# Educational and Occupational Information in the German National Education Panel Study (NEPS)

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LEIBNIZ INSTITUTE FOR EDUCATIONAL TRAJECTORIES

# THE NATIONAL EDUCATION PANEL STUDY (NEPS)

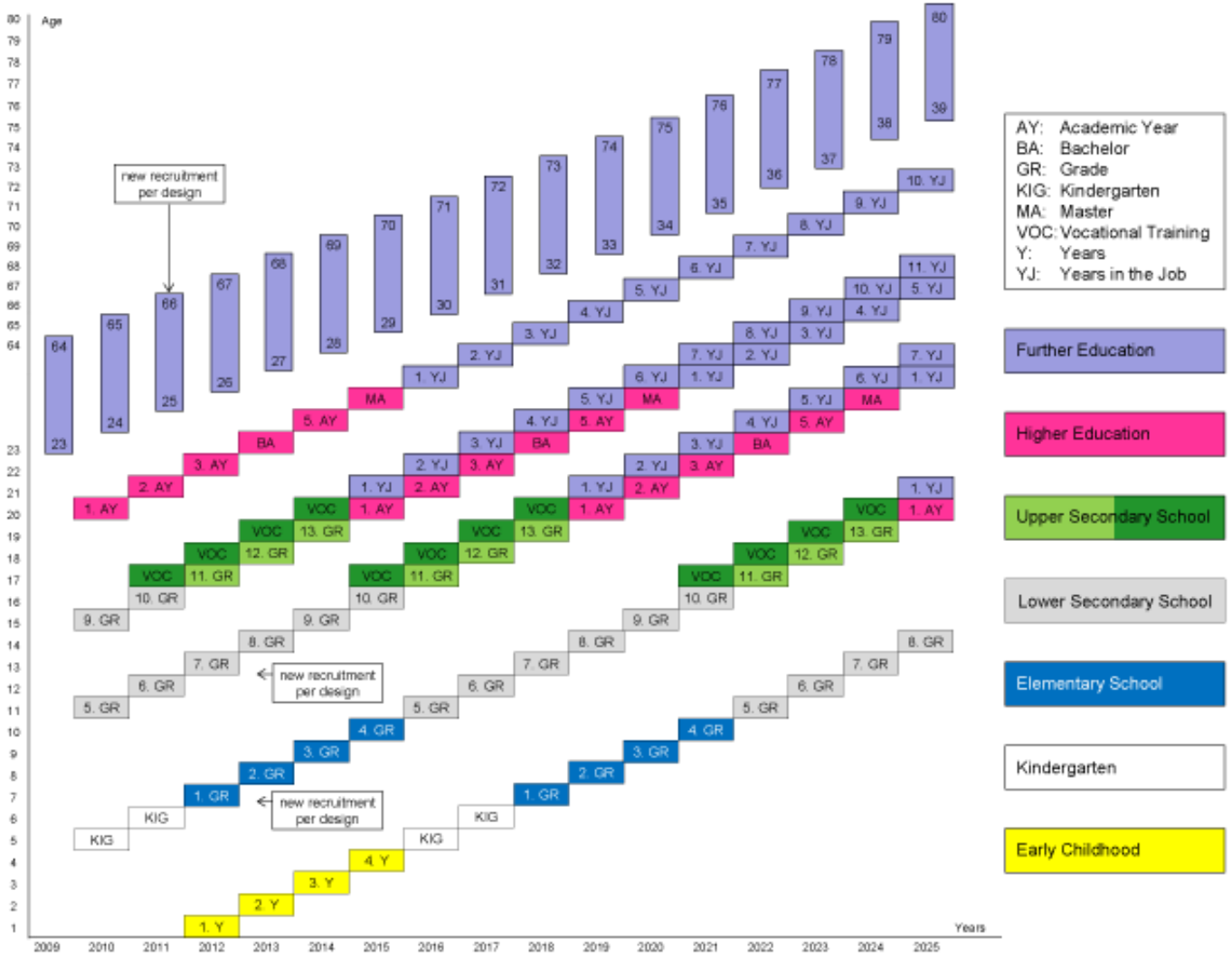
- Focus on educational trajectories and outcomes throughout the life course

- Six individual longitudinal cohort studies:
  - SC1 – Newborns
  - SC2 – Kindergarten
  - SC3 – Grade 5
  - SC4 – Grade 9
  - SC5 – First-year university students
  - SC6 – Adults

- Data collection started in 2009-2012

- Three new cohorts planned beginning in 2021

# THE NATIONAL EDUCATION PANEL STUDY (NEPS)




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# WORKFLOW

**Instrument Development**

- Done in-house by subject experts
- As well as by members of the NEPS-Consortium

**Data Collection**

- Conducted by contracted third party institutes using proprietary software
- Data collection using CATI, CAPI, CAWI, CASI, and PAPI

**Coding**

- Done in-house (and members of the NEPS-Consortium) by subject experts

**Classification**

- Done in-house (and members of the NEPS-Consortium) by subject experts

# SAMPLE ITEM – EDUCATION

| **63102 What is your highest general school-leaving certificate?** | |
|---|---|
| *Read out options only if necessary, allocate appropriately. If the term "Fachabitur" is given: "Does the "Fachabitur" allow access to higher education at a university of applied sciences or a university." If university of applied sciences, then allocate to category 4, if a university, then allocate to category 5. For qualifications gained abroad, please allocate as follows: "What would the approximate equivalent be in Germany?"* | |
| Basic leaving certificate of the Hauptschule [basic secondary school], Volksschule [former name for compulsory school], 8th grade Polytechnische Oberschule [former intermediate secondary school in the GDR] (POS) [1] | ☐ |
| Qualifying leaving certificate of the Hauptschule [basic secondary school] [2] | ☐ |
| Certificate of intermediate secondary education (Realschule [intermediate secondary school], Wirtschaftsschule [intermediate secondary school in Bavaria with focus on commerce], entrance qualification for universities of applied sciences or leaving certificate of a Fachoberschule [vocational upper secondary school leading to subject-specific Abitur], Berufsfachschule [full-time vocational school], Fachoberschulreife [entrance qualification for vocational upper secondary schools], 10th grade Polytechnische Oberschule [former intermediate secondary school in the GDR] (POS) [3] | ☐ |
| Entrance qualification for universities of applied sciences, leaving certificate of the Fachoberschule [vocational upper secondary school leading to subject-specific Abitur] [4] | ☐ |
| General / subject-specific higher education entrance qualification (Abitur [higher education entrance qualification]/extended Oberschule [former upper secondary school in the GDR] (EOS) 12th grade) [5] | ☐ |
| Special needs school-leaving certificate [6] | ☐ |
| Other school-leaving certificate [7] | ☐ |
| *No school-leaving certificate [-20]* | ☐ |
| *Refused [-97]* | ☐ |
| *Don't know [-98]* | ☐ |
| *if (63102 = 7) goto 63103*<br>*if (63102 <> 7) goto 63118* | |

# SAMPLE ITEM – OCCUPATION

Condition: if (64101 = 1, 2)

**64108 Please tell me what your current professional activity is:**

Condition: if (64101 = 3, 4)

**64108 What was your most recent professional activity:**

|___|___|___|___|___|___|

*Has never been employed [-20]* ☐

*if (64108 <> -20) goto 64109*
*if (64108 = -20 & 64104 = 1) goto 64119*
*if (64108 = -20 & 64104 <> 1) goto 64121*

# CODING DATA FOR NEPS (AND OTHER LIFBI STUDIES)

- Some facts:
  - About 100 000 – 150 000 verbatim/open responses per year
  - 80% occupations or occupational aspirations
  - Educational degree categories
  - Foreign educational degree equivalences
  - Mainly from educational and job histories of adults (CAPI)
  - Also student questionnaires (PAPI)
  - … but also industry, courses etc.

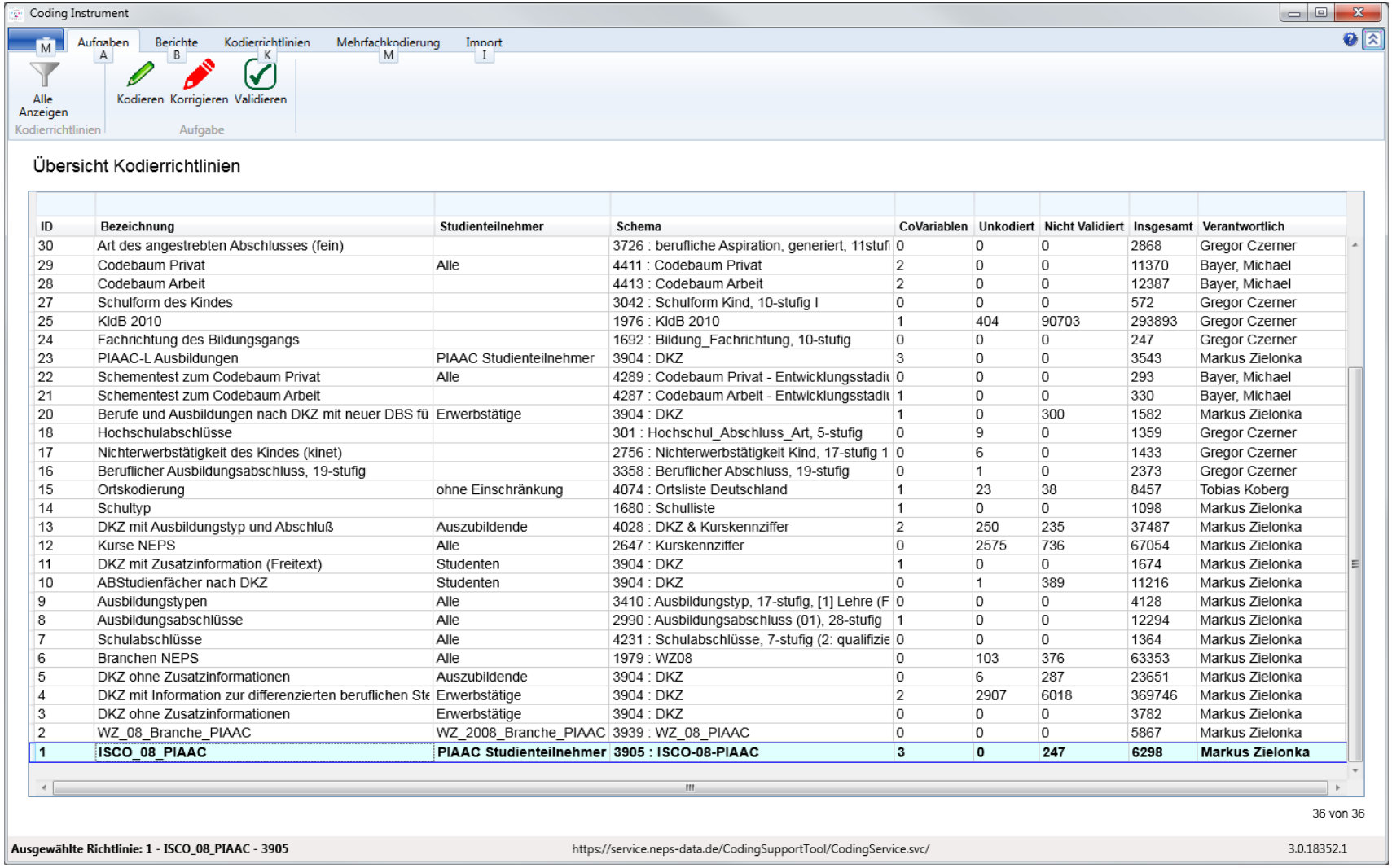
# CODING DATA FOR NEPS (AND OTHER LIFBI STUDIES)

**Why not use established tools (CASCOT, AUTOCOD…)?**

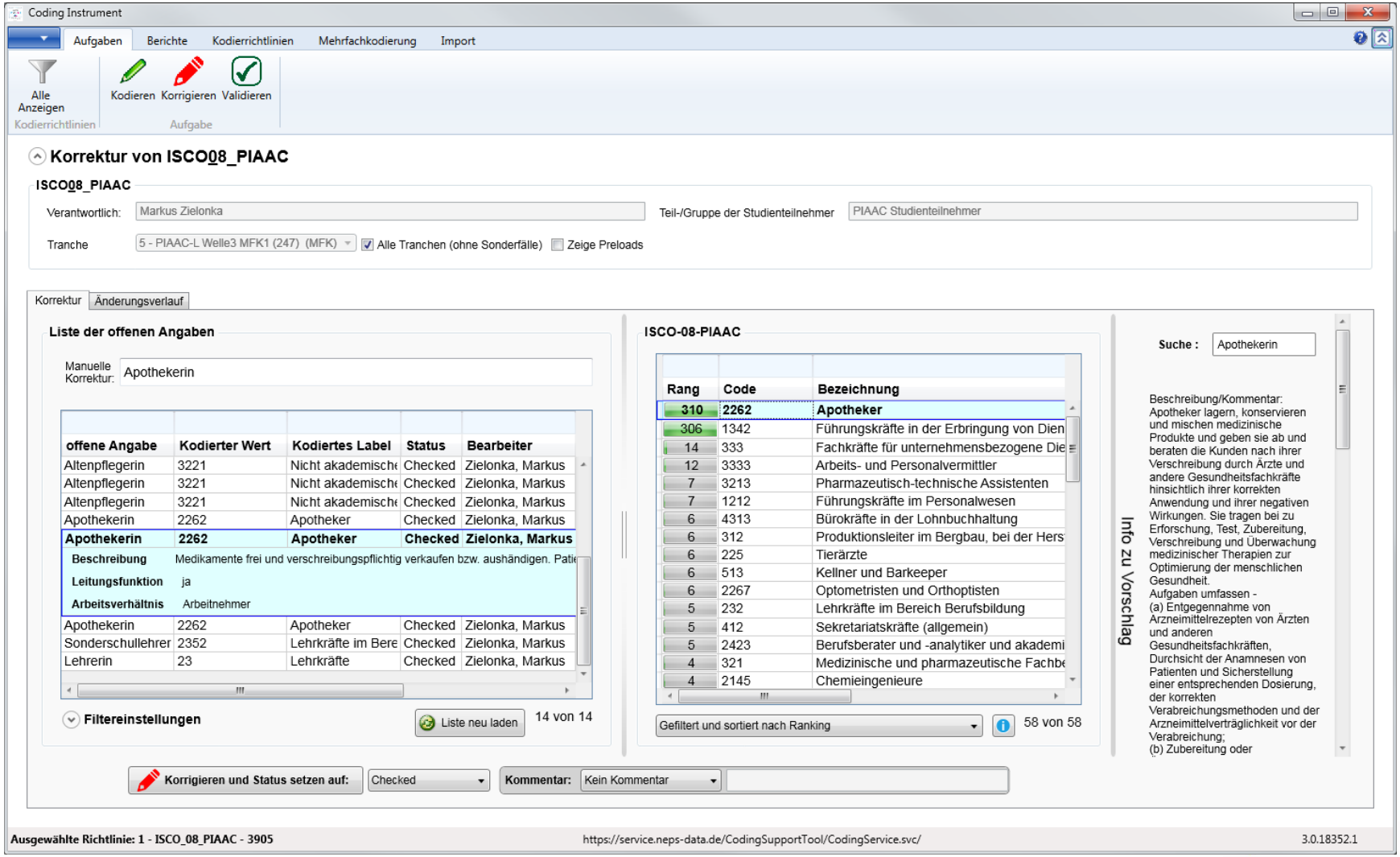
- Requirements:
  - Flexible (not only for occupations)
  - Handling of covariates
  - Handling of additional information/guidelines
  - Flexible suggestion algorithms
  - Fitting in the established infrastructure
  - SQL (Meta)database
  - User rights management
  - Connectivity to the other edition processes (Stata procedures)
  - → Adaption costs too high!

- CODI Tool:
  - .net based client GUI for SQL entry
  - + flexible handling of different coding rules
  - + powerful & fast suggestion algorithms
  - Integrated tool for (almost) all coding scenarios in NEPS/LIfBI

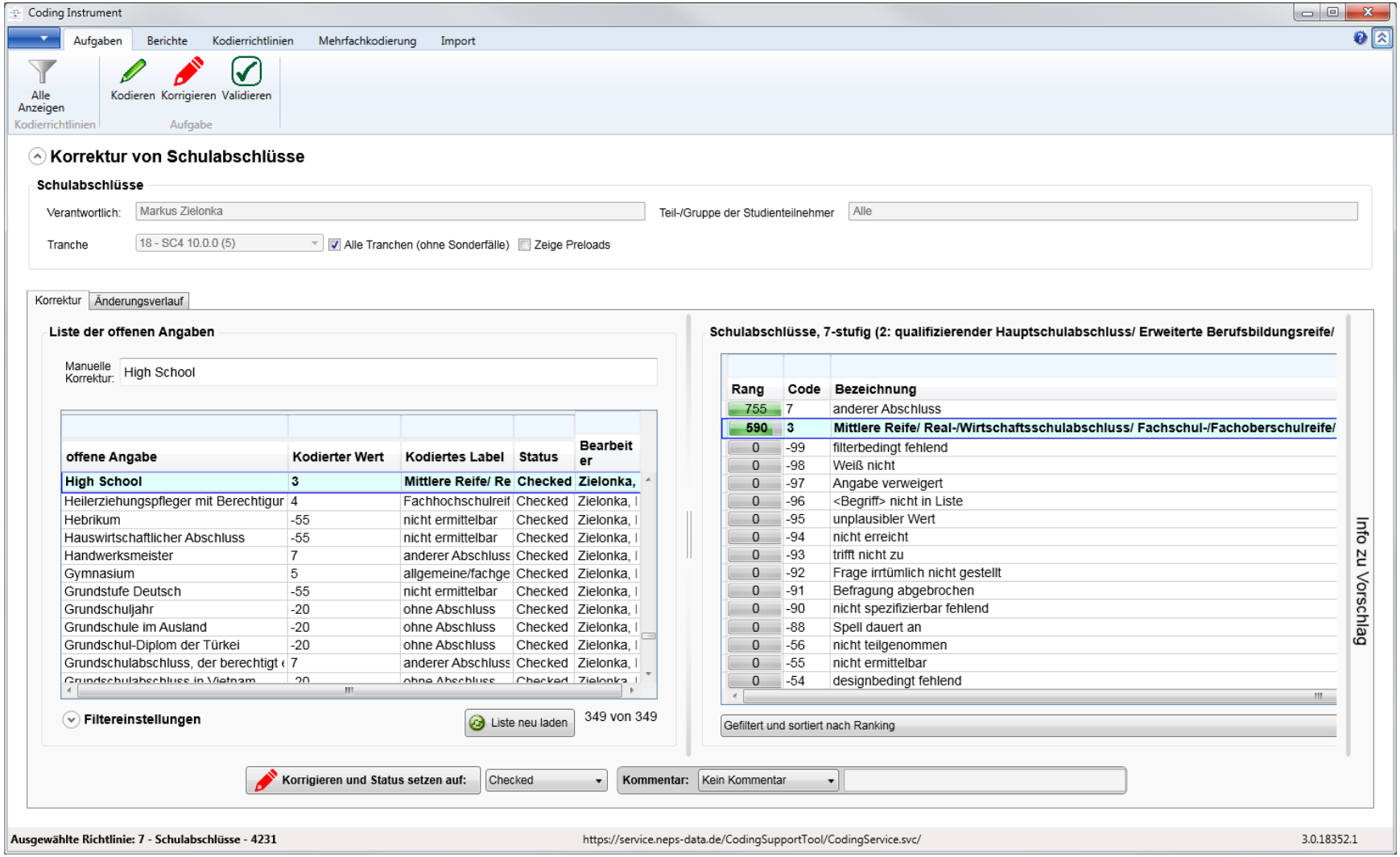
# CODING DATA FOR NEPS (AND OTHER LIFBI STUDIES)



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# CODING DATA FOR NEPS (AND OTHER LIFBI STUDIES)

- Simple experiment to compare coding speed and quality:
  - German Classification of Occupations (KldB 2010)

| Coders | N | mean | median | min | max |
|---|---|---|---|---|---|
| 1 | 497 | 32.78 | 19.21 | 8.796 | 569.8 |
| 2 | 497 | 55.52 | 32.81 | 8.864 | 587.3 |
| 3 | 493 | 23.05 | 14.82 | 8.200 | 392.5 |
| 4 | 496 | 48.48 | 25.76 | 8.332 | 512.6 |
| mean | 999 | **40.41** | 26.14 | 8.586 | 383.6 |

  - Occupational titles with a Documentation Number (DKZ 2010)

| Coders | N | mean | median | min | max |
|---|---|---|---|---|---|
| 1 | 498 | 30.58 | 17.41 | 4.388 | 308.2 |
| 2 | 496 | 34.84 | 20.83 | 7.728 | 571.8 |
| 3 | 499 | 19.82 | 16.54 | 5.156 | 117.2 |
| 4 | 494 | 55.23 | 28.86 | 7.560 | 537.0 |
| mean | 998 | **35.10** | 22.91 | 6.076 | 396.2 |

# CODING DATA FOR NEPS (AND OTHER LIFBI STUDIES)

- Some lessons from the experiment:
  - Complex classifications do not necessarily take longer to code
  - Reliability and correlations on an aggregated level and derived scales seem to be better if coders are forced to code into complex classifications first

# EDUCATIONAL INFORMATION CLASSIFICATION

- Integrated part of a comprehensive (mainly) Stata-driven data editing process

- Educational information classifications for …
  - … target persons (only Starting Cohorts 4, 5, and 6)
  - … several context persons (e.g. partners, parents, siblings, …)

- By default, derivation of three (international) classifications of education:
  - ISCED-97
  - CASMIN
  - (Standardized) Years of education

- Consideration of multiple information sources:
  - (Foreign) School and vocational training histories
  - Courses, transitional vocational programs, institutional + temporal information

# EDUCATIONAL INFORMATION CLASSIFICATION

- Consideration of (specific NEPS) panel study design:
  - Usage of harmonized biography file to create data set with educational information from multiple sources in the correct temporal order (only target persons)
  - Generation of auxiliary variables to capture general schooling and vocational qualification in an already ISCED/CASMIN specific categorization
  - Carry forward of categorization in the case of no new educational information
  - Consistency checks (e.g. “falling” schooling degrees)

- Line-by-line combination to derive the ISCED/CASMIN/Years of Education scale scores

| id | wave | school | school_isced | school_casmin | vocation | vocation_isced | vocation_casmin | isced | casmin | years |
|---|---|---|---|---|---|---|---|---|---|---|
| … | | | | | | | | | | |
| 12345 | 1 | Abitur | ISCED 3A | CASMIN 2c_gen | . | . | . | **ISCED 3A** | **CASMIN 2c_gen** | **13** |
| 12345 | 2 | . | ISCED 3A | CASMIN 2c_gen | . | . | . | **ISCED 3A** | **CASMIN 2c_gen** | **13** |
| 12345 | 3 | . | ISCED 3A | CASMIN 2c_gen | University | ISCED 5A | CASMIN 3b | **ISCED 5A** | **CASMIN 3b** | **18** |
| 12345 | 4 | . | ISCED 3A | CASMIN 2c_gen | . | ISCED 5A | CASMIN 3b | **ISCED 5A** | **CASMIN 3b** | **18** |
| … | | | | | | | | | | |

# QUESTIONS AND CHALLENGES

- Correctly measuring foreign degrees for individuals with migration background?
- Working with third party data collection institutes on incorporating software such as CAMCES?
- Dependent interviewing and integration of preload data possible for CAMCES modules in surveys?
- General question: experience with integration of external data query modules (like CAMCES) in large CATI and CAPI survey settings?

# THANK YOU FOR YOUR ATTENTION!



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