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Statistics & Schools

Statistics Austria’s contribution to improving statistical literacy
Statistics has arrived in everyday life

What we fear most on Friday, 13th

- black cats
- horrible accidents
- Monday, 16th
Statistical literacy

e.g.

to understand and interpret statistics correctly

to take a critical look at figures and to recognise misinterpretations
Bringing statistics to the classrooms – how it all began...

1980
School visits

2001
STAT4U*

2007
Austrian Economic Atlas

2008
Further ideas... glancing at other NSIs

2011
Statistics & Schools

*) project of the University of Vienna
School visits

- Excursions of school classes to the „Austrian Central Statistical Office“ since 1980 (500-1 000 pupils per year, mostly of secondary schools)

- Included a visit to library, printing office, IT-section and a short presentation of the production of statistics
• **STAT4U** launched in 2001 by Marcus Hudec (Institute for Scientific Computing, Univ. of Vienna), Austrian Statistical Society and Austrian National Bank

• Initiative to support action-oriented and interdisciplinary (project) teaching of statistical content in schools:
  - Detailed, project-based modules for the teaching staff
  - Age-appropriate examples for students

• Communicated in workshops, training sessions, seminars

• Material free of charge on the website [www.stat4u.at](http://www.stat4u.at)
Stat4U Aktivitäten

Diplomarbeit: "Fachdidaktische Aufbereitung statistischer Inhalte für 11- bis 14-jährige Schülerinnen und Schüler"

Im Rahmen ihrer Diplomarbeit hat Pia Ebhart eine fachdidaktische Aufbereitung statistischer Inhalte für 11- bis 14-jährige Schülerinnen und Schüler erstellt. In insgesamt 12 möglichst modular aufgebaute Kapiteln werden Verfahren der deskriptiven Statistik behandelt und ihre Anwendung mit Hilfe des Tabellenkalkulationsprogramms MS Excel demonstriert und für den Unterricht aufbereitet.

01.12.2004
Workshop mit Lehrerinnen

Im Rahmen der Dialog-Vorstellung Pithagoras am Pädagogischem Institut wurde interessierten Lehrerinnen die Grundkonzepte von STAT4U nähergebracht.

15.07.2004
KinderUni 2004


10.05.2002
Statistik in der Volksschule

Besonderer Dank gilt natürlich allen Volksschullehren, die in der Einführungsphase tatkräftig mitgearbeitet haben, die Idee erfolgreich und praxisorientiert umzusetzen und den Kindern, die immer mit Spaß und Eifer mitgearbeitet haben. Der folgende Abschnitt illustriert einige Ergebnisse.
Austrian Economic Atlas

- Online tool since 2007 (tables in German only)
- Overview of the structure of Austrian Economy

- Temporal, regional and topic-specific aspects
Further thoughts and ideas? Glancing at other NSIs...

Inventory of activities of other NSIs (Finland, Portugal, United Kingdom, Switzerland, Canada) in 2008

- **General material** usually offered as e-learning courses

- **Theme-based material** broken down by school subjects and age groups

- Web pages were **either** designed for teachers **or** for pupils
Further thoughts and ideas?

Meeting experts

Experts (in statistics and education) proposed

1. Dual strategy for pupils **and** teachers
2. No abstract theories for pupils - find a link to your target group’s reality instead
3. „Ready-to-use“-material for teachers
4. Dedicated website for schools

(No actions were taken.)
1st „Statistics & Schools“ event was performed instead of Statistics Day in 2011

According to experts’ proposals:

- dual strategy for pupils and teachers
- trying to build a link to „pupils’ reality“

Target groups identified:

- Students at second-stage secondary academic schools or secondary technical and vocational colleges (ISCED level 3, aged approx. between 16-19)
- Teachers, in particular of subjects such as mathematics, geography and economics or (macro) economics
Criteria for the programme

- Morning for pupils, afternoon for teachers
- Topics for students: according to curriculum and their experience
- Topics for teachers: background information or useful tools
- Wanted: STAT’s experts with teaching experience
- Lessons 45 minutes
- Attractive papers & teaching material
- Evaluation
- Incentives
Morning lessons for students

- Register-based Census
- Consumer Price Index
- Tourism Statistics
- Austrian Economic Atlas
Afternoon training for teachers

8 lectures to choose:

• Population statistics and demographic projections
• Long-term and current trends of international migration to Austria
• Real GDP for the calculation of economic growth and alternative approaches ("GDP and beyond")
• Deficit and debt
• Aspects of income distribution, poverty and exclusion
• Selected results on income distribution of households in Austria and the central EU targets on poverty and social exclusion are presented for discussion
• Statistics lessons interactive with TGUI (Teaching Graphic User Interface)
• “Good practice”: teaching with data from Statistics Austria (external lecturer)
The target group – invitation & reactions

- School authorities
- Headmasters
- Curators & custodians
- Teachers (geography, mathematics, economics)

Requests for participation of 1254 students within 48 hours by 58 teachers of 43 Viennese secondary schools

Accepted: 260 students for 2 (!) days

- 34 teachers registered
- 23 participants
Evaluation of the programme

Pupils (186 out of 260 filled in the questionnaire)

- „Tourism“ most interesting topic, „Economic Atlas“ was last on the scale
- Expectations of 80% were met „very well“ or „well“
- For 45% the content was practically very well applicable, 35% found it well applicable.
- Strukture, timeliness and quality of papers was „very satisfying“ for 75%
Lessons learned

• The programme was more appreciated by students of secondary academic schools than by those of technical schools.
• The Austrian Economic Atlas will is no longer be on the agenda of future "Statistics & Schools" programmes.
• Some organisational improvements regarding the invitation policy – discussions with teachers about who can or cannot participate should be avoided.
• The quiz was fun, but caused a lot of organisational stress and some expenses for the awards – this will not be part of future “Statistics & Schools” events.
• (Austrian) teachers have specific qualifying opportunities – they do rather not attend “trainings” or workshops outside this scheme.
Conclusions, further impact

It is extremely rewarding to invest in statistical literacy!!!

Event will be repeated twice a year

Train teachers in their usual scheme

Keep the „Visit Statistics Austria in two hours”-Tour

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