours). In the specialised technology components of accompanying specialities, the number of hours will be lower, 46 for "Technology of Macaroni Products Production" and 56 for "Technology of Confectionery Products Production".

Through this approach the Uzbek experts managed to create a more flexible approach in accordance with local needs but still within a relatively rigid national framework.

Methodology

Another way of modifying the training process is to look at the methodology, which is generally less regulated and therefore easier to adjust. This is particularly important for the question of how to introduce personal and functional skills into the vocational education and training curriculum.

Personal and functional skills are skills, abilities and knowledge, which are required to a greater or lesser extent in all occupations. Furthermore, they are not limited to occupations, but include skills, abilities and knowledge, which are useful for any citizen of a modern society.

If we have put the right questions in the labour market analysis exercise, we will probably have obtained adequate professional skill descriptions as a result. But if an employer identifies a need for improved 'team working' or 'communication skills', these descriptions are so imprecise that they do not give a good indication as to how they can be included in a vocational education and training curriculum. And they should not! It is their manifestations which should be included – personal and functional skills are “meta-occupational”.

One important way for individuals to acquire and improve such skills is through the education and training system itself and the pedagogical and methodological approaches in the learning process. Personal and functional skills are different from general and professional skills: they cannot and should not be explicitly taught as 'subjects', but should on the contrary be systematically integrated in the entire learning and training process, from as early a stage as possible. Much of the challenge in this respect is to organise the class and learning situations around these skills so as to allow the trainees to experience and “feel” the concepts rather than just learn them in the conventional sense. This leads to an emphasis upon pedagogics which encourage learning by doing; by exchange; by learning from experience; by experiment; by co-operation; by “positive” mistake-making; by creative problem-solving; by feedback through social interaction; by dramatising and acting; by exploring role models; and in particular by interacting with the outside world.

Consequently the teacher's and trainer's role will change from the traditional instructional role to an approach which encourages a much more active role for the students and trainees in the learning process. An “ideal teacher” should be good at: knowing how much responsibility and control of the learning process to give to the students; achieving maximum social inter-action; encouraging student networking; developing motivation and commitments of students; encouraging experiments and “positive” mistake-making; encouraging the students to take initiative and responsibility; encouraging students to accept their own responsibility for developing their personal skills and knowledge.

The conclusion of this is that a possible way of introducing personal and functional skills into the vocational education and training learning process will not be to introduce them as such in the curriculum, but to introduce them through the pedagogical and methodological approaches. By doing so, two objectives can be achieved:

- a) Introduction of consequent personal and functional skills training through the pedagogical and methodological approach in the learning process will improve “meta-occupational” employability and adaptability to change. No vocational education and training system can prepare trainees for all the possible skills needed, even for a specific occupation, let alone for possible technical or organisational changes within the occupation, or for possibly unavoidable changes between occupations in the future. There will always be company-specific skills, which a new employee will have to acquire, and company-specific working environments, to which the new employee will have to adapt. Through a consequent approach, aiming to improve personal and functional skills, graduates of the vocational education and training system will acquire increased employability based on their ability to adapt to today's specific needs in the labour market and on improved preparedness for the changes which the future will certainly bring (they will “learn how to learn”).
- b) Introduction of consequent personal and functional skills training through the pedagogical and methodological approach in the learning process can contribute to breaking down the conceptual separation of subjects as reflected in the vocational education and training curriculum. New pedagogical and methodological approaches can help to build bridges between different subjects and underpin a holistic view, preparing the trainees for a working and social life which will certainly not be subject-divided.

Practice vs. theory

Finally, new methodological and pedagogical approaches can help us to overcome the issue of false or excessive separation between the theoretical and practical parts of the curriculum.

Problems of practice training and lack of practical skills are frequently mentioned in the reports of earlier European Training Foundation pilot projects on labour market analysis. On the one hand the vocational institutions have problems in reaching agreement on practice periods with employers, and even in persuading them to accept trainees in the first place. On the other hand employers often consider the graduates to have too little practical experience. Thus employers and vocational institutions both feel the need for more practice. A possible way of addressing this is outlined here. It should be noted that the proposal is predicated on regular cooperation between the employers and the vocational institutions; as was the case with the labour market analysis exercise this should not be seen as an isolated, one-time event!

Practice training periods in companies should be organised and prepared by the vocational institutions in cooperation with individual enterprises, but always with the vocational institutions retaining the main responsibility. One way of ensuring efficient practice training periods is to appoint a staff member of the vocational institution to maintain regular communication with enterprises, and to be the school's contact point for them. The tasks of this school contact person should in particular be:

- to create and maintain a database of local enterprises in relevant branch(es) which offer good practice places. A requirement from the vocational institution should be that an enterprise offering practice places can guarantee a mentor, preferably with training experience, for the student during the practice period. The enterprise will also be given the opportunity to influence the training curriculum, which ideally should be individually designed, for the trainee during the practice period. Identification of good training enterprises and collaborative curriculum design will be carried out on the school's side by the specialists concerned, but the contact person should retain a coordinating role in order to avoid excessive and disorganised contacts with an employer, which will certainly irritate him. The database will of course assist with the appropriate placement of trainees.
- to create a database of vacant positions within the local enterprises in the relevant branches. In effect this will enable the school to collate a job search database, which would list the requirements of enterprises, and conditions for employment. This database will assist the graduates in their search for jobs, and can at the same time be used by local enterprises, which will have an incentive to approach the school in search of skilled workers.
- to coordinate the feedback from the practice training periods in local enterprises. The main instrument for this feedback is frequent visits to the practice places by the teachers and trainers responsible for the training, providing opportunities for discussions with the trainees, the mentors, and other representatives of the employers.

9. Conclusion

Labour market assessment is a vast topic. The experience from earlier projects and initiatives, carried out by the European Training Foundation and the EU under the Tacis Programme within the New Independent States has shown the clear need to continue to develop systems for labour market analysis at different levels - national, regional and local. These systems will undoubtedly have different structures and different actors in the different countries – just as in the EU Member States.

However, there are a number of key issues, which are relevant for all countries. The local labour markets play a crucial role for the social and economic development of the countries. The vocational institutions see most of their graduates enter into the local labour market. There is a potential role for the vocational institutions in a local labour market analysis system. This handbook has tried to highlight some of the aspects on how such a potential role can be realised:

- ➡ **Close relationship with employers.** A close and long-term relationship with employers is the basis on which vocational institution involvement must be built. This relationship should be multi-dimensional – labour market analysis exercises should be seen as a natural ingredient in employer-vocational institution cooperation.
- ➡ **The incentive for the vocational institutions.** Labour market analysis exercises demand specific inputs, mainly working time of vocational institution employees. A labour market analysis exercise, concentrating on skill needs assessment for specific occupations, gives a picture of which skills will be needed tomorrow by future employees, but also which skills are needed today, and the discrepancy between today's need and the competence profiles of employees. The vocational institution will acquire the information base on which to design and offer in-service training for enterprises. By exploiting such opportunities, a vocational institution has the chance to earn a surplus not only covering the resources, which have to be invested in the labour market analysis itself.
- ➡ **A vocational education and training involvement in local labour market analysis should be well prepared.** This preparation should include components of making the employers aware of and more receptive to the exercise. Given the limited resources of an individual vocational institution it is also important that the institution concentrates on one aspect of labour market analysis at a time. The qualitative aspects – skill needs assessment – are more likely to be suitable for individual vocational institutions to deal with, since they require less volume of involved employers and since the results can be directly applicable on the institution's activities.

Appendix I

Examples of EU practices in Labour Market Assessment and Monitoring

A) The French experience:

Because of the lack of success of the quantitative labour market analysis approach, the French authorities have adopted a more pragmatic and flexible approach aimed at identifying the main trends of the labour market, and helping the vocational education and training system to respond quickly to its signals.

This flexible system is built in at national, regional and local levels. At local level, vocational schools are encouraged to establish close links with local enterprises, the future employers of their graduates. Vocational schools have to follow their graduates (“tracers” studies) in order to find out:

- how many have actually found a job?
- how long it took to get a job?
- how many have remained unemployed and why?

Vocational schools also have the possibility to create “local complementary training”: these courses last one year after obtaining the diploma. The content of this training is defined in close cooperation with local companies in order to correspond to the needs of the local labour market.

B) The Danish experience:

The vocational institutions in Denmark, both initial vocational institutions belonging to the Ministry of Education and adult training centres of the Ministry of Labour – are tripartite managed self-governing institutions.

At national level a tripartite Education Council advises the Ministers of Labour, Education, and Trade and Industry in matters concerning education and training. Besides this council a tripartite Vocational Training Council advises the Minister of Labour on matters concerning vocational training programmes – including the dimensioning of training activities.

At sector level, a number of bipartite vocational training committees have been established within different groups of professions and occupations responsible for the development of training programmes (curricula) within their respective area. These programmes will often be based on an analysis of the need for competencies and skills.

Probably the most valuable information stems from the everyday contact with enterprises that training institutions obtain. The Danish initial vocational education system is a dual system, where the demand for apprentices is decisive in the enrolment of new students.

C) *The Swedish experience:*

In Sweden as in Denmark, the Employment Service plays an important role for Labour Market Monitoring at national, regional and local levels. Much of this work is carried out through local Employment Committees.

The social partners have a central role for labour market analysis. The trade unions, which in Sweden are organised on a branch basis, carry out regular research on skill needs and changes in the demand of skills with the help of questionnaires and interviews. In a number of cases such research is also carried out jointly between a trade union and the Swedish Employers' Association.

Cooperation between the individual Swedish Upper Secondary Schools and the local employers is underlined in the overall National Curriculum for Swedish Non-Compulsory Schools (LGY94). The most important component of this interaction is information dissemination to the students, recruitment activities, practice periods and exam work. The most important incentive for employers to cooperate with the schools is the possibilities surrounding recruitment, and the possibilities for influencing school curricula. The possibility for achieving this is relatively high, since local parts, or "modules", of training curricula are encouraged by the Swedish National School Board.

Appendix II

In vision-building exercises it is important to gather together all relevant stakeholders and make sure that they discuss with each other in as open an atmosphere as possible. Typically, a vision-building exercise would start with an overview of what has been achieved in the last period (for example ten years). The participants express in a plenary session good and bad experiences within the theme around which the vision-building exercise evolves. The objectives of this “historical overview” are to:

- a) show and extract positive elements upon which to build on;
- b) get rid of the habit of looking backwards, which still is common in many of the countries of the New Independent States (“previously, we had.../there were....we received...”) and instead focus fully on the future.

After this the exercise can continue either in plenary (if different themes have not been determined earlier) or in smaller groups (if different themes have already been determined). The idea is then, within the smaller groups, to break down the vision, themes and sub-themes into smaller and more and more measurable units, in order, by the end of the exercise, to be able to present action plans for different sub-themes, which should all be fully supportive to the development of the overall topic/theme.

To be able to achieve this, each of the groups should be headed by a facilitator. The facilitator is responsible for the work within the group, ensuring that discussions are moving forward, and that more and more measurable results are produced. The role of the facilitator is therefore crucial, but at the same time it is important that he or she has the ability to act without being visible. The facilitator should only be a catalyst, ensuring an intense dialogue between the different stakeholders. In the ideal case, therefore, the group members should hardly notice the presence of the facilitator!

Example of Facilitator's Role and Activities

Overall guidelines

1. Pick someone who will record what people say - one line for each comment;
2. Establish the ground rules for the group. Suggest that they be the same as the ground rules in the plenary session (participate fully - no holding back, treat everyone with respect and as an equal contributor, do not judge or evaluate the quality of other people's comments, focus on possibilities, rather than on the obstacles);
3. Insist on no speeches - you can tell the difference;
4. Focus on the result you want. Keep repeating the question for your group. If we had the most effective i.e. successful, best, (insert your group's theme) we could imagine, what would it look like, what we would see happening? Then listen for what people say and have someone record it. Make sure people are speaking for the future, not constrained by the present reality;

5. No judging or evaluating - your job is to help others speak;
6. Make sure everyone gets a chance to speak;
7. If the group seems stuck in the discussion, stop the discussion after a minute or two and repeat what you are hearing. Say "I hear that you are debatingWould it be possible to say the following, based on what I've heard?"

Result needed for session 1

1. Ask the participants in your group to imagine that it is the year 2010. Ask them to come up with 20 - 30 indicators of how they would be able to assess whether your theme had been accomplished. For example, if your theme was a **well-developed relationship between employers and technical/professional education and training institutions**, ask "it's the year 2010. You're in the future. How would you know the technical/professional education and training institution has a good relationship with employers? What would you see happening?"

Possible indicators people might generate might include:

- regular dialogue on the contents of training curricula;
 - practice sessions are planned and carried out jointly at the employers' premises;
 - the training institutions are well-informed about existing and planned vacancies;
 - the graduates have highly suitable skills for the local and regional labour market;
 - employers pay fair share of training.
2. If you have time, sort your indicators into themes. For example, in the above case, one theme might be a "skill needs assessment", another "financing", another "job placement", etc.

Result needed for session 2

1. Decide which of your theme's indicators must be achieved within the next three years;
2. Make each of them measurable;
3. Break into sub-indicators if needed. For example, if the indicator is all schools carry out regular labour market analysis every ten years, in three years you might have one school in each oblast carrying out regular labour market analysis.

Result needed for session 3

1. Make sure each item is measurable;
2. Identify what specific actions are needed to accomplish it;
3. make an action plan - with rough dates;
4. if you have time, suggest possible cost-sharing methods for each action;
5. make sure your leader/recorder can present their working group's report to the plenary session.

Appendix III

Pilot project “Labour Market Analysis and Vocational Education in Belarus, Moldova, Russia and Ukraine”

Questionnaire to obtain information on educational and skill demands from employers in selected sectors of the four economies

The questionnaire was developed by Hartmut Lehmann (EU leading expert) in close cooperation with Lars Anderson and Charles Manton (EU experts) and after consultation with representatives from the national observatories of the four countries.

The interviewer notes the number of persons participating in the interview:
A Background	
A1 About the company in general	
1. What is your position within the company?	<input type="checkbox"/> President <input type="checkbox"/> Production Manager <input type="checkbox"/> Personnel Manager <input type="checkbox"/> Other
2. What is the company's name?
3. What is the main activity that is performed at the workplace?
4. What does your company produce?
5. For how many years has your company been operating?years
6. Does your company have many competitors in the market(s), in which it operates?	<input type="checkbox"/> Yes How many? <input type="checkbox"/> No
7. How would you describe the financial situation of your company over the last year?	<input type="checkbox"/> Very good (large profits over the last year) <input type="checkbox"/> Good (some profits over the last year) <input type="checkbox"/> Bad (some losses over the last year) <input type="checkbox"/> Very bad (large losses over the last year)

8. Who is the main buyer of your products?	<input type="checkbox"/> The private sector <input type="checkbox"/> Local, regional or federal government
9. Does your company manufacture goods or is it a subcontractor?	<input type="checkbox"/> Manufactures own goods <input type="checkbox"/> Subcontractor <input type="checkbox"/> Both of the above
10. What was the number of employees in your company at the end of 1999?	Full-time Number of men Number of women Part-time Number of men Number of women
11. Has the number of employees at your company changed during the following periods?	During the period from January 1999 to December 1999, Increased bynumber of employees; Decreased bynumber of employees; <input type="checkbox"/> Has not changed. During the period from January 1998 to December 1999, Increased bynumber of employees; Decreased bynumber of employees; <input type="checkbox"/> Has not changed.
12. Have any major changes in either technology or work organisation been made during the last two years that have resulted in changes in occupational structure and skill requirements? If so, please give brief details
13. Does your company have international business contacts? <i>If yes, kindly answer question 14, if no go to question 15</i>	<input type="checkbox"/> No <input type="checkbox"/> Yes
14. With which countries? <i>(Multiple ticks possible)</i>	<input type="checkbox"/> New Independent States <input type="checkbox"/> Former COMECON countries <input type="checkbox"/> EU countries <input type="checkbox"/> Asian countries <input type="checkbox"/> North America <input type="checkbox"/> Other
Future developments	
15. Is your company planning any major changes in either technology or work organisation which will or might result in changes in occupational structure and skill requirements? <i>If so, please give brief details</i>

<p>16. Does your company intend any major changes in the number of employees employed by the company within the forthcoming two years? (<i>tick one</i>)</p>	<p><input type="checkbox"/> Yes, we intend to increase the number of employees substantially</p> <p><input type="checkbox"/> Yes, we intend to decrease the number of employees substantially</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Do not know</p>																																								
<p>A2 Hiring of new personnel, personnel development and proficiency development within the company. The role of vocational education. The present and the past.</p>																																									
<p>17. Does your company have a separate personnel department? <i>If not, who is in charge of personnel matters within your company?</i></p>	<p><input type="checkbox"/> Yes.....</p> <p><input type="checkbox"/> No</p> <p>.....</p> <p>.....</p>																																								
<p>18. Please indicate the importance you attach, when selecting new employees, to the following characteristics:</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: right;"><i>Very important</i></td> <td></td> <td></td> <td style="text-align: left;"><i>Not important</i></td> </tr> <tr> <td style="text-align: right;">5</td> <td style="text-align: center;">4</td> <td style="text-align: center;">3</td> <td style="text-align: left;">2 1</td> </tr> </table> <p>[NB The questions when translated into Russian should be put in alphabetical order to avoid "leading"]</p>	<i>Very important</i>			<i>Not important</i>	5	4	3	2 1	<p>Ability to work with IT</p> <p>Ability to work with other people</p> <p>Age.....</p> <p>Appearance.....</p> <p>Attitude to work</p> <p>Education</p> <p>General work experience.....</p> <p>Qualifications</p> <p>Specific work experience</p>																																
<i>Very important</i>			<i>Not important</i>																																						
5	4	3	2 1																																						
<p>19. If your company has hired any new employees in the last two years, please indicate the numbers in the following table:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Senior</th> <th style="text-align: center;">Supervisory</th> <th style="text-align: center;">Worker</th> <th style="text-align: center;">Trainee</th> </tr> </thead> <tbody> <tr> <td>General Management</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sales and Marketing</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Production</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Maintenance</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Finance</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Secretarial Support</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other (please specify)</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Senior	Supervisory	Worker	Trainee	General Management					Sales and Marketing					Production					Maintenance					Finance					Secretarial Support					Other (please specify)				
	Senior	Supervisory	Worker	Trainee																																					
General Management																																									
Sales and Marketing																																									
Production																																									
Maintenance																																									
Finance																																									
Secretarial Support																																									
Other (please specify)																																									
<p>20. Have you found difficulty in recruiting new employees with any particular skills or knowledge? <i>If so, please describe your difficulties.</i></p>	<p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>																																								

<p>21. How do you recruit new employees? If you have not recruited new employees in the last two years, please indicate your preferred methods, should the occasion arise. <i>(Tick all methods used or preferred)</i></p>	<p><input type="checkbox"/> From the Federal Employment Service</p> <p><input type="checkbox"/> From a vocational school</p> <p><input type="checkbox"/> From a higher-level educational institution</p> <p><input type="checkbox"/> Through an employment agency</p> <p><input type="checkbox"/> By advertisement in (above all) newspapers</p> <p><input type="checkbox"/> Through personal contacts and recommendations</p> <p><input type="checkbox"/> Other (please specify)</p>
<p>22. Does your company have regular contacts with one or more vocational institutions? <i>If yes, for what purpose?</i></p>	<p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> Recruitment</p> <p><input type="checkbox"/> Participation in testing of students</p> <p><input type="checkbox"/> Curriculum development</p> <p><input type="checkbox"/> Further training of your firm's employees?</p> <p><input type="checkbox"/> Provision of work experience for vocational school students (Internships)</p> <p><input type="checkbox"/> Other (please specify)</p>
<p>23. According to your experience:</p> <p>Do the practical skills of graduates of vocational schools match your company's requirements?</p> <p>Do the graduates of vocational schools have adequate theoretical knowledge?</p> <p>What do you find particularly satisfactory about vocational school training?</p> <p>What particular aspect of vocational school training should be improved?</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>24. How does your company organise further training of employees? Please tick all that apply, and underline your preferred method.</p>	<p><input type="checkbox"/> In-house – on the job</p> <p><input type="checkbox"/> In-house – in special training facilities</p> <p><input type="checkbox"/> At a vocational school</p> <p><input type="checkbox"/> Through private training providers</p> <p><input type="checkbox"/> Through equipment suppliers (for example, a company selling computers provides training sessions on major software)</p> <p><input type="checkbox"/> Other (please specify)</p>

B Demands of knowledge and proficiency in the production department

This section is concerned with skill demands your company is having on employees within the production department today, and in the future.

1. which professions within the production department does your company currently have and what number of employees do the professions employ respectively?
(Rank by number of workers employed in the respective profession)

Profession 1.....
Number of employees
Profession 2.....
Number of employees
Profession 3.....
Number of employees
Other.....
Number of employees

Please briefly describe the activities of the three professions that employ the largest number of workers among the professions mentioned in question 1 above

1.
.....
2.
.....
3.
.....

In this part of the questionnaire we focus on the professions that employ the largest amount of workers within the production department. Before we ask specific questions we would like you to respond to a general question.

2. Could you try to anticipate the major education needs of the production line during the forthcoming two years?

.....
.....
.....
.....
.....
.....

If you turn to the next page you will see a list of different areas of knowledge. Please specify the areas of knowledge where your company demands proficiency from its workers belonging to the three professions that employ the largest amount of workers within the production department of your company. We will cover each profession separately.

Instructions for the interviewer:

First get a general view by asking which areas of knowledge are considered important to the company. Go down the first column (1) and put a mark in the boxes next to the areas of knowledge that are considered important by the company.

Next ask questions in columns (2), (3) and (4) about each area of knowledge that has been marked, i.e. work through each row. Skip the last column for the time being.

Finally, finish by asking if any area of knowledge that has not been discussed will be likely to occur within the two forthcoming years. Mark the answers in the last column (5).

Continue with the next profession in the same way using a new page!

3. Detailed Identification of skill demands in the production department

Company:.....Profession:1

	DEMANDS TODAY			ESTIMATED DEMANDS WITHIN A TWO-YEAR PERIOD	
Area of knowledge	(1) areas of knowledge important to company (mark)	(2) Level of demand* 1 Low 2 Average 3 High	(3) Proportion of employees meeting the demand	(4) The level of demand will: + Increase - Decrease +/- Not change 0 Disappear	(5) Level of demand in new areas 1 Low 2 Average 3 High
General					
Maths					
Physics					
Chemistry					
English					
German					
French					
Vocational skill					
Group cooperation					
Leadership					
Quality					
Production technology					
Production economy					
Environmental science					
Marketing					
MPC					
SPS					
Presentation technique					
Instruction methods					
Computer science					
CNC-technique					
CAD					
CAD/CAM					
Computer usage					
Networking					
Programming					
Vocational theory					
Mechanics					

Area of knowledge	DEMANDS TODAY			ESTIMATED DEMANDS WITHIN A TWO-YEAR PERIOD	
	(1) areas of knowledge important to company (mark)	(2) Level of demand* 1 Low 2 Average 3 High	(3) Proportion of employees meeting the demand	(4) The level of demand will: + Increase - Decrease +/- Not change 0 Disappear	(5) Level of demand in new areas 1 Low 2 Average 3 High
Science of materials					
Mechanical measuring					
Mechanical drawing					
Handling of materials					
Construction					
Assembling					
Electronics					
Welding					
Processing techniques					
Cutting					
Automation					
Automatic controlling					
Regulation techniques					
Hydraulics					
Robotics					
Maintenance					
Industrial measuring					
Cutting					
Grinding					
Benchworking					
Drilling					
Welding					
TIG-Welding					
Gas-welding					
Laser-welding					
Thermal cutting					
Other					

*Please note: “low level of demand” means here that knowledge of this area is of relatively small importance for an efficient performance of the worker in the production process; “average level of demand” means here that knowledge of this area is of average importance for an efficient performance of the worker in the production process; “high level of demand” means here that knowledge of this area is of great importance for an efficient performance of the worker in the production process.

Detailed Identification of skill demands in the production department					
Company:.....Profession:2					
	DEMANDS TODAY			ESTIMATED DEMANDS WITHIN A TWO-YEAR PERIOD	
Area of knowledge	(1) areas of knowledge important to company (mark)	(2) Level of demand 1 Low 2 Average 3 High	(3) Proportion of employees meeting the demand	(4) The level of demand will: + Increase - Decrease +/- Not change 0 Disappear	(5) Level of demand in new areas 1 Low 2 Average 3 High
General					
Maths					
Physics					
Chemistry					
English					
German					
French					
Vocational skill					
Group co-operation					
Leadership					
Quality					
Production technology					
Production economy					
Environmental science					
Marketing					
MPC					
SPS					
Presentation technique					
Instruction methods					
Computer science					
CNC-technique					
CAD					
CAD/CAM					
Computer usage					
Networking					
Programming					

	DEMANDS TODAY			ESTIMATED DEMANDS WITHIN A TWO-YEAR PERIOD	
Area of knowledge	(1) areas of knowledge important to company (mark)	(2) Level of demand 1 Low 2 Average 3 High	(3) Proportion of employees meeting the demand	(4) The level of demand will: + Increase - Decrease +/- Not change 0 Disappear	(5) Level of demand in new areas 1 Low 2 Average 3 High
Vocational theory					
Mechanics					
Science of materials					
Mechanical measuring					
Mechanical drawing					
Handling of materials					
Construction					
Assembling					
Electronics					
Welding					
Processing techniques					
Cutting					
Automation					
Automatic controlling					
Regulation techniques					
Hydraulics					
Robotics					
Maintenance					
Industrial measuring					
Cutting					
Grinding					
Benchworking					
Drilling					
Welding					
TIG-Welding					
Gas-welding					
Laser-welding					
Thermal cutting					
Other					

4. Detailed Identification of skill demands in the production department

Company:.....Profession:3

	DEMANDS TODAY			ESTIMATED DEMANDS WITHIN A TWO-YEAR PERIOD	
Area of knowledge	(1) areas of knowledge important to company (mark)	(2) Level of demand 1 Low 2 Average 3 High	(3) Proportion of employees meeting the demand	(4) The level of demand will: + Increase - Decrease +/- Not change 0 Disappear	(5) Level of demand in new areas 1 Low 2 Average 3 High
General					
Maths					
Physics					
Chemistry					
English					
German					
French					
Vocational skill					
Group co-operation					
Leadership					
Quality					
Production technology					
Production economy					
Environmental science					
Marketing					
MPC					
SPS					
Presentation technique					
Instruction methods					
Computer science					
CNC-technique					
CAD					
CAD/CAM					
Computer usage					
Networking					
Programming					

	DEMANDS TODAY			ESTIMATED DEMANDS WITHIN A TWO-YEAR PERIOD	
Area of knowledge	(1) areas of knowledge important to company (mark)	(2) Level of demand 1 Low 2 Average 3 High	(3) Proportion of employees meeting the demand	(4) The level of demand will: + Increase - Decrease +/- Not change 0 Disappear	(5) Level of demand in new areas 1 Low 2 Average 3 High
Vocational theory					
Mechanics					
Science of materials					
Mechanical measuring					
Mechanical drawing					
Handling of materials					
Construction					
Assembling					
Electronics					
Welding					
Processing techniques					
Cutting					
Automation					
Automatic controlling					
Regulation techniques					
Hydraulics					
Robotics					
Maintenance					
Industrial measuring					
Cutting					
Grinding					
Benchworking					
Drilling					
Welding					
TIG-Welding					
Gas-welding					
Laser-welding					
Thermal cutting					
Other					

Thank you for your co-operation and time! The results of the survey will be made available to you!

Appendix IV

Two examples of questionnaires for employers, taken from: S. Ivanov, S. Kuznetsov, E. Salmi, J. Sinkkonen, I. Khokhlov: Labour market assessment performed by professional education establishments, St Petersburg, 1999

“Questionnaire of Employer No 1”

The academic year in the system of professional education is coming to an end. However, many graduates are unlikely to find a job immediately. The problem of communication concerning the structure of supply and demand in the labour market is one of the most urgent ones in our city. It can be solved through versatile analysis of current and potential demands of employers for manpower, by revealing deficit specialities, forecasting the demand for labour resources for the most promising trends of economic development.

In this regard we ask you to fill in the questionnaire to help work out an optimal strategy for developing a system of general and professional education in our city.

You need not include your surname. When answering the questions please read carefully all possible answers and circle (with a pen, pencil) the number of your answer. You may also add answers which are, in your opinion, missing and express your opinion.

We thank you for your help!

1. To which type of industry does your enterprise belong?

1. ☐ Light industry
2. ☐ Engineering
3. ☐ Woodworking
4. ☐ Transport, car service
5. ☐ Communication and telecommunication
6. ☐ Construction
7. ☐ Trade and catering
8. ☐ Maintenance supply and marketing
9. ☐ Information and calculation service
10. ☐ Geology and natural resources exploration
11. ☐ Housing and communal serving and consumer service

12. ☐ Healthcare, sports, social security
13. ☐ Education
14. ☐ Tourism and excursion services
15. ☐ Culture and arts
16. ☐ Science and scientific services
17. ☐ Crediting, insurance, pension security financing (banks included)
18. ☐ Management bodies (including state management)
19. ☐ Other industry (name it):

2. *What is the average listed number of employees at your enterprise?*

Less than 15	15-29	30-49	50-99	100-299	300-499	500+
①	②	③	④	⑤	⑥	⑦

3. *Do you have a shortage of personnel at your enterprise for the following employees?*

①	②	③	④	⑤
Yes	Very likely yes	Very likely no	No	Hard to answer

Elementary manual labour employees (not requiring professional skills)

① ② ③ ④ ⑤

Complicated manual labour employees (requiring professional skills)

① ② ③ ④ ⑤

Elementary intellectual labour employees (not requiring specific knowledge)

① ② ③ ④ ⑤

Complicated intellectual labour employees (requiring specific knowledge)

① ② ③ ④ ⑤

Executives (at the level of subsections: department, shop, divisions)

① ② ③ ④ ⑤

Executives (at the level of enterprise, company)

① ② ③ ④ ⑤

4. *How would you characterise the flow of personnel at your enterprise during the last 2-3 years?*

1. ☐ Considerable increase (more than 20%)
2. ☐ Slight increase (from 5% to 20%)
3. ☐ Practically without changes (fluctuation +/- 5%)
4. ☐ Slight reduction (from 5% to 20%)
5. ☐ Considerable reduction (more than 20%)
6. ☐ Hard to answer

5. *Are you currently reducing personnel at your enterprise?*

1. ☐ No reduction
2. ☐ Insignificant reduction
3. ☐ Mass reduction
4. ☐ Do not want to answer this question

6. *Can you tell how many people were hired at your enterprise last year?*

.....

Elementary manual labour employees (not requiring professional skills)

.....

Complicated manual labour employees (requiring professional skills)

.....

Elementary intellectual labour employees (not requiring specific knowledge)

.....

Complicated intellectual labour employees (requiring specific knowledge)

.....

Executives (at the level of subsections: department, shop, division)

.....

Executives (at the level of enterprise, company)

.....

7. *How many graduates of elementary professional educational institutions were hired at your enterprise last year?*

.....person (s)

8. *How many people from among those hired last year who were graduates of elementary professional educational have been fired or quit?*

.....person (s)

9. ***What professions are being hired at your enterprise today (please state the specialities and the number of vacancies)***

N°	profession (speciality)	Potential to be hired (persons.)
1
n

10. ***Is it a mandatory requirement to have professional education and experience when being hired for existing vacancies (indicate "yes" or "no" by circling the appropriate section)?***

N°	profession (speciality)	Professional education	Years of experience in this speciality
1
n

11. ***What can be the range of payment for new employees at your enterprise by professions listed in the table of question 10 of the questionnaire?***

Approximate amount of payment, rub.							
N° profession (speciality)	to 100	100-199	200-499	500-999	1000-1999	2000-5000	over 5000
	①	②	③	④	⑤	⑥	⑦

12. ***Has the personnel of your enterprise been professionally retrained at the initiative of the administration in the last few years?***

1. ☐ Hasn't been
2. ☐ Has been, but not regularly
3. ☐ Has constantly been and is currently being
4. ☐ Hard to answer

13. ***How do you assess potential personnel flow at your enterprise in the next 1-2 years?***

1. ☐ Considerable increase (more than 20%)
2. ☐ Slight increase (from 5% to 20%)
3. ☐ Practically without change (fluctuation +/- 5%)
4. ☐ Slight reduction (from 5% to 20%)
5. ☐ Considerable reduction (more than 20%)
6. ☐ Hard to answer

14. *Would you consider it desirable to have direct relations with educational institutions which train the type of specialists in your enterprise?*
1. ☐ Certainly yes
 2. ☐ Very likely yes
 3. ☐ Very likely no
 4. ☐ At present there is absolutely no necessity
 5. ☐ Hard to answer
15. *Are you interested in participating in the development of education/production programmes and planning professional training of young of people your enterprise?*
1. ☐ Yes
 2. ☐ Very likely yes
 3. ☐ Very likely no
 4. ☐ No
 5. ☐ Hard to answer
16. *Are you interested in training graduates of professional educational establishments whose specialities fit your enterprise?*
1. ☐ There is interest and opportunity
 2. ☐ There is interest, but no opportunity
 3. ☐ There is neither opportunity nor interest
 4. ☐ No interest
 5. ☐ Hard to answer
17. *Do you have any requirements for institutions of elementary professional education training with specialities fitting your enterprise?*
-
-
-

Thank you for participation in this survey. Good luck at work!

"Questionnaire of Employer No 2"

The academic year in the professional education system is coming to an end. Graduates have started looking for work, but many of them have to face the fact that the acquired knowledge and skills do not always correspond to employers' requirements. Techniques and technology production functions are changing. As a result, graduates at the work place have to retrain and master new, unknown tasks. Monitoring of qualification requirements for employees with different professions and specialities can help to solve this problem.

In this regard, we ask you to answer the questions in our questionnaire to help us to refine the list of necessary knowledge and skills for graduates with the professions named below to match educational plans and curricula and increase the period for practical mastering of specific equipment.

You need not write your surname. When answering the questions please read carefully all possible answers and circle (with a pen or pencil) the number of your answer. You may also add those answers which are, in your opinion, missing, as well as expressing your opinion.

One questionnaire should be filled in for each profession.

We thank you for your co-operation!

1. ***Please list as fully as possible all the most important production tasks and responsibilities of employees carrying out this profession at your enterprise. Indicate the level of their importance, complexity, and approximate frequency of performance.***

Assessment scales

1.1 Scale of importance for employees with this profession to be able to perform this operation

Requirements

Must have only general understanding.

Specific knowledge and skills are not required ①

General knowledge and elementary skills are required ②

Must have full understanding of the task, performs basic skills ③

Good knowledge and skills for performing the task are required ④

Perfect knowledge and ideal completion of the task are required ⑤

1.2 Scale of operation complexity

Assessment of task complexity

Elementary task, not requiring knowledge and skills ①

Task is not complicated, but requires certain knowledge and skills ②

Performance of this task requires specific knowledge and skills ③

Task is complicated, requires good knowledge and skills ④

Task is highly complicated, requires up-to-date knowledge and experience ⑤

1.3 Scale of frequency of operation performance

Frequency of task performance

- Less than once a week ①
- 2-3 times a week ②
- Every day (5 times a week) ③
- Every day, several times a day ④

Assessment table

N°	List of production operations importance/complexity/frequency
1
1
2
n

2. *Please describe the most common types of mistakes, accidents, and difficulties of employees with this profession. Name the operation they refer to (N° from assessment scale of question 1.2).*

N°	Description of mistakes, accidents	N° of operation they refer to
1
n

3. *In the last 2-3 years have the operations (responsibilities) of employees with this profession been changed at your enterprise?*

1. ☐ Have not
2. ☐ Have been, the number was increased
3. ☐ Have been, the number was reduced

4. *Please indicate the level of importance of the following personality traits required for this profession (if necessary add other features).*

N°	Personality traits	Assessment of importance for professions
	Absolutely unimportant	1
	Not very important.....	2
	Very likely, important	3
	Very important	4
	Hard to say	5
1.	Initiative.....	
2.	Energy	
3.	Persistence.....	
4.	Pedantry (scrupulousness)	

5. Endurance
6. Responsibility
7. Creativity
8. Team-work (team spirit)
9. Independence.....
10. Flexibility
11. Non-conformity
12. Resolution (boldness)
13. Quickness of wit.....

5. *Please indicate the level of importance of the following functional traits for an individual in the given profession (if necessary add other features).*

N° Functional features Assessment of importance for profession

Absolutely unimportant1
Not very important.....2
Very likely, important3
Very important4
Hard to say5

1. Organisational ability
2. Ability to plan activities.....
3. Research skills
4. Ability to share experiences
5. Ability to reach an agreement
6. Ability to master new techniques
7. Manual abilities
8. Presentation abilities.....
9. Ability to prepare/ edit texts.....
10. Striving for new qualities

6. *Please indicate all the major types of equipment (machines, mechanisms) and tools the employee with this profession has to work with at your enterprise.*

Equipment		Tools	
N°	type (name)	N°	type (name)
.....

7. *Please describe the psycho-physiological characteristics of the tasks of the employee with this profession at your enterprise (if necessary add other parameters).*

N° Psycho-physiological parameter Assessment of its level

Low.....1

Medium.....2

High.....3

1. Load level on visual analyser
2. Load level on acoustic analyser.....
3. Level of muscle (physical) load
4. Level of intellectual load
5. Load level on sensory organ.....
6. Level of motor reactions
7. Level of concentration (attention load)
8. Level of neuro-psychological tension.....

8. *Characterise the working conditions of employees with the given profession (which environmental factors have a harmful effect)*

N° Parameters of work conditions estimation

Absolutely no.....1

Insignificant level.....2

Medium level.....3

High level.....4

1. Air pollution
2. Dust pollution.....
3. Noise pollution.....
4. Vibration.....
5. Temperature fluctuations
6. Deviation from lighting norms.....
7. Electro-magnetic radiation
8. Radio-active radiation

9. *To what extent are the employees of the given profession exposed to professional diseases, traumas and other risks?*

N°	Characteristic of risk	Level of risk
	<i>Absolutely no</i>	<i>1</i>
	<i>low</i>	<i>2</i>
	<i>medium</i>	<i>3</i>
	<i>high</i>	<i>4</i>
1.	Professional diseases	
2.	Trauma	
3.	Others (name)	

10. *To which industry does your enterprise belong?*

.....

.....

Thank you for participation in the survey. Good luck with your work!