

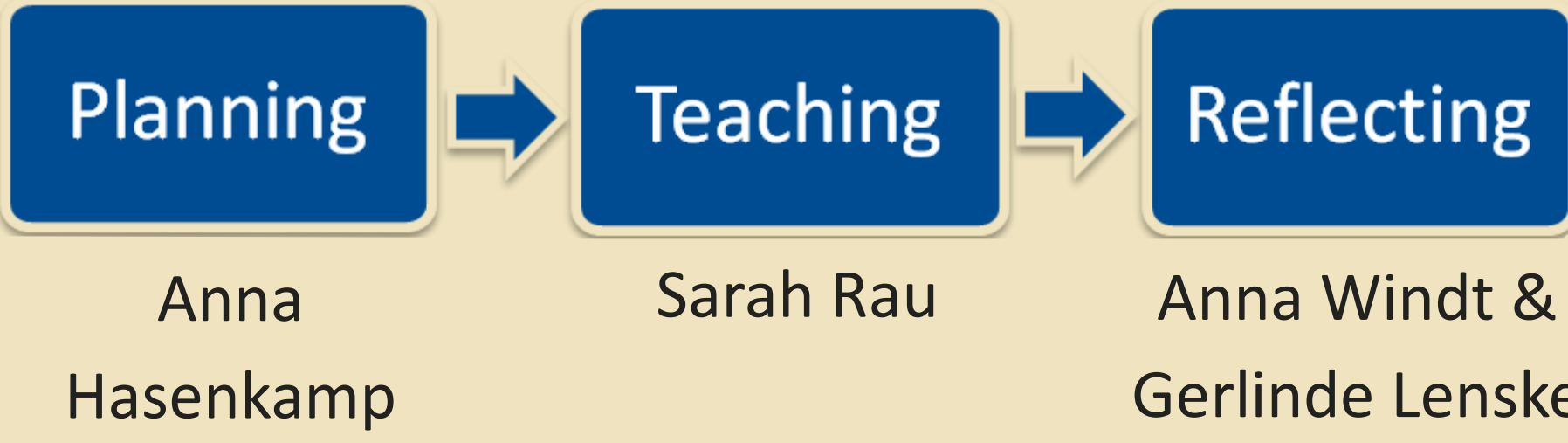
# Quality of Teaching the Subject Sachunterricht – Development of Future Teachers in Teacher Education in Germany

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## Project EuLe: Development of Planning, Teaching & Reflecting Sachunterricht in Teacher Education in Germany

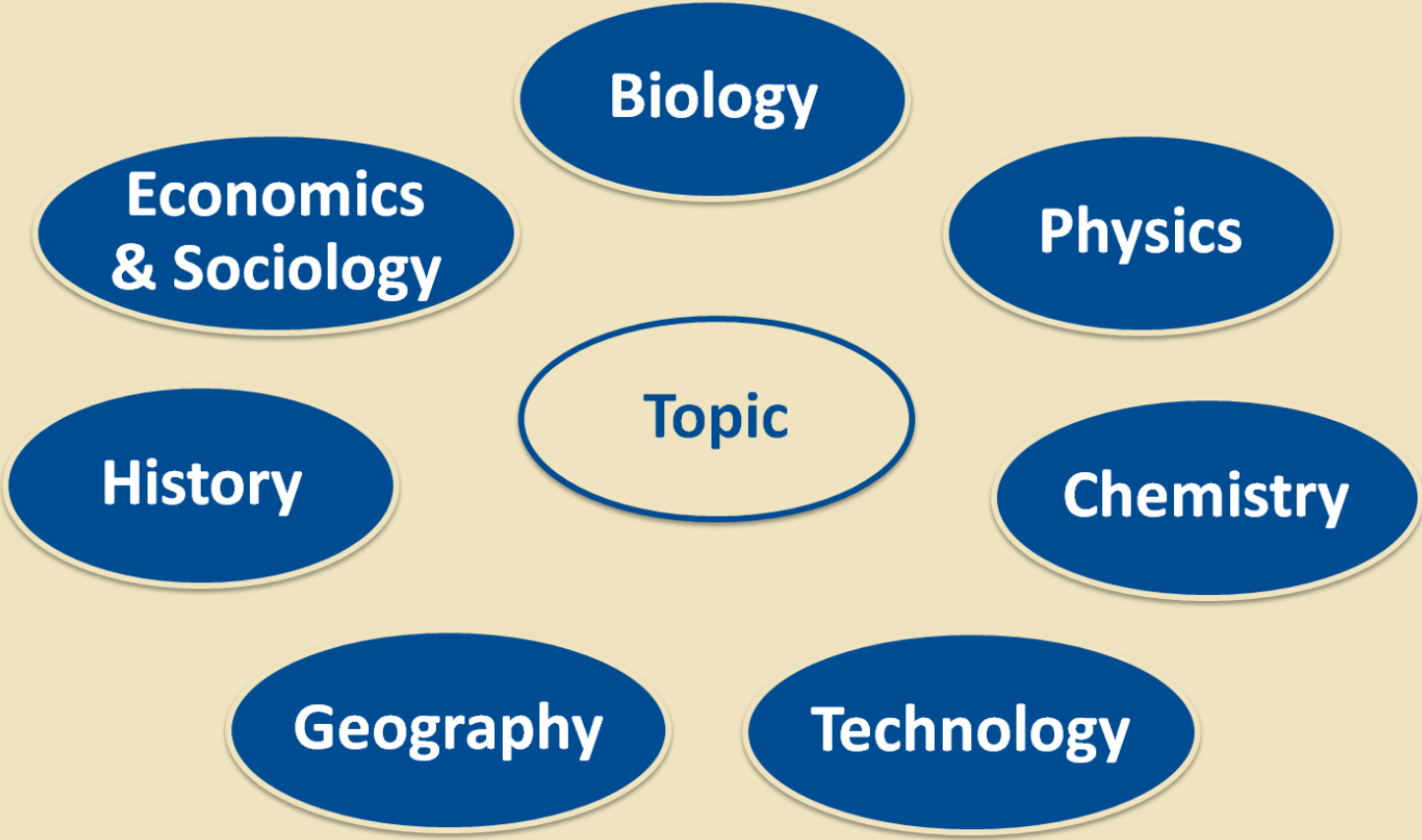


- ◆ 3 sub-projects, corresponding to each phase of the teaching process
- ◆ taking recourse to the same sample



### Sachunterricht (SU)

- ◆ subject in German primary school, grade 1-4
- ◆ combines natural & social sciences
- ◆ multi-perspective access to a topic:



### German Teacher Education

- ◆ **1<sup>st</sup> Phase (Studies):**  
focus on content knowledge, different practical trainings; internship semester in Master studies
  - ◆ **2<sup>nd</sup> Phase (Preparatory Service):**  
focus on practical training “how-to-teach”, guidance differs in intensity over the time
  - ◆ education related to school type
  - ◆ primary school teachers: Pedagogy, Mathematics, German & another subject, e.g. SU
- (Kodron, 1994; Viebahn, 2003)

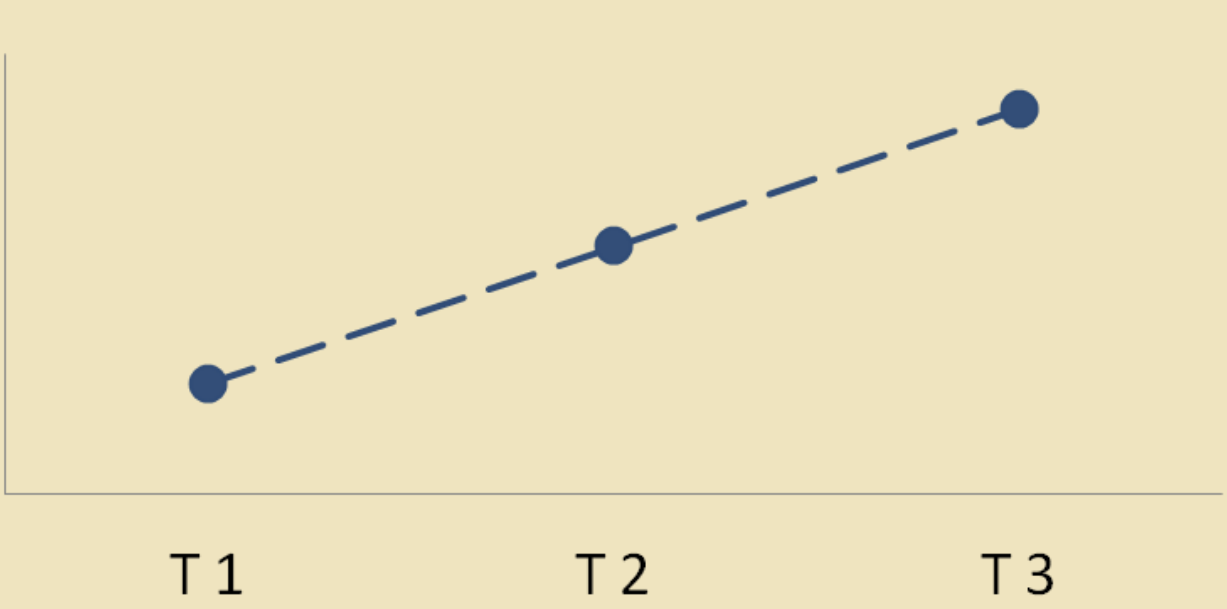
### Development of Learning to Teach

- ◆ learning opportunities in preparation programs influence secondary school teachers’ knowledge and beliefs (Schmidt et. al, 2007 (MT21))
- ◆ increasing confidence and general teaching abilities over the time of learning opportunities (Niemi, 2011; Wideen, Mayer-Smith & Moon, 1998)
- ◆ increasing quality of teaching over the time of practical phases, but not every skill seems to develop equally (Baer et al., 2011; Döbrich & Storch, 2012; Lersch, 2006)
- ◆ few hints about primary school teachers & no research on future SU teachers

### Research Questions & Hypotheses

**RQ 1.** How does the quality of teaching the subject SU develop over the time of teacher education?

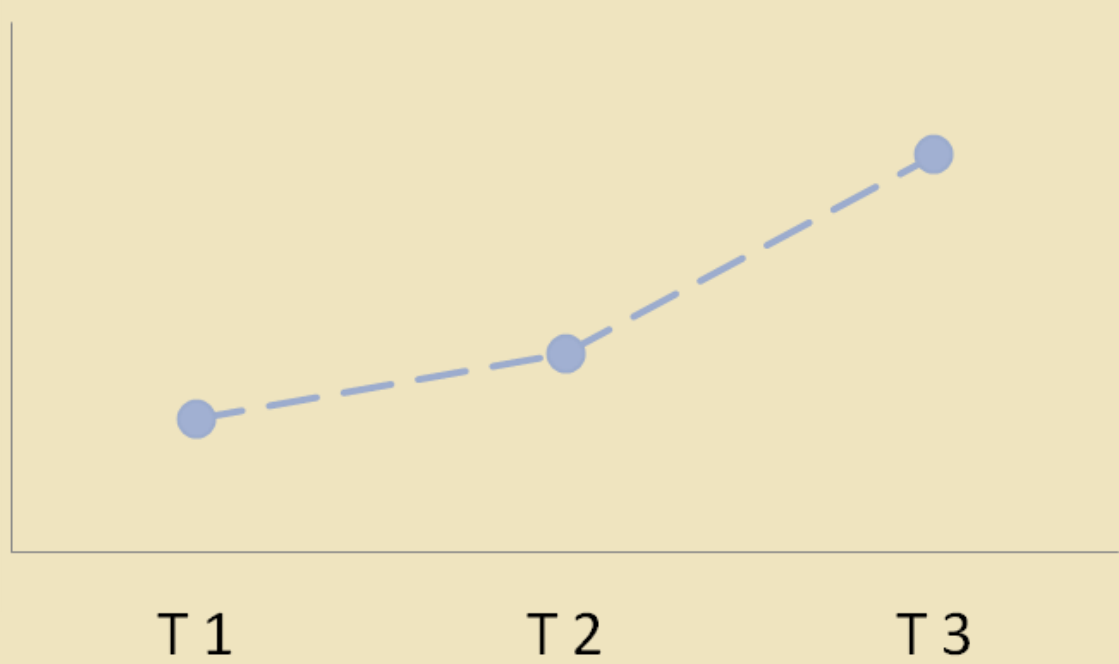
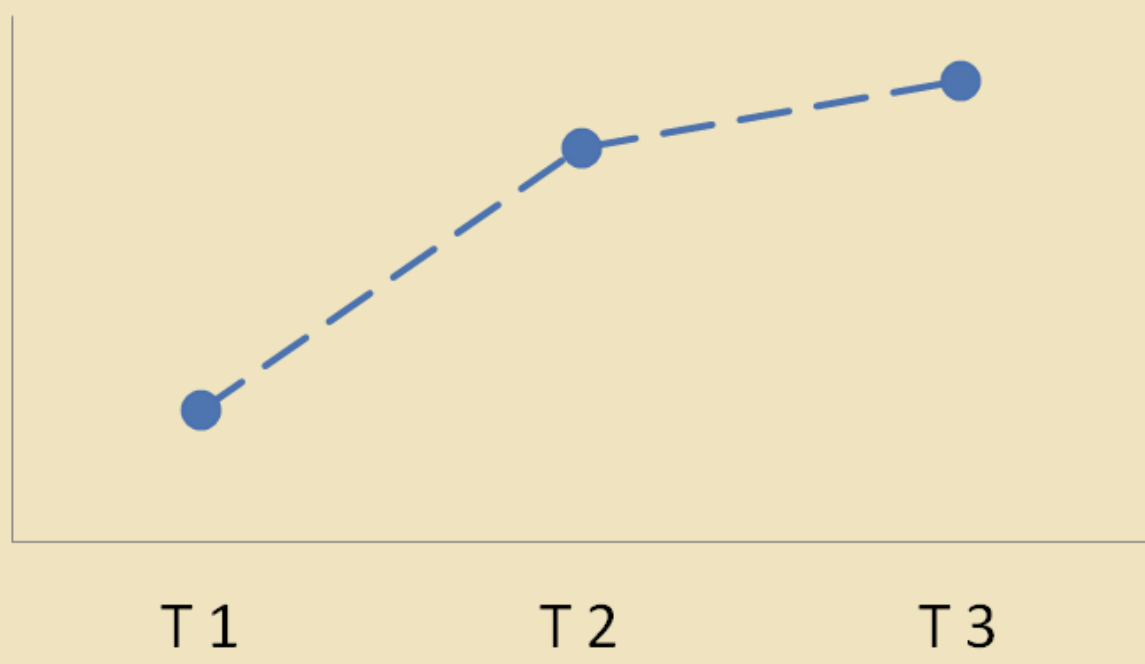
**H 1.** The quality of teaching the subject SU



**RQ 2.** How does the quality of teaching the subject SU develop over the time of teacher education with regard to several criteria for good SU lessons?

**H 2.1.** Aspects of teaching on the structuring and organizing level (e.g. classroom management, clarity & structure) develop mainly from T1 to T2.

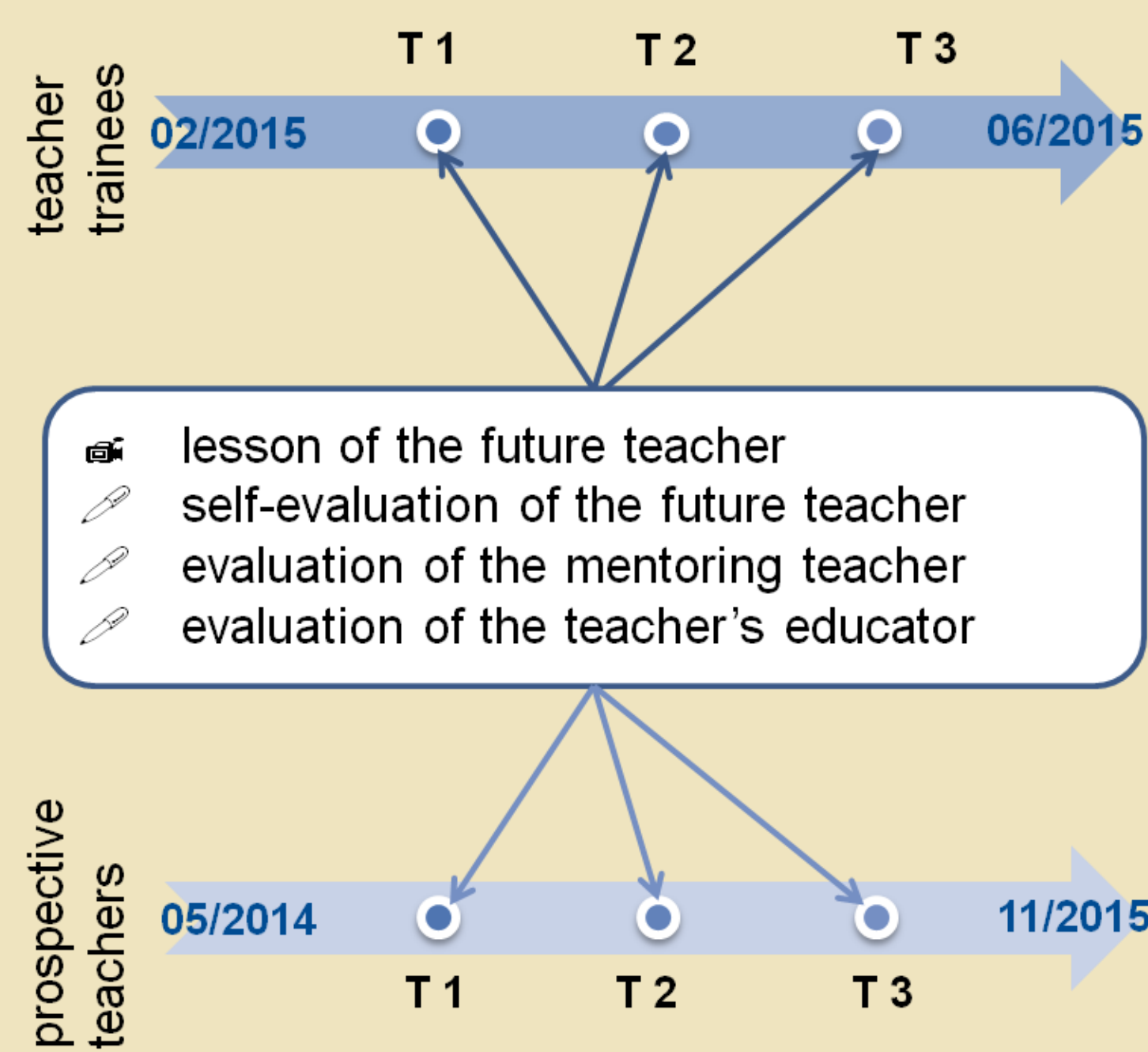
**H 2.2.** Aspects of teaching on the individual level of students (e.g. handling heterogeneity, activation) develop mainly from T2 to T3.



### Sample & Design

N = 30 future teachers

teacher trainees in the 1 <sup>st</sup> phase; n = 15	prospective teachers in the 2 <sup>nd</sup> phase; n = 15
... Bachelor of Arts	... 1 <sup>st</sup> State Examination or
... in their Master Studies	Master of Education
teaching Su in different grades	
teaching different topics of the curriculum	



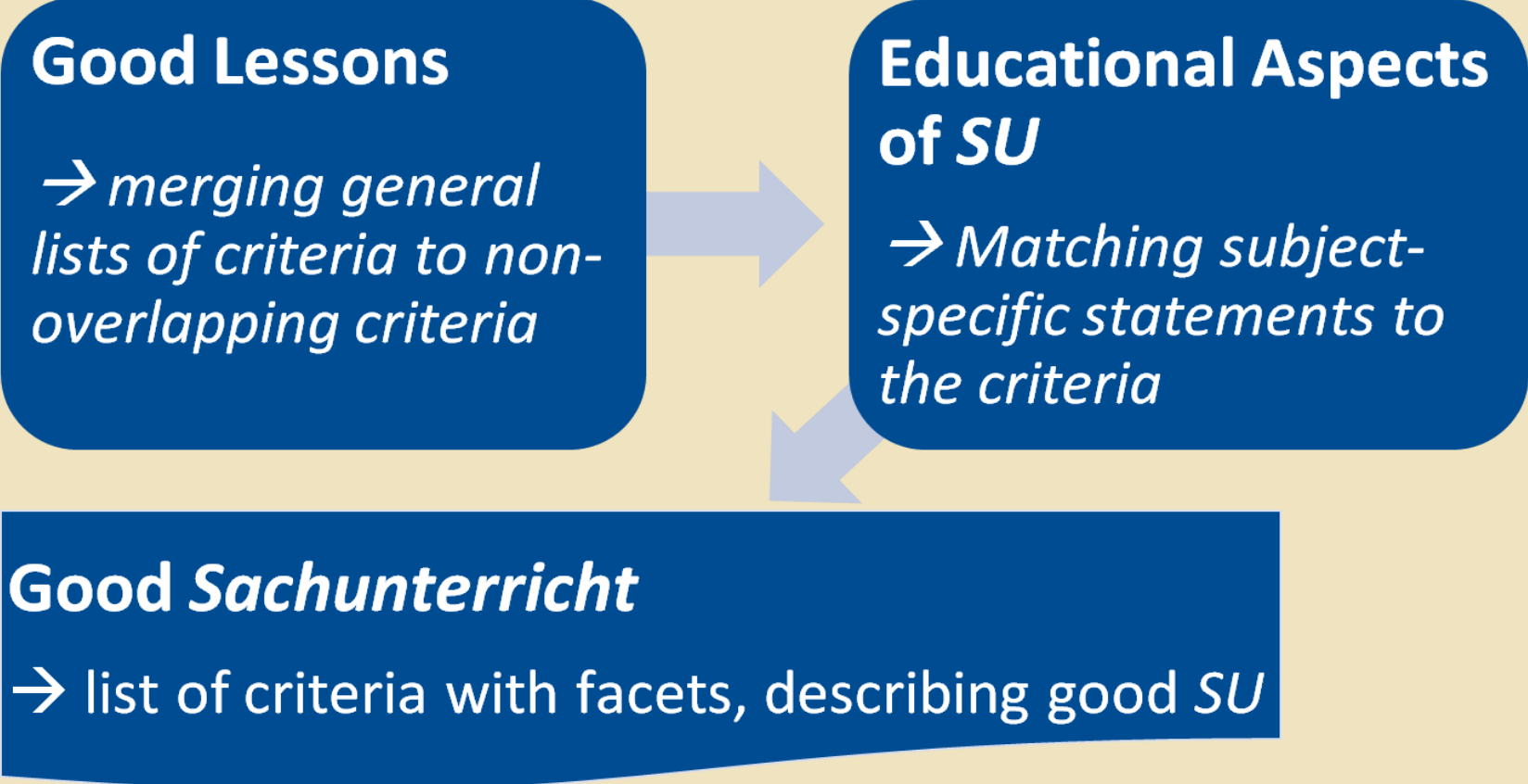
#### Variables of Interest

- ◆ educational background
- ◆ teaching experience
- ◆ interests in natural & social sciences
- ◆ contents of the curriculum of each phase
- ◆ interview with the teachers’ educators about their conceptions and expectations of good Sachunterricht

### Concept of the Video Study

- ◆ 90 videos (30 future teacher 3 times)
- ◆ 2 cameras in the back of the room
- ◆ Standardization: recording and rating manual
- ◆ conception of qualitative content analysis for video analyses (Mayring, Gläser-Zikuda & Ziegelbauer, 2005)
- ◆ deductive category application with definitions, examples & coding rules (Mayring, 2000)
- ◆ analytical rules:
  - ◆ 1<sup>st</sup> watching the whole video  
...getting an overall impression  
...rating onetime facets (e.g. class discussion at the beginning & in the end)
  - ◆ 2<sup>nd</sup> watching the video in sequences  
...event-sampling (e.g. disturbances)  
...analyzing each facet (all criteria at once)
- ◆ Software: MAXQDA

### Manual - Conception



#### 6 Criteria:

- |  |            |
|--|------------|
| 1. Classroom management                    | – 6 facets |
| 2. Clarity & structure                     | – 7 facets |
| 3. Activation                              | – 8 facets |
| 4. Supportive classroom climate            | – 5 facets |
| 5. Handling heterogeneity                  | – 5 facets |
| 6. Arrangement of the learning environment | – 6 facets |

#### Rating:

- type a facets: dichotomous aspects
- type b facets: 4-point Likert-Scale

### Pilot Study of the Manual

- ◆ **Step 1:** content-discussion of each criteria (3 researchers in SU)
- ◆ **Step 2:** inter rater reliability of each criteria (2 trained raters, 5 videotaped SU lessons)
  - ✓ Classroom-Management:  
.167 <  $\kappa$  < 1.0; Median = .615
  - ✓ Activation:  
.167 <  $\kappa$  < 1.0; Median = 1.0
  - ✓ Supportive Classroom Climate:  
.545 <  $\kappa$  < 1.0; Median = .545
- ◆ **Step 3:** expert rating of the manual to examine content validity (5 teachers’ educators, 5 researchers in SU)
- ◆ **Step 4:** deleting the facets lacking acceptance

