Key Methodological Issues of Tracer Studies – Challenges for a Guide on Tracer Studies

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1. Background of the Guide
2. Concept of the Guide
3. Challenges of Objectives
4. Challenges of Timing
5. Challenges of Data Analysis and Interpretation
6. Conclusions
Outline

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30 years of experiences as researcher at the International Centre of Higher Education Research (INCHER-Kassel); research centre of the University of Kassel (part of the university) with about 20-30 researchers.

Research focus: Higher education and work; HE systems and structures; (international) graduate surveys (CHEERS; REFLEX; PROFLEX; HEGESCO)

Graduate Survey Cooperation Project (KOAB) – yearly surveys in cooperation with about 70 universities (2012/2013: about 70,000 questionnaires will be collected)

Training of Tracer Study researchers from Africa, Asia, Europe and Latin America

International network of graduate surveys (INGRADNET)
University Kassel: in the Heart of Germany

- Located in the center of Germany and Europe
- Unique unity of urban culture and landscape
- City of the documenta
- Parks and recreational areas
- Center for industry, services and civil administration of northern Hesse
Background: International Tracer Study Cooperation

- **Africa**: Cameroon, Ghana, Kenya, Malawi, Namibia, Nigeria, South Africa, Uganda, Tanzania
- **Central America**: Costa Rica, El Salvador, Honduras, Guatemala, Mexico, Nicaragua, Panama
- **Asia**: Indonesia, Iran, Japan, Oman, Philippines, Vietnam
- **Europe**: Austria, Belgium, Czech Republic, Estonia, Finland, France, Italy, Netherlands, Norway, Portugal, Romania, Spain, Sweden, Switzerland, United Kingdom

INCHER-Kassel


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Mainly people from educational institutions who are going to organize and implement tracer studies at their own institution (Institutional Tracer Studies)

*Users from various categories*, notably:

- Policy and decision makers (national, regional, sector levels) seeking to obtain information and data to inform decision making;
- Research centres and experts networks involved/engaged in carrying out tracer studies for clients;
- Associations and networks with interest on evidence offered by tracer studies.
Objectives of the Guide on Tracer Studies

- Institutional Tracer Studies: *capacity building* to enable VET/HE institutions to learn from the labour market experiences of their graduates
- *Methodological competencies* of staff engaged with Tracer Studies
- *Practical advise* and examples: sample questionnaires and many recommendations „how to do“
- Meaningful practical conclusions requires *high quality of data*
- *Long term perspective*: regular tracer studies
What the Users can Learn

- How to plan and design a Tracer Study,
- How to formulate the research questions/objectives,
- How to develop the questionnaires,
- How to collect and update the addresses of former students,
- How to organize the data collection,
- How to analyse the data and interpret the results.
The Traditional Approach:
Tracer Studies Conducted by Consultants

Advantages
- High professional expertise in conducting surveys
- High accountability – easy going for donor agencies

Disadvantages
- Low quality of results: Consultants do not have the necessary context knowledge for a meaningful interpretation of the results
- The specific needs of individual institutions and study programmes/training courses are ignored
- Low sustainability: No capacity building at the VET/HE institution
- Relative high costs
The New Approach: Capacity Building for a Learning Organisation

- Staff training
- Interpretation of results
- Data collection
- Staff training
- Data analysis

A cycle of 12 – 24 months
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What are (Graduate) Tracer Studies?

Similar terms
- Graduate survey
- Tracer study
- Alumni research
- Follow-up study (graduates)
- Graduate career tracking

Target population
- Graduates of an institution of education (regardless the kind of degree)
- Surveyed after graduation
1. Development of the VET/HE institution (e.g. curriculum)

2. To evaluate the relevance of VET/HE (assessment)

3. To contribute to the accreditation process (accountability)

4. To inform students, parents, lecturers and administrators

Data from graduates
## Conceptual Framework for Graduate Surveys

### Graduate Survey

#### VET/HE Input
- Study conditions and provisions

#### Student Input
- Students’ bio data, experiences, motives

#### Process
- Teaching and learning

#### Output
- Knowledge, skills, competences, motivation, grades

#### Labor market signals

#### Outcomes
- Transition, employment, work, professional success, service to society

### Context:
Labour market – region – country; socio-economic development and personal development
Indicators of Professional Success – Labor Market Signals – Employment Outcomes

Objective indicators
- Short search duration
- Employed or further study
- High income
- Appropriate position regarding level of education (job title; ISCO)
- Work tasks closely related to field of study (description of work tasks)

Subjective indicators
- Perceived links of kind of job and own level of education
- Perceived high use of competences
- Perceived high status (income, career perspectives)
- Perceived high work autonomy
- Perceived high job satisfaction
Traditional and New Type of Graduate Surveys

Traditional type – representative sample survey to inform the Ministry and other key stakeholders
- Since more than 30 years
- E.g. France, Germany, Italy, Norway, Switzerland
- Irrelevant for individual institution

New type – institutional graduate surveys (all graduates from one institution of VET/HE)
- (France), Germany, Hungary, Italy, Indonesia, the Netherlands, Romania
- Combination of a National Monitor and a feedback instrument for VET/HE institutions
- Relevant for individual institutions (reports for individual institutions, study program level breakdown of results)
Scope of Graduate Tracer Studies and Target Population

A. Country (national tracer study)

- Country A

B. Institution

- Institution A
- Institution B

C. Subject

- Subject A
- Subject B
- Subject A

D. Degree level

- BA
- MA
Complex Approach of Institutional Questionnaires
Every VET/HE institution Has an Own Questionnaire (Romania, Germany)

Structure of the questionnaire

1. **Core questions**
   (have to be fixed for the whole project, contained in all versions of the questionnaire, warranted / guarantees comparability for institutions and national monitoring)

2. **Optional questions**
   (should be fixed for the whole project, institution decide the use in its questionnaire, give comparability only for institutions which using it, but no national monitoring)

3. **Specific / individual questions**
   (institutions are completely free for the content, no comparision possible, except some institutions using the same specific / individual questions, the layout have to fit the other quest. )
Myth: The Length of a Questionnaire is the Main Factor for the Response Rate

Wrong assumption: the longer the questionnaire the less the response rate

Experiences: in Germany no relation between number of pages (range 20 to 40) and return rate

Response rate depends mainly on the efforts of the VET/HE institution (number of contacts, quality of addresses)

The longer the questionnaire, the more research questions can be answered → more relevant
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Further education and training

The Complexity of Transition

The first five years after graduation

First degree

Further study, professional training

First temporary employment

„Regular“ employment

Job search, unemployment

Family
Time Relation of Key Questionnaire Topics

- **Socio-biographic data**
  - Before study
  - During study
  - After study
  - At present

- **Education**
  - Before study
  - Course of study
  - After first degree
  - At present

- **Employment and Work**
  - Before study
  - During study
  - After study
  - At present

- **Personality, competences, abilities, motivation**
**Optimal Design of Graduate Surveys**

- **Student survey**
  - Seldom
  - Exit Survey

- **Graduate survey**
  - **Most frequent**
    - Graduate Survey I
  - **Less frequent**
    - Graduate Survey II

- **Time After Graduation**
  - 1-2 years
  - 4-5 years
What is a panel survey?
- The same graduate is asked at different time points questions. The relationship of the answers can be analyzed.

Real individual change or trend?

What is the target population? Old addresses?

Retrospective design

Specific topics - be more specific

Heterogenity of professional development can be covered
Cross Sectional Graduate Survey at one Time Point

Graduate survey 5 years after graduation

Content of the questionnaire: about 300 to 600 variables

A. Socio-demographic information
B. Course of study
C. Competences at time of graduation
D. Transition to employment and further education
E. Employment and work requirements in the first job
F. Professional success
G. Work tasks and competences
H. Context factors
I. Recommendations for improvements in study program
Survey at Three Time Points (Panel)

Panel design: only 100 variables in one survey

<table>
<thead>
<tr>
<th>Student survey</th>
<th>Graduate survey 1</th>
<th>Graduate survey 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Socio-demographic information</td>
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Time After Graduation

1-2 years  4-5 years
Advantages of a Panel Design with three Waves:
at the time of Graduation, 1.5 and 4.5 years after graduation

- Each questionnaire has a specific focus/research questions → better quality
- The questionnaires can be shorter → better quality
- Outputs (e.g. competences) can be best measured at the end of study → much better quality
- Addresses for further contacts can be collected at the end of study = preparation of the first graduate survey → cost reduction + → better quality
Challenges of Panel Studies

- Panel mortality → possible selection bias and only a few cases could be left
- Long term commitment of the VET/HE institution – planning of human resources for about 6 – 8 years
- Higher requirements of professional competences of the researchers → much more demanding (database management and statistical analysis)
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The Need to Achieve a High Quality of the Data: Can we trust the data?

- Does the respondent belong to the target population?
- Are the answers serious?
- Do we find indicators of cheating?
- How shall we define and handle incomplete questionnaires (drop-outs)?
Key Problems of Data Quality

- Data editing
- Coding
- Plausibility check
- Detection and corrections of data errors
- Differentiation of missing values (e.g. filter, item non-response, drop-out)
- Incomplete data
- Drop-out analysis
- Imputation of missing data
- Data analysis and reporting
Example: Response Rate of the KOAB Survey 2009, by Higher Education Institution (%)

Source: INCHER, KOAB Absolventenbefragung 2009 Cohort 2007
The Magic of Response Rates

- What are responses?
- The lurker
- Drop-outs
- Net and gross response rate
- What is the target population?
- How to get a feedback about delivered invitations?
- How to handle the drop-out problem?
Requirements for a Methods Report

- Questionnaire development (used sources, pretest)
- Programming of the online questionnaire (software, testing)
- Availability and quality of addresses (methods used to update addresses)
- Documentation of procedures
  - Methods and procedures of data protection
  - Process of data collection (dates of delivery)
  - Rules and actions in data editing
Interpretation of Results

- Interpretation and data analysis – group comparison, relationships
- External (context) information
  - Educational statistics
  - Labour market statistics
  - Labour force survey results
- Causal effects (correlations of independent variables?)
- Selection bias?
Tools for Tracer Studies

- The Guide on Tracer Studies
- Sample questionnaire
- Free software for online surveys: QTAFI online
  - Easy to use, data export
  - Frequencies and crosstabs
  - Documentation
- Free software for automatic data capture with a scanner: QTAFI scanner
- International Network of Tracer Study Researchers (INGRADNET)
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High response rates are possible to achieve in almost all countries

High quality of the data is a pre-requisite of the relevance of the findings for research and institutional development

Availability and quality of addresses (methods used to update addresses) seems not to be a real problem

Documentation of survey procedures and data editing is necessary – culture of critique

An excellent tracer study needs substantial support (including training for the researchers)
Open Questions

- Can Institutional Tracer Studies deliver relevant data to substitute a separate National Tracer Study?
- How to ensure comparability of Institutional Tracer Studies?
- Who collects the data and is responsible for data quality?
- How can to build a system of Tracer Studies which is flexible and relevant for the institutions and for researchers (and the Ministry of Education) at the same time?
- How to exchange systematically the experiences to improve the future Tracer Studies (building a learning culture)?
Support Measures

- The implementation of Institutional Tracer Studies is a long term perspective (5 to 10 years)
- Network approach of institutions (cooperation)
- A central support unit is needed
  - Education research center (e.g. at university)
  - National monitor – national data base
  - Training, workshops and conferences
  - Publications, international contacts
- Support of international cooperation: training, workshops and conferences, publications
Tracer Study Researchers from Africa, America, Asia and Europe

International Conference „Experiences with Link and Match in Higher Education: Results of Tracer Studies Worldwide“ (Bali, 2012)
Thank you very much for your attention