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## **Development of a methodology for a long term strategy on the Continuing Vocational Training Survey (CVTS) – CVTS3 M**

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## Abstract

At European level two enterprise surveys on continuing vocational training (CVTS1 in 1994 and CVTS2 in 2000) were carried out. For 2006, a third European survey on continuing vocational training (CVTS3) is scheduled. The European Commission initiated the project “Development of a methodology for a long term strategy on the Continuing Vocational Training Survey (CVTS)” to support the methodological preparation and implementation of CVTS3.

The objective of the project was to design a long term approach for future data collections on vocational training in enterprises including the development of the statistical methodology and the organisation of the data collection for future surveys beyond CVTS3. The main goals of the project were to develop a questionnaire for CVTS3, based on a review of CVTS2 and including new questions due to new demands (e.g. inclusion of initial vocational training in the survey), to refine the survey guidelines and the conceptual framework of the survey (codebook, manual with glossary, etc.) and to contribute to the development of harmonised and comprehensive statistics on education and training.

The main issues in the development of the questionnaire and the survey guidelines were the inclusion of initial vocational training in CVTS, a refinement of the questionnaire (especially the questions relating to costs, forms of training other than courses, and the training policy of the enterprises), the extension of the coverage with respect to economic activities and size of enterprises, data availability in enterprises and the sample design.

The project work was carried out by an international consortium of key experts in the field of continuing vocational training. BIBB was leading the project.

- **Ausgangslage**

At European level, the first enterprise survey on continuing vocational training (CVTS1) was carried out in 1994 in the then 12 member states of the European Union. The European Commission initiated a second European continuing vocational training survey (CVTS2) to satisfy the growing policy interest in data on continuing vocational training (CVT) in enterprises and to meet the demand for CVT data to cover all member states. CVTS2 was implemented in 2000 in the 15 member states of the European Union at that point of time, in Norway and in nine candidate countries.<sup>1</sup>

The implementation of both CVTS1 and CVTS2 was based on “gentlemen’s agreements” with the member states of the European Union, but for the forthcoming CVT surveys it was decided to provide a legal basis for the data collection within the European Statistical System. The third European survey on continuing vocational training (**CVTS3**) is based on the “Regulation of the European Parliament and of the Council on statistics relating to vocational training in enterprises” (Regulation 1552/2005/EC). The objective of the regulation

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<sup>1</sup> Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovenia. Results of the survey are published in many publications. The most prominent summary of the results can be found on the internet ([http://europa.eu.int/comm/education/programmes/leonardo/new/leonardo2/cvts/index\\_en.html](http://europa.eu.int/comm/education/programmes/leonardo/new/leonardo2/cvts/index_en.html)).

is the creation of common statistical standards that permit the production of harmonised data. It establishes a common framework for the production of Community statistics on vocational training in enterprises. CVTS3 is scheduled for 2006, relating to CVT activities in the enterprises in 2005.

After implementation and evaluation of CVTS2, several aspects of future methodological improvement and development, including for example the extension of the survey content to initial vocational training in enterprises, have been identified.<sup>2</sup> Therefore the European Commission initiated a call for tender for the preparatory work relating to the implementation of CVTS3. The project "Development of a methodology for a long term strategy on the Continuing Vocational Training Survey (CVTS) - CVTS3 M" was then set up to prepare the CVTS3 survey. It was carried out by an international consortium of key experts in the field of CVT. Most experts have been involved in the implementation of CVTS2 and some already in CVTS1, and have used CVTS data for national and comparative research activities. BIBB was leading the project. Members of this consortium were:

- 3s research laboratory (Austria)
- Statistics Finland
- Statistics Sweden
- FÁS – Training and Employment Authority (Ireland).

- **Ziele**

The central objective of this project was not only the methodological preparation of CVTS3, but also the designing of a long-term approach for future data collections on vocational training in enterprises including the development of the statistical methodology and the organisation of the data collection.

The main goals of the project were:

- To develop a questionnaire for CVTS3, based on a review of the outline questionnaire used in CVTS2, and the inclusion of new questions because of new demands (e.g. inclusion of initial vocational training in the survey)
- To refine the survey guidelines and the conceptual framework of the survey (codebook, manual with glossary, etc.)
- To contribute to the development of harmonised and comprehensive statistics on education and training.

- **Methodische Hinweise**

The terms of reference of the call for tender of the European Commission not only specified the key results to be achieved in the project. It was also requested that all work had to be based on the CVTS2 approach, taking into account all the working papers, the manual, the reports and publications elaborated in its context. Furthermore, compatibility with national and Community Statistical Systems was required.

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<sup>2</sup> BIBB-Forschungsprojekt Nr. 1.6.101 "Assessment of the Second Vocational Training Survey (CVTS-II). Comparative Analysis of Continuing Vocational Training on the Basis of CVTS-II Results"

- According to these requirements and the objectives to be achieved the project rests on the expertise in conceptualising, implementing, and analysing CVTS2. The CVTS3 M consortium drew upon the following publications and reports (some of them previously elaborated by members of the consortium):
- Methods Report of the Leonardo-II project “Assessment of the Second Vocational Training Survey (CVTS-II). Comparative Analysis of Continuing Vocational Training on the Basis of CVTS-II Results” (BIBB-Forschungsprojekt Nr. 1.6.101).
- 6 issues of Statistics in Focus relating to CVTS (edited by Eurostat, written by the Leonardo-II project “Assessment of the Second Vocational Training Survey (CVTS-II). Comparative Analysis of Continuing Vocational Training on the Basis of CVTS-II Results” (BIBB-Forschungsprojekt Nr. 1.6.101).
- Online publication “Results of the second European Continuing Vocational Training Survey in enterprises” (edited by Eurostat, written by the Leonardo-II project “Assessment of the Second Vocational Training Survey (CVTS-II). Comparative Analysis of Continuing Vocational Training on the Basis of CVTS-II Results” (BIBB-Forschungsprojekt Nr. 1.6.101).
- Discussion papers and minutes of Eurostat relating to CVTS2.
- Reports on the German extra-surveys supplementing CVTS1 and CVTS2 (BIBB-Vorhaben Nr. 4.0.541 “Nationale Ergänzungserhebung zur zweiten europäischen Weiterbildungserhebung (CVTS-II Zusatzerhebung).

In addition, analyses were based on

- Quality reports of CVTS2 made available by countries participating in CVTS2;
- Tables of CVTS data made available by Eurostat<sup>3</sup> ;
- A survey designed and implemented by the consortium concerning the coverage of national Business Registers.

The CVTS3 M consortium worked together in close partnership. There was frequent communication and exchange of papers and comments by e-mail and phone. Five project meetings in Bonn had been arranged.

For some special topics other experts in the relevant fields assisted the CVTS3 M consortium by contributing expertise on specified items:

- Statistics Austria provided expertise on staging and modularisation of the survey;
- The National Statistical Institute of the Republic of Bulgaria contributed expertise on the integration of micro-enterprises and additional economic sectors in CVTS;
- Infas (Institute for Applied Social Sciences) provided expertise on advantages and disadvantages of different modes of data collection, especially on the use of CATI/CAPI and web based surveys.

Preparing CVTS3 was accompanied by a CVTS Working Group<sup>4</sup> and a Task Force<sup>5</sup>. BIBB as project leader represented the consortium in all the meetings of CVTS Working Group and

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<sup>3</sup> BIBB requested with the proposal of this project access to micro data of CVTS2. Unfortunately, it was only towards the end of the project that Eurostat was in the position to grant access - too late to conduct detailed analysis that would have improved the foundation of the work.

<sup>4</sup> The CVTS Working Group is composed of the representatives from the countries participating in CVTS (for CVTS3 these are the 25 EU member states, Norway and candidate countries).

Task Force as well as in steering group meetings with the European Commission and Eurostat. The results of various work packages were made available and presented in these meetings. BIBB also participated in several national consultation rounds.

A supporting group of national experts (researchers, statistical offices, government, social partners) was established in Germany. The meeting of this group took place on the 24<sup>th</sup> of May 2005. The national experts intensively discussed the first draft version of the questionnaire. After the meeting the experts were kept informed by email.

- **Ergebnisse**

Two mutually contradicting targets were set for the project: Insuring continuity between CVTS2 and CVTS3 as well as improvement of concepts, definitions and questions. The main restrictions to be considered during the preparation of CVTS3 were

- Costs of the survey;
- Burden on the respondents;
- Availability of detailed data on CVT in enterprises;
- Time schedule;
- Different situations in the participating countries.

The final results agreed upon by the CVTS Working Group meeting in September 2005 are a compromise between the recommendations of the CVTS3 M consortium and the proposals of other parties involved (e.g. the European Commission, Eurostat, countries participating in CVTS3), and hence are not always entirely taking up the recommendations elaborated in the project. The main results of the project work are described in the section below.

**a) Refinement of the CVTS3 questionnaire**

Based on its analysis of the national CVTS2 quality reports and the non-response rates of variables, the CVTS3 M consortium identified questions in CVTS2 yielding low data quality. The consortium recommended skipping and rephrasing some questions with the objective of raising the quality of the data collection. No major changes of the core questions mainly relating to the quantitative data (structural data, CVT activities of the enterprises) were recommended. However, the questions relating to the training policy of the enterprises underwent major changes, because the CVTS3 M consortium decided to reformulate these qualitative questions in such a way that it is possible to construct an indicator of professionalisation on the basis of these questions.

The regulation stipulates that future CVTS (starting with CVTS3) have to include questions relating to the initial vocational training provided by enterprises. Initial vocational training (IVT) and continuing vocational training (CVT) are two elements in the development of employees' vocational skills. Both form core parts of lifelong learning and are partially complementary. CVTS1 and CVTS2 excluded IVT explicitly from the survey. The CVTS3 M consortium underlined the importance that the inclusion of IVT in future CVTS should not

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<sup>5</sup> The CVTS Working Group mandated a Task Force to assist Eurostat in the implementation of CVTS3. Membership of the Task Force was open to all countries. The composition of the Task Force changed depending on the agenda of each meeting, as a function of countries and/or organisations specific interests and expertise with respect to the subject of each meeting.

endanger comparisons of CVT between future and past surveys. Consequently, all parts of the CVTS3 questionnaire relating to the provision of CVT are excluding persons with an apprenticeship or training contract.

In order to collect data on IVT, a clear operational definition of IVT and a clear demarcation between IVT and CVT is essential for the quality of the data and necessary for comparisons with CVTS2. The consortium delivered a proposal and its operationalisation in the questionnaire. In an intensive discussion with contributions by many participants (e.g. European Commission, Eurostat, Cedefop, CVTS3 M consortium, countries' representatives) a criteria-based solution was found and agreed upon in the CVTS Working Group. As parts of the definition are still open to national interpretation, international comparability may not be fully guaranteed.

The "Regulation of the European Parliament and of the Council on statistics relating to vocational training in enterprises" (Regulation 1552/2005/EC) stipulates that participants and total expenditure on initial training are to be collected. Although total expenditure on IVT is requested in the regulation, the consortium for methodological reasons recommended to focus on costs of the participation of apprentices in training courses and, in addition, on total labour costs of apprentices. Regarding the latter it has to be taken into account that for an assessment of enterprises' real costs of IVT the value of the productive work of apprentices would have to be deducted. Experience shows that labour costs of trainers for on-the-job-training needs extensive treatment in a questionnaire.<sup>6</sup> Given the restriction of not increasing the response burden of enterprises, it was recommended to refrain from collecting these costs for IVT as well as for CVT.

- The costs of CVT made up an important component of the past two surveys. Although the measurement of costs is not easy, it is very important to collect data in this area. Even estimates are very useful, as no alternative source of such data exists. As in past surveys, cost assessment in CVTS3 is focused on enterprises' investment in CVT courses. However, the CVTS3 M consortium recommended some changes to the collection of the cost data, which were implemented in the final questionnaire:
- Asking for every sub-item whether costs were incurred or not (to differentiate between non-response or in fact zero costs, an important improvement of data quality);
- Abandonment of the differentiation between the labour costs of full-time and part-time CVT trainers;
- Deletion of the questions about the different sources of receipts and the number of CVT trainers.

From the very start of conceptualising CVTS, it was recognised that analysis of CVT is not complete if limited to the provision of training courses only. Information about so-called "other forms of CVT" also needs to be collected. These forms often are taking place at the immediate place of work, which makes it difficult to distinguish work and learning, both analytically and empirically. When analysing the outcomes of the two past surveys, it became clear that on the one hand the quality of the data was insufficient and on the other hand the data were not informative, because no information on the relevance of the other forms was provided. Therefore, the consortium originally proposed for CVTS3 a more comprehensive approach. However, because of the target not to increase the response burden, it was not possible to implement this approach in the final CVTS3 questionnaire. The consortium,

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<sup>6</sup> Cf. BIBB-Forschungsprojekt Nr. 2.9. 005 „Nutzen und Nettokosten der Berufsausbildung für Betriebe“

nevertheless, proposed changes for the coverage of the other forms of CVT and concentrated on clarification of definitions and on collection of additional information on the number of participants.

Quantitative indicators are a central element for describing the structure of continuing vocational training in Europe. In CVTS2 four main quantitative indicators were used for the analysis of continuing vocational training in enterprises: training incidence, training access, training intensity and training costs. These main indicators are available at two levels, the national level and the level of training enterprises. The CVTS3 M consortium recommended to continue providing these indicators in CVTS3 and future CVTS and suggested collecting participation of different age groups and broad occupational groups to analyse the access and the intensity of continuing vocational training for different groups of employees. However, the CVTS Working Group decided not to include questions about occupational groups in CVTS3.

The prime purpose of CVTS is to collect quantitative indicators of continuing vocational training in enterprises. Both CVTS1 and CVTS2 allowed for a number of supplementary qualitative questions concerning contents, character and organisation of CVT offered by enterprises. Some of the questions in CVTS2 provide a starting point for developing an operationalisation of a concept of “professionalisation” of enterprises’ approach to CVT. The CVTS3 M consortium proposed a set of qualitative questions – partly revised to enhance discriminatory power, partly new – to be integrated into an overall indicator, measuring the level of professionalisation of the organisation of CVT in an enterprise. The indicator should be able to classify enterprises by the scale of measures already taken to institutionalise CVT.

CVTS so far excludes enterprises employing less than 10 persons and enterprises in the sectors agriculture/forestry; fishing; public administration, government and municipal institutions; education; health; activities of private households; extra-territorial bodies. Extending the coverage of CVTS is desirable, as this would substantially enhance the representativeness and the quality of the results of the survey. The possibility of doing so depends inter alia on the state and coverage of national business registers. The consortium conducted a short survey on these issues and concluded that the integration of some of the economic sectors would imply additional conceptual and practical work. Policy interest in inclusion of small enterprises is high, considering the high share of small enterprises in all enterprises and all employees, but issues like the high volatility of the target population and a presumably higher response bias would require further efforts.

## **b) Refinement of the survey guidelines**

Data availability in enterprises is one of the key factors for CVTS data quality. Enterprise surveys, because of the nature of the information required and data availability, are often more difficult than surveys of individuals. Some information on most of the variables included in the CVTS3 questionnaire is usually at hand, but the information is not always recorded in the enterprises’ accounting systems in a way that can be easily extracted when answering the questionnaire.

The CVTS3 M consortium analysed the data availability results of CVTS2 and the German extra survey and identified the most problematic items:

1. Data on participants (age, gender, occupational status);
2. Data on training hours, especially the subdivision by subject and provider;
3. Data on training costs.

The CVTS3 M consortium presented some proposals on how the answering of the problematic questions can be made easier for the enterprises (e.g. sending the questionnaire before telephone or face-to-face interviews).

Like in CVTS2 also for CVTS3 the data collection method was determined nationally - a unified approach was not possible. The CVTS3 M consortium compiled, based on an extensive assessment, the pros and cons of the use of the different modes of data collection (face-to-face interviews, telephone interviews, postal questionnaires, web based questionnaires).

In addition, the CVTS3 M consortium presented some recommendations for the organisation of the field work and addressed issues like the training of the interviewers and the supervision and monitoring of the field work. One of the most important recommendations concerns the implementation of national helpdesks or phone hotlines for the enterprises that should be administered professionally.

### **c) Conceptual informatics framework**

The regulation stipulates that national quality reports containing all the information and data requested to verify the quality of the data are to be delivered. The consortium, as a conclusion of its analysis of the national quality reports concerning CVTS2, stressed the necessity of including descriptions of all processes during the production of statistics, for example collection of data, editing, treatment of non-response and estimation. This information should include the concepts and methodology used in collecting and processing the data and other characteristics of the data that may affect their quality, use or interpretation.

There are two types of non-responses:

- Unit non-response arises when no survey data are collected for a unit (information is missing on all the questionnaire variables).
- Item non-response arises when some data are collected for a unit but values of one or more items are missing.

Re-contacting enterprises is a measure to reduce unit and item non-response rates as much as possible. However, some non-response is inevitable. It is recommended that re-weighting be used to treat the problem of unit non-response, while imputation is used to treat problems of item non-response. However, it is not possible to base the imputation of qualitative variables on a model that uses a combination of other information in the enterprise record, like in the case of quantitative variables. This means that there are doubts if imputation of qualitative variables will improve quality in the estimates. It is also recommended that qualitative variables that have been imputed will not be used for further breakdown of enterprises when the results are presented. The consortium strongly recommends analysing the effects of the imputations in different countries and for different variables. In order to do that, it is necessary that countries deliver datasets both before and after imputation of the variables for all participating countries.

- **Bisherige Auswirkungen**

The project "Development of a methodology for a long term strategy on the Continuing Vocational Training Survey (CVTS)" supported the European Commission and Eurostat in the methodological preparation and implementation of CVTS3. The consortium delivered



working papers, reports and presentations informing the discussions in the CVTS Working Group and the CVTS Task Force as well as internal discussion within Eurostat and the Directorate-General for Education and Culture of the European Commission. The list of papers, assembled in 8 work packages, is included in the next section. Eurostat has uploaded most of the papers on the “Circa” website (Communication and Information Resource Centre of the European Commission) for further distribution and reference.

The final results agreed upon by the CVTS Working Group meeting in September 2005 are a compromise between the recommendations of the CVTS3 M consortium and the proposals of other parties involved (e.g. the European Commission, Eurostat, countries participating in CVTS3), and hence are not always entirely taking up the recommendations elaborated in the project. In particular, considerations of costs of the survey, the tight timelines for implementing CVTS3 in countries, the target of not increasing the response burden on enterprises, and specific conditions in countries (e.g. prohibition of enterprises recording information on employees migration background) were reasons not to implement the consortium’s recommendations to the full extent. All things considered, it is safe to conclude that the project contributed to the improvement of CVTS3, in particular by refining the questionnaire, the survey guidelines and the conceptual informatics framework. Some recommendations have been integrated in the “Regulation (EC) No 1552/2005 of the European Parliament and the Council of 7 September 2005 on statistics relating to vocational training in enterprises” and in the Commission Regulation (EC) No 198/2006 of 3 February 2006, implementing the former regulation.

The countries participating in CVTS3 have started with the implementation of the survey, in some countries data collection has started at the time of writing this report. In 2007 results will be sent to Eurostat. The information collected by CVTS is very important for the assessment of lifelong learning in the European Union, despite some methodological and organisational pitfalls of these surveys (e.g. small enterprises with less than 10 employees are not included). The Lisbon Strategy aims to create a drive towards a more dynamic and competitive knowledge-based economy that will deliver sustainable economic growth with more and better jobs and greater social cohesion. The agreement reached at the Lisbon European Council gives education and training an important role as part of the economic and social strategy and the future of the European Union. The monitoring of progress in achieving the Lisbon goal needs adequate data. The project has contributed to the improvement of the scope, precision and reliability of VET statistics. There is room for further improvement, and the consortium has provided recommendations regarding CVTS4 and following surveys as well as concerning all other statistical surveys in education and training.

## **Veröffentlichungen**

Berufliche Weiterbildung im internationalen Vergleich. In: Bundesministerium für Bildung und Forschung (Hrsg.), Berufsbildungsbericht 2005, S. 281

Work package 1: Further development of a coherent system of quantitative and qualitative statistics and indicators on vocational training in enterprises (survey output):

- Inclusion of initial vocational training (IVT) in future CVTS (Eurostat Doc. ESTAT/D5/2004-CVTS 05-EN).
- “Other” forms of continuing vocational training (Eurostat Doc. ESTAT/D5/2004-CVTS 06-EN).
- Coverage of costs (Eurostat Doc. ESTAT/D5/2004-CVTS 07-EN).

- Coherence of enterprise-based and individual-based European surveys (Eurostat Doc. ESTAT/D5/2004-CVTS 08-EN).
- Qualitative questions relating to the training policies of enterprises (Eurostat Doc. ESTAT/D5/2004-CVTS 09-EN).
- Coherent set of quantitative key-indicators (Eurostat Doc. ESTAT/D5/2004-CVTS 10-EN).
- Needs and consequences of the extension of coverage with respect to NACE and size of the enterprises (Eurostat Doc. ESTAT/D5/2004-CVTS 11-EN).

Work package 2: Definition and description of the variables with respect to the survey output:

- Definition and description of the variables with respect to the survey output (Eurostat Doc. ESTAT/D5/2005-CVTS3-TF-04-EN).
- Summary table : Methodological assessment of the variables of CVTS2 and recommendations for CVTS3 (Eurostat Doc. ESTAT/D5/2005-CVTS3-TF-06-EN).

Work package 3: Modular European outline questionnaire including the description of the different modules.

Work package 4: Improvement of the operational concepts and definitions for the implementation of the survey:

- Introduction and CVTS3 Questionnaire (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2 – 14).
- Summary table – Changes between CVTS2 and CVTS 3 / motivation and usage of the questions / data availability in enterprises (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2-15-EN).
- Code book – List of variables (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2-16-EN).
- Glossary (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2-17-EN).
- Qualitative questions concerning the professionalisation of CVT in enterprises (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2-18-EN).
- Note on high performance work systems (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2-19-EN).
- Staging / modularisation approach (Eurostat Doc. ESTAT-D5-2005-CVTS3-TF2-20-EN).

Work package 5: Survey guidelines:

- Data availability in enterprises.
- Mode of data collection.
- Organisation of the field work.

Work package 6: Conceptual informatics framework:

- Conceptual informatics framework.

Work package 7: Needs and consequences of the extension of coverage with respect to NACE and the size of the enterprises - Recommendations for future CVTS surveys:

- Needs and consequences of the extension of coverage with respect to NACE and the size of the enterprises - Recommendations for future CVTS surveys.

Work package 8: European Union Manual

- European Union Manual.

Final report (including summary) (not yet published at the time of writing this report).