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Indicators for quality in VET

To enhance European cooperation

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Erwin Seyfried

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Foreword

In the past two decades and in most Member States there has been a growing awareness of the importance of quality in vocational education and training (VET). In many countries, approaches for quality assurance (QA) and quality management (QM) are developed to meet specific national policy objectives. Obviously, the changing demands of the knowledge-based society and the overall trend to increase the efficiency and effectiveness of VET systems, constitute major driving forces behind these developments. Undeniably, through its funds and programmes, such as Leonardo da Vinci, the European Commission has contributed to improving education and VET systems by raising the level of the services they offer. Progressively, qualitative VET provision is key in achieving economic competitiveness, one of the important goals of the Lisbon Summit and its declaration.

Many tools and indicators to measure quality in VET have been developed and are now available in Europe. However, they mainly address the level of VET schools or training providers and seldom the level of institutions. In reality, the various quality approaches in use address certain aspects or levels of VET and rarely the whole VET system from national down to local levels and from ministerial down to workshop players.

It was therefore necessary to look to the European level for a comprehensive quality approach addressing all levels of VET and completing what already exists. In other words, an original approach had to be defined to cover the lack of coherent national systems for quality assurance, which should not repeat or duplicate existing quality tools, but focus on the level of VET systems and support a European strategy for improving quality in VET.

This was the challenge the technical working group on quality in VET (TWG) was called to respond to during its mandate (2003 and 2004) in accordance with the priorities of the Council resolution of 19 December 2002 ([1]) and the Copenhagen declaration on 'enhanced cooperation in vocational education and training' ([2]).

It was decided that the European perspective should be based on the definition of common objectives, increased cooperation, the comparability of approaches and data and on common learning between Member States, to foster common understanding and trust at European level.

Quality contributes to increasing not only the efficiency and effectiveness but also the accountability of VET provision. To make it accountable, it has to be measurable; hence the importance of indicators. On indicators, the TWG mandate was 'to develop a limited set of coherent quality indicators for VET at systems level, on the basis of good practice'.

([1]) See: Council Resolution of 19 December 2002 ... , 2003.

([2]) European Commission - DG EAC, 2004.

Consequently, the TWG started by identifying the quality indicators used by Member States and found these were only partially applied in various countries. To broaden relevant knowledge it then reviewed the indicators in use at European and international levels to develop a proposal for indicator-based European cooperation on promoting quality in VET.

This methodology, which considered the empirical situation in Member States and the know-how at international level, was complemented by a theoretical approach. As use of isolated indicators risks provoking negative side-effects, it was necessary to develop a conceptual framework for a system of indicators linking different quality indicators to one another. Finally, a further focus of the work consisted of translating the three European policy priorities (promoting employability of the workforce, access to training with particular emphasis on the most vulnerable groups, and the better matching of training demand and supply) into concrete and measurable objectives.

This work was entrusted to Prof. Dr Erwin Seyfried of FHVR-FBAE Berlin (*Fachhochschule für Verwaltung und Rechtspflege – Forschungsstelle für Berufsbildung, Arbeitsmarkt und Evaluation, Berlin* [University for public policies and law – Research unit for vocational education, the labour market and evaluation, Berlin]). Analysis of the policy priorities and review of the European and international indicator systems in Chapter 7 of this study were carried out by Dr Lorenz Lassnigg of IHS, Vienna (*Institut für höhere Studien, Wien* [Institute for advanced studies, Vienna]).

We would like to thank them for their commitment to the present work which was done in steady cooperation with the TWG on quality in VET. Special thanks are addressed to the members of the TWG for their contribution and genuine interest in this work monitored by the European Commission, Directorate General for Education and Culture (DG EAC) which also bore overall responsibility for implementing the Copenhagen declaration.

Readers are informed that in view of the importance of the indicators for any VET system and the great interest shown by relevant stakeholders, Cedefop decided to publish the present study in French and English.

Tina Bertzeletou
Project manager

Preface

To achieve the objectives of the present work a complex methodological approach consisting of several elements was adopted:

- to make the best use of already existing experiences and thus following a bottom-up approach, each Member State participating in the TWG was asked to provide examples of the use of indicators for quality improvement in their country;
- these experiences were then reviewed from a European point of view;
- next, the data and indicators on VET regularly published by OECD, Unesco, Eurostat, Eurydice, Cedefop and other institutions, were analysed;
- then, the work for developing common indicators for quality in VET was also connected to the work done at European level on education, lifelong learning (LLL) and in the framework of employment policies (see: Council of the European Union, 2001; European Commission, 2000; European Commission – DG EAC, 2002b, 2006; European Commission – DG EMPL, 2005).

Over 200 indicators were collected, together with the examples of Member States. They were reviewed and analysed for their suitability for a European approach to improve quality in VET (3). Wherever possible, the indicators described in this report have been drawn from these data sources.

In parallel, a conceptual framework for a system of indicators to promote quality assurance in VET linking them to one another was developed. Based on this empirical review of the indicators, and considering the theoretical framework, a final step consisted of addressing European cooperation. This led to a proposal for a set of indicators for a quality policy in VET at both European and Member State levels.

As stated in the Foreword, the TWG was involved in all steps of the present work: providing lists of indicators and documents relative to their use, discussing the findings throughout the analysis, and completing our views and knowledge on national characteristics and policy priorities. It played a decisive role in defining the coherent set of quality indicators as the most suitable ones for promoting awareness and cooperation at European level.

In my capacity as expert in charge of this work, I would like to express my thanks to them all for our intensive and fruitful cooperation during these two years.

Prof. Dr Erwin Seyfried
FHVR-FBAE Berlin

([3]) The stock-taking and review of existing indicators were carried out with support from Christof Slickers, FHVR-FBAE Berlin.

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Executive summary

In the past decades Europe has seen growing awareness that quality in vocational education and training (VET) is an important but also a complex policy issue with indicators being key for guiding and improving quality as well as for the good governance of training systems and structures.

The introduction of the study clarifies the role of indicators in quality in VET: in general, an indicator is defined as a characteristic or an attribute that can be measured to assess a certain action, which may relate to the measurement of an objective to be met, a resource mobilised, an effect obtained, a gauge of quality or a context variable. In relation to quality in VET, the role of indicators is to describe the current status or the baseline from which an action towards quality starts, to quantify (as much as possible) the quality objectives set, and to provide continuous information on the degree to which those objectives have been achieved.

In operational terms, indicators produce information which helps relevant VET actors to assess the extent to which their pre-defined objectives have been met, identify influential factors and take informed decisions. Besides their long-lasting function of improving the quality of VET provision, indicators often contribute to a common understanding of relevant criteria for quality. In European cooperation, too, indicators can contribute to a commonly shared understanding of good practices, helping to identify the strengths and weaknesses of VET quality systems at European, national, regional and sectoral levels.

Since an indicator is not a value in itself, defining and selecting indicators presupposes clarification of the objectives to be attained in order to improve quality. Consequently, the study undertakes an analysis of the most important policy objectives for education and training systems in Europe and their implications for goal setting. We have noticed that fundamental changes have taken place: in the past emphasis was put on the dimensions of VET policies related to input and process factors, nowadays the focus is more on output and outcomes. In a knowledge-based economy it is use of competences and skills on the labour market that counts. The relationship between VET systems, employment systems, and the economy has come to the forefront.

The present study aims, against this background, at developing suitable indicators to measure the quality of VET in relation to the following policy priorities set by Member States, the European Commission and the social partners:

- better employability of the labour force,
- better match between training supply and demand,
- better access to vocational training, in particular for vulnerable groups on the labour market.

As these priorities are complex concepts which cannot be measured directly, they need to be broken down into more concrete measurable objectives, which can be related to indicators as a

next step. Thus, for each of the three policy priorities several categories and objectives are operationalised as measurable criteria for quality and a coherent chain of quality indicators is developed.

Indicators have to relate not only to certain objectives but also to one another, because the information provided by indicators interlinked in this way, is more useful than the information provided by separate or individual indicators. To render the quality dynamics of a VET system more comprehensible, a coherent chain of indicators reflecting the objectives, context, input, process, output and outcome of an action is necessary. Further, in relation to quality, the use of indicators should be part of a quality cycle comprising the following basic steps: planning, monitoring, evaluating and changing according to the lessons learned, thus leading to improvement of quality. At European level, this quality cycle is reflected in the common quality assurance framework (CQAF), which the study considers.

Based on some principal considerations on the use of indicators as an instrumental part of a European strategy for quality in VET, the study proposes a coherent set of quality indicators for use at European level. Two approaches have guided selection of the proposed indicators. The first related to the application of quality management systems by both VET providers and VET systems. The second was to link better quality of VET provision to the broader objectives of VET systems agreed throughout Europe.

Some selected indicators are based on existing data at European level (for example, the labour force survey, carried out regularly by Eurostat) and therefore are already used in most Member States. Others are used in OECD surveys. Some others have only been used in pilot schemes or are still in the phase of proposals for implementation.

It should be noted that the proposed set of indicators contains two overarching indicators to promote quality assurance in general (indicators 1 and 2). The other indicators (3 to 8) reflect and support achievement of the three policy priorities for VET systems (better employability, matching, and access). A certain focus is given to indicators oriented towards measurement of output and outcome of VET activities.

1. Share of VET providers applying effective internal QA systems.
2. Investment in trainers and teachers in VET.
3. Participation rates in training programmes (according to gender and vulnerable groups).
4. Rates of successful completion/drop-out rates.
5. Graduation rates.
6. Placement rates: destination of trainees one year after completion of training.
7. Use of acquired skills in the workplace.
8. Context indicators (unemployment rates, prevalence of vulnerable groups).

As they are linked to clearly defined objectives, all indicators are based on quantified data and consequently they can support achievement of those objectives in practice. It should also be

underlined that all indicators referring to the level of individuals provide information according to gender and vulnerable groups.

Current status on the practical use of indicators is described in some national examples, which show there are only a few countries where a coherent set of indicators is already in use to improve the quality of VET systems. At system level, this is mainly the case in Finland, and to a lesser extent in Denmark, the Netherlands, and the Flemish community of Belgium. Given this situation, the first step in using indicators at European level should be to obtain more information about the national approaches to ensure quality in VET. Although the proposed set of indicators principally allows for measurement and comparability, these indicators currently cannot be used as comparative benchmarks. The availability of data varies too much between Member States and there is too little quantitative and comparable information at present.

However, if data related to the proposed indicators is regularly collected, the degree of practical implementation of QM approaches in Member States could be defined. These data, if aggregated at European level could also reflect the progress made over the years to achieve the major common objective to make European education and training systems a world quality reference by the year 2010.

Additionally, the study provides an analysis of the international and European indicator systems to check their usefulness for quality in VET. These systems are analysed according to their different functions in human resource development, their impact on developing VET systems, European policy priorities and their relation to the four steps to the quality cycle mentioned above. The analysis showed that various approaches are adopted to deal with the indicators and different emphasis is laid on the importance of input and process factors versus output and outcomes, or of qualitative instruments versus quantitative ones.

The final section of the study contains reflections on additional requirements and the limits on using indicators due to the methods and ways they are applied. Our recommendations mainly address the data collection process, how to prove the reliability and validity of collected data and how to assess data collection efforts in relation to the effects achieved once an indicator is put into operation. As most information for indicators at VET system level will be collected by VET organisations before it can be aggregated at system level, a precise definition and operationalisation of the indicators in use as well as standardisation of data collection methods are necessary.

In conclusion, the report demonstrates that indicators are extremely useful instruments to document, check and support implementation of (commonly agreed) quality objectives in VET. We hope the information thus produced will help the relevant VET actors to assess the extent to which their quality objectives have been met, to communicate the results achieved, to negotiate possible consequences, and to undertake the necessary actions for further developing the quality of their VET provision.

1. Introduction: the usefulness of indicators

In recent years there has been growing awareness of the importance of indicators for improving VET systems. There is general consensus that indicators for observing and/or measuring quality are key instruments for guiding and improving the quality of education and vocational training and are necessary for the good governance of training systems and structures. While not all Member States have the same experience with using indicators in VET, it is generally agreed that indicators are a necessary part of every mechanism (including self-assessment) designed to ensure constant progression towards quality improvement.

Generally, an indicator is a characteristic or an attribute that can be measured to assess a certain action. This may relate to measuring an objective to be met, a resource mobilised, an effect obtained, a gauge of quality or a context variable. The role of indicators is to:

- describe the current status or the baseline from where we are starting in our efforts to increase the quality of VET;
- quantify (as much as possible) the quality objectives which have been set;
- provide continuous information on the extent to which those objectives have been met;
- provide an idea of the factors which might have contributed to attainment of certain results.

A further operational element is that indicators should produce information to help relevant actors in VET not only assess the extent to which their predefined objectives have been met, but also to help communicate the results, negotiate the effects, discuss influential factors and adopt the consequent decisions. Although in the long run indicators go for valid information and measurement, in practice they can provide insight into the most relevant dimension for quality. Through this operation, i.e. their reflective function, they support the common understanding of relevant criteria for quality, thus enabling continuous learning.

This aspect is also particularly relevant for European cooperation, where indicators are of central importance for enriching widely used instruments such as exchanging good practices and adopting bench-marking processes. The Barcelona European Council in March 2002 reaffirmed the importance of developing closer cooperation between Member States in VET and developing a more systematic strategy for the exchange of good practices. Use of indicators will help to arrive at commonly shared understandings of good practices, it can help to structure the exchange of experiences and it will also help to identify strengths and weaknesses of VET quality systems at European, national, regional and sectoral levels.

To support cooperation on quality in VET at European level, it might be helpful to have some specific criteria and indicators to compare the different achievements for quality between Member States and also help to reflect on the extent of, the level or even the 'quality' of cooperation in VET at European level. This paper will therefore also make some proposals for quality indicators addressing the policy level of a European strategy for quality in VET.

2. Preconditions for quality indicators

An indicator is not a value in itself. The definition and selection of indicators presupposes the clarification of the objectives to be attained to improve quality, i.e. selecting indicators is not a technical task; the central focus must be on the quality objectives of VET.

In the policy model emerging all around Europe, the roles and relationships among actors are changing. First, providers of VET are increasingly differentiated from the state and perform their services with increasing autonomy; second, the range of actors involved and participating in policies is increasing. In addition, the basic policy structures are becoming more diverse among countries, and within countries. As a consequence, the coordination of the various functions, the cooperation among actors and the flows of accurate information become more important for effective delivery of policy.

The following four roles of the state are in need of special attention:

- stating and formulating goals and objectives in a democratic process of partnership among the relevant stakeholders;
- implementing the goals and objectives, their translation into performance measures and expected results which can be measured with indicators;
- monitoring and assessing the performances and results achieved in the light of the previous goals and objectives;
- feedback on the implementation process to organise change and provoke improvement.

In EU Member States a further role is emerging and being reinforced because of open coordination of education and training systems in the Lisbon follow-up process.

To perform those roles properly, the goals and objectives, as well as expected results and performance measures to be achieved must be formulated in terms which allow for monitoring and assessment, i.e. they must be sufficiently concrete. Only then does it make sense to think about formulating indicators. With the definition of indicators some kind of measurement must be obtainable, i.e. at the same time sufficient instruments and systems for monitoring must be set up including defining rules for data collection. Something must then happen with the available data. Data must be evaluated, results reviewed in the light of the set objectives and conclusions drawn. To put the final step of feedback and procedural change into practice, first, certain mechanisms supporting the flow of information among stakeholders and the broader public will have to be organised. Second, one has to think about the ways to further improvement and practical change, for example by organising bench-learning processes or by providing incentives.

Each of those functions must be considered carefully to allow for proper delivery of policies. The best system of monitoring is useless if collected data are not used at all. The best indicators will not help if they are not effectively put into practice, if data are not available in

time and/or at the sufficient level of aggregation (production), or if it is not transmitted on time. The best formulation of goals and results is worthless if it is not translated into measures for assessing their implementation. The formulation of indicators is impossible if the goals and/or performance measures are not formulated sufficiently accurately.

The following sections address some key issues for each of the four functions, which must be solved in some way, to implement the outlined policy model. Discourses and practices at both international and European levels are considered.

2.1. Defining policy objectives for quality in VET

In the following section we analyse first some general trends in the changing attempts to define policy objectives for the education and training system. Then we turn our attention to relevant policy objectives recently defined at European level.

2.1.1. Defining objectives for education and training

The formulation of goals and objectives makes the distinction between normative systems of indicators and analytic or communicative ones. We have stated above that formulating quality indicators presupposes goals and objectives as reference points for evaluation.

Formulating goals and objectives in education and training policy has undergone a basic trend towards differentiation during the past decades. Some decades ago, the material input dimension (number of teachers, number of educational institutions, etc.) and simple process or output measures (class size, accessibility, retention) were mainly emphasised. With the boom in the economics of education in terms of growth accounting and manpower planning in the 1960s, increase of financial input became an important objective.

The human capital theory in the early 1970s brought the comparison of input and output as efficiency measures to the fore. However, the results at macro level did not give sufficient information about what to do at the micro level, and the search for the 'production function' proved more complicated than had been expected at the beginning (Hanushek, 1997)**.** As a result, the economic outcome measures of the contribution to economic growth, or increase of workers' productivity, or the rate of return approach were considered too abstract to influence the complex education and training process.

The emphasis then turned to analysis of the process and qualitative issues were strongly reinforced by the effective schools movement of the 1980s and early 1990s (Papadopoulos, 1994; Haddad et al., 1990), with the most important step made towards the competences acquired by the education and training processes as the main output measure which should be emphasised as a core dimension of goals and objectives.

Growing emphasis on the dimension of competences and skills was all the more supported by economical arguments. In a knowledge-based economy it is not abstract human capital that counts but using competences and skills on the labour market. Therefore most recently the dimension of outcome and the relationship between VET systems, employment systems, and the economy have come to the fore.

In sum, there is an ongoing process of expansion and differentiation of the scope of formulation of goals and objectives for education and training policy. The measures have been extended from input to process and result dimensions. The more concrete the formulation of goals and objectives, the wider the scope and the higher the number of categories which might be used to measure progress. A specific issue in education and training policy arises from the complex nature of the process of delivery of services: there is no clear and unambiguous way to achieve certain general goals; moreover, the influence of context might be strong and is difficult to assess with rigour; finally, there may be dispute in a certain system about its actual performance, based on different dimensions of measurement (e.g. some outcome measures such as the situation on the youth labour market might be good, whereas the competence level provided by education might be less favourable).

2.1.2. Defining policy objectives for VET at European level

There are different approaches to arrive at common definitions for policy objectives for the vocational and educational systems at European level.

A strong attempt to formulate more concrete goals and objectives has been started in the processes for open coordination at European level with an initiative to develop a set of 'concrete future objectives of education systems' ([4]).

([4]) Other recent examples for formulating goals and objectives at transnational level are the results of the 'EU – high level task force on skills and mobility', and the Commission's action plan based on those results, or the recommendations of the 1999 Unesco congress on technical and vocational education (second international congress, 1999).

- The EU action plan for skills and mobility formulated a set of objectives to improve (a) occupational mobility and skills development, (b) geographic mobility, and (c) information and transparency of job opportunities. A system of monitoring and following up the implementation of those objectives has been recommended through a yearly benchmarking exercise (European Commission - DG EAC, 2002a). The formulated objectives have been translated into indicators based on available comparative data.

- The Unesco congress formulated a broad agenda of strategic goals for technical and vocational education to cope with the new worldwide challenges for (a) improving systems, (b) innovating the process, (c) universal access, (d) provision of services. However, the developed strategic goals have not been translated into more concrete objectives or actions.

Table 1: Proposal for concrete future objectives of education and training systems in the EU

Strategic objective 1	**Improving the quality and effectiveness of education and training systems in the EU**
Objective 1.1	Improving education and training for teachers and trainers
Objective 1.2	Developing skills for the knowledge society
Objective 1.3	Ensuring access to ICT* for everyone
Objective 1.4	Increasing recruitment to scientific and technical studies
Objective 1.5	Making the best use of resources
Strategic objective 2	**Facilitating the access of all to education and training systems**
Objective 2.1	Open learning environment
Objective 2.2	Making learning more attractive
Objective 2.3	Supporting active citizenship, equal opportunities and social cohesion
Strategic objective 3	**Opening up education and training systems to the wider world**
Objective 3.1	Strengthening the links with working life and research and society
Objective 3.2	Developing the spirit of enterprise
Objective 3.3	Improving foreign language learning
Objective 3.4	Improving mobility
Objective 3.5	Strengthening European cooperation

* Information and communication technology.

Source: Council of the European Union, 2001; compiled by the author.

The formulation of objectives does not specifically address the VET system, and the concept of quality is formulated somewhat more narrowly than in the approach of this report. The strategic objective of 'improving quality' covers the input dimension (Objectives 1.1, 1.3, partly 1.4, partly 1.5), to some extent aspects of process (Objective 1.5) and output (Objective 1.2); the outcome dimension is hardly covered by those objectives. The dimension of improved access has not been subsumed under the concept of quality but as a strategic objective of its own, and the dimension of matching supply and demand is covered at best implicitly (Objective 3.1).

Another European initiative which includes normative goals and objectives for policies in education, training and human resource development is the policy of the European structural funds, namely the European Social Fund (ESF), which is the main financial instrument at EU level for human resource development. The ESF regulation ([5]) formulated five broad policy fields, and several eligible activities to develop human resources. One of those policy fields concerns the promotion of employability, skills and mobility through lifelong learning. A

([5]) See: Regulation (EC) No 1784/1999.

broad set of more or less clearly specified objectives are given to support the broad overall policy goals. Those objectives are given as a kind of overall menu, which has to be specified by Member States (or regions of Member States) in their programme planning documents for interventions supported by structural funds. Evaluation and assessment is done separately for individual countries, based on European guidelines indicating a rough structure and proposals for measurement and indicators. Comparability is not guaranteed.

In the guidelines of the employment strategy the objectives for education, training and human resources have been substantially strengthened and continuously further developed ([6]). Indicators to monitor the employment guidelines have been endorsed, some objectives have been translated into specified targets with a timeframe for fulfilment, others have been recommended to be translated into targets by Member States (European Commission - DG EMPL, 2005).

The action plan for skills and mobility (Council of the European Union, 2001) has reinforced some of the objectives given by the structural policy and the employment strategy, and makes further specifications and extensions of objectives related to education, training and human resources. The defined objectives have different characters. Some have directly taken up objectives from other initiatives (e.g. define targets for cutting early school leaving). Some are formulated in specific actions (e.g. define indicators on skill deficits, develop lifelong learning awards, define standards for ICT and e-business skills). Some seek more complex actions (e.g. develop a 'modular' system for accumulating qualifications, develop a new European system for classification of occupations). And some propose rather broad strategies (e.g. to introduce and consolidate effective competence development strategies for workers).

The communication from the European Commission on lifelong learning (European Commission - DG EAC, 2001) has set out building blocks and priorities for developing a coherent and comprehensive European strategy for lifelong learning based on the consultation process on the memorandum for lifelong learning. The proposals of that communication provide a bridge between the lifelong learning guideline of the employment strategy and development of the concrete objectives for education and training policy, and have also conceptually integrated some additional initiatives. The objectives are strongly situated at the levels of context (e.g. proposals on the method of policy-making, as the objectives under 'striving for excellence', or to ensure high quality outcomes, or several objectives for valuing learning), input (e.g. some objectives on resources, infrastructure and participation) and process (e.g. the objectives for improving access, or matching individuals to learning opportunities). The output and outcome dimensions are rarely touched by the proposals.

In the ESF and employment guidelines, quality is mentioned in a rather narrow sense as a specific aspect of the services of education and training systems, about provision and infrastructure, participation and progression, and results of education and training processes. The communication on lifelong learning has broadened and strengthened the concept of

([6]) See: Council Decision 2005/600/EC.

quality by including, for example, learning culture, innovative pedagogy and striving for excellence.

2.2. Formulating results of policy

Formulating results is the next function in the outlined policy model. Formulation of results is formulating the expectations given in a policy (or intervention), which serve as the reference for comparison with observed experience. Results of policy or practice must be distinguished from the results of the education and training process. While the results of the education and training process are output or outcomes, the results of policy can be on each stage of the implementation process (context, input, process, output, outcome).

The main question is: are the objectives formulated openly, as an activity which should be done, or are the results which should be achieved, defined in an objective and principally measurable way? Some distinctions are important for formulating results:

- results of policies can be formulated basically at policy level (input and process), or at what should be achieved by delivery (output, outcome);
- also important is the level of aggregation at which results are attempted to be achieved, or the kinds of 'objects', which underlie the formulation of results (individuals, clients or customers, organisations and institutions, localities and regions, system level);
- formulation of results should include: (a) operational definitions of what achieving results means; (b) mapping the time scale for that achievement; (c) the relationship between policy delivery and products (i.e. ideas about the necessary resources for achieving results).

Formulating results accurately is crucial, as the important objectives are normally broad and complex and difficult to break down into specific objectives. To change an accurate definition of results might reduce efforts to achieve specific objectives. The breakdown of complex objectives (e.g. employability, or social inclusion) into meaningful specific results is one of the main challenges.

2.3. Indicators and the measurement trap

Measurement means observing experience, which has to be compared to expectations to assess quality. An accurate formulation of results does not guarantee the results can also and will be measured properly.

The new policy model touches on some deeply rooted inclinations and controversies in education and training, about assumptions on 'measurability' of achievements and results. A gap between the qualitative and the quantitative is frequently assumed, and it remains difficult to develop accurate quantitative measures of the core achievements of educational systems or

institutions (see the international projects on achievement: third international mathematics and science study (TIMMSS); programme for international student assessment (PISA); international adult literacy survey (IALS), etc.). Much effort and many resources are needed to proceed. There is clearly a danger of retreating to the measurable, instead of measuring what should be achieved. In turn, these problems might increase mistrust in measurement. Development of measurement is increasingly shifting to large international projects, which might lead to less discretion on crucial issues of policy and practice at national or subnational levels (especially in smaller countries).

Thus, measurement transcends the technical questions of how something can be measured accurately according to the statistical criteria of objectivity, reliability and validity, to: (a) the question of resources needed for measurement, and (b) to questions of communication and acceptance among actors.

Comparability is increasingly important, as VET is seen as key in competition and economic wellbeing – however, measuring at international level might hamper the local, regional or national context, which affects social cohesion and wellbeing.

Given these critical elements of measurement and comparability of data at an aggregated European level, the approach followed for defining commonly agreed quality indicators had to restrict itself to a limited number of indicators, not too complex to reach common understanding, and relatively easy to put into practice to avoid excessive expenditure for information collection and data processing.

2.4. Gathering information

The new policy model challenges the main sources of gathering information, as national statistical systems have evolved over a long time 'symbiotically' along with mechanisms of policy delivery. Much information about input was gathered, much less or nothing about process and results. National statistical systems have developed big, complex and idiosyncratic structures, which are not easy to change. Moreover, change can induce a break in history, as long-term time series might be skipped, and substituted by new categories, etc.

European statistics have partly shifted the measurement to new or different sources (i.e. from administrative statistics to surveys), and included complex processes of negotiation. Developing new processes of producing information is often time consuming, and in need of additional resources. There has been some demand for coordination between different international activities (e.g. between the OECD indicators project and EU sources), which might be difficult to handle at Member State level against a background of some reluctance towards international activities.

The time-scale for producing information is crucial for periodicity and availability. Also crucial and closely related to distribution and use of information is the ownership and flow of

information between the levels of aggregation (institutions, localities and regions, system level). The described indicator systems have different time-scales. Some are reported annually; however, several measures refer to years other than the target year due to problems of data gathering. Other systems are reported on a longer time-scale (e.g. three or five years, as PISA or the continuing vocational training survey (CVTS)), or only irregularly.

2.5. Transparency and distribution of information

This function concerns the potential and actual use of information. There may be different systems and structures of information distribution among the various actors, and in the public. Questions are: who has which kind of access at which costs to which kind of data? Are data for the defined indicators publicly available? Are raw or aggregated data available?

These are preconditions for creating transparency in the VET system. To improve quality there must be systems for distributing information and certain mechanisms to ensure the circulated information can be used by the various actors in the policy process. The more widespread the distribution, the better the potential use of the data will be – and as a reversal effect, better quality data can be expected, as the actors are able to check the information against their experience and will provide feedback to the systems for gathering data.

3. European policy priorities for quality in VET

In the context of the Lisbon strategy, the 'Copenhagen declaration' ([7]) of the European Ministers for Vocational Education and Training and the European Commission formulated – among others – an objective towards improving quality assurance through promoting cooperation with particular focus on exchange of models and methods, as well as common criteria and principles for quality in vocational education and training. Against this background this study aimed at developing of indicators to measure the quality of vocational training in relation to the political priorities set by Member States, the European Commission and the social partners:

- better employability of the labour force;
- better match between training supply and demand;
- better access to vocational training, in particular for vulnerable groups on the labour market.

Taking these policy priorities as a point of departure, defining and selecting appropriate indicators of quality in VET should be guided by documenting, assessing, and supporting achievement of these goals.

So far, quality has been linked primarily to how education and training organisations provide their services, mainly in the results of their teaching or training activities. Thus, quality has been approached mainly from the point of view of the processes within VET organisations (West, 1999). This study adopted a wider concept of quality, with the challenge of developing quality indicators at the level of systems, thus including and going beyond the level of VET institutions and training providers.

3.1. Three European policy objectives for quality of VET

In this section the grounds are laid for defining and selecting indicators for assessing quality in vocational education and training (VET). The three priority areas for policy and practice in VET (providing employability; matching the supply and demand for competences and qualifications; providing inclusive access to VET), are taken as basic overall objectives to be reached by VET policy and practice. The first step is to break down these broad priorities into a set of more concrete objectives, which might serve as a basis for formulating expectations and assessment of experience.

The three priorities are complex concepts, which do not have an unambiguous and straightforward definition or meaning. Therefore establishing objectives can be done in

([7]) European Commission - DG EAC, 2004.

different ways. As a consequence of this complexity, sets of objectives can be formulated for each of those policy priorities. Consensus on the meaning of the overall priorities can be developed progressively during the process of policy and practice. To relate indicators to a set of objectives sets up a conditional relationship, and gives an option to select certain objectives. At the same time, different definitions of objectives and indicators may conflict and provoke comparison, debates on clarification of the pros and cons of certain definitions among the actors involved.

Objectives can be set for the three broad policy priorities (employability, matching, access), relating them to measurable indicators. The source for selecting indicators should be primarily sets of indicators which are already in use.

Conventionally, the concept of quality is predominantly attached to how education and training organisations are delivering their services, mainly in the results of their educating or training activities. Thus the level of addressing quality has been mainly the processes in education and training organisations. A broadening of that concept to system level makes sense if we consider that the three policy priorities, employability, matching, access, cannot be reached by those organisations alone, but include broader actions and structures at system level. We can distinguish two dimensions which can be measured for quality: (a) how the systems provide their services to improve quality on the three priorities; (b) how policy contributes to improvement of quality. Those dimensions are clearly interrelated, but have certainly implications for the choice and application of indicators. A main implication is that the choice of indicators about policy includes tighter normative (strategic choices) and dynamic (the time-scale of delivery) assumptions about which objectives should be reached. Another implication is that responsibility for reaching objectives can be attributed more properly to the actors in charge.

A main starting point is that each of the three policy priorities (employability, matching, access) is in itself a complex and ambiguous area for practice and policy. Therefore there are many possible ways to translate the broad priorities into more concrete objectives. The attempt to do this is guided by the ambitious goals set in various European documents to define a set of objectives for each priority which might be ‘ideally’ suitable to reach them based on what we know about the respective areas. That set of objectives can be translated into indicators to measure them, and related to the systems of indicators which are available ‘top-down’ at international and European levels, as well as ‘bottom-up’ in Member States.

Taking policy priorities as a basis for defining objectives and formulating indicators, they prove to be both demanding and conceptually productive. Overall formulation of the broad objectives for employability, matching and access, which should be reached by good quality VET systems, and/or supported by good quality policies, has been easily agreed in several documents in this general fashion. However, the question of what it means to achieve those objectives, and how to measure the achievement comes quickly under dispute. What are the proper framework conditions for acquiring the necessary competences for employability? How can the responsiveness of a system be improved? How good is a system in its

responsiveness to demand? How accessible is a system? How much resources should be devoted to including vulnerable groups? These familiar questions quickly lead to matters of fact and issues of measurement and indicators.

3.2. Priority I: employability

The concept of employability gained prominence on the political agenda during the past decade. An important step was its use as a main concept in the European employment strategy since the Luxembourg summit in 1997 ([8]). Emergence of the concept, and its implications for policy and practice, were thoroughly analysed by Gazier (1999). At the core is its dynamic and interactive nature, which has replaced security of employment by '... employability security. Although not easily and not often defined, employability in this context means dynamic and updated competences and labour-market-oriented behaviour for every person participating in the workforce. The insistence on the dynamic and interactive dimensions is now patent and constitutes the main attributes of the present and operational concept of employability. Even when implemented through concrete labour market policy interventions, employability remains in part abstract. The ability to find and keep a job, however defined, is not the disposal of a job'.

Employability is a relatively new and a complex concept. As developing indicators is normally a process which takes time, the well-established systems of indicators do not measure employability. Developing widely used indicators includes many learning processes involving definition, measurement and interpretation. A complex concept cannot be measured directly, and to define it in empirical trends, there is room for discretion. The concept also has no unanimous definition. This is reinforced as it includes a paradigm shift in defining the relation of education and training to employment. Employability refers to individuals and their responsibility to meet the requirements to find employment. It also refers to the overall system of employment relations, including enterprise practices, which to some extent provide incentives and constitute expectations. 'Employability means the capacity for people to be employed: it relates not only to the adequacy of their skills but also incentives and opportunities offered to individuals to seek employment' (Tronti, 1997). The study identified three main factors influencing employability:

- the recruitment and search strategies of the labour market actors;
- the situation and activities of intermediaries, such as public and private employment agencies;
- general demand and production conditions (Gazier, 1999).

A more recent working definition by Tissot (2004) specifies two components: readiness for mobility and for developing occupational competences.

([8]) See: http://www.eu-employment-observatory.net/en/ees/.

The tension between an individualistic definition of employability focusing on the initiative of individuals, and an interactive concept is key among the more recent interpretations. The interactive concept assumes that 'employability is an attribute not merely of individuals but also of the workforce as a whole; ... improving employability is not just about increasing skills and human capital but also about overcoming a whole array of barriers that prevent people from accessing jobs, remaining in stable jobs or increasing earnings' (Gazier, 1999).

As the concept is strongly contextual, VET is not the only contributor to employability. Therefore overall measures of employability cannot be directly attributed to the quality of VET. Defining objectives can to some extent solve that attribution problem, as the objectives express what is expected from VET to improve employability.

Employability cannot be measured directly. Therefore indirect measures must be developed as on which aspects of the concept they refer to. The employment guidelines and indicators of the employment strategy do not attempt to measure employability. Instead the effort of labour market policy to prevent long-term unemployment, the rate of inflow into long-term unemployment and the activation rate are measured under the employability pillar. Those measures are clearly not sufficient for measuring quality of VET. The main measures applied so far are considering employment, unemployment and inactivity. However, employment does not really measure employability. People who are employed, necessarily are to some extent employable, however, because of the contextual and interactive nature of the concept, the reverse must not be true.

The interactive concept of employability presupposes changes not only by individuals, but also by enterprises and other actors involved in employment and the labour market system as well as in the wider welfare system (Blancke et al., 2000). Individuals need incentives and support to secure and improve their employability. In this respect, continuing vocational education and training (CVET) is in charge. Particularly important objectives are introducing competence development strategies for workers and involving in-company training. These objectives are strongly addressed in the action plan for skills and mobility (European Commission - DG EAC, 2002a) and in the communication on the European area of lifelong learning (European Commission - DG EAC, 2001).

The main dimensions which are seen conceptually as providing employability at individual level are competences and attitudes. These are paradoxically poorly measured so far, and their impact is rarely proven. Attempts to measure achieved competences provide at best marginal information on VET systems. The PISA assessment, for example, gives information about young people entering VET.

We can identify a set of objectives to measure VET's contribution to improving employability. According to this, employability includes four basic categories of objectives: competences and attitudes, completion of training programmes and pathways, transition to and participation in employment (quantitative), and issues relating to quality of employment.

3.3. Priority II: matching supply and demand for competences and qualifications on the labour market

In recent years VET systems have come under pressure to match supply to demand. However, an assessment of the quality of that matching performance has seldom been an explicit policy priority. Explicit measurement of the matching quality is difficult. The employment guidelines have introduced an objective of policies to develop job matching and to prevent and combat emerging bottlenecks in labour markets. However, the main activities to achieve this objective are the labour market and employment systems. Developing policies to prevent skill shortages addresses the VET system more directly. This task is reinforced in the skills and mobility action plan which proposes to develop indicators measuring skills deficits, and in one of the building blocks of the communication on the European area for lifelong learning, which is developing insight into the demand for learning, from the perspectives of different actors.

Analysis of the relationship between supply and demand for human resources basically concerns the performance and efficiency of the labour market. As a complex system, there are widely differing approaches for assessing the performance of the labour market, ranging from macroeconomic concepts on the relation between GDP or output growth and the labour market, to the micro level concepts of matching job-seekers to vacancies. VET is only one of the factors which influence that broader system. If the performance of the overall system is not known, it is clearly not possible to gauge the impact of a specific factor. This is the main difficulty in the assessment of matching. The key problem which is heavily disputed is analysis of the demand side: if the demand for labour and qualifications is taken as given, it is relatively easy (at least in the short term) to assess labour market performance. However, one of the main ideas related to the concepts of innovation and the knowledge-based economy is that the demand for competences would evolve through complex interactive relationships with various factors concerning innovative behaviour.

On VET, it is clear the overall impact on labour market performance will be – at least potentially – greater from CVET than from IVET (initial vocational education and training), because IVET produces a limited inflow into the overall flows on the labour market (one age cohort per year). CVET potentially, depending on participation, has a much broader impact on the flows and transactions on the labour market. This comparison concerns quantitative relationships. In a qualitative perspective the relationship is less clear. IVET serves to renew the human resources stock gradually and year by year. If an ongoing structural mismatch occurs, that will culminate in substantial problems in the mid and longer term. The increasing dynamic of changing demand, combined with the ageing population, leads to a double squeeze on renewing skills and competences.

A main concern for analysing overall employment and labour market performance is to separate structural from cyclical and frictional components. The structural component is a result of the institutional set-up of the employment and labour market system, comprising the following elements (see: European Commission - DG EMPL, 2002, p. 50):

- the design of tax-benefit systems;
- skills mismatches;
- geographic and occupational mobility on the labour market;
- preventing unemployment from becoming persistent by active labour market policy;
- degree of competition among producers;
- long-term real interest rates.

The main concepts to measure the structural component are the NAIRU as a stock concept based on macroeconomic econometric modelling and the Beveridge curve as a flow concept which measures the matching between supply and demand on the labour market by comparing the relationship between unemployment and job vacancies over time. An inward or outward shift of the Beveridge curve indicates improvement or deterioration of the overall matching efficiency on the labour market. These estimates at the aggregate level, which are available for the Member States of the EU in recent studies ([9]) mainly provide information on the context of VET. In principle, the weight of skills mismatches can be estimated by models based on that concept, or by using additional measures more loosely, and the matching efficiency can also be analysed for certain subgroups or sectors (Tronti, 1997, p. 31-50). At European level the variance between unemployment of educational attainment levels as compared to overall unemployment has been used as an indicator for educational mismatch (ECB, 2002, p. 16). Several measures for skills mismatch based on comparing the distribution of educational attainment among different aggregates (population, young and adult population, the employed, unemployed and inactive population, etc.) and its change over time is used for measuring skills mismatch (ICT skills monitoring group, 2002). The educational attainment structure of the employed population and its change reflects the demand for skills, whereas the attainment structure of different aggregates of the population reflect supply. The degree of similarity between the distribution of supply compared to demand are used as measures for the match or mismatch.

Skill gaps, defined as 'poor availability of potential skilled employees within the existing workforce' (ibid., p. 39) are measured similarly, based on the categories of educational attainment levels. The European Employment Observatory (EEO) has distinguished labour shortage and skills gaps (European Commission - DG EMPL, 2001, p. iii):

- labour shortage: 'an overall shortage of labour at national level across sectoral and occupational areas';
- skill shortage: 'seen to exist when employers are unable to recruit staff with the skills they are looking for at the going rate of pay'.

([9]) See: European Commission - DG EMPL, 2002, p. 71-72; ECB, 2002, p. 15, p. 31-32. Estimates of the Beveridge curve normally rely on the statistical categories on supply and demand on the labour market (the demand data being notoriously problematic), with possible breakdowns by sectoral, occupational or educational categories.

Lack of agreed definitions and data, and diverse methodologies have been mentioned as main problems for observing skills gaps. In its conclusions the EEO stated that 'the emergence of labour shortages and skills gaps is a highly complex and multi-faceted phenomenon. The importance of addressing this phenomenon is highlighted by evidence available in the Member States which shows that skill shortages can lead to wage cost inflation, difficulties in maintaining competitiveness and even an indication of the emergence of the 'discouraged recruiter' which could impede job creation in the short to medium term. It is a phenomenon which has only recently begun to attain greater prominence in the academic community ...' ([10]) (ibid., p. vi). Emphasis is also laid on the question of predicting future skill shortages, which is more problematic, given the limitations in ascertaining the actual situation. 'The importance of mapping and forecasting skill needs is not only important to avoid skills shortages with potential future impact on competitiveness, but also to avoid low returns on investment and expectation failure' (ibid.).

Assessing the quality of matching presupposes a clear definition of demand, and its relationship with supply in comparable measurement units. In reality this assessment is performed by more or less implicit processes, and seldom or only partly by explicit procedures. Different dimensions can be used for assessment of matching, and in most systems more than one of those dimensions will be relevant: occupations, trades or sectors, education and training levels, qualifications or competences. Main dimensions of matching practice are the following:

- A first main dimension in matching is the production and dissemination of information and knowledge in a system. How are mismatches detected (informally, formally)? What time perspective and approach is involved (short-term, mid- or long-term; reactive, proactive)? What are the main dimensions of mismatches that can improve matching? How is information on mismatches communicated among the actors?
- A second dimension is the actions or types of activities taken to react to perceived mismatches. Which strategies are adopted or expected to be adopted by VET systems or its subsectors to improve matching (flexibility and broadening, specificities and updating)? Which actors (individuals, enterprises, education sector, policy and public sector, research) have which implicit or explicit responsibilities in the prevailing matching practices? What information should be disseminated among the actors, and how?
- A third dimension is the relationships between initial VET and continuing VET with respect to matching. A main difference between these sectors is IVET is supply oriented whereas CVET is demand oriented. An influential way of conceiving that relationship in terms of matching has been to allocate to IVET the more general and long-term and foundational tasks, and to CVET the more specific and dynamic adaptational tasks. Consequently the matching in the sector of IVET would be more strongly driven by the anticipation and foresight of longer-term trends, whereas matching in the sector of CVET

([10]) As examples for the academic attempts to assess those issues see Manacorda and Petrongolo, 1999; Nickell et al., 2001; Lucifora and Origo, 2002.

would be more strongly driven by the short-term dynamic of demand and supply on the labour market. A basic task for policy to improve matching would be to coordinate IVET and CVET. However, more recently in the lifelong learning strategy, these sectors have become more blurred. Both sectors are increasingly expected to respond to demand, and both sectors are expected to consider the longer-term trends and more general and specific aspects.

A crucial element in matching practice is using methods for anticipating and foreseeing future demands for skills and competences, and the relationship of these methods to developing education and training profiles in VET systems. Different practices and developments are prevalent in the EU.

3.4. Priority III: access, especially for vulnerable groups

The third policy priority covers two different facets which are not clearly denoted in the definition: first the overall accessibility of VET systems and institutions, and second access for vulnerable groups. The provision of access as a policy priority in terms of quality is to some extent a conflict-loaded issue, as a main dimension inherent in education is selection. Therefore accessibility has to be seen to a certain degree in relation to selectivity with a background of different values and interests. Education systems and policies serve to different degrees accessibility and selectivity. The outcomes of these different relationships are not sufficiently clear. Frequently the assumption is that a certain degree of selectivity would improve quality of results, an assumption countered by the empirical results of the recent PISA study.

There seems to be a pragmatic consensus on certain functional assets of the accessibility-selectivity relationship:

- VET systems should not select someone on grounds other than the prevailing definitions of ability (which may differ widely);
- the selectivity of VET systems should not waste energy or resources (e.g. such as too much repetition of grades, drop-out, dead-ends or broken pathways, unproductive waiting procedures);
- VET systems are expected to secure a first vocational qualification for the whole cohort of young people, and to provide the opportunity of updates of obsolete qualifications for adults;
- to combat social exclusion, VET systems should secure at least a certain level of basic qualifications or basic level of competences for the whole population. That means avoiding early school-leaving, providing second chances in case of early drop-out among young people, and providing opportunities for adult people;
- finally, as requirements for qualifications and competences are generally estimated to be on the rise because of the development towards the knowledge-based economy and the

economic policy objectives, broadening access to higher qualifications is generally seen as an aim for education and training policy.

Based on these considerations we can define a set of objectives for the overall improvement of access, and another set of objectives for improving access to learning opportunities for vulnerable groups. Access can be broken down into the following four types of objective: basic competences for everyone, broadening access to everyone who can benefit, effective opportunities for vulnerable groups, and permeability of systems. The objectives selected to improve the quality of access at a general level and in relation to vulnerable groups might be more controversial than other policy priorities. On access for vulnerable groups, and to combat exclusion, VET systems should secure at least a certain level of basic qualifications or basic level of competences for the whole population. That means at the very minimum (i) avoiding early school-leavers; (ii) providing second chances if young people have dropped out, and (iii) providing appropriate opportunities for adults, including lifelong learning, especially for people older than 55.

The following table provides a summary of a proposal for a set of main categories of objectives, which have been selected to put the three basic policy priorities into practice.

Table 2: Categories of objectives for the European policy priorities

Main categories of objectives to be attained or improved / criteria for quality		
Employability	Matching	Access
Competences and attitudes achieved (levels: basic, ICT, social, personal, technical)	Information (knowledge of training demand acquired and transmitted)	Basic competences for everyone (distribution among groups)
Completion of education and training pathways and acquisition of qualifications (avoidance of drop-out)	Responsiveness (knowledge of training demand recognised and reacted to)	Broadening of access to education and training pathways (to everyone who can benefit)
Transition to employment, employment participation (quantity measures, duration)	Adaptation (production of training supply related to demand)	Effective opportunities for vulnerable groups (targeted provision, outreach activities, acceptance, completion and utilisation)
Quality of employment (stability, income, desired working time) and employment in new and flourishing sectors	Innovation (training supply related to new demands)	Permeability of systems: accreditation and certification of acquired skills and competences

Source: Compiled by L. Lassnigg, IHS.

4. A coherent chain of quality indicators

Indicators cannot stand in isolation. As described above, they first of all have to be related to certain important objectives in reality. We call this external coherence. Second, they have to be related to one another, which is called internal coherence. In this sense one should be aware that one indicator alone is worthless. Indicators must be organised in a specific system to make the information provided by individual indicators more useful. If indicators are part of an internally coherent theoretical model they can provide not only information but explanations as well. In many cases a figure that stands out in one indicator can be explained by relating another indicator to it. To make the quality dynamics in a VET system more comprehensible, there must be a coherent chain of indicators which reflects the objectives, the process and the results of an action. In doing so, the information provided by individual indicators can be placed and interpreted in a broader context that will become relevant to the pre-defined policy objectives. Such a coherent set of indicators is all the more important when dealing with complex policy priorities such as improving employability, matching supply and demand and access to training.

Following the process of cooperation on quality assurance which has taken place at European level as a result of the Copenhagen process, a set of indicators has been adopted and structured according to context, input, output and outcome. In the world of VET these different aspects are all interrelated, but to make improvements one has to make distinctions, analyse the different aspects separately and look for relationships among them. Differentiation according to context, input, output, and outcome has the advantage of allowing the entire cycle of VET activities to be covered and further, it can serve as a frame of reference for all levels of VET, i.e. the systems level as well as the level of VET providers. All in all, this model provides a coherent system of indicators that has been adapted from the concept that has in recent years become an EU-wide standard for assessing structural fund interventions, and in particular vocational training activities cofinanced by the European Social Fund (European Commission, 1999).

4.1. From context to outcome

4.1.1. Context indicators

In general VET organisations cannot ensure attainment of the stated goals of the policy priorities in isolation because they are anchored in systems and regulations. Nor can VET policy be deemed responsible for achieving them on its own, since the VET system is also dependent on certain contextual factors. Economic and occupational structures, as well as incentives and, last but not least, resources are important preconditions for the quality of VET systems, although these factors can scarcely be influenced either by VET policy or by VET institutions.

A second meaning of context relates to context in terms of history and development, defined as an actual baseline on which further development must build (i.e. qualification level of a certain population). This second meaning of context is especially important if the focus is on the quality of policies. In this respect context indicators can serve as general reference data. In a time frame, they serve first as a baseline for the point of departure and for a realistic definition of policy objectives. In later stages, with the data provided by context indicators, it can be proved whether and to what extent certain objectives (on quality in VET) have been met. For example, the proportion of vulnerable groups in a certain population (national, regional, local) is an important piece of context information, which serves as the necessary starting point for setting realistic objectives for their access to and their participation in VET. In a second step, this contextual baseline information will allow comparison with the actual access and participation rates achieved.

When talking about baselines for measuring improvements, there are different levels of context indicators to be considered. Taking the example of vulnerable groups, there are concrete indicators which could be measured without too much effort. However, the more general the formulation of objectives (for example: influencing the economic growth rate or reducing unemployment rates through VET, etc.), the greater the need to assess the contextual factors relevant to the quality of VET. With regard to the selection of indicators relating to context, the main question is the extent to which that dimension should be covered, and how the most demanding areas – which have been poorly covered by indicators so far – should be dealt with (e.g. the degree of mismatch, or the selectivity of systems).

4.1.2. Input indicators

In contrast to context-related factors, which can only partly be influenced by the VET system, input covers those factors which are derived from VET policy and which can be influenced by the actors in this field. Input factors have a direct bearing on the way in which VET activities or the VET process takes place. Sometimes an additional differentiation is made according to input and process, although process indicators, too, relate to the way in which VET activities take place.

Input or process indicators deliver important information on the resources mobilised to improve the quality of VET. It is not only possible to measure input in quantitative terms (financial resources); it can also be differentiated according to the different resources and instruments used in the process of VET production (process indicators). For quality issues it is important that input/process indicators deliver information on the different types of resources mobilised. These resources might consist of solid infra-structural conditions, but also of certain instruments or tools for improving quality, such as the implementation of a QM system or the training of trainers.

It is also important to consider that different kinds of input resources will have varying impacts not only on the process but also on the output and outcome of VET provision. Therefore, for example, implementing QM approaches that cover the full quality cycle could

be used as a basic indicator for quality in VET, because this indicator includes input, output and outcome factors.

4.1.3. Output indicators

Recently the relationship between the VET system and the labour market has become more and more important, which – last but not least – is reflected in the importance of employability and the matching issue. As a result both the output and outcome factors of VET have received greater attention.

Output factors are the direct result of VET activities. And they can be influenced directly by organising the input and process of VET accordingly. Thus, for example, under the policy priority employability, the acquisition of formal qualifications or ICT skills by VET participants can be seen as a direct output of VET activities, i.e. the output indicators measure the direct results of the VET process.

4.1.4. Outcome indicators

Whereas output is a direct result of the VET process, the outcome factors consist of results which can only partly and indirectly be related to the VET system. The outcome of the VET system covers all the indirect and long-term effects of VET activities, which are also influenced by many other factors. Successful transition to employment after completion of VET depends not only on the qualifications acquired but on other factors such as the general economic situation. Similarly the use of newly acquired competences in the workplace will depend not only on these competences but also on the conditions in the workplace.

Despite these factors having an influence on the outcome of VET activities, there is nevertheless a causal relationship between the quality of VET and such outcomes. This relationship makes it important to consider the outcome of VET using appropriate indicators.

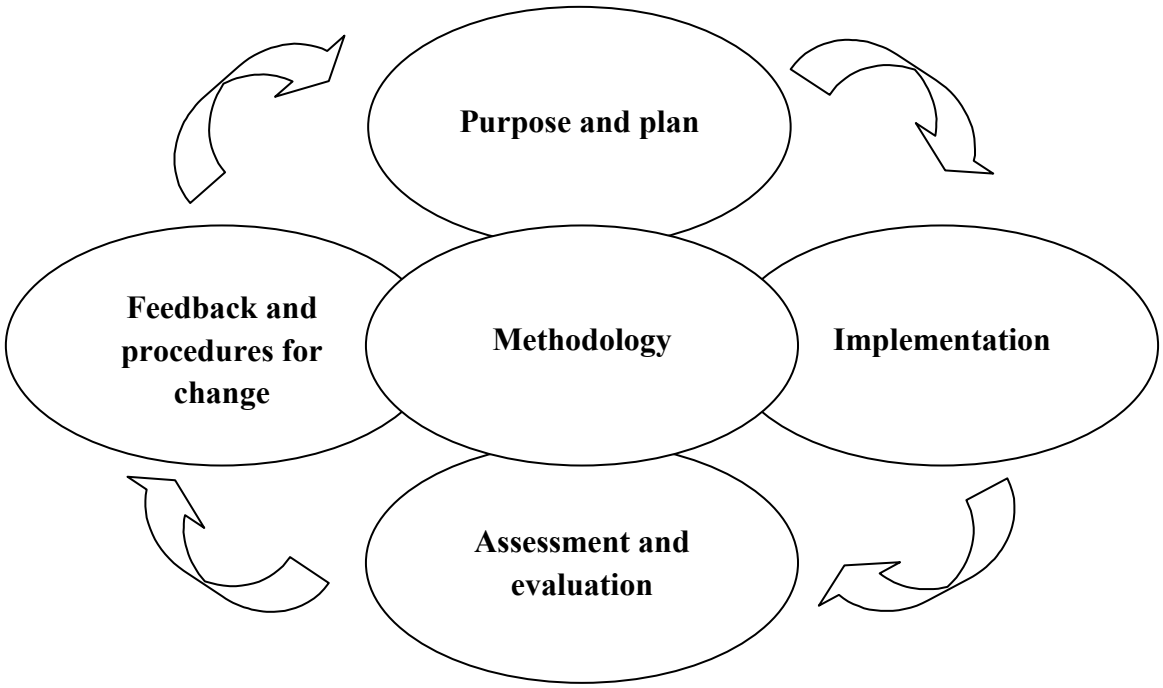
4.2. The four steps of the quality cycle and the CQAF

Defining objectives and using a coherent set of relating indicators are just certain steps towards improving the quality of the VET system. The essential point is that use of indicators should be part of a quality cycle which includes as additional steps planning, monitoring and evaluation activities and finally feeds back the lessons learned into the different parts of the VET system thus leading to practical conclusions towards improving quality.

According to the quality cycle, at European level, a common quality assessment framework (CQAF) was developed by the technical working group which was established as a follow-up instrument to the Copenhagen process. The CQAF consists of four steps:

- purpose and plan,
- implementation,
- assessment and evaluation,
- feedback and procedures for change (see Figure 1) ([11]).

Figure 1: The common quality assessment framework (CQAF) for VET: core elements



Source: Oliveira Reis, 2004.

In this model methodological aspects are considered as an additional crosscut step, which has to be included and decided on in each of the different steps and in the process as a whole. The methodological issues are especially important for the indicators applied as well as for the inherent procedures for data collection.

The set of indicators presented in the following section cannot be linked directly to the different steps of the framework, as they have to be addressed in every step from different angles.

Obviously, indicators should be part of the planning phase and decisions have to be taken in the planning phase on the methodology to gather the necessary information to serve the different indicators. Some information will be available from the implementation process (such as contextual data), other information will be gained in parallel to the implementation process (entries respectively participation rates and drop-outs). For other indicators

([11]) For further information, see: Oliveira Reis, 2004.

(completion, destination of trainees) data collection can only be organised after the training courses.

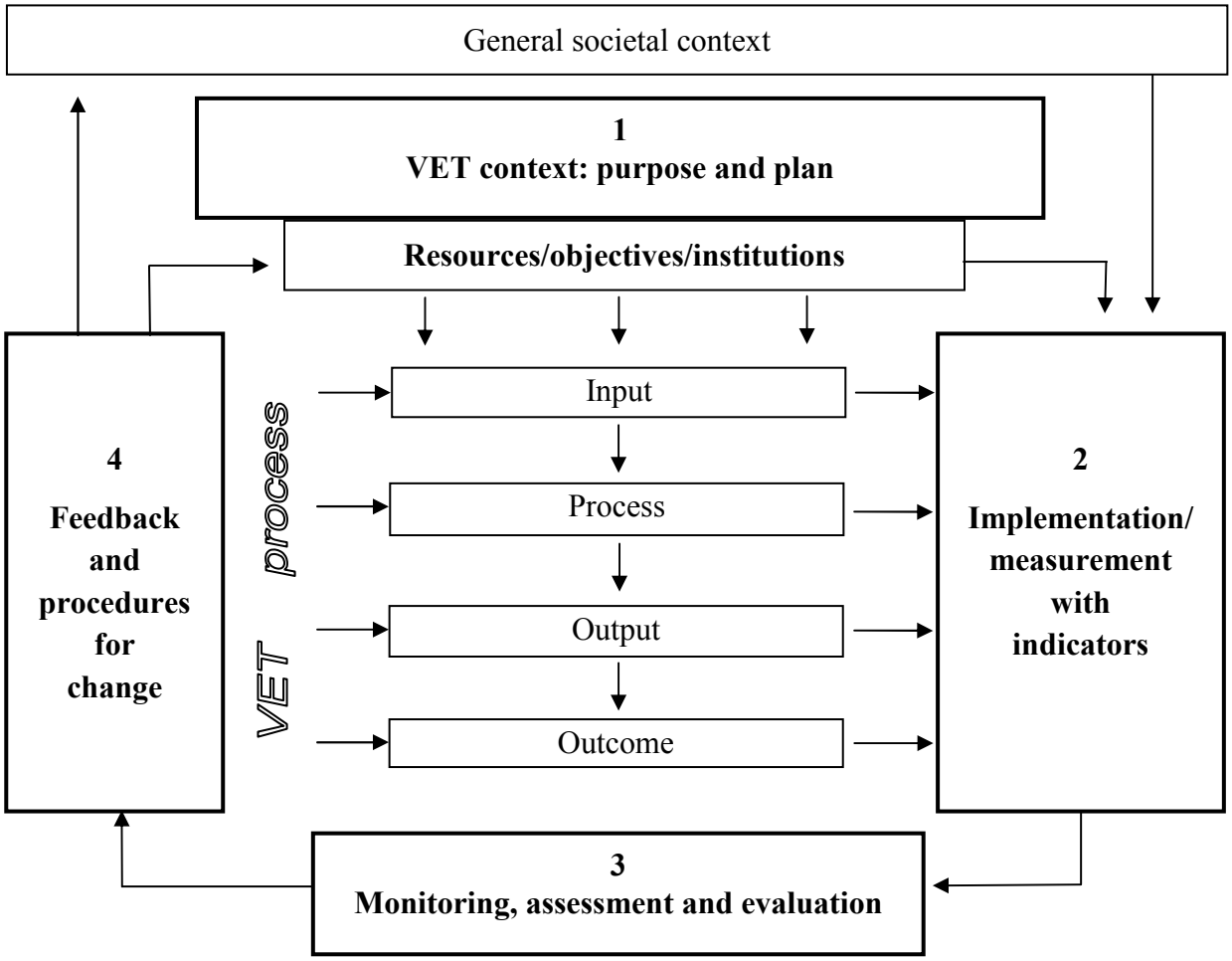
Evaluation means that information on the different indicators is available on time and that all data is interlinked to gain a complete picture of the quality of VET activities, i.e. achievements have to be compared to contextual data, actual data has to be compared with data from previous evaluations, etc.

In the feedback phase all indicators should be considered again as practical consequences might be drawn from each of them. Subsequently, in methodological terms and in coherence with the CQAF model, the quality of the information on which recommendations and decisions for change are based should be assessed, i.e. the set of indicators which has been used should be reviewed and improved as well. Similarly the applied procedures for data collection should be assessed and adapted wherever necessary.

A more detailed description of the policy cycle that splits the VET process into several analytical steps is given in Figure 2. A VET system is always located in or is part of a certain context. We can distinguish first the general context, which consists of the societal framework conditions that influence VET systems, but which in contrast are themselves scarcely influenced by VET systems, for example the actual economic growth rate in a given society. Second, we can distinguish a context specific to VET, such as the legislative conditions. This VET-specific context influences mainly the overall political objectives of the VET system, the (public) resources mobilised and finally the definition of certain organisational arrangements for VET institutions or VET providers.

The VET process itself first consists of certain inputs which are strongly influenced by the VET-specific context (objectives, resources, organisational arrangements). The process describes how these inputs are transformed into certain outputs and outcomes. In the perspective of improvement of quality, all these steps should include a reliable measurement of input, process, output and outcome of VET activities. This can be done through monitoring and evaluation using different techniques; use of indicators, however, is the common element of all these efforts.

Figure 2: CQAF and the process of quality in VET



Source: Compiled by the author.

In our European approach, the most prominent function of indicators is to test the appropriateness of policies and actions by comparing the objectives achieved with the previous contextual starting points and the (policy) objectives previously set. By using the information provided by a set of indicators, the changes necessary to bring about improvement can be implemented, and the objectives and methods to achieve these changes can be redefined. The more meaningful the use of indicators, the better the information acquired will feed back into the VET system.

Finally, for improving the quality of VET, it is important that conclusions are drawn from the results of monitoring and evaluation and that these conclusions feed back into the VET process. Of course, this feedback primarily has to address the weak points of the process, but in principle it should contribute to improving the whole system, for example, by redefining the objectives, reallocating resources, changing institutional arrangements, reconsidering and rearranging input factors, considering practical approaches to improve the outputs and outcomes of the system.

5. Proposals for a limited set of coherent quality indicators

This chapter consists of two parts. The first section contains some principal considerations on the use of indicators as an instrumental part of a European strategy for quality in VET. The second section presents proposals for a coherent set of indicators as developed by the technical working group for quality in VET.

5.1. Using indicators in a European perspective

In March 2000, the Lisbon European Council adopted a new open method of coordination of European policies to spread best practices and achieve greater convergence towards the main European objectives. This management by objective approach can be seen as the most successful procedural innovation for European policy.

This process is not concerned with establishing rules and regulations but with agreement of specific objectives at policy level. Wherever possible, these objectives are quantified, which allows measurement of progress and comparisons. This approach leaves Member States fully responsible for their policies, but promotes convergence through common commitments to the agreed objectives and through the 'soft' pressure of an in-built review mechanism. Thus, this method establishes equilibrium between the European level, which is to coordinate definition of common policy objectives and comparison of outcomes, and the Member States' responsibilities in deciding the concrete activities to reach the objectives.

This approach contains three important aspects, each of which exerts an influence on the other:

- agreement of objectives which are genuinely verifiable regarding their degree of achievement; for quality in VET this has been put into practice with the definition of the policy priorities and their translation into measurable objectives;
- measurement of the degree of objective achievement and comparison of agreed target values with actual achievements;
- unambiguous, previously determined indicators, which provide a basis for examining the extent to which the objectives set have actually been achieved. For quality in VET, concrete proposals for such indicators are presented in the following section.

This management by objectives approach, which was first successfully applied in the 'Luxembourg process' for implementing the European employment strategy, has in the meantime also been extended to a wide range of other European policy areas, for example the European initiatives for social integration and lifelong learning.

When the management by objectives approach is applied to quality in VET, we have to consider indicators for measuring progress at Member State level and, based on this, at European level as well.

Some indicators proposed in this report are based on data which already exist at European level (Eurostat, labour force survey (LFS), etc.), some are in use in some Member States, others are used in OECD surveys and for some others it is unclear if reliable data are available at the level of the VET system. Further, some indicators have only been used in pilot schemes, or are still just proposals for implementation at a later stage. Some indicators currently in use at Member State level only, but which are not used at European level yet, will need a certain amount of adaptation to meet the requirements of a European strategy on quality in VET. In accordance with European policy objectives, this adaptation of indicators should also consider gender, i.e. they should provide information according to gender distribution.

The first criterion for the indicators proposed in this report is their clear relationship to quality assurance and to policy priorities. A further selection criterion is their degree of operationalisation and the comprehensiveness of the information they deliver; preference for indicators which provide more valuable information. In this respect, the cost-benefit ratio was also considered: indicators should not only provide useful information, they should do so at reasonable cost.

The following proposals can be seen as key indicators to support the European policy priorities in quality for VET. They are derived from broader lists of indicators contained in the annexes. Annex 2 contains a list of indicators derived from the information provided by representatives of Member States in the technical working group for quality in VET and by the social partners.

All data referring to individuals should be differentiated according to gender, age and where appropriate to certain social groups (ethnic minorities, migrants, persons with disabilities, long-term unemployed, persons older than 55 years) reflecting other EU policy objectives, mainly towards social inclusion.

5.2. Description of the set of indicators developed by the TWG

Part of the mandate of the technical working group on quality (TWG) was ‘to develop a limited set of coherent quality indicators for VET at systems level, based on good practice’. The intention of the TWG with the proposed indicators is not primarily to measure and compare at European level. Although in principle most of the proposed indicators allow for measurement, its main emphasis is, in a first step, to obtain more information on national approaches to ensure quality in VET, to exchange experience on these national approaches and to create common trust at European level. Further, the indicators are meant both for use at VET systems level and at VET provider level. Therefore, the main function of the proposed

list of indicators is to serve as a recommendation to VET providers and to those responsible at systems level to make use of these indicators.

To put its mandate into practice, members of the TWG first reviewed the set of indicators developed by the former European forum. Two rationales have been the guiding principles for selecting adequate indicators: the first to support indirectly the application of quality management systems at both VET providers and VET systems levels; the second to link the activities for better quality to European-wide agreed objectives for VET systems. This selection process led to a proposal with a few condensed and concise indicators, forming a limited set of coherent quality indicators (see Table 3, where the proposed indicators are presented).

The proposed set consists of eight indicators which can be based on quantified data which means they can be linked to clearly defined objectives and they can support achievement of these objectives. These eight indicators are accompanied by two descriptors (soft indicators) which can be used to collect additional qualitative information for achieving certain policy objectives relevant to developing VET.

All indicators can be applied both at VET systems level and at VET providers level.

Together the proposed indicators cover the different steps or the whole cycle of the VET process, i.e. they do not stand in isolation but are related to one another; they include contextual information as well as data relating to input, process, output and outcome. A certain focus has been given to indicators oriented towards measuring output and outcome of VET activities.

It should also be noted that all indicators referring to individuals should consider the gender perspective and provide information according to gender.

The proposed set of indicators consists of two overarching indicators which are to promote quality assurance in general (indicators 1 and 2); the other indicators (3 to 8) reflect and support achievement of the three policy priorities for the VET systems (better employability, matching, and access) set by the Member States, the European Commission and the social partners. All indicators serve more then one policy objective.

Table 3: A coherent set of quality indicators (selected by the TWG)

Level	No	Overarching indicators for quality assurance			Source
context/input	1	share of VET providers applying QM systems respecting the European reference model by type of used approach (for example: ISO*, EFQM**)			new
input/process	2	investment in training of trainers			new
		Indicators according to quality objectives			
		employability	access	matching	
context	3	unemployment according to groups	unemployment according to groups	–	Eurostat
context	4	–	prevalence of vulnerable groups	–	Eurostat
input/process output	5	participation rates in IVT and LLL	participation rates in IVT and LLL (compared to prevalence of vulnerable groups)	participation rates in IVT and LLL	Eurostat LFS/CVTS
output/ outcome	6	successful completion of training	successful completion of training (compared to prevalence of vulnerable groups)	–	LFS
outcome	7	destination of trainees six months after training: further training, employed (in job related to training), unemployed, etc.	–	destination of trainees six months after training: further training, employed (in job related to training), unemployed, etc.	new
outcome	8	use of acquired skills at the workplace	–	use of acquired skills at the workplace	new
		qualitative information			
context/input	9	–	–	mechanisms to relate developments in labour market to VET systems	to be included in core criteria
process	10	–	schemes to promote better access (orientation, guidance, support)	–	to be included in core criteria

* International Standards Organization.

** European Foundation for Quality Management.

N.B. All data referring to individuals to be disaggregated according to gender.

Source: Compiled by the author.

Most indicators are also interlinked with one another, i.e. additional information can be obtained by linking and comparing the results for certain indicators with one another. For example, by comparing completion rates (indicator 6) with participation rates (indicator 5) it will be possible to reveal drop-out rates, by comparing participation rates with data on prevalence of certain groups (indicator 4) it will be possible to evaluate accessibility.

For three of the chosen indicators existing data sources at European level can be exploited; for two indicators existing surveys may need to be broadened. Additional data collection will be necessary for three indicators (share of VET providers using QM systems; investment of training in trainers; use of acquired skills at the workplace).

5.2.1. Indicators to support quality management

Indicator 1: share of VET providers applying QM systems respecting the European reference model for quality in VET by type of used approach

The main reason to include this indicator is to support implementation of QM systems in all countries and all European VET providers. The indicator will be especially useful when linked to other indicators which reflect European policy objectives. Further, it will be a crucial question if the QM systems which are applied include the core criteria of the common quality assessment framework (CQAF) developed by the TWG. When applying this indicator one would not only ask for a QM system as such but for QM systems to be coherent with this framework. Further, this indicator should not only deal with the question of being accredited or not, as accreditation sometimes seems to be a purely formal procedure. The crucial question on this indicator is, if the applied QM systems respect the four steps and other criteria of the European quality assessment framework. VET schools and VET providers applying self-assessment should be included, too.

In some European countries VET providers are required by law to apply QM approaches. There are, however, big differences in what is seen to be an adequate QM system. In general, it seems there is a lack of coherent national systems for quality assurance. For most national systems therefore, applying this indicator could play a catalyst role in applying QM systems in a more structured way.

Because of its central importance for quality assurance, this indicator should be proposed to Eurostat for inclusion in its regular surveys.

Indicator 2: investment in training of trainers

The Copenhagen declaration ([12]) states that giving attention to the learning needs of teachers and trainers within VET is one of the most crucial factors for improving the quality of VET. Therefore, this indicator is essential, however, it seems difficult to base the information on

([12]) European Commission - DG EAC, 2004.

quantitative data. It has been suggested to obtain information both on existing qualifications and on continuing training. Further, one should bear in mind that trainers and teachers will not only learn through formal learning. However, to include all these aspects would make it impossible to put this indicator into practice, as it is already complex enough.

Example of good practice

In Finnish VET systems two indicators are applied reflecting the activities towards investment in training of teachers and trainers.

- **Teachers' qualification**

  The formal qualification of employed staff is seen as an indicator which influences the quality and performance of VET and therefore the competences of employees, i.e. the teachers are considered. The goal is to have the highest possible proportion of formally competent teachers. The competence of teaching staff is assessed based on material compiled by Statistics Finland.

- **Staff development**

  The staff development indicator detects the financial input by the VET provider into updating the professional skills of the teaching staff, especially in containing increased knowledge of working life and maintaining work capacity. The staff-development indicator is calculated as the proportion of staff-development costs out of all personnel costs.

It would be simpler to stick to qualitative information, i.e. to take 'investment' in training of trainers literally. This solution could summarise various approaches aimed at improving trainers' skills under this heading. However, it will be difficult to obtain a clear picture and make comparisons if only qualitative information is available.

The quantitative approach would consider 'investments' as a proxy for the importance given to training trainers. This approach has been chosen by the European Commission in its communication on the future of the European employment strategy ([13]) where a similar indicator addresses investment of enterprises in continuous training of their workforce. In parallel, for Member State investment per capita into human resources is used as a structural indicator. Thus, a quantitative understanding of 'investment in trainers of trainers' would be in line with similar indicators currently implemented in policy fields close to VET.

Three possibilities for quantification (at systems and providers levels) could be considered: one is yearly amount spent on training trainers. The other is the number of trainers participating in training as part of all trainers active in VET with a further differentiation possible according to hours spent on training. The third possibility, considered to be the most appropriate, is the number of training days (of trainers in a certain VET institution) in relation to the number of trainees (which are trained in the relevant VET institution).

([13]) European Commission - DG EMPL, 2003.

5.2.2. Indicators supporting quality towards the European policy objectives

Indicator 3: unemployment according to groups

This indicator provides contextual information important for both the objectives of better employability and improvement of access. For Member States, through Eurostat, analysis of data on unemployment rates is continuously carried out by gender, age group, highest educational qualification attained, and long/short-term unemployment. For some countries the data further allow for aggregation and disaggregation according to other detailed group variables (like ethnic minorities).

Indicator 4: prevalence of vulnerable groups

This indicator, too, provides contextual information particularly relevant for the policy objective addressing improved access of vulnerable groups to VET. Of course, vulnerable groups vary widely according to national, regional or even local conditions, but there are some vulnerable groups where clear definitions at European level are available (see Section 3.4.). At least for those groups data can be provided through Eurostat. For the level of VET providers it is important that the relevant data is available at regional and local levels.

Indicator 5: participation rates in IVT and LLL (by type of VET course)

In general this indicator is quite useful especially for CVET and IVET, too. For the moment it is proposed to stick to the data provided through Eurostat surveys of CVET where participation at enterprise level and rate of participation in VET courses by economic activities, etc. is measured based on entries. Indicator LLLc2 ([14]) provides relevant data according to age group, working status and educational attainment level which can all be used in limited terms. Indicators LLLc5 and LLLc6 give information on the share of employees participating in training.

For IVT relevant data at national or systems levels should not be taken alone but be related to participation rates in higher education. It should encompass the age range from 15 to 18 or 15 to 19 depending on Member States use). It is also necessary to define the population which serves as the baseline for measuring participation rates. It might be a certain problem that no internationally comparable classification of VET programmes is currently available, but harmonisation seems to be possible.

For both the employability and matching objectives the indicator primarily serves as an input factor; however, if there is a political objective to improve participation rates in LLL the relevant data could also be at the level of process or output.

([14]) LLL indicators are used to monitor the European lifelong learning process; see: European Commission - DG EAC, 2002b.

Participation rates of vulnerable groups in relation to prevalence

Seen from the background of the policy objective to improve access to VET, participation rates of vulnerable groups are an important output indicator and the information is all the more valid if it can be compared to the contextual data on prevalence of vulnerable groups in a certain context. Given the variety of available data at national level it is proposed to refer to relevant data provided in Eurostat surveys.

One might ask if unemployment data or data on prevalence of vulnerable groups are of any relevance to VET providers or if these data are only important at the political level, i.e. at the level of the VET system. The same may be asked for data on participants. On the other hand, one should be aware that every VET provider is active in a certain catchment area which defines the relevant context. There will always be certain (vulnerable) groups with poor chances of employment and with restricted opportunities for access to VET. Therefore, VET providers which are to work in coherence with the European priorities for quality in VET will be asked to consider the objectives of better employability and better matching. A first step is the availability of data on the prevalence of vulnerable groups in the specific catchment area, a second step to implement those policy objectives is to develop relevant recruiting strategies in their catchment area. To check the effectiveness of these equity policies one could compare the data on prevalence with the entries and participation rates, respectively.

An example from practice

The Finnish system includes just one context indicator – youth unemployment – which is used as a proxy for all regional differences (for example: early school leavers, share of migrants and ethnic minorities, share of long-term unemployed persons, older people). Using proxies is a pragmatic solution which should be considered for the European set of indicators, too. However, in the European set of indicators both indicators 3 and 4 serve as effectiveness indicators for the policy objective of having better access to VET for different vulnerable groups, whereas in the Finnish system the level of youth unemployment is used only for making regression adjustment in the overall performance index. In summary, with indicators 3 and 4 the current European set of indicators is able to serve more policy objectives although the Finnish system is less complex.

Indicator 6: percentage of participants who started and successfully completed VET (by type of VET course)

This indicator is of central importance as it delivers the main output data for the employability objective. This is especially true when the data on completion rates can be compared to the entries and participation rates, respectively (indicator 5). It is also possible to obtain drop-out rates, another valuable indicator of quality. Data could be obtained through the labour force survey carried out by Eurostat.

Again it became obvious that participation rates are of central importance at VET provider level, too. Participation rates not only reflect the degree of fulfilment of equity objectives but

serve as a baseline, too, for detecting output objectives, such as for example the rate of drop-outs.

Completion rates of vulnerable groups in relation to prevalence and participation rates

For the objective of better access the data on successful completion rates of vulnerable groups can be classified as an outcome indicator, which will be reinforced when compared with overall participation rates of these groups.

Indicator 7: destination of trainees one year after training

The destination of trainees is an important outcome indicator for employability and matching objectives; and in a longer perspective it also could make sense to use this indicator for gaining additional information on better access.

The indicator is especially relevant for VET activities for unemployed persons, although it is of lesser importance for continuous training for employed people.

The destination-indicator is to provide information on the employment status of trainees one year after the end of training, as this period of time has become an international standard. The main status categories should be as follows: being in further training activities, being employed, being unemployed, not being available for the labour market (for example because of illness). Data must be obtained by follow-up leaver surveys.

Additional information from those employed if their jobs were in the same field as the training (employed in job related to training) would be welcome. But there are some doubts about the reliability of this information. A closer look at practical experiences in those countries in which data on this question are available (for example, Belgium) is necessary. Conducting (additional) longitudinal studies over longer periods of time (for example three years) should also be considered.

Wherever possible, the indicator should be used in combination with predefined objectives for achievement rates, which is already the case in some countries (Germany, Finland). At systems level, in labour market policy evaluating the destination indicator has become an international standard (for example in evaluating the new deal programme in the UK). In other countries (for example, Finland) achieving certain placement rates after training is part of a performance-based funding policy.

Example of good practice

In the Finnish system highest attention is given to the effectiveness of VET measures and the placement rate, which indicates the placement of graduates into jobs, is seen as the most important indicator of this type. At the end of the statistical year for each VET provider the ratio of former students placed into employment is calculated in relation to the number of students who have graduated from their courses. The placement indicator does not describe the content of placement, e.g. there is no information available on how far placement has been

undertaken into professions corresponding to the type of training achieved. For each VET provider the placement rate is adjusted according to the regional level of youth unemployment in the relevant catchment area and the share of students with special needs.

It might be argued that destination of trainees is of minor importance at the level of VET providers as the chance to get a job after training not only depends on the quality of training courses but on other factors as well, such as, for example, the general economic situation. Of course, the overall economic situation has to be considered when analysing and comparing data on destination of trainees. However, it is obvious there are strong causal links between the content and the quality of training and the chances for securing employment afterwards. To abandon the destination indicator would mean neglecting these links which are of growing importance for the European economy. Developing knowledge society investment in human resources is seen as the most prominent factor for growth. Therefore, the destination indicator is of strategic importance to strengthen the links between VET and employment systems.

As this indicator is not yet included in the labour force survey, a proposal should be made to Eurostat for inclusion.

Indicator 8: use of acquired skills at the workplace, from the perspective of both employer and employee

Even when difficult to measure, the use indicator was classified as very important as an outcome indicator for employability and better matching. Also for enterprises, this indicator is of central importance. The point was made that measurement should not be restricted to customer satisfaction surveys or rely on self-assessment. It was deemed important to develop methods and techniques to measure the effect of training, i.e. that acquired skills and knowledge are really used. Practical experiences should be made with this indicator by organising random sample studies in some Member States interested in these data. Similar studies could be organised by VET providers. Linking data collection for this indicator to the procedures for data collection of the destination-indicator (7) should also be considered. Another possibility is to extend the regular European Community household panel (ECHP) surveys on job satisfaction (JSAT).

- This indicator should be proposed to Eurostat for an explorative pilot survey and, after gaining experience, for inclusion in regular surveys.

5.2.3. Additional qualitative indicators (descriptors)

Indicator (descriptor) 9: (quality of) existing mechanisms to adapt vocational education and training to changing demands of labour markets

In many Member States there are mechanisms to adapt vocational education and training to changing demands of labour markets. However, the mechanisms in use are broad, they include forecasting skills development as well as procedures for updating professional profiles.

The overall impression is that this indicator is doubtful and difficult to put into practice. There is no other choice than to stick to qualitative information and to learn more about the different mechanisms in use.

Indicator (descriptor) 10: (quality of) existing schemes to promote better access including orientation, guidance and support schemes

According to Member States' experiences it seems too many different schemes to promote better access are in operation at national, regional and local levels, which makes it difficult to get reliable and comparable data. On the other hand, it is obvious that such schemes can contribute a lot to quality. Therefore information on schemes to promote better access (including orientation, guidance and support schemes) is proposed as a soft indicator.

5.3. Vulnerable groups

Identification of vulnerable groups has to be included in the system of indicators, as the European policy objectives for improved access to VET and better employability refer to the special needs of these groups. Some vulnerable groups on the labour market are clearly defined at European level and for these groups there will be no problem with contextual data at European level. These groups are:

- early school leavers (drop-outs);
- young unemployed people (less than 25 years);
- long-term unemployed people (more than one year);
- older people (over 55 years of age);
- handicapped people (according to national definitions).

Existing data sources could probably also provide information on these group categories for indicators 5 (participation) and 6 (completion).

There are other vulnerable groups in all countries, too, such as migrants from non-EU countries. But for these groups national definitions and/or modes of registration vary considerably. It is not realistic therefore to arrive at comparable data for these groups at European level.

Some groups, such as ethnic minorities, are composed differently across Member States, and other groups, such as the Roma people, are only prevalent in a few countries.

Apart from the five groups listed above where comparable data are available at European level, additional vulnerable groups should be identified at national levels and included in national quality approaches according to the specific social conditions in those countries.

5.4. Working with the proposed set of indicators in a European perspective

In their main function the proposed set of indicators should serve as a recommendation to VET providers and policy developers at systems level to apply these indicators and to use them in a European perspective.

Besides collecting statistical information and including the proposed set of indicators into QM approaches it seems necessary to collect more information on how the different quality systems in Europe work. This exercise should include whether and how basic data as defined for the set of indicators are collected in the relevant systems and how the information obtained is used in procedures for change. Future work with the proposed set of indicators will give statistical evidence of the actual state of the quality of VET systems in Europe and in Member States. Once relevant data for the proposed indicators are prepared, a baseline for improvements towards the European policy objectives will exist, progress could be measured and comparison between VET providers and systems would be possible.

At this stage information on indicators probably cannot be used as comparative benchmarks. The availability of data varies too much between Member States; currently there is too little quantitative and comparable information. Even where quantitative data on most of the proposed indicators are available, the data may not be comparable because of differences in data collection procedures. Therefore the emphasis is on developing common learning processes on how to implement and work with the proposed set of indicators to improve quality in VET.

Some further implications could arise if the proposed set of indicators were included in regular European surveys. The results of such an exercise would provide useful information for further promotion of exchange of experiences, models and methods for quality in VET. The information gained would lead to increased visibility of initiatives to support quality in VET in Member States and at regional, sectoral or even enterprise levels.

At the same time the proposed indicators implicitly would support developing initiatives for their application. In themselves they set certain objectives and after identifying baselines for each indicator following a first European survey (for example: rate of VET providers applying QM approaches), a next step could be setting more detailed and even quantified objectives by relevant actors (for example: improving the rate of VET providers applying QM approaches to a higher degree).

If collected regularly, the proposed indicators would reflect the degree of practical implementation of QM approaches in Member States, and if aggregated at European level, they would also express the progress made over the years to arrive at the common objective set by the Stockholm Council in March 2001 to make European education and training systems a world quality reference by the year 2010. In principle, the quantified indicators proposed should not only allow for comparison but also for overall aggregation at European level.

6. Indicators in use: examples from practice

In the following section some examples from national practices are described. These descriptions are the result of a bottom-up approach applied to analyse the indicators in use in different European Member States to support quality in VET ([15]). To screen available systems of indicators, members of the technical working group for quality in VET were asked to provide material describing the sets of indicators in use in their countries. The information and feedback was provided by most Member States and other countries cooperating in the TWG.

Some contributions consisted of detailed descriptions of sets of indicators and the systems for their organisational implementation and sometimes also long-standing results with practical experiences. Representatives from other countries provided papers with plans to establish quality indicators in the near future. However, according to the material provided, there are only a few countries where a coherent set of indicators is already in use to improve the quality of VET systems. At system level this is mainly the case in Finland and to a lesser extent Denmark, in the Netherlands, and the Flemish community in Belgium. In Italy a set of indicators for quality in VET is applied to ESF-funded activities. In Spain a set of indicators has been developed at central level, to be subsequently implemented in cooperation with the regions. The most widespread mechanisms of quality assurance are types of inspectorates, more or less combined with self-assessment systems.

Below are summaries of examples of practice to explore the use of indicators in different systems or sectors of education and training policy. These examples should give an impression about the current state, and the various approaches taken in certain Member States. The examples are not comprehensive, but try to outline different approaches to the quality issue.

6.1. Belgium/Flanders

The education authority of the Flemish community in Belgium has developed a sophisticated model to provide a basis for evaluation and planning of the education system at macro level. That initiative was strongly influenced by OECD activities on developing education indicators since the 1990s, however, some different perspectives have also been developed, particularly a stronger emphasis on process and satisfaction of pupils and students, and less emphasis on the economic-technical approach (Ministry of the Flemish Community, 2001, p. 7).

A distinction is made between two functions of indicators for policy-making: one is that indicators are developed at a certain distance from policy, to provide an independent basis for improving the system (this refers to the above-mentioned communicative purpose of

([15]) This section is strongly based on the final report on indicators of the European forum for quality in VET (Seyfried and Lassnigg, 2002).

indicators); the other refers to the normative purpose of indicators where a more direct inclusion in the policy programme is made. The Flemish approach has been developed for the first function rather than the second. A 'Policy memorandum' by the Flemish Minister for Education and Training provided the strategic and operational objectives of the Government of Flanders for education and training for the period 2000-04 and the system of indicators was related to these objectives, by defining the explicit links of the indicators to the policy objectives of the memorandum. The links were formulated *ex post*. The strategic and operational objectives of the policy memorandum could be covered by the indicators to a different extent, and some gaps on operational objectives which are difficult to translate into indicators remained (e.g. 'simplification of the rules', or 'optimising child care').

The content of the Flemish system of indicators refers mainly to policy at macro level, at which the link with the policy objectives can constantly be made. It is possible to examine to what extent the policy objectives are achieved, and evolutions can be monitored.

Since 1998, the Education Department has used the so-called CIPO-model as the framework for indicators. CIPO stands for 'context-input-process-output', and consists of 28 indicators (4 context indicators; 14 input indicators, 4 process indicators and 6 output indicators). With this structure the Flemish model strongly refers to the model of indicators proposed in this study.

On use of the indicators at different levels of the education and training system, it is clearly stated that 'the Education Department does not wish to impose on schools the education indication indicators' (Ministry of the Flemish Community, 2001, p. 7). This means that in the procedures of quality development at school level (school audits), indicators have a communicative purpose, as a supply of information, rather than a formative one.

6.2. Denmark

Development of mechanisms for quality assurance has been a longstanding issue in the Danish education and training system, and they have been further developed in the more recent reforms ([16]).

In VET, vocational colleges are required by law to have a quality assurance system. Each school must have a quality system for ongoing quality development and evaluating the results of the courses undertaken at school. The quality assurance system includes a procedure which allows ongoing self-assessment and quality development, which is guided by questions about strategically selected fields of education and training activities. Each school must have a procedure that shows that the teaching provided meets the objectives set out in the plans for individual courses.

([16]) See the materials presented on: http://eng.uvm.dk//publications/engonline.htm. In particular, the following documents give some insight into main developments: the Danish Government, 2002; Danish Ministry of Education 1997, 2000, 2005.

Further, in Denmark over the past four years an increasing number of vocational schools have joined forces to improve the quality of their services and establish benchmarks. These cooperative efforts so far concern benchmarking based on satisfaction surveys conducted among students and staff. Financial managers of the schools are currently seeking to develop comparative financial indices between schools. These mechanisms have focused on the input side, more recent documents emphasise strongly the further development of output indicators (the Danish Government, 2002, p. 80).

At central level there have been attempts to develop a system of indicators to report and assess achievement of goals and objectives of education and training policy ([17]). Seven general targets have been set, and five framework conditions defined to reach the targets. These dimensions have been defined as indicators and translated into results given by the setting of criteria on the indicators. It has also been considered for future development to create operative links between that system of monitoring and the mechanisms of quality assurance and development at institutional level, e.g. to assure the necessary input to achieve the targets (the Danish Government, 2002, p. 19-20).

The system of indicators in place so far includes 43 indicators (with several sub-indicators), which are allocated to four broad categories: education system (including basic characteristics of provision and financing), resources (16 indicators), pupil/student flows (15 indicators), and results (10 indicators). An important feature of the Danish system and policy is that the distinction between initial education and adult/continuing education is becoming increasingly blurred, and these sectors are consequently included in the overall system of indicators. Particularly in VET, there are proposals and plans to coordinate and integrate the different frameworks of provision more strongly.

6.3. Italy

In Italy a sophisticated approach to assess the quality in VET has been developed by the national ESF evaluation unit, using a complex programme evaluation approach (ISFOL, 2002) ([18]). Basically the VET system is modelled according to a supply structure (encompassing the policy system for programming and financing, and the providers of training), and a demand system (encompassing the participants in training and target groups for participation or 'users' and the economic actors in demand for qualifications). VET is considered part of 'active labour policy', therefore results at employment system level (the 'effects') are a key area of evaluation. Output, outcome, and impact are the dimensions of the 'product phase' to be assessed.

([17]) See: Danish Ministry of Education, 2000; 2005.

([18]) This model was built for the Italian Ministry of Welfare and the regional authorities in the framework of the European Social Fund programming by the national ESF evaluation unit of ISFOL.

The systems and mechanisms of policy development and provision of VET by the various actors are another key area of the evaluation. In the 'process phase' strategic programming, operational planning and implementation are the main components to be assessed.

Another key component is the established principle of programme evaluation, that a simple comparison of objectives and results might be misleading because of the complex relationships between the dimensions of process, output and outcome, and their interaction. Therefore the context is considered, in terms of economic and demographic development, and regulations determining the VET system, as a third basis area of the evaluation (besides product and process) ([19]). To obtain the quality of VET accurately, the relationships between the policy process, the supply process, and the output, outcomes and impacts must be analysed, considering the context. These areas are broken down into several concrete quality elements, which will be the main units of evaluation, and have to be translated into the appropriate indicators for the analysis. Finally, individual results have to be summarised by appropriate weighting procedures, to produce more comprehensive measures.

This approach is used to evaluate ESF interventions implemented at regional level ([20]). Comparison among regions, and the relationship between the national and European levels and the regional level are strongly emphasised. For ESF programming and evaluation, the indicators in the categories of implementation, outcome and impact at national and regional levels are meant to assess the broad policy objectives related to employability, equal access and adaptability/competitiveness. For measuring employability the quality indicators include the gross and net placement rates of VET participants compared to control groups and its variation by age, gender and duration of unemployment. For measuring the access objective they go for information on the coverage rate of the different target groups and the availability of support actions according to type of training activity. The indicators have been adopted and are now in the process of implementation by all regional authorities. After implementation, organising a process of bench-learning between the regions is foreseen.

The approach, developed for evaluating the formalised ESF programme planning process, sets high demands on the availability of data, and high expectations on the rationality and comprehensiveness of the policy process ([21]). The definition of quality of VET as an element of 'active labour policy', and emphasis on employment-related indicators is an important contribution of that approach to assessing quality in VET. Other important elements are use of consumer satisfaction, and the combination of quantitative and qualitative indicators.

([19]) The process area in the Italian model is broader than the definition of process given above in Chapter 4, and includes elements of context, input and process from the definition in this study.

([20]) The results of the previous ESF programming period are summarised in ISFOL, 2001.

([21]) ESF interventions require construction of a quite inclusive monitoring database, which must not be commonly available for VET systems. The ESF policy process is based on formal development and planning procedures targeted at certain objectives, which deviate more or less markedly from the structure of the overall VET policy.

6.4. France

In France an approach named *professionalisation durable* is in the process of implementation on a voluntary basis for state-owned VET institutions for adult education (called GRETA). This development has led to the coexistence of four different quality labels and is driven forward by a pilot phase which explores the possibilities for a comprehensive label specifically designed for GRETAs, named GretaPlus (Ministère de la Jeunesse, de l'Éducation nationale et de la Recherche, 2003). The label will be given to VET institutions working in close relation to the needs of their individual or organisational customers; it is grounded in a policy for quality development respecting different criteria and indicators and quality.

6.5. Spain

In Spain at central level a set of indicators has been developed which is currently being fine-tuned and is to be implemented in cooperation with the regions. This set of indicators is to cover the whole VET process and includes indicators of context, input, process, output and outcome.

6.6. England

In England quality measures and controls have been developed separately for activities in schools and for those that take place in other organisations. The indicators developed for schools are qualitative and quantitative. For example, each school is required to publish a report on the results of its pupils in all the qualifications taken each year. The Department for Education and Skills also produces 'league tables' which show national results for each school. These tables are intended to help parents and children to 'choose' schools. It is possible to evaluate the overall performance of the school related to the number of pupils. A 'points score' indicator is used to show success in academic subjects such as GCE A levels (general certificate of education advanced level). Indicators relate to the ages, gender, ethnicity and economic situation in each school. 'Value added' measures have been published for the first time this year in school results.

For post-16 VET providers the funding bodies collect, analyse and report on achievement and retention data for each of their providers in much the same way as for schools. At the moment the precise definitions of these data are not the same for schools, colleges and training providers, but the aim is to make them uniform in the near future. This will enable a single set of indicators based on the same data sources to be established.

Both schools and LSC- (Learning and Skills Council) funded VET are inspected by independent inspectorates. Ofsted (Office for Standards in Education) inspects schools and leads most further education inspections working with the Adult Learning Inspectorate (ALI). The ALI also inspects work-based training provided by employers and training providers.

These inspectorates operate on a four-year cycle. Their job is to inspect the quality of the learning experience (process) and evaluate the extent to which learners are retained and achieve. They grade their judgements (on a five-point scale) and publish reports on each inspected organisation. This provides a quality indicator that shows the quality of both input measures and outcomes.

The element that is missing from all these indicators (except inspection) is any indicator for evaluating the quality of the training process. The existing indicators allow monitoring and evaluation of the input measures including access and output measures including retention and achievement of qualifications. How can indicators be devised for the process of training? The two methods used in the UK are learner surveys to establish their views on the quality of the training they have received and inspection by independent inspectors who evaluate the whole process of learning from guidance at the start to achievement and progression. Inspectors' grades are awarded to each subject offered by the provider and give a national picture of the quality of VET.

6.7. Ireland

Ireland provides an example for a comprehensive policy plan for developing adult education which has been set up in a broad and inclusive policy development process (Department of Education and Science, 2000). The proposals and programmes included in the white paper are based on a thorough analysis of the state of the Irish education and training system, and an inclusive consultation process among the various actors. A broad approach for adult education is taken, which complements the goals related to the economy and employment with broader personal, cultural and social goals. A picture of the state of adult education is given using a set of basic indicators on the educational status of Irish adult education, and a review of the various ongoing and previous policy initiatives addressing lifelong learning. Support of workplace education is core in continuing VET for improving employability. Several measures based on established forecasting and anticipation mechanisms about future skills needs are proposed, to improve the matching of supply and demand (Expert group on future skills needs, 2003) ([22]).

Two main programmes for second chance and further education are outlined to improve basic competences. Improvement of access for disadvantaged groups is one of the main broad policy objectives. The policy plan provides a blueprint for setting up a comprehensive institutional framework to implement the set of policy objectives including creation of an agency (FETAC – Further Education and Training Awards Council) the mission of which is to make quality assured awards to learners in accordance with national standards within the national framework for VET (FETAC, 2003). For assessing quality of adult education, mainly two layers are included in the policy plan: a system of self-assessment and external assessment

([22]) For other activities of the Expert group on future skills needs see: http://www.skillsireland.ie/.

with support and advice from FETAC at institutional level, and a system of evaluations of certain elements of the plan (e.g. those supported by European programmes), including an overarching evaluation three years after the proposed structures are set up (Department of Education and Science, 2000, p. 162-163, p. 199-200).

Formulation of objectives is based on sound analyses. It is, however, only to some extent translated into measurable results. Many objectives are formulated in a rather open way, measurable results are formulated mainly in terms of inputs (for main activities the planned resources, and the planned number of participants or training places are specified over some years) and processes (e.g. the eligibility criteria and target groups, or measures to reach the target groups are specified).

6.8. The Netherlands

Based on the law on IVET and CVET which went into force in the Netherlands in 1996 a comprehensive and outstanding approach was taken about quality assurance, use of objectives and their measurement. The following characteristics can be emphasised ([23]):

- secondary VET and adult education were integrated into one common framework, aimed at establishing relatively large and comprehensive institutions at regional level comprising all training 'under a single roof';
- formulating concrete objectives guiding the practical enactment of quality development was left to institutions, based on some broad overall objectives (which are very similar to the three overall policy priorities of employability, matching and access) and the formulation of national standards;
- measurement of achievement of objectives was also left to institutions but backed up and followed up through a formalised reporting process based on a set of mainly technical guidelines written down as legal requirements;
- the reporting process via biannual quality assurance reports is monitored by the inspectorate at two different layers, the documents submitted and first-hand reviews at VET institutions.

That overall process, which has produced experience via three cycles of reporting and review so far, allows for a 'bottom up' development of the concrete objectives relevant for the practical level, and their translation into measurable results and related indicators. The formalised monitoring process allows for developing aggregate measures, based on analysis of the reporting and first hand reviews. In principle, a link between aggregate measures at systems level and measures at institutional level can evolve step by step through a process of organisational and policy learning which can be established in this system.

([23]) This description is strongly based on the contribution by Verkroost and Jurna (2001) to the European forum on quality in VET.

Two kinds of indicators for quality are produced via this process: the measures which institutions use for assessing realisation of their objectives, and the measures which the inspectorate produces in the monitoring process. At that level several qualitative indicators are produced about the degree to which institutions fulfil the overall objectives and have developed policies for improvement. However, so far the measures used for assessing quality at institutional level are very diverse and cannot be easily aggregated, and they have shortcomings as several goals are not formulated in a measurable way. An important asset of the system at institutional level is that institutions are required to engage in a quality dialogue with their external stakeholders (community members, regional actors, employers, etc.) about objectives and achievements.

The experience reported so far from evaluations provides some interesting insights into practice in the overall process of quality assurance. Little emphasis has been laid on the output dimension in the quality assurance process by institutions. Educational management and financial management are separated, and management information systems are not sufficiently related to measuring and improving quality. There are also difficulties linking the quality dialogue with interested parties to the internal process of quality development and management information.

6.9. Finland

The previous system for VET financing in Finland was based on unit costs (average cost), transactions (student numbers) and field-specific costs (special tasks). This system has proved effective as it ensures training opportunities for the whole age group, but it has not encouraged qualitative development and necessary changes. Therefore a goal was set, that financing of vocational institutions should provide more incentives for quality development. Complementary to unit-price funding a performance-based financing system was developed which evaluates outcome and rewards training providers for placing their students in employment and in further studies. Another aim was to develop the financing system to have a stronger steering effect.

From 1 January 2002, a performance-based financing system for initial secondary VET was introduced. The system is twofold, consisting of outcome-based funds and a quality award. Outcome-based funds are granted based on certain numerical indicators, the most important being student placement in employment and in further education. Other indicators are the graduation rate, the drop-out rate and the training provider's input into staff development. Most data are produced annually by Statistics Finland, and some by the National Board of Education.

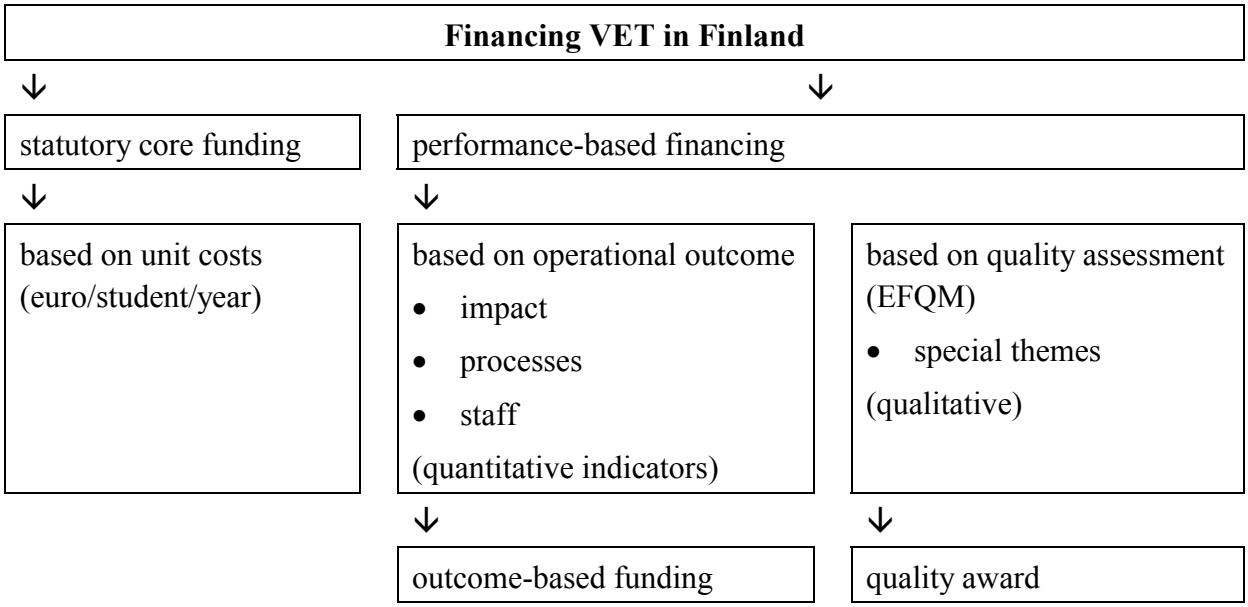
Performance-based financing is granted without application, but quality awards are granted based on training providers' written applications, supplemented by site visits, where necessary. The projected quality themes include support for developing business and industry,

developing learning and teaching, measures to prevent exclusion, special-needs training, and internationalisation.

The system of performance-based financing has been presented extensively at different training events. Some 20 training providers and six interest groups of various types have given their opinion. These and other opinions show there is broad agreement on the need to introduce performance-based financing. It is seen to encourage training providers to develop their provision, to highlight the role of VET and to bring positive publicity to it, thereby improving its image.

During the running-in period (three years) the appropriation for performance-based financing will be gradually increased from 2 % to 4 % of the core funding of VET. Thus, performance-based funding is aimed at promoting quality development, and not to become the main source of funding. There are no disincentives. Decisions on allocating funds are made by the Ministry of Education. Performance-based financing is always allocated to the training provider in a lump sum. To motivate the staff to improve performance, it is important that those who achieve high performance also benefit from the additional financing.

Figure 3: Financing VET in Finland



Source: Compiled by the author.

Performance-based financing is an umbrella concept, consisting of outcome-based funds granted according to operational performance indicators and quality awards granted according to success in larger thematic entities. Performance-based funding makes use of seven indicators which address (a) the effectiveness of VET, (b) the processes of VET courses and (c) the activities oriented towards the competences and the personal development of employees of the VET provider.

Based on the indicators described above a final performance index is calculated. To arrive at this overall index, the different indicators are given different weights. As can be seen in the

following table, placement of trainees into employment after graduation from training has been given the highest weight (40 %).

Weights for deriving the performance index (2003)

Placement (employment after graduation)	40 %
Further education (after graduation)	15 %
Retention (drop-out rate)	14 %
Graduation rate (completion)	13 %
Degree of use (participation)	1 %
Teachers' formal qualifications	11 %
Staff development	6 %

Together, the indicators for performance-based financing aim to measure the results of VET activities under scrutiny as relevantly, reliably and simply as possible. Results are calculated from statistical material and are combined into an index describing the overall performance of the VET provider according to the weights of the individual indicators which are applied. Thus, VET providers can be easily compared by using the overall performance index they have achieved. This can be applied all the more, as construction of the overall performance index considers the operational and regional situation of VET providers through standardisation of regions and preconditions of students. Results are adjusted through regression using the regional level of youth unemployment as the single indicator for social deprivation in a certain area, thus taking this as a proxy for differences in context.

With the performance-based funding approach the Finnish VET system is convincingly shaped towards the basic policy issues of the Copenhagen Council, mainly to bring the world of work and national systems for education and training closer together. In Finland there seems to be clear political leadership and guidance towards improving the quality of the VET system. The targets set are ambitious but nevertheless simple and clear, and moreover they are shared by the relevant stakeholders.

Thus, Finland has adopted a quality system which covers all steps of the quality cycle of the European CQAF model and it is noticeable that the whole cycle is closed because use is made of assessment and evaluation results through comparisons, benchmarking and rewards for successful providers. In the Finnish system a direct link is also made between the use of indicators and quality management.

There is a clear orientation towards steering the provision of VET via outcomes and impacts, although this is only complementary to core financing via inputs. Due to this balanced system of financing, VET providers might be given both financial security for their basic needs and a motivational push to improve their performance. Even the staff on the ground – the teachers

and trainers – are aware of the performance-based funding system and the weight of the quality indicators because like the provider they can also take advantage of the results and rewards they achieve. There is high coherence between the policy approach at VET systems level, the provider level and the teachers and trainers.

Results of each provider are transparent, they are available via the Internet and they are discussed and they are easy to understand because they consist of just one overall performance index. Contrary to many other countries, in Finland there seems to be no fear of touching on figures, processing the relevant data and communicating them to the public. The possibilities of using available statistical data to describe performances and developments in VET are extraordinarily good.

Transforming the achieved results into an overall performance index for each VET provider greatly helps make the work done visible, to draw attention to performances and quality and to address the whole system and the whole quality cycle instead of separated aspects.

7. International and European indicator systems in VET and in related policy fields

In the following section international and European indicator systems are analysed to check their usefulness for quality in VET.

7.1. Indicator systems in education, training and employment

This section attempts to screen the available and most commonly used systems of indicators on education, training and employment, and ascertain how information on quality of VET might be derived from these information bases. The following systems of indicators ([24]) are considered:

- OECD education and human resources indicators: the education indicators (OECD, 2002; 2003) include 33 indicators, with some subdivisions, which cover merely the education and training system at the systems level, the VET system is directly covered only by one indicator which measures the upper secondary graduation rate. Strong emphasis is laid on issues of content and achievement (IALS, TIMSS, PISA). These indicators are primarily analytic, providing important background information for policy development.
- International Labour Organisation (ILO) employment indicators (ILO, 2004): the ILO key indicators of the labour market (KILM) are measured worldwide, and cover the main dimensions of employment and the labour market. Two indicators are related to education and training, unemployment by educational attainment, and educational attainment and illiteracy. These indicators are analytical, and also include some basic features of quality of employment (wages, part-time work, underemployment), and social cohesion (poverty and income distribution).
- EU databases and reports, Mossoux (2003), Eurostat – LFS (European Commission, 2003), European Commission et al. (2002), CVTS (Grünewald et al., 2003), etc. The key data publications on VET, published jointly by the European Commission, Eurydice, Eurostat and Cedefop are the most developed source on VET (European Commission et al., 2002). A special VET database has been developed by Eurostat which has gathered important additional value.
- Other sources, especially the LFS and data from Unesco, OECD and Eurostat, have been utilised thoroughly. The key data from Eurydice cover overall education systems, and provide additional information to the OECD indicators, especially on regulation, and specific features, such as ICT. These indicators are also primarily analytical, and to some

([24]) The reviewed systems are not exhaustive (there are additional systems available, e.g. by Unesco or the World Bank, which however are strongly focused on developing countries). There are also additional indicator systems about specific policy actions at European level available, which could not be covered by the current project, e.g. indicators on social inclusion.

extent communicative by trying to bring some important features to the foreground. The LFS is an important data source for issues of outcome and participation and the CVTS has collected a wide range of comparative information about enterprise-related CVET. The Eurostat task force on measuring lifelong learning (TFMLL) has provided a review and assessment of existing sources and indicators.

- EU policy indicators (structural indicators ([25]), employment and national action plan (NAP) indicators (European Commission - DG EMPL, 2005; Council of the European Union, 2004) ([26]) innovation indicators ([27]), competitiveness indicators (European Commission - DG ENTR, 2005). These indicator systems have been developed since the end of the 1990s, some are clearly normative in purpose, in trying to measure the implementation and results of certain policy targets and objectives, others are more communicative, in trying to assist the policy formation process by providing comparative information. These indicators systems have also included some general indicators on education, training and human resources, which measure the contribution of human resources to broader economic goals.
- EU proposals for indicators and benchmarks in education and training policies (concrete future objectives):
    - EU quality indicators for initial education (European Commission, 2000), and for lifelong learning (European Commission - DG EAC, 2002b);
    - proposals from the European Employment Observatory.
- Initiatives on specific sub-areas of education, training and employment, e.g. lifelong learning task force, indicators on the use of ICT (European Commission et al., 2002), indicators on transition from school to work, or on human resource development.

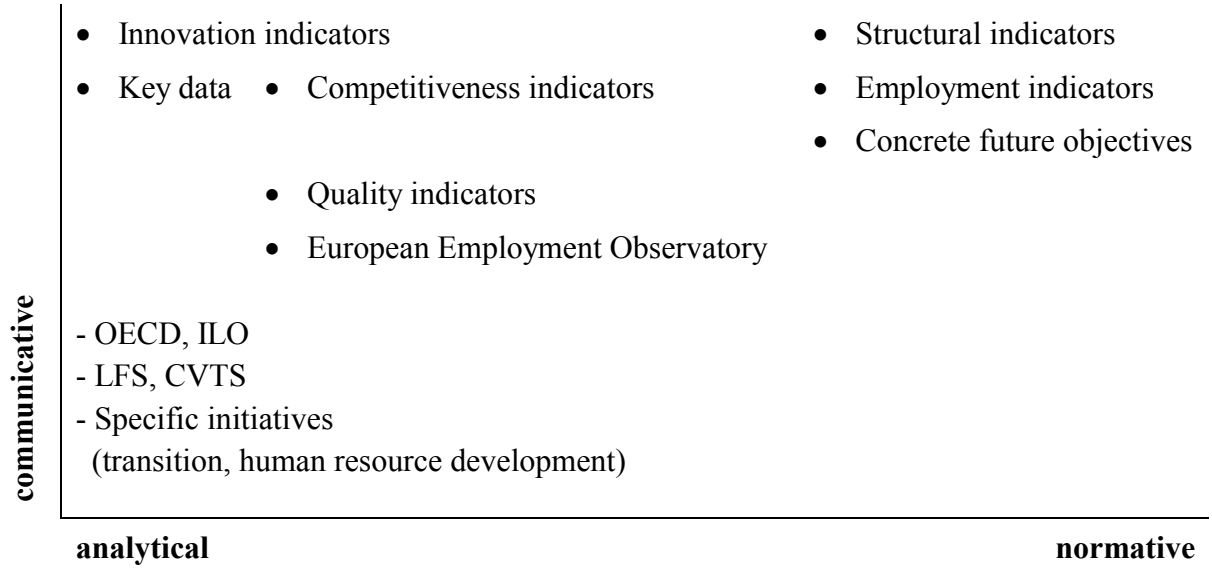
We can allocate the different indicators systems on an analytical-normative scale, where the normative end also includes to some extent analytical purposes (whereas the reverse is not necessarily the case). The communicative purpose is also to some extent included in the development of every indicator system, however, it can be more or less marked, and targeted to a wider or smaller range of actors (researchers, practitioners, politicians, clients and customers, the general public).

([25]) See: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1133,47800773,1133_47803568&_dad=portal&_schema=PORTAL.

([26]) The yearly employment in Europe reports include a set of indicators on the labour market. See: http://ec.europa.eu/employment_social/employment_analysis/employ_en.htm.

([27]) See the innovation scoreboard: http://www.cordis.lu/innovation-smes/scoreboard/ and for the indicators: http://trendchart.cordis.lu/.

Figure 4: Purpose of different indicator systems



Source: Compiled by L. Lassnigg, IHS.

We can also relate the indicator systems to the different dimensions and stages of VET. Most existing systems, even various education indicators, do this.

The relationship of indicators to the stages of implementation and performance (context – input – process – output – outcome) is not clear. The OECD indicators are presented in changing groupings and classifications in different editions (OECD, 2002; 2003). The various EU indicator systems do not refer consistently to that classification.

7.2. Indicators from European sources for the VET process

General sources analysed provide an overall number of 123 indicators which are analysed in relation to the set of indicators to support quality in VET developed in this report.

Three quarters of the indicators are related to context dimensions, and one quarter (31 indicators) directly refer to education, training and human resources. More than half the specific education indicators refer to the input dimension, and about one third to output. Output is covered by only two indicators.

Table 4: Summary of identified indicators in the VET process

	EU structural indicators	ILO-KILM*	Employment in Europe	NAP** (JER)***	Innovation trend chart	Competitiveness (2002 scoreboard)	Sum
Context dimensions	1	–	2	1	4	–	8
Education, training and HRD**** systems	4	1	–	7	14	5	31
Context	–	1	–	–	–	–	1
Input	2	–	–	6	8	1	17
Output	2	–	–	1	5	3	11
Outcome	–	–	–	–	1	1	2
Employment, labour market systems	9	18	17	21	9	–	74
Social cohesion, equality of opportunity	5	2	–	3	–	–	10
Sum	19	21	19	32	27	5	123

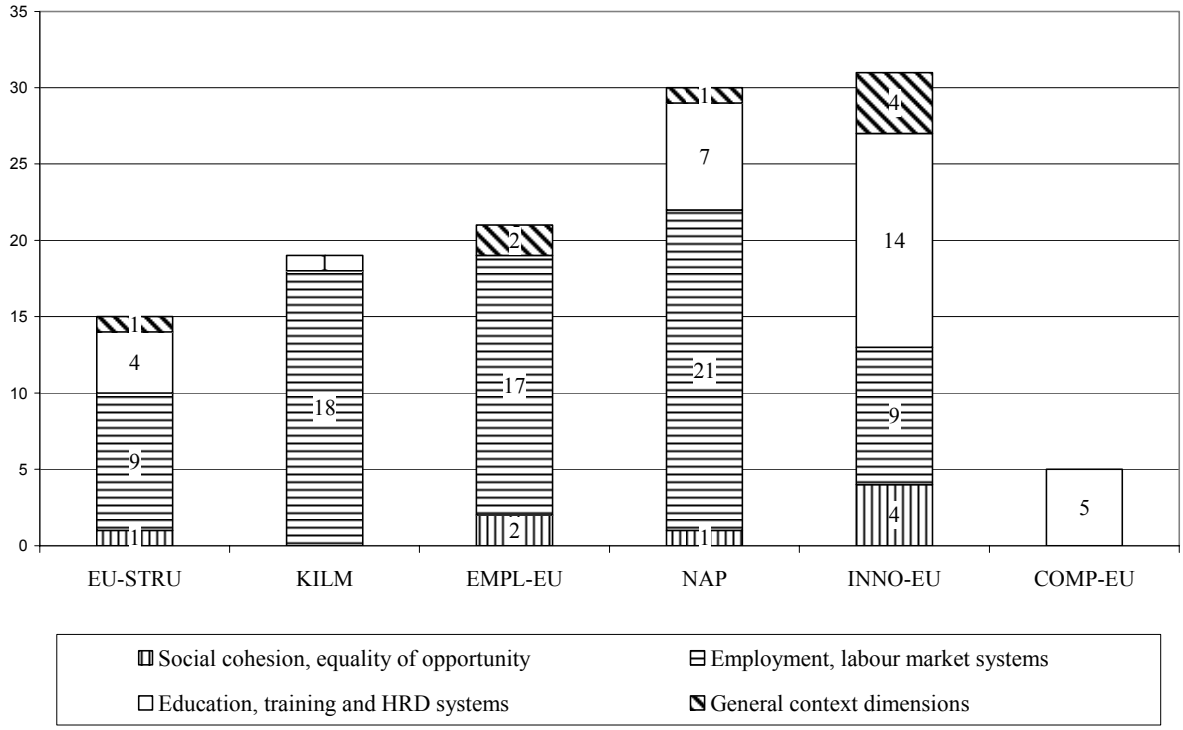
* International labour organisation: Key indicators of the labour market.
** National action plan.
*** Joint employment report.
**** Human resource development.

Source: Compiled by L. Lassnigg, IHS.

The table shows distribution among the different categories relevant to the VET process. The largest overall number of indicators related to education, training and human resources are included in the joint employment report (Council of the European Union, 2004), a document which is derived from the national action plans for implementing the European employment strategy (32), with a clear focus on employment and labour market systems. That category refers partly to context, and partly to outcome issues. Indicators on the education and training system are a focus in the innovation trend chart (14), about half of the specific education, training and human resource indicators are from that source ([28]).

([28]) See: http://trendchart.cordis.lu/ and http://www.cordis.lu/innovation-smes/scoreboard.

Figure 5: Numbers of indicators in analysed sources, by category



Source: Compiled by L. Lassnigg, IHS.

7.3. Indicator systems for the VET cycle

The analysed sources provide an overall number of 251 indicators. The number of input-indicators is the highest (81 indicators), the other categories are in a range between 34 (output) and 54 (context). Thus there is a plentiful source of indicators available, which have undergone procedures for making them comparable at international or European levels.

Table 5: Indicators systems in education, training and human resources, by category

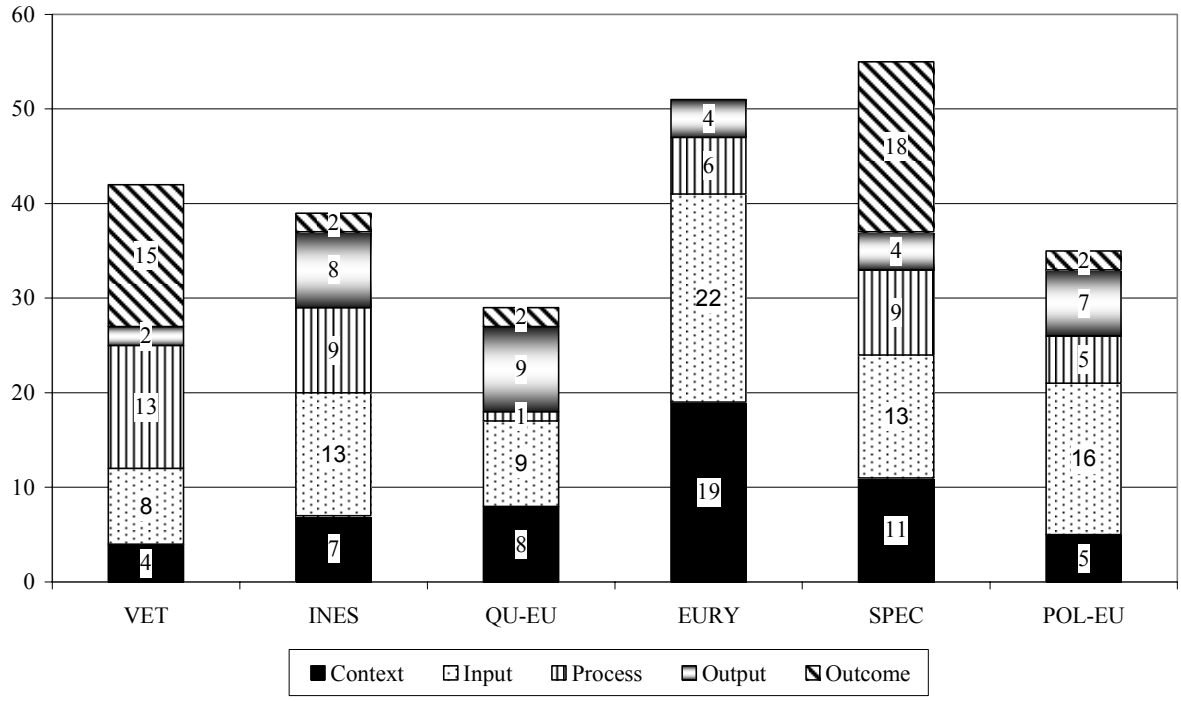
	Key data training, transition	OECD education indicators 2002	Initial education – quality indicators LLL – quality indicators	Key data, ICT-data Eurydice	Specific sources	EC benchmarks concrete objectives	Sum
Context	4	7	8	19	11	5	54
Input	8	13	9	22	13	16	81
Financial	1	7	2	4	3	1	18
Provision	5	3	3	2	9	7	29
Personnel	–	2	2	7	–	7	18
Content	2	1	2	9	1	1	16
Process	13	9	1	6	9	5	43
Output	2	8	9	4	4	7	34
Outcome	15	2	2	-	18	2	39
Sum	42	39	29	51	55	35	251

Source: Compiled by L. Lassnigg, IHS.

The table shows the numbers from the different sources and the distribution over the categories of the VET policy cycle. Different weight has been laid on those categories in the different sources:

- the indicators from Eurydice (European Commission et al., 2002) are focused on context and input; input is also strongly emphasised in the EU policy indicators for the concrete objectives (Council of the European Union, 2001), the EU quality indicators (European Commission - DG EAC, 2002b) emphasise context, input and output;
- the VET database is focused rather on outcome and process indicators;
- the OECD indicators (OECD, 2002; 2003) and the specific sources are quite balanced, emphasis on outcome is weak in the OECD indicators, and strong in the specific sources.

Figure 6: Numbers of indicators in education, training and human resources development, by category



Source: Compiled by L. Lassnigg, IHS.

Only 12 of the 187 indicators are represented in three or more sources. Those 'common' indicators are situated in only three of the five categories: context, output (no process or outcome indicators are common in this definition).

The overall distribution of the indicators on education, training and human resources by the stages of the policy cycle show an emphasis on input and context indicators in the specific sources on education and training, and a strong emphasis on input and output indicators in the general sources.

7.4. Indicators for matching supply and demand

Establishing systems to assess and anticipate the relationship between supply and demand for VET is important for developing and using indicators, particularly for the priority of matching. Applying quantitative methods for forecasting or anticipation clearly presupposes a sufficient set of indicators on the main dimensions of VET. Therefore developing and implementing an up-to-date method of quantitative forecasting stands in a 'symbiotic' relationship for developing databases on VET and its outputs and outcomes. Good practice is impossible without good data.

There are also strong arguments that a feasible system of anticipation needs to be a combination of quantitative and qualitative procedures (each used without the other produces unsatisfactory results). A study performed some years ago (Feijen and Reubsaet, 1996) has provided a review of the practices applied for anticipation in all Member States of EU-15 in the mid-1990s ([29]). The study made an inventory of the methods applied on a quantitative and a qualitative dimension of anticipation, and observed which methods were in place in the Member States at that time ([30]). Econometric methods were used in virtually all Member States for purposes of economic or industrial policy, however, only in half the countries was the application of those methods sufficiently disaggregated to be used for purposes of development in VET. Some substitutional relationship between econometric models and other more qualitative methods was observed among countries.

At the qualitative dimension different patterns were observed among Member States: some applied mainly formal methods, others mainly informal methods, and the third small group patterns of combinations of the two.

From the six countries which had established econometric mechanisms at the quantitative dimension in the mid-1990s, the following patterns at the qualitative dimension were in place: in Germany, the Netherlands and the UK formal methods were observed at the qualitative dimension; in Finland and Sweden the quantitative methods were combined mainly with informal mechanisms at the qualitative level; and in Ireland a mix of formal and informal methods was observed at the qualitative level. As far as practice might have developed and changed during the past decade, the pattern nevertheless indicates to what extent developments have built on established practices.

- Assessing the more recent development in the UK, Lindley (2002) points to good progress on methodology. There are, however, some problems in using results at institutional level.
- In Germany a broad and comprehensive research network has been set up to produce, collect and distribute information on trends and future developments ([31]). This system is oriented to 'early identification' of qualification needs and distributing the results of research within the research community and to practitioners, and seems not to have strong

([29]) On forecasting in OECD countries, see Neugart and Schömann, 2002. The approaches used in the following countries are analysed in this study: Austria, Canada, France, Ireland, Japan, the Netherlands, Spain, the UK, the USA.

([30]) The quantitative dimension refers to the overall distribution of supply and demand for labour and skills: econometric models, extrapolation of trends, survey techniques, qualitative foresight methods (expert studies, Delphi, scenario technique); the qualitative dimension refers to developing competences within qualification or occupational profiles: formal methods at the qualitative dimension: functional analysis, surveys (at a detailed level of activities or about strategic aspects), qualitative research with overarching methodology, action research, conference methodology (e.g. scenario technique); informal methods at the qualitative dimension: combination of methods (mainly surveys and specific qualitative research), tailor-made studies for selected activities), two types of working groups of actors (only for decision-making); or for data gathering and decision-making (according to Feijen and Reubsaet, 2001).

([31]) See: http://www.frequenz.net/.

direct links to more 'soft' assessment methods ('anticipation') or implementation of results.

- In Finland the first programming period of the European Social Fund was used to set up a comprehensive network of projects to improve anticipation and coordination of VET and employment (Kekkonen, 1998).

As stated in a study encompassing several OECD countries, the informal mechanisms of anticipation seem to have been strengthened by the setting up of more formal coordinating bodies for sectors (Gülker et al., 2000).

The examples show the various approaches to using indicators in systems or activities of quality assurance in education and training policies. Different emphasis is laid on the dimensions of input and process versus output and outcome, or on the use of qualitative or quantitative instruments, etc. A main unresolved issue is how to relate the use and development of indicators at the level of systems and policy to the mechanisms of quality assurance at the level of institutions and providers. Some countries try to approach that issue from top-down, others from bottom-up. The Netherlands example shows probably most decisively that a solution can only be found from a balanced approach which uses both directions.

8. Conclusions and proposals for the practical use of indicators

These last reflections about the numbers of available indicators in different European sources should lead us to the conclusion that first of all a careful selection of indicators is needed, last but not least because of cost-benefit ratios.

8.1. Requirements and limits for using indicators

There are some additional requirements and limits in using indicators which will be considered in the following section. To be of practical use a series of requirements should be made not only of the indicators themselves, but also of the methods and manner of their application. Indicators should by no means be handled negligently, but purposefully and with a certain methodological stringency. In general indicators should meet the following requirements:

- central importance – the indicators selected should be of central importance for the activities to be assessed;
- comprehensiveness – the selected indicators should consider the most important dimensions of the activities in question;
- simplicity – as few indicators as possible should be used, and these should be unambiguous and easy to understand;
- high validity of data – internally the selected set of indicators should reflect causal links; externally the selected indicators should be generally valid, which is of special importance when benchmarking processes among different practices are to be implemented;
- exactness – reliable criteria need to be available for the indicators used, so that different actors can use the indicators in the same way; this is the only way to achieve comparability between activities of the same type;
- availability – the data serving for the chosen indicators must be made available punctually before the time set for the assessment as well as before any scheduled decisions are made;
- efficiency – the costs of collating and evaluating the necessary data must be in a justifiable relation to the potential benefit of any insights which might be gained from the data.

The indicators proposed in the previous chapter are either based on hard quantitative data which can be measured and counted statistically (example: drop-out rate), or they address the same issue by providing soft indications of the existence of certain trends (example: policy to combat dropping out).

It will probably not be possible to arrive at one single solution at European level for all indicators. Instead, for some indicators it might be wise to propose to Member States various

approaches for putting into practice indicators for certain quality objectives, such as reducing the drop-out rate. This could mean that instead of putting indicators into practice we could suggest several quality dimensions be covered (participation, drop-out, transition to employment, quality of employment). However, this would mean that comparisons between different VET systems would be of very limited value and that implementation of benchmarking or benchlearning processes would be extremely difficult.

The decision on which type of indicator to use will depend primarily on the data collection process. In so far as the relevant data are not acquired through special evaluation surveys, the decision will also depend on the type of governance of the VET system. Most information for indicators at VET system level will have to be collected at the level of VET organisations before it can be aggregated at the system level. Aggregation, however, requires valid, reliable and comparable data. For hard indicators, this means not only a precise definition of the indicators in use but also standardisation of data collection methods. For the public part of VET systems, where the central level can ask for the relevant information from VET institutions to aggregate it at system level, such standardised methods can probably be implemented more easily than in VET systems where the responsibility for monitoring the relevant data remains mainly within VET organisations. In such cases it might be wise to rely mainly on soft indicators, which at system level can be aggregated more easily into hard information.

Every use of indicators is accompanied by data collection. When making decisions on the implementation of certain indicators, the following issues should be considered:

- examination of the necessary data collection procedures which go hand-in-hand with the use of different indicators;
- proof of reliability and validity of the data to be collected;
- assessment of the data collection in relation to the effects achieved once the relevant indicator is put into operation.

In relation to data collection procedures, it is always worth considering how far data from existing sources can be used to serve as quality indicators. It should always be checked to see which data sources can be exploited more fully for quality issues and which regular surveys could be extended to include quality-related aspects. For each newly proposed indicator, the data collection efforts should be weighed against its explanatory value.

Despite the importance of the use of indicators, we should always remember that even those indicators which fulfil all the requirements stated in the previous section will still only be of limited use. Below we list the most significant limitations affecting indicators:

- measurement with indicators can provide useful information but not all objectivities and activities which are relevant for achieving quality in VET can be quantified and measured;

- measuring performance with indicators is of growing political importance, but information on indicators can never replace discussion among relevant stakeholders and decision processes which should finally lead to practical conclusions.

8.2. Proposals for implementing indicators

The experiences documented in this report demonstrate that indicators are extremely useful instruments with which achieving commonly agreed quality objectives in VET can be documented, checked and supported. Indicators are intended to produce information which helps the relevant actors in VET to assess the extent to which their quality objectives have been met, to communicate the results, to negotiate possible consequences, and to adopt the resulting decisions and actions to be undertaken.

- It is recommended therefore that the use of indicators should be part of any approach to quality improvement (including self-assessment) and that indicators should be used to support quality at all levels of VET systems.
- Indicators do not stand alone, they support achievement of certain objectives, i.e. they always have to be linked to clearly defined objectives.
- To support achievement of the three policy priorities (better employability, matching, and access) set by the Member States, the European Commission and the social partners, it is recommended that the indicators used for quality development in VET systems reflect these policy objectives.
- Indicators should not stand in isolation. To make the information provided by individual indicators more useful, indicators should be related to one another. It is recommended therefore to implement a coherent set of indicators at each level of the VET system.
- It is recommended that use be made of such a coherent set of indicators, differentiated according to context, input, process, output and outcome of VET activities allowing the entire cycle of VET activities to be covered.
- Special attention should be given to indicators oriented towards measuring output and outcome of VET activities.
- When deciding on a system of indicators, the different starting points, goals, and objectives in initial VET and continuing VET should be addressed.
- It is recommended that quantified indicators be used wherever possible. If not possible, use should be made of soft indicators (descriptors) that reflect certain trends for achieving the defined objectives.
- It is recommended that all indicators referring to the level of individuals consider the gender perspective and provide information according to gender.

- When making decisions on implementing indicators, ensure for each indicator that the effort put into collecting relevant data is proportional to the value of the information provided.
- To ensure indicators are used seriously, necessary arrangements for partnerships should be made, i.e. the relevant VET actors should be included in developing both a coherent system of indicators and a corresponding implementation strategy.
- Use of indicators should not be restricted to assessing previously set quality objectives, but should also cover and be a substantial part of the broader learning process in the VET system.

In a European perspective, the main function of the proposed set of indicators will be to serve as a recommendation to VET providers and to policy developers at systems level to apply these indicators and to make use of them. At this stage, the indicators probably cannot be used as comparative benchmarks. Therefore emphasis is on developing common learning processes on how to implement and to work with the proposed set of indicators to improve quality in VET.

The crucial questions for the future will be how the learning process and exchange of experience is organised, how this exchange is structured, how it is 'guided' and where it should lead.

8.3. Points for further discussion

To conclude we would like to put forward some questions which build on the results reached so far. These questions mainly address issues at the European level of action but also incorporating indicators into the existing VET systems.

For further clarification of the concept of quality in VET and use of indicators in the quality cycle, it is suggested to work more intensively on the following subjects:

- **inclusion of stakeholders:** comparison of different models for stakeholder inclusion; define quality criteria for including stakeholders, analysing trade-offs between stakeholder participation and the effectiveness of the process;
- **stimulation of learning:** identification of factors supporting learning when making use of the quality cycle, possible steps leading from single-loop learning to double-loop learning;
- **use of indicators:** practical tools to support the use of indicators, more precise implementation of indicators, incorporation of the objectives of the European policy priorities into national and regional approaches for improving the quality of VET systems.

Finally, further discussions and reflections will be needed on how to support implementation of indicators in practice. It should be clear there is no way to implement use of indicators by constraint. If the relevant actors in VET are forced to use indicators they will concentrate their

efforts on generating the expected data and information, and they will neglect the substance and the quality of their work. The merits of indicators will only become clear if those using them have confidence in them.

Incentives should only be used in a first phase of implementation as they can only help overcome starting difficulties with a new and unknown instrument. Incentives can never stand alone and they are not for use over longer periods of time, otherwise they create negative effects. Using indicators has certain values and rewards of its own. It is important to know that using indicators can support common learning and can contribute to common trust.

List of abbreviations and acronyms

CQAF	Common quality assessment framework
CVET	Continuing vocational education and training
CVTS	Continuing vocational training survey
DG-EAC	Directorate General for Education and Culture
DG-EMPL	Directorate General for Employment, Social Affairs and Equal Opportunities
DG-ENTR	Directorate General for Enterprise and Industry
EEO	European Employment Observatory
ESF	European Social Fund
Eurostat	Statistical Office of the European Communities
Eurydice	Information network on education in Europe
EQFM	European Foundation for Quality Management
FETAC	Further Education and Training Awards Council
FHVR-FBAE Berlin	*Fachhochschule für Verwaltung und Rechtspflege – Forschungsstelle für Berufsbildung, Arbeitsmarkt und Evaluation, Berlin* (University for public policies and law – Research unit for vocational education, the labour market and evaluation, Berlin).
ICT	Information and communication technology
IHS	*Institut für höhere Studien, Wien* (Institute for advanced studies, Vienna)
ILO	International labour organisation
ISFOL	*Istituto per la Formazione dei Lavoratori*
IVET	Initial vocational education and training
HRD	Human resource development
IALS	International adult literacy survey
KILM	Key indicators of the labour market
LFS	Labour force survey
LLL	Lifelong learning
NAP	National action plan
OECD	Organisation for economic cooperation and development
PISA	Programme for international student assessment
QA	Quality assurance
QM	Quality management
TWG	Technical working group on quality in VET for the follow-up of the Copenhagen process
VET	Vocational education and training

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Annex 1 List of policy objectives for initial VET and continuing VET

Employability	Matching	Access
Initial VET	**Initial VET**	**Initial VET**
Completion of initial VET course (recognised qualification, assets and structure of offers)	Assessment of mismatches	**Everyone**
Prevention of drop-out	Production of information and knowledge	Secure accessibility (generally, at certain levels)
Provision of work experience	Dissemination of information and knowledge	Open access/selective access
Acquisition of appropriate competences	Adaptation of VET supply to demand	Avoid unproductive delays
ICT skills	Support for flexibility, mobility, transferability	Broaden accessibility
Transition (success and conditions)	Proactivity and innovation	Information about supply and conditions for access
Employment (including quality)		Incentives and support for access
New jobs/occupations/ trades/sectors		Smooth progression pathways towards completion/qualifications
		Flexibility, modularisation, credits, accreditation, certification
		Vulnerable groups
		Incidence of vulnerable groups
		Creation of specific supply targeted to needs
		Specific information and counselling on supply and conditions for access
		Specific incentives and support for access
		Opportunities for reentry
Continuing VET	**Continuing VET**	**Continuing VET**
Participation in continuing VET activity (recognised qualification)	Assessment of mismatches	**Everyone**
Completion of continuing VET course (recognised qualification)	Production of information and knowledge	Secure accessibility (generally, at certain levels)
Acquisition of appropriate specific and broad competences	Dissemination of information and knowledge	Develop a balanced system of supply including informal, non-formal and formal offers
ICT skills	Adaptation of VET supply to demand	Information about supply and conditions for access
Transition	Support for flexibility, mobility, transferability	Provide incentives and support and remove obstacles to access

Employment	Proactivity and innovation	Provide mechanisms for accreditation of prior learning
Participation from old (declining) jobs/occupations/trades/sectors	Obsolescence and redundancy	
Mobility to new (growing) jobs/occupations/trades/sectors	Employer training and HRD	
		Vulnerable groups
		Incidence of vulnerable groups
		Creation of specific supply targeted to needs
		Specific information and counselling on supply and conditions for access
		Specific incentives and support for access
		Specific opportunities for re-entry

Annex 2 Proposals for indicators for each objective of the three policy priorities

Context indicators applicable to all policy priorities

Indicators	Existing data source in:	hard data	soft data
Structural indicators (economic growth, employment, unemployment, expenditure on VET per capita)	proposal	x	
Job vacancies in different sectors/branches	proposal	x	
NAP indicators (early school leavers, youth employment, unemployment, proportion of adults participating in LLL)	EU	x	
Proportions of vulnerable groups in the population	proposal	x	
Percentage of VET institutions applying full-cycle QM approaches	proposal	x	x

Policy priority: employability

Objective: competences (basic, ICT, social, personal, technical)

Indicators	Existing data source in:	hard data	soft data
Breakdown of VET participants by gender and by programme venue	EU	x	
ICT skills			
Basic skills in literacy and numeracy meeting the requirements of the recognised demand	proposal		x
Basic social skills meeting the requirements of the recognised demand	proposal		x
Percentage of VET participants spending at least 25 % of training in a work environment	EU	x	
Percentage of young people aged 18 to 30 in employment whose education/training has given them the skills needed for their present type of work	UK	x	

Objective: completion of VET/avoidance of dropping out

Indicators	Existing data source in:	hard data	soft data
Percentage of those who started and completed VET (by type of VET)	EU	x	
Failures and drop-outs at all levels of the VET system (breakdown by type of course)	proposal	x	
Existence of an active policy to combat dropping out	proposal		x

Objective: transition to employment

Indicators	Existing data source in:	hard data	soft data
Percentage of young people (18-25) who have completed upper secondary vocational education or training and are currently (a) employed, (b) unemployed, (c) inactive, (d) in education, (e) in a government training scheme related to employment	EU	x	
Effectiveness of transition between formal and non-formal learning and the labour market	proposal		x
Transition from education to labour market/employment – unemployment by educational attainment	proposal		x
Unemployment and bottlenecks determined by education and training	proposal		x
Flexibility: VET participants who are willing to relocate after completion of training	proposal	x	

Objective: quality of employment (stability, income, desired working time)/ employment in new sectors

Indicators	Existing data source in:	hard data	soft data
Percentage of those who, after completion of training, find a job in the field in which they have been trained and retain that job for a certain period of time, i.e. six months	EU	x	
Percentage of those undertaking continuing VET and receiving higher remuneration than previously	EU	x	
Active policies to train unemployed people from the old sector to enter a new sector, e.g. ICT	proposal		x

Policy priority: matching

Objective: information (knowledge about demand acquired and transmitted)

Indicators	Existing data source in:	hard data	soft data
Existing mechanisms for acquiring information on present and future demands of the labour market, e.g. forecast of skill gaps: (a) national, (b) regional	proposal		x
Existing mechanisms for transmitting information to providers on recognised demands of the labour market	proposal		x
Percentage of VET participants not in a job that they have been trained for six months after completion of their training (breakdown by type of course)	proposal	x	

Objective: responsiveness (reaction to knowledge about recognised demand)

Indicators	Existing data source in:	hard data	soft data
Utilisation of acquired skills at the workplace, from the perspective both of the employer and the employee	proposal		
Establishment of annual action plans based on the data on the recognised demand	proposal		x
Number of new training offers in a year in response to the recognised demand	proposal	x	
Design of new courses in response to the needs of the regional employment market	proposal		x
Proportion of continuing VET organised directly by enterprises	proposal		

Objective: adaptation/innovation

Indicators	Existing data source in:	hard data	soft data
Percentage of fully subscribed courses for the recognised demand	proposal	x	
Existing policies on campaigns to promote new training offers	proposal		x
Availability of individualised training in response to demand	proposal		x

Policy priority: access

Objective: broadening access (everyone who can benefit)

Indicators	Existing data source in:	hard data	soft data
Accessibility (group participation differentials)	proposal	x	
Proportion of vulnerable groups by current participation rate	proposal	x	
Existence of information guidance systems accessible to everybody including vulnerable groups	proposal		x
Existence of financial support scheme for vulnerable groups	proposal		x
Existence of national action plans to improve access of vulnerable groups	proposal		x

Objective: opportunities for vulnerable groups

Indicators	Existing data source in:	hard data	soft data
Existence of special offers (outreach activities, guidance, orientation, motivation, courses, qualifications, competences)	proposal		x
Number of enrolments in the abovementioned special offers	proposal	x	
Completion rates for the abovementioned special offers	proposal		x
Active policies to improve participation of vulnerable groups	proposal	x	

Objective: permeability

Indicators	Existing data source in:	hard data	soft data
Active policies to reduce group-specific drop-out rates	proposal		x
Existence of monitoring systems for group-specific drop-out rates	proposal		x
Existence of mechanisms to validate prior learning	proposal		x

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Taking the commonly agreed political priorities for better employability of the labour force, better match between training supply and demand, and better access to vocational training and education as a starting point, the study presents a coherent set of eight indicators as an instrumental part of a comprehensive European strategy for quality in vocational education and training (VET). The practical use of indicators is illustrated by several national examples and international and European indicators systems are analysed to check their usefulness for quality. The report demonstrates that indicators are extremely useful instruments to document, check and support achievement of commonly agreed quality objectives in VET. Use of indicators will help the relevant actors in VET to assess the extent to which their quality objectives have been met, to communicate the results achieved, and to undertake the necessary actions to improve their quality.

PANORAMA

Indicators for quality in VET
To enhance European cooperation

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