



# The ISCED Standard for Coding of Education and DDI-Lifecycle

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# Outline

- Challenges in measuring education cross-nationally
- The International Standard for Classification of Education (ISCED), why and what?
- Possible DDI usage – resource packages for ISCED.

# Challenges in Measuring Education Cross-nationally

- Education is a widely used variable in social research as a core explanatory factor or as a control variable
- Education is a social institution that differ strongly between countries
- Qualifications differs over time
- Challenge: Cross-nationally comparable measurement of educational attainment, enrollment and other education related information
- Education affects many aspects of an individual's life chances, behaviours, attitudes and values  
(Walter Müller 2008)

# ISCED – What is it, Developments

- The International Standard for Classification of Education (ISCED) is the most advanced attempt at creating a systematic international framework for classification of educational programs and qualifications.
- UNESCO is responsible
- First version: 1976, was developed for own use, as well as for the use of other statistical agencies, e.g. the OECD. Classifies education levels.
- Second version: 1997 – allows for measuring education and training in more detail within levels.
- Third version: 2011 – released the 10<sup>th</sup> of November this year. More differentiation at tertiary level. Simplification of allocation criteria. 3-digit numeric coding frames for coding of educational enrollment and educational attainment.

# Classification of ISCED 2011 - Purpose

- System on an abstract level
- Captures the variance of national programmes
- Goal:

Comparability between countries

- Heterogeneity of programme systems and measurement systems *between countries*

Comparability within countries over time

- Heterogeneity of programme systems and measurement systems *over time*

# Classification of ISCED 2011

- Variants
  - Educational programmes
  - Educational attainment
- Numeric coding framework
- Strictly hierarchical
  - sub-levels add to the next upper level
- 3 levels (digits)
  - Level of education
  - Categories
  - Sub-categories

# Classification of ISCED 2011 - Extract

0 Less than primary

...

1 Primary

...

**2 Lower secondary**

**24 general**

**242 partial level completion and without direct access to upper secondary**

**243 level completion, without direct access to upper secondary**

**244 level completion, with direct access to upper secondary**

**25 vocational**

**252 partial level completion and without direct access to upper secondary**

**253 level completion, without direct access to upper secondary**

**254 level completion, with direct access to upper secondary**

3 Upper secondary

...

4 Post-secondary non-tertiary

...

5 Short-cycle tertiary

...

6 Bachelor or equivalent

...

7 Master or equivalent

...

8 Doctoral or equivalent

...

9 Not elsewhere classified

# ISCED 2011 - Complete Standard

- Three components:
  - Classification
  - Operational concepts and definitions as structured text
  - Mappings of national programs to classification
    - Required for usage in official statistics and surveys, especially to achieve comparability
    - Not available yet, planned for the next few years



# ISCED 2011 Definitions – Example

## Level 5 – short-cycle tertiary

- B. CLASSIFICATION CRITERIA
  - 211. For the definition of short-cycle tertiary, the following criteria are relevant:
    - Main criteria
      - a. Content of short-cycle tertiary programmes (see Paragraph 212);
      - b. Entry requirements (see Paragraph 208); and
      - c. Minimum duration of programme (see Paragraph 213).
  - ...
- D. COMPLEMENTARY DIMENSIONS
  - 216. Two dimensions differentiate educational programmes at ISCED level 5:
    - Programme orientation (see Paragraph 217); and
    - Level completion (see Paragraph 218).
  - ...

# Mapping Example of ISCED 1997

| ISCED alpha-numeric code | Germany                                      | USA                                     |
|--------------------------|--|---|
| 5                        |  |   |
| 5B                       |  |   |
| 5B1                      |  |   |
| 5B1sh or 5B1me           | 29 Fachakademien (Bayern)                    |   |
| 5B1sh or 5B1me           | 30 Schulen des Gesundheitswesens, 2+3 jährig |   |
| 5B1sh                    | 31 Fachschulen, 2 jährig                     | Vocational Associate's Degree Programme |
| 5B1me                    | 32 Fachschulen, 3+4 jährig                   |   |
| 5B1me                    | 36 Berufsakademien                           |   |
| 5B1me                    | 37 Verwaltungsfachhochschulen                |   |
| 5A                       |  |   |
| 5A1                      |  |   |
| 5A1sh                    |  | Academic Associate's Degree Programme   |
| 5A1me                    |  | Bachelor's Degree Programme             |
| 5A1me or 5A1lo           | 38 Fachhochschulen                           |   |
| 5A1lo or 5A1vl           | 39 Universitäten                             | .....                                   |

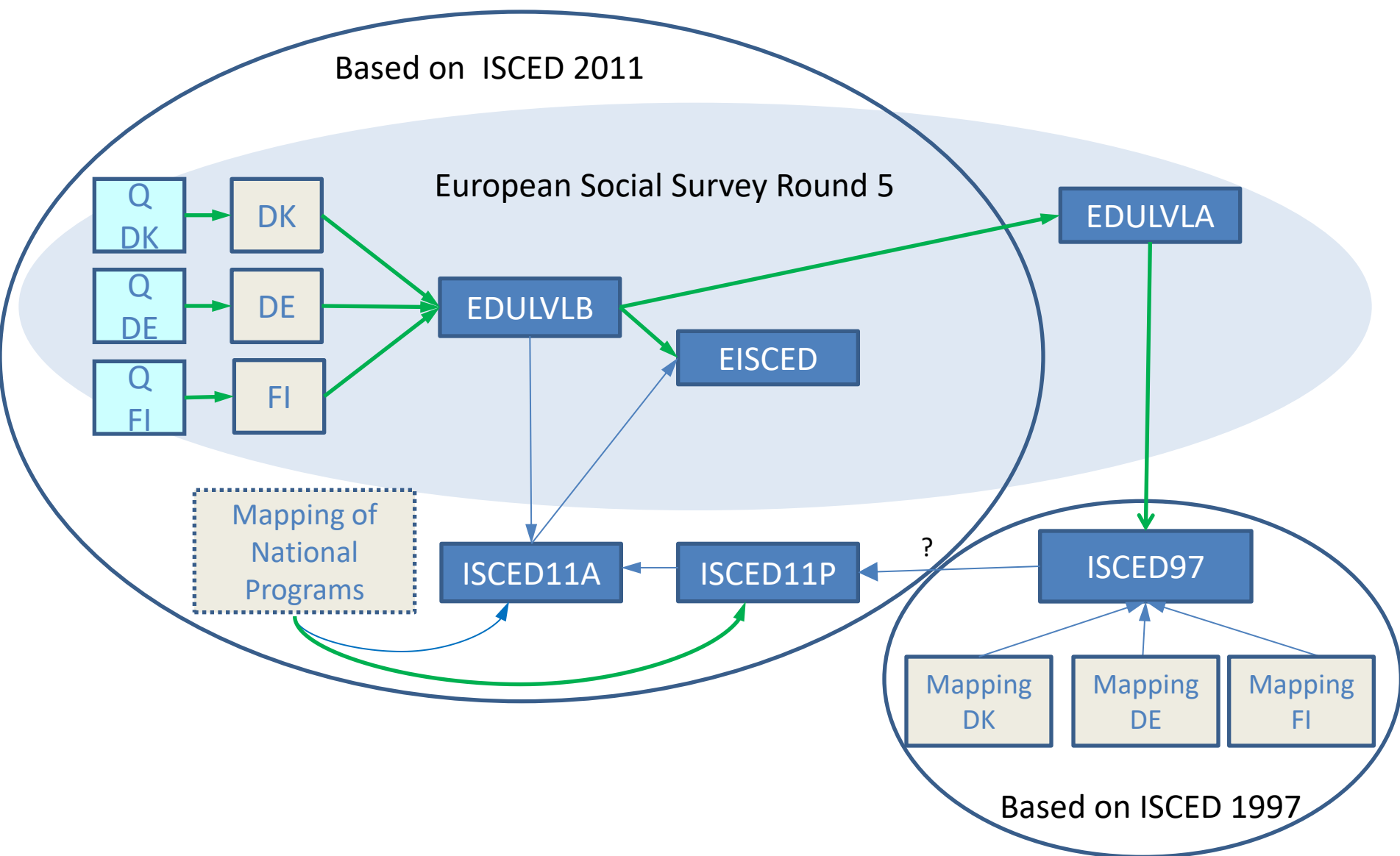
# ISCED 1997

- The ISCED 1997 standard consists in:
  - Classification
  - Operational concepts and definitions
  - Manuals
- No codes available
  - Alpha-numeric codes can be constructed according to the text
- No separate coding for attainment
- Less detailed below primary and above secondary level compared to ISCED 2011
- More complicated classification criteria (clarification and simplification in ISCED 2011)

# European Social Survey Round 5

- EDULVLB – Motivation
  - More detailed and better coding framework for educational attainment
  - Allows for the construction of purpose built measures, e.g. EISCED and EDULVLA
  - Improvement of tertiary level, useful for European countries
  - Improvement of some simplifications in ISCED
  - Based on developments of ISCED 2011 till May 2010
- EDULVLA
  - 5-category system, based on ISCED 1997
  - Can be used as simple link between EDULVLB and ISCED 1997, useful for comparison with former rounds
- EISCED
  - 7-category system, of better analytical value than EDULVLA, useful for European countries

# Relationship between ISCED based components



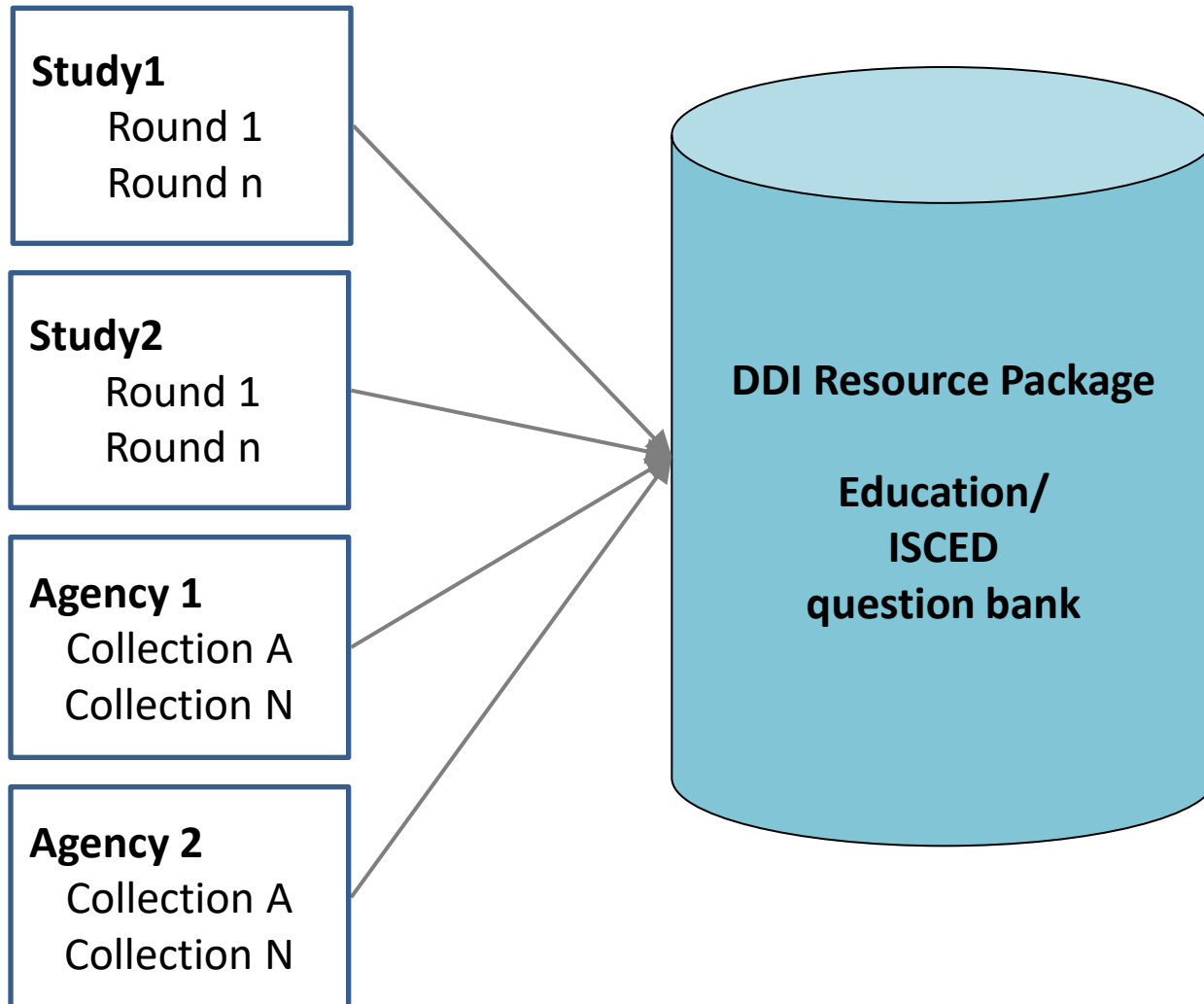
# Possible DDI Usage:

## Resource Package for ISCED 2011

- Programme and Attainment as two variables (with codes and categories)
- Relationship between programme and attainment variant, realised in comparison
- Operational concepts and definitions as collection of notes (or as external other material with identifiable sections)
  - *Issue: identification of each paragraph, cross-reference between paragraphs, integration of structured text*
- Future mappings from national variables to ISCED11, realised in comparison and generation instruction
- *Issue: current solution of extracting/adding parts of/to existing code list is probably not flexible enough*

# ISCED in a DDI Resource Package

Study-independent Metadata stored in a DDI Resource package can be reused by different studies, waves, or agencies



# Structural Outline of Resource Package

DDIInstance

ResourcePackage

Purpose

**DataElementScheme**

**DataElement**

LogicalProduct

LogicalProduct

OtherMaterial

Note

**CategoryScheme**

**Category**

...

**CodeScheme ISCED2011**

**Code**

**CategoryReference**

**Value 1**

**Code**

**CategoryReference**

**Value 11**

...

DDI 3.2



# DDI Category Map - Example

## ISCED11P vs. ISCED11A category descriptions

| Code | ISCED11P  | ISCED11A   | Similarity |
|------|---|--|------------|
| 3    | Upper secondary   | Upper secondary  | Identical  |
| 34   | Upper secondary general / academic  | Upper secondary general / academic   | Identical  |
| 341  | Upper secondary general/ academic. Recognized successful completion of programme is insufficient for completion or partial completion of ISCED level (and thus without direct access to programmes at a higher ISCED level) | Not used   | None       |
| 342  | Upper secondary general academic. Recognized successful completion of programme sufficient for partial completion of ISCED level but without direct access to programmes at ISCED level                                     | <b>Description:</b> The categories of ISCED11P and ISCED11A at ISCED level 3 have highly similar meanings. Codes with 1 in the third digit in ISCED11P represent programmes insufficient for level completion or partial level completion, and should be classified at ISCED level 2 in ISCED11A |            |

# Possible DDI Usage II

- Resource Package for ESS education variables
  - EDULVLB, EDULVLA, EISCED as variables
  - National variables and questions
  - Mappings from national variables to EDULVLB, realised in comparison and generation instruction
  - Relationship of EDULVLB, EDULVLA, EISCED, realised in comparison and generation instruction
  - Explanations and definitions for EDULVLB, realised as notes
- Resource Package for ISCED 1997
  - Variable ISCED97 with alpha-numeric codes
  - National variables based on the ISCED mappings
  - Mappings from national variables to ISCED97, realised in comparison and generation instruction

# DDI Code Map based on ESS variables - Example

## EDULVLB (source)/EDULVLA (target)

| EDULVLB                     | EDULVLA | Category  |
|-----------------------------|---------|---|
| 0 - 129                     | 1       | Less than lower secondary education (ISCED 0-1) |
| 212 - 229                   | 2       | Lower secondary education completed (ISCED 2)   |
| 311 - 323                   | 3       | Upper secondary education completed (ISCED 3)   |
| 412 - 423                   | 4       |   |
| 510 - 800                   | 5       |   |
| 5555                        | 5       |   |
| 7777                        | 7       |   |
| 8888                        | 8       |   |
| 9999                        | 9       |   |
| <b>Description:</b> EDULVLA |         |   |
| code 0-1 and 5-6 are c      |         |   |
| based on the developr       |         |   |

**Generation instruction EDULVLB (source) to EDULVLA (target):**

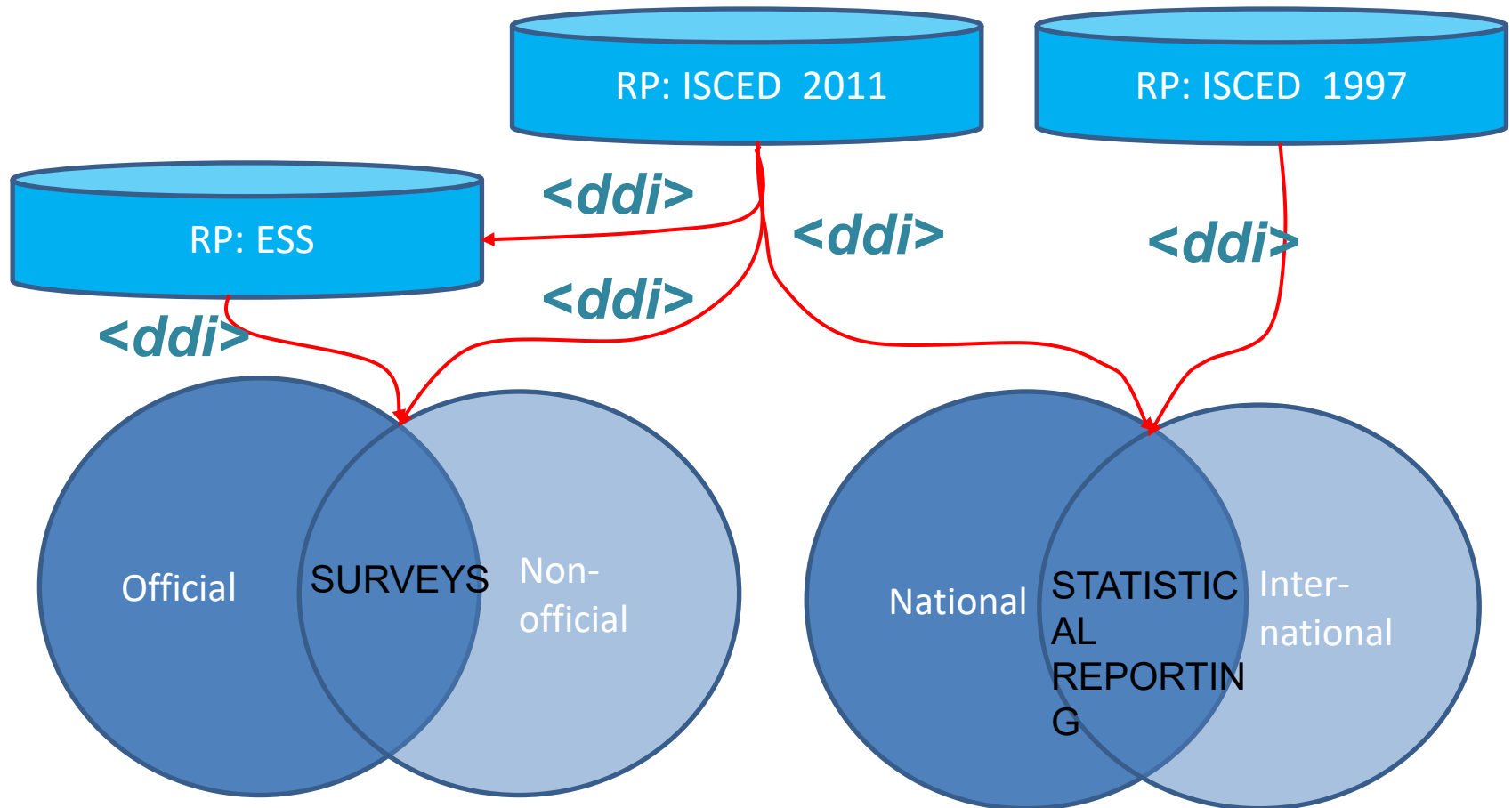
*\* SAS command;*

```

if 0 <= EDULVLB <=129 then EDULVLA = 1;
else if 212 <= EDULVLB <= 229 then EDULVLA = 2;
else if 311 <= EDULVLB <= 323 then EDULVLA = 3;
else if 412 <= EDULVLB <= 423 then EDULVLA = 4;
else if 510 <= EDULVLB = 800 then EDULVLA = 5;
else if EDULVLB = 5555 then EDULVLA = 55;
else if EDULVLB = 7777 then EDULVLA = 77;
else if EDULVLB = 8888 then EDULVLA = 88;
else if EDULVLB = 9999 then EDULVLA = 99;
run;

```

# Possible DDI resource packages based on ISCED and potential use



# Next Steps

- Resource Package for ISCED 2011
  - Motivation: latest version, most structured version
  - Challenge: ISCED 2011 is a complete package not just a classification
- Realised in two steps:
  - 1) The classification variants ISCEDA and ISCEDP  
Terminology and definitions
  - 2) Mapping of educational programmes into ISCED.

# Thank you for your attention!

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