

The International Standard Classification of  
Education (ISCED-97):  
Application to country-specific  
educational qualifications  
and implementation in cross-national surveys

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Summary and Conclusions

# Cross-national Measurement of Educational Attainment

## Years of education

time spent in the educational system

- ▶ actual: explicitly measured
- ▶ 'virtual': derived from country-specific categorical education variable

## Scoring

ordering and pseudo-distance between original categories relative to some outcome

## ISCED, CASMIN

categories for educational qualifications or certificates coded into a common framework based on core characteristics of educational systems

# The ISCED-97 Levels of Education

Seven ordinal levels of educational attainment:

Level 0: Pre-primary education

Level 1: Primary education or first stage of basic education

Level 2: Lower secondary education or second stage of basic

Level 3: Upper secondary education

Level 4: Post-secondary non-tertiary education

Level 5: First stage of tertiary education

Level 6: Second stage of tertiary education

# The ISCED-97 Sub-dimensions within Levels of Education

These levels are subdivided according to . . .

## **Type of destination (Levels 2, 3, 4, 5):**

A, B and sometimes C, e. g.

- ▶ ISCED 2B: programmes designed to prepare students for direct access to programmes at Level 3C.
- ▶ ISCED 3A: programmes at Level 3 designed to provide direct access to ISCED 5A. ▶ Transition Pattern

## **Programme orientation (Levels 2, 3 and 4):**

general, pre-vocational and vocational

## **Programme duration (Level 5):**

short, medium, long and very long

## **Position in the national degree structure (Level 5):**

first, second, third and further degree

# Application of the ISCED–97 to country-specific Data

How are country-specific education categories to be reliably translated into ISCED categories?

- ▶ co-ordination between the OECD and national statistical offices
- ▶ production and provision of mapping tables
- ▶ regular updating of mappings for European countries guided by Eurostat

| ISCED-97 level | Programme orientation | Cumulative duration at ISCED 5 | Position in the national degree/qualification structure (Intermediate, First, Second, etc.) | Notes on programmes that span across ISCED levels or sub-categories | Descriptive name of the programme                                                         | Main diplomas, credentials or certifications | Typical starting ages |
|----------------|-----------------------|--------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------|
| <b>France</b>  |                       |                                |                                                                                             |                                                                     |                                                                                           |                                              |                       |
| 0              |                       |                                |                                                                                             |                                                                     | Enseignement préélémentaire (pre-school education)                                        |                                              | 2-3                   |
| 1              |                       |                                |                                                                                             |                                                                     | Enseignement primaire (primary education)                                                 |                                              | 6                     |
| 2A             | G                     |                                |                                                                                             | 2A, 2B                                                              | Enseignement du premier cycle du second degré – Collège (secondary education (1st cycle)) | BREVET                                       | 11-12                 |
| 3              |                       |                                |                                                                                             |                                                                     | Enseignement de troisième de collège de type général                                      | BAC, Brevet Professionnel                    | 15-16                 |

| Theoretical length of the programme | Typical length of the programme | Cumulative years of education at the end of the programme | Minimum entrance requirement | Programme specifically designed for part-time attendance | Reported in the UOE | Enrolment 1996-97 | Other relevant information                                                                                                           |
|-------------------------------------|---------------------------------|-----------------------------------------------------------|------------------------------|----------------------------------------------------------|---------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 3-4                                 | 3                               |                                                           |                              |                                                          |                     | 2450000           | Pre-school classes are attached to primary comprehensive schools.                                                                    |
| 5                                   | 5                               | 5                                                         |                              |                                                          |                     | 4000000           | Compulsory for 6-year-olds.                                                                                                          |
| 4                                   | 4-5                             | 9                                                         | 1                            |                                                          |                     | 3360000           | Compulsory education, although all students do not complete this programme. It leads to general, vocational and technical education. |
| 4-5                                 | 4-5                             | 4-5                                                       |                              |                                                          |                     | 4000000           | 4-year contract lasting between 2 and 24 months.                                                                                     |

# Current Limitations in the Application of the ISCED-97

Problems in the production of the mappings:

- ▶ unclear definitions in the ISCED-97
- ▶ disputable mappings

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Problems in the application of the mappings:

- ▶ comparability across time
- ▶ lack of consultation of the ISCED-97-mappings
- ▶ no guidelines on how to deal with uncertified education
- ▶ shortcomings of national data collection instruments

# Enhancement of country-specific measures I

Most important: procure *detailed* country-specific instruments

- ▶ separate response categories for different qualifications, even if nationally regarded as 'equivalent'
- ▶ coverage of outdated qualifications in separate categories
- ▶ coverage of uncertified education/dropout in all countries
- ▶ differentiate according to tracks/final marks if country has an integrated school system

## Enhancement of country-specific measures II

Even better: include *educational careers and transitions*

- ▶ not ask for highest level of attainment only, but *all qualifications held*
- ▶ include temporal order of achieving different qualifications

Some co-ordination across countries could be helpful for developing state-of-the-art measures for all countries.

A1: Which of the following educational qualifications do you hold? Please number all that apply in the order in which you completed them (column A).

|                                                                                     | A                    |                    | B                    |
|-------------------------------------------------------------------------------------|----------------------|--------------------|----------------------|
| None                                                                                | <input type="text"/> | → Go to 'A2' below | X                    |
| [Qualification corresponding to ISCED 2C]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 2B]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 2A]                                           | 1                    |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 3C]                                           | 2                    |                    | <input type="text"/> |
| [Another qualification corresponding to ISCED 3C]                                   | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 3B]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 3A]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 4C]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 4B]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 4A]                                           | 3                    |                    | <input type="text"/> |
| [An outdated qualification corresponding to ISCED 4A]                               | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 5B]                                           | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 5A 1 <sup>st</sup> and medium]                | 4                    |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 5A 2 <sup>nd</sup> and medium]                | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 5A 1 <sup>st</sup> /2 <sup>nd</sup> and long] | <input type="text"/> |                    | <input type="text"/> |
| [Qualification corresponding to ISCED 6]                                            | <input type="text"/> |                    | <input type="text"/> |

A2: If "none" at item A1: Did you complete...

[Primary education/the first stage of basic education]?

[Lower secondary education/the second stage of basic education]?

B: Which qualifications did you study for, without acquiring the final certificate? Please tick all that apply (column B above).

# Enhancement of the ISCED–97

- ▶ clearer definition of ‘programme destination’
- ▶ no priority of ‘programme destination’ over ‘programme orientation’  
Thus distinguish 3Ag, 3Av, (3Bg,) 3Bv, (3Cg,) 3Cv rather than only 3A, 3B and 3C (similar at levels 2 and 4)
- ▶ differentiation of heterogeneous categories:
  - 3Ag: mix of traditional and restricted university entrance qualifications
  - 5A: mix of university and polytechnic college degrees
- ▶ re-organisation of post-secondary levels

# Implementation in cross-national Surveys

Common procedure:

1. if ex-ante output harmonisation: cross-national framework specified before data collection
2. data collection with country-specific instruments
3. recoding into cross-national framework (centrally co-ordinated or decentralized).

# Implementation in cross-national Surveys

Common procedure:

1. if ex-ante output harmonisation: cross-national framework specified before data collection
2. data collection with country-specific instruments
3. recoding into cross-national framework (centrally co-ordinated or decentralized). If ISCED-97, a simplified version used:
  - ▶ ISCED-97 main levels only (ESS)
  - ▶ ... plus partial sub-dimension 'programme destination', but changes over time
    - ▶ PISA (0, 1, 2, 3A, 3B/C, 4, 5A, 5B, 6)
    - ▶ EU-LFS (0, 1, 2, 3A/B, 3Cs, 3CI, 4A/B, 4C, 5A, 5B, 6)

Result: crude, inflexible data.

Table:  $R^2$ s from regressing ISEI scores on country specific education variables (absolute), ISCED and years of education (relative).

| country         | ESS round | n of cat's | country specif. | ISCED 7 cat's | ISCED 6 cat's | years of educ. |
|-----------------|-----------|------------|-----------------|---------------|---------------|----------------|
| Czech Republic  | 1         | 11         | 46.7            |               |               |                |
|                 | 2         | 11         | 51.1            |               |               |                |
| Germany         | 1         | 20         | 45.7            |               |               |                |
|                 | 2         | 20         | 43.9            |               |               |                |
| Italy*          | 1         | 7          | 46.0            |               |               |                |
|                 | 2         | 8          | 44.8            |               |               |                |
| Netherlands     | 1         | 13         | 36.7            |               |               |                |
|                 | 2         | 13         | 36.5            |               |               |                |
| United Kingdom* | 1         | 8          | 31.7            |               |               |                |
|                 | 2         | 5          | 31.2            |               |               |                |
| average/total   |           | 11         | 42.1            |               |               |                |
| min             |           | 5          | 21.8            |               |               |                |
| max             |           | 20         | 61.3            |               |               |                |

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| country         | ESS round | n of cat's | country specif. | ISCED 7 cat's | ISCED 6 cat's | years of educ. |
|-----------------|-----------|------------|-----------------|---------------|---------------|----------------|
| Czech Republic  | 1         | 11         | 46.7            | —             |               |                |
|                 | 2         | 11         | 51.1            | —             |               |                |
| Germany         | 1         | 20         | 45.7            | 58.4          |               |                |
|                 | 2         | 20         | 43.9            | 60.4          |               |                |
| Italy*          | 1         | 7          | 46.0            | —             |               |                |
|                 | 2         | 8          | 44.8            | —             |               |                |
| Netherlands     | 1         | 13         | 36.7            | 88.3          |               |                |
|                 | 2         | 13         | 36.5            | 87.4          |               |                |
| United Kingdom* | 1         | 8          | 31.7            | 81.1          |               |                |
|                 | 2         | 5          | 31.2            | —             |               |                |
| average/total   |           | 11         | 42.1            | 85.4          |               |                |
| min             |           | 5          | 21.8            | 58.4          |               |                |
| max             |           | 20         | 61.3            | 100.0         |               |                |

Table:  $R^2$ s from regressing ISEI scores on country specific education variables (absolute), ISCED and years of education (relative).

| country         | ESS round | n of cat's | country specif. | ISCED 7 cat's | ISCED 6 cat's | years of educ. |
|-----------------|-----------|------------|-----------------|---------------|---------------|----------------|
| Czech Republic  | 1         | 11         | 46.7            | —             | 67.2          |                |
|                 | 2         | 11         | 51.1            | —             | 69.1          |                |
| Germany         | 1         | 20         | 45.7            | 58.4          | 49.7          |                |
|                 | 2         | 20         | 43.9            | 60.4          | 55.8          |                |
| Italy*          | 1         | 7          | 46.0            | —             | 94.8          |                |
|                 | 2         | 8          | 44.8            | —             | 94.9          |                |
| Netherlands     | 1         | 13         | 36.7            | 88.3          | 88.0          |                |
|                 | 2         | 13         | 36.5            | 87.4          | 86.3          |                |
| United Kingdom* | 1         | 8          | 31.7            | 81.1          | 78.5          |                |
|                 | 2         | 5          | 31.2            | —             | —             |                |
| average/total   |           | 11         | 42.1            | 85.4          | 83.3          |                |
| min             |           | 5          | 21.8            | 58.4          | 49.7          |                |
| max             |           | 20         | 61.3            | 100.0         | 100.2         |                |

Table:  $R^2$ s from regressing ISEI scores on country specific education variables (absolute), ISCED and years of education (relative).

| country         | ESS round | n of cat's | country specif. | ISCED 7 cat's | ISCED 6 cat's | years of educ. |
|-----------------|-----------|------------|-----------------|---------------|---------------|----------------|
| Czech Republic  | 1         | 11         | 46.7            | —             | 67.2          | 73.0           |
|                 | 2         | 11         | 51.1            | —             | 69.1          | 80.8           |
| Germany         | 1         | 20         | 45.7            | 58.4          | 49.7          | 72.4           |
|                 | 2         | 20         | 43.9            | 60.4          | 55.8          | 72.0           |
| Italy*          | 1         | 7          | 46.0            | —             | 94.8          | 97.6           |
|                 | 2         | 8          | 44.8            | —             | 94.9          | 84.8           |
| Netherlands     | 1         | 13         | 36.7            | 88.3          | 88.0          | 60.8           |
|                 | 2         | 13         | 36.5            | 87.4          | 86.3          | 61.4           |
| United Kingdom* | 1         | 8          | 31.7            | 81.1          | 78.5          | 74.8           |
|                 | 2         | 5          | 31.2            | —             | —             | 58.3           |
| average/total   |           | 11         | 42.1            | 85.4          | 83.3          | 77.6           |
| min             |           | 5          | 21.8            | 58.4          | 49.7          | 47.2           |
| max             |           | 20         | 61.3            | 100.0         | 100.2         | 98.6           |

## Suggestions for implementing the ISCED-97

Proposed procedure:

1. data collection with highly detailed country-specific instruments (see above proposal)
2. harmonisation: centrally co-ordinated recoding into most detailed cross-national framework (full ISCED-97, including all sub-dimensions)
3. simplification: recoding into less detailed cross-national variable for actual statistical analyses
  - ▶ centrally: 'all purpose' education variable; compromise between detail and usability
  - ▶ locally: individual researchers can derive purpose-built variables from the full ISCED-97, adequate for their research questions

# Summary and Conclusions

For improving the cross-national measurement of educational attainment using categorical (certificate-oriented) variables, we need

- ▶ detailed high quality country-specific education variables
  - ▶ implementation of detailed comparable variables in cross-national surveys
  - ▶ a clearly defined cross-national coding framework with a high ability to discriminate different educational qualifications.
- Next revision of the ISCED?

# Thank you!

This presentation builds on  
Schneider, Silke L. (Ed.) 2008: The International Standard  
Classification of Education (ISCED-97). An Evaluation of Content  
and Criterion Validity for 15 European Countries. Mannheim:  
MZES.

