
**ESSi-NA2 Quality Enhancement Meeting V:
Comparative and Harmonised Measurement of Educational
Qualification**

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Outcomes of the Quality Enhancement Meeting V on Comparative and Harmonised Measurement of Educational Qualification

Introduction

As a part of the European Social Survey Infrastructure Programme, the networking activity NA2 convened a fifth Quality Enhancement Meeting on Comparative and Harmonised Measurement of Educational Qualification in the ESS (held in Mannheim, 15-16 October 2009). International experts in the area of comparative education research met with key members of the ESS Central Coordination Team (CCT) in order to develop recommendations with regard to improvements of the measurement of educational attainment.

Level of education achieved is a central explanatory variable for a variety of attitudes, behaviours and living conditions. The ESS data file supplies, firstly, country-specific as well as harmonised measures for educational level for respondent, partner, father and mother using the ISCED-based highest level of education attained (EDULVL, EDULVLP, EDULVLF, EDULVLM); secondly, the respondents' years of education in full-time equivalents (EDUYRS); and thirdly, the field of education (EDUFLD). A variety of defects, made the first of these measures, the attainment variable, the principal candidate for urgent quality improvement. The discussion of the meeting thus concentrated on this measure.

Most obviously, distributions of educational attainment seem irregular in some cases where implausibly high or low shares of the respondents populate specific categories. Comparisons with distributions of e.g. the Labour Force Surveys displayed at times problematic deviations. More in-depth analyses showed in addition that the explanatory power of the comparative attainment variable is often substantially lower than the one of the original country-specific variables of educational attainment, and that this differs across countries, thus impairing comparability (Müller & Klein 2008; Schneider 2009). These and other observations led to the conclusion that the process and concepts underlying the construction of the harmonised variable of educational attainment in the ESS needed revision and that a Quality Enhancement Meeting (QEM) was in place to call for support of external experts.

The first session of the meeting served to set the agenda for the QEM by outlining the questions to be addressed in the meeting, the current practices and procedures used for measuring and deriving comparative variables of educational attainment and duration of education, problems associated with these practices and procedures, the efforts and effectiveness of improvements carried out in ESS Rounds 3 and 4 and also OECD efforts to improve international measures of educational attainment. The second session reviewed some of the problems of coding to the ISCED classification, described revisions being undertaken and outlined some alternative cross-national classifications available for ways to measure educational attainment. The third session provided insights into the practices of other comparative surveys from which suggestions for improvement can be derived. The final session reflected on the lessons learnt from the presentations and the lively discussions, and extracted the main recommendations that the experts agreed upon as the meeting outcome.

The participants noted that whilst there were clearly problems with the ESS education variables, most other cross-national surveys – including those conducted for official statistics agencies – had problems with their harmonised education variables, too. There was therefore an opportunity for the ESS to develop questions and coding systems that could improve the state of the art in cross-national surveys in this area more generally.

Agenda

DAY I (15.10.09) *Chair: Angelika Scheuer*

I Practice and problems

Measures of educational qualification in the ESS – aims, history, constraints and shortfalls (Rory Fitzgerald & Eric Harrison)

Practice, procedures and problems with the ESS education variables – the Archive perspective (Hilde Orten & Katrine Mortensen)

OECD effort to improve international measures of educational attainment (Karinne Logez)

II The ISCED scale

The problems of measuring education along ISCED-levels. Research illustrations for Germany and selected other countries (Walter Müller)

A European Survey Version of the ISCED-97 (Silke Schneider)

III Scales and Typologies

The Hoffmeyer-Zlotnik/Warner-Matrix of Education (Jürgen Hoffmeyer-Zlotnik)

Harmonizing Education Measures in the ESS (Harry Ganzeboom)

DAY II (16.10.09) *Chair: Eric Harrison*

IV Insights from application

Education in cross-national survey data: Insights from youth transition research (Cristina Iannelli)

V Comparing surveys

The problem of measuring education in the ESS for France in comparison with French LFS (Annick Kieffer)

The Education Variables in the European Value Study 2008 (Ruud Luijkx)

Experience from comparing European Social Survey (ESS), International Social Survey

Programme (ISSP), World Value Survey (WVS), and Adult Learning and Lifeskills (ALL) survey (Abe George)

VI Recommendations

Until now, the ESS strategy for developing a comparative variable of educational attainment for respondent (EDULVL), partner (EDULVLP), father (EDULVLF) and mother (EDULVLM) consists in collecting country-specific variables that can be coded into a modified levels-only 7-category version of the International Standard Classification of Education (ISCED7):

- 0 – Not completed primary education
- 1 – Primary or first stage of basic
- 2 – Lower secondary or second stage of basic
- 3 – Upper secondary
- 4 – Post secondary, non-tertiary
- 5 – First stage of tertiary
- 6 – Second stage of tertiary

For respondent's education, countries are advised to use the best possible nationally designed instrument to measure respondent's highest level of education. For partner, father and mother, countries are allowed to code directly into the ESS frame, but it is highly recommended that they use the country-specific instrument here as well. While a few countries coded directly into the ESS frame in round 4, most use some sort of country-specific instrument. The national instruments are coded into the ESS ISCED-based standard by the national teams. They are provided with OECD's mapping of national educational programmes into ISCED, but they are not required to follow it. The archive has, through a consultation process prior to round 4, tried to encourage the countries to pay attention to the education variables, but there has not been a central standardised check of the national instruments or the bridging.

MAIN RECOMMENDATIONS AND POINTS NOTED

The participants of this Quality Enhancement Meeting on Comparative and Harmonised Measurement of Educational Qualification clearly recognise the pressing need to improve the education variables in the ESS and in particular the harmonised education variables coded into the modified version of ISCED-97. The participants generally agreed that ISCED should remain the foundation of ESS output harmonised education variables and – like the original designers of the ESS – rejected a move to alternative schemes such as CASMIN. The participants also agreed (and demonstrated in their papers) that the question on education duration would not be a suitable single item for measuring educational level. Compared to both country specific and even the existing harmonised education question, the duration item had poorer quality and lower predictive strength. At the same time this measure provides a useful second measure which complements ISCED.

It was further agreed that there is no ‘golden standard’ in terms of statistics for educational attainment. However the EU-LFS generally provides a good source of data for most ESS countries and should be used as a source for comparison. At the same time it was noted that the approach used at the country level to measure education in the LFS might not always be optimal nor replicable (since sometimes the LFS asks a very long series of questions that would not be possible within the confines of the ESS questionnaire).

Most importantly, the country-specific ESS education variables need to be detailed enough to be bridged into what will be called ‘detailed ISCED’ in the following. They thus need to distinguish between general and vocational qualifications at the secondary and post-secondary levels as well as different levels of tertiary education certificates (along the lines of the BA/MA degree split). The ESS should therefore seriously consider moving away from its current specification of coding to a 7-category modified ISCED and require a more detailed level of ISCED coding. This classification could additionally be recoded into an aggregated harmonised variable suitable for cross-country comparisons such as the new ES-ISCED developed by Schneider (2009), which is actually not more detailed than ISCED7, but aggregates detailed ISCED categories in a substantively more meaningful way.

The QEM recognised the improvements to education coding that had occurred since Round 3 of the ESS and aimed to build on these in their recommendations. They particularly welcomed the consultation process that NSD offered to the National Coordinators. However since round 4 data were released only shortly before the meeting, the improvements could not yet be evaluated in any greater detail.

General recommendation

In order to achieve a best-practice coding scheme for educational attainment, the QEM experts propose a 4-step procedure for building the comparative variables on educational attainment for the ESS data file:

Step 1: Specification of revised output harmonised ISCED-97 variable

The CCT should specify that National Coordinators eventually post code their country specific education variables to a detailed ISCED level as shown in Table 1 in the Appendix. This requires much more detailed information than is presently produced in many ESS countries. For some levels of ISCED it will be necessary to differentiate between general and vocational level qualifications (and potentially different levels of vocational qualifications) and the duration of studies, too.

Step 2: Seeking optimal Country-specific education variables (CSEV)

CSEV question items should be developed in order that the detailed ISCED distinctions now required can be made. Vocational and general qualifications should always be included in separate categories. At the same time, these CSEVs need to reflect the national educational systems (including their peculiarities). The ISCED mappings are a useful tool for countries to check which distinctions need to be made in the CSEV.

Step 3: Mapping the CSEV into the detailed ISCED scheme

The application of the detailed ISCED scheme will ensure that important distinctions are not “lost in harmonisation”. The CCT should specify that the mapping of qualifications in each country to ISCED should confirm to the mappings published by the OECD. A main reason for this is that this allows consistency checks and comparability across data sources and therefore later analytical outcomes (e.g. the new indicators on “Social outcomes of learning“ in *Education at a Glance 2009*). Where a decision is made to deviate from these official mappings, these must be documented along with the reason for this.

Step 4: Collapse the detailed ISCED scheme into the ES-ISCED scale

The ES-ISCED scheme proposed by Schneider (2009) offers one very effective scheme covering the key vertical and horizontal distinctions necessary to describe and analyse educational attainment across countries. Therefore, in addition to providing the detailed ISCED variable, the ESS should make available in the dataset the ES-ISCED scheme. The transformation from the detailed ISCED classification to ES-ISCED is also described in Table 1 in the Appendix.

Recommendations for improving the country-specific variables (CSEV)

In order to improve education measurement in the ESS, it is essential that the CSEV questions asked cover all of the relevant categories in the detailed ISCED classification. Other recommendations are as follows:

1. Ensure that the questions in all countries are based on the same concept: The focus of the educational attainment variable is on the *highest educational qualification obtained*, and the *highest grade completed* for respondents without qualifications. Education comprises general/academic as well as technical and vocational education and training (TVET). It also includes full-time as well as part-time education.
2. The CCT should check the existing source question and specification to make sure this is correctly phrased (the existing ‘source question’ refers to level of education). Translation experts and verifiers should ensure the questions are equivalent across countries.
3. The CSEV question(s) must be designed so that respondents can answer the question even if they obtained their qualifications a long time ago (i.e. ‘outdated’ qualifications must be covered, even though they are not included in the ISCED mappings). Plans for bridging to the detailed ISCED must be considered prior to fieldwork at this stage to be certain that coding into the detailed ISCED will be feasible. Experts on educational systems and ISCED as well as translation experts are needed in this part of the process to assist both the ESS and the national teams.
4. Detailed recommendations on question format:
 - 4.1. Showcards for the country specific questions are preferable to open questions.
 - 4.2. Where possible a single question with about 15-20 categories should be used.
 - 4.3. Clearly separate certificates from primary, secondary, post-secondary non-tertiary and tertiary levels of education. If no certificate is awarded in a country after successful completion of ISCED 1, ‘full attendance’ should be used as a criterion, as is the guideline currently used for Eurostat surveys.

- 4.4. Distinguish types of post-qualification destination (A, B, C).
- 4.5. ISCED level 2 (lower secondary) and 3 (upper secondary) need to include a distinction between general education and vocational training. If different vocational education certificates exist, they should be differentiated according to programme destination (A, B, C).
- 4.6. The ‘tertiary level’ category needs to include a distinction between lower and upper levels, especially with respect to the Bologna process (Bachelor vs. Master and higher). It should be clarified if PhDs should be distinguished to be consistent with what was asked for in the previous ESS rounds.
- 4.7. Vocational and general education should not be included in the same response categories on showcards and in CSEVs.
- 4.8. Countries that prefer separate questions for school and post-school education should consider piloting them carefully to look for the optimal design.
- 4.9. For the highest educational level of the partner, father and mother the same procedures (i.e. same instruments and same mappings) should be used. The practice used in some countries of presenting respondents with the ISCED summary codes or equally undifferentiated CSEVs should be phased out from Round 5 onwards.
5. Optimise the documentation on the ISCED classification provided to the National Coordinators. This does not necessarily mean *more* information, but *better* information. In particular, a short ESS specific manual explaining the task should be provided. However, National Coordinators would still need to consult the ISCED mappings for their country as well as the ISCED manual for details.
 - 5.1. Provide National coordinators with expert support to set up the mapping tables between the country-specific education variable and the detailed ISCED.
 - 5.2. Remind National coordinators of existing documentation on ISCED and the mappings. When personnel changes among the National Coordinators occur, the new national teams are to be provided again with all necessary information. A briefing of the ‘new’ team by the ‘old’ team on practices in earlier ESS rounds should be encouraged.
 - 5.3. Make National Coordinators aware of CSEVs used in other cross-national surveys like the European Values Study or even national surveys. Encourage National Coordinators to consult with other researchers in their country that include educational attainment measures in cross-national surveys including those working in official statistics.

Recommendations regarding support from outside the ESS

Improving education coding is a challenging task. Therefore, the ESS should make use of expert support from outside the ESS.

1. Enlist help of an expert in comparative education as a consultant to the CCT and National Coordinators. Their task would be to advise on qualifications to be included in CSEVs and the subsequent mapping.
2. Encourage National Coordinators to learn from the experience of other surveys (e.g. EVS) and compare measurement procedures and descriptive statistics with ESS.

Recommendations for the archive, data file and data from previous rounds

1. The international data file should contain all CSEVs (deviant cases should be flagged but not removed from the combined file), the detailed ISCED scale and the ES-ISCED as well as the variable on years of education in full-time equivalents and field of education.
2. Recode data from previous ESS rounds into ES-ISCED for countries where this is possible. This task should be performed centrally by an education specialist. Alert users to this change and provide full documentation.
3. Produce a corrected EDULVL(A), in accordance with the official ISCED mappings, which will have to have only 5 levels (0+1 and 5+6 collapsed) in order to cover all/most of the countries and rounds. Keep the existing versions of EDULVL but publish details of problems with this variable.

Other recommendations

1. Compare more and less detailed versions of ISCED in terms of both variance explained and correlation between spouses/partners.
2. Test additional or alternative measures in experimental surveys (add another indicator, e.g. highest level of education attended, to achieve a true-score measure).
3. It is important for analysts to keep the question on the field of education. However, its validity should be tested and evaluated using other data sources.
4. Interested researchers to consider applying for a rotating module on education.

References

Silke Schneider (2009): *Confusing Credentials: The Cross-Nationally Comparable Measurement of Educational Attainment*. Doctoral Thesis at Nuffield College, University of Oxford.

Walter Müller and Markus Klein (2008): *Schein oder Sein: Bildungsdisparitäten in der Europäischen Statistik. Eine Illustration am Beispiel Deutschlands*. *Schmollers Jahrbuch*, 128(4):511–543.

Table 1: Mapping table for harmonising country-specific educational attainment categories in cross-national surveys

Code	Country-specific education categories for xx (to be assigned by the national teams)	Description	Detailed ISCED category	ES-ISCED category
0		No formal qualification, did not complete an ISCED 1 programme	0	I
1		No formal qualification, completed an ISCED 1 but no ISCED 2 programme	1	I
2		No formal qualification, completed an ISCED 2 but no ISCED 3 programme	2D	I (but II if code 6 does not apply in the country)
3		No formal qualification, completed an ISCED 3 programme	3D	II (b)
4		Achieved qualification from a vocational ISCED 2 programme	2v	II (b)
5		Achieved qualification from a general ISCED 2 programme not giving access to ISCED 3A general	2A/Bg	II (b)
6		Achieved qualification from a general ISCED 2 programme giving access to ISCED 3A general	2Ag	II (a)
7		Achieved qualification from a short* vocational ISCED 3 programme not giving access to ISCED 5	3Cvs	II (b)
8		Achieved qualification from a long* vocational ISCED 3 programme not giving access to ISCED 5A	3Cv1, 3Bv	IIIb
9		Achieved qualification from a vocational ISCED 3 programme giving access to ISCED 5A	3Av	IIIa (but IIIb if code 8 does not apply in the country) ¹
10		Achieved qualification from a general ISCED 3 programme giving access to ISCED 5A	3Ag	IIIa
11		Achieved qualification from a vocational ISCED 4 programme (also by completing first a ISCED 3A and then a 3B programme or the other way round)	4v	IV
12		Achieved qualification from a general ISCED 4 programme giving access to ISCED 5A	4Ag	IV
13		Achieved vocational tertiary qualification after 2-3 years of study	5B	IV
14		Achieved first polytechnic degree after 3-4 years of study ('professional' BA level)	5A 1 st medium	V1 (b)
15		Achieved first university degree after 3-4 years of study (academic BA level)	5A 1 st medium	V1 (a)
16		Achieved first polytechnic degree after more than 4 years of study or second polytechnic degree ('professional' MA level)	5A long (1 st or 2 nd)	V2 (b)
17		Achieved first university degree after more than 4 years of study or second university degree (academic MA level)	5A long (1 st or 2 nd)	V2 (a)
18		PhD/doctoral degree	6	V2 (a)

¹ This is necessary in order to deal with the rather complex relationship between ‘programme destination’ and ‘programme orientation’ across countries. Some countries allow access to university with all upper secondary certificates and thus do not have any educational programmes in ISCED 3B or 3C. In terms of content, their 3Av programmes can however be assumed to be equivalent to other countries’ 3B and 3C programmes.

* For ISCED 3C, ‘short’ means: more than one year shorter than 3Ag programmes giving direct access to all types of ISCED 5A programmes. All other 3C programmes are ‘long’."

Notes:

1. Every country should fill in the column ‘country specific education categories’ using the names of the programmes/qualifications in the national language(s).
 - Response categories may be more detailed than foreseen here if this is considered important from a national point of view, and extra lines can be added to the table for this (e.g. for identifying qualifications from elite institutions, religious schools etc. if applicable).
 - Qualifications not effective any more today (and thus not included in the ISCED mappings) should be covered in separate categories and mapped to ISCED according to the criteria given in the ISCED manual (OECD 1999), which may or may not correspond to nationally established equivalence rules.
 - If in a country no qualification exists for a specific ISCED 97 category, ‘not applicable’ should be noted.
2. The distinction of (a) and (b) in levels II, V1 and V2 of ES-ISCED is optional because
 - it is only relevant in a few countries with tracked schooling at the lower secondary and a tiered system of higher education at the tertiary level (such as NL, DE; also AT, CH, HU and CZ, but in those latter countries the current country-specific variables in the ESS don’t always identify those tracks/tiers).
 - It requires rather large samples (which however could be achieved in principle by merging ESS rounds).
3. Recommended deviations from official ISCED mappings for deriving ES-ISCED:
 - UK: Consider GCSEs as ISCED 2Ag rather than 3C
 - FR: Consider Bac professionnel as 3Av rather than 3B