Teaching Survey Statistics by Teleteaching: A joint project at three German universities

Ulrich Rendtel

Freie Universität Berlin
Economic Department
Institute for Statistics and Econometrics

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The background of the project

The Teleteaching concept

Needs and Technical aspects

Future aspects
Growing importance of survey data

- Surveys have become more frequent
  - cheaper sampling procedures
  - cheap data storage
  - powerful computers
  - intelligent questionnaire tools
  - combination with register information

- Surveys have become a more important source of information, esp. in Europe growing need for comparative analysis in the European Union.

- Easier access to micro data by research data centers:
  - distribution of campus files via internet
  - distribution of scientific use files via CD
  - batch job computing at data center
  - remote access at safe off-site environment
  - on-site computing at data center
Survey statistics are rarely taught at German universities at present!

With the introduction of Bachelor and Master grades in Germany there are emerging specialized master programs (For example, 6 Master programs at the economic faculty of the FU)
The background of the project

Options

- Classical summer schools (Ann Arbor, Southampton, BANOCOSS)
- Specialized master program at one university: A least 3 professors are needed!
  Note: there is no university in Germany with 3 survey statisticians at docent level!
- Distributed program at different universities:
  - Traditional: docents travel to students or students to docents (expensive!).
  - Video conference: Not suited for the presentation of formulas, tables, etc.
  - Virtual classroom: Not integrated in the regular teaching schedule.
  - Teleteaching: to be explained later!
The background of the project

The Teleteaching concept
  Distributed teaching
  The didactics

Needs and Technical aspects

Future aspects
The Teleteaching concept

Distributed teaching

Three docents at three universities in three federal states!
"MiSS BBT"

Master in Survey Statistics Bamberg/Berlin/Trier
Three professors with different profiles

- Susanne Rässler (Bamberg): Bayesian Statistics, Multiple Imputation, Item Nonresponse, Statistical Matching, R
- Ralf Männich (Trier): Small Area Estimation, Variance Estimation, Simulation, R
- Ulrich Rendtel (Berlin): Panel Surveys, Weighting, Unit Nonresponse, SAS
The joint teaching program

<table>
<thead>
<tr>
<th>university</th>
<th>summer term</th>
<th>winter term</th>
</tr>
</thead>
<tbody>
<tr>
<td>changing</td>
<td>Introduction to sampling theory</td>
<td></td>
</tr>
<tr>
<td>Bamberg</td>
<td>Seminar on Item Nonresponse</td>
<td>Bayes Statistics and Multiple Imputation</td>
</tr>
<tr>
<td>Berlin</td>
<td>Calibration and Weighting</td>
<td>Panel Surveys or Survey statistics with SAS</td>
</tr>
<tr>
<td>Trier</td>
<td>Variance estimation</td>
<td>Small Area Estimation or Introduction to Monte Carlo Simulation</td>
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Teaching in 3 different federal states (1/2)

In Germany education is regulated by the federal states with separate legislation. This results in different admission rules, study fares, semester intervals, examination rules, etc. Consequence: It is not possible to run this master program under a unique legal frame (Studien- und Prüfungsordnung)!

Therefore: The joint teaching is integrated into 3 independent master programs:

- **Bamberg**: Master in Survey statistics (http://www.uni-bamberg.de/miss)
- **Berlin**: Master in Statistics (http://www.stat.de/en/) This is a general statistical program where survey statistics was integrated as one out of 5 specialisation fields.
- **Trier**: Master in Survey Statistics (http://www.uni-trier.de/index.php?id=36139)

However, there is a joint internet platform with the joint timetable: http://master.surveystatistics.net/MiSS/lehre.html
Teaching in 3 different federal states (2/2)

- Different term schedules between states, different holidays.
- Because of a missing joint legal frame: no mandatory status of examinations outside the state.
- Different learning management systems at each university. (Stud.IP (Trier), Virtual Campus (Bamberg), Blackboard (Trier))
- Different agencies for the accreditation of the master programs.
- At the moment (after 3 years) no formal cooperation treaty between universities.
Teaching channels

- Visual, audio **and** separate blackboard channel!
  - Classical video conference (Conference node at Trier)
  - Virtual Network Computing (VNC) (Freeware: VNC viewer and server)
- Bi-directional teaching to enforce interaction
  - Tablet PC with PDF annotator software (70 Euro)
  - Still some time lag in transmission of screen.
- Occasionally: joint meetings (seminar in summer term)
The Teleteaching concept

The didactics

The 2 screens (1/2)

Blackboard Channel + video conference
The 2 screens (2/2)

Teaching from Berlin, listening in Bamberg

19. Give the interpretation of the restrictions that are set by the do-statement.
Answer:

\[
P(R/A, B) = \begin{pmatrix} 2 & 2 \\ 2 & 2 \end{pmatrix}
\]

20. How have the restrictions to be chosen to meet the MAR assumption by the DES-statement?
Answer:

\[
P(R/A, B) = P(R/A) = \begin{pmatrix} 2 & 2 \\ 2 & 2 \end{pmatrix}
\]
The Bamberg studio
A dynamic video screen

A software (Polycom) regulates the different screens of the video conference:

- The teacher gains 2/3 the area. The "most active" listener gets a larger part than the more quiet listeners.
- At the teaching site only the listeners sites are displayed, with emphasis to the most active listener.
- There are limitations to the number of listening sites, simply by the screen area.
A different teaching style

- The teacher should be more present at the blackboard channel. He should not walk around the classroom and explain with gestures.
- The students should not talk with low voice, as the microphone will not transmit their contribution.
- The students should dare to use the tablet screen (rather seldom up to now).
The background of the project

The Teleteaching concept

Needs and Technical aspects
  Needs
  Technical Aspects

Future aspects
Needs of resources

- Three rooms with video conference equipment at all sites at the same time (Mo 12-16, Tues 14-18, Wed 12-16). Universities will provide such facilities in general. It only the problem to get fixed slots.

- Technical staff for the video equipment and room access. Such staff is present at central facilities.

- Student assistants for the tablet PC’s and the running of the VNC. Often some participant of the class has taken over this responsibility.
Technical aspects

- The whole system is sensitive with respect to technical failures! Meanwhile some routine has been established.
- At the beginning in winter term 2010/2011 all kind of technical failures occurred!
  - VNC + connectivity: firewalls, internet access, etc.
  - VNC + screen and beamer resolution
  - VNC + tablet calibration
  - Acoustic feedback and microphones
  - Lightening of rooms
- The students were very patient in case of technical problems.
Podcasting

- Production of a video stream of the blackboard channel plus voice.
- Easily done with CAMTASIA software (100 EURO): 90 minutes = 1.2 GB
- Downsizing to an MP4-file: 70 MB
- Download via Internet for class participants
Future aspects

Extension of the network?

- Technically easy!
- More coordination needs with each additional partner.
- Until now: German language is used.
- Non-academic partners: German statistical office showed interest.