

Teaching ERP means teaching integration

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1. Problem
2. Teaching and Learning
3. Learning Models
4. Teaching Integration
5. Integrated Teaching
6. Conclusion and Prospects

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In general

- Insufficient transfer of knowledge and skills
- Lack of interactive learning approaches
- Need for more effective teaching and learning methods
- Need for practice orientation

Specific for Business Informatics

Business Informatics students should, first, acquire knowledge about how information systems are constructed, how they act and why they act like this. Second, students need to gain competence on how to (re)construct information systems (Heinrich 1993, p. 4).



Need for a teaching concept creating an awareness of how intensively and sustainably integration contributes to the design of most useful information systems

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Knowledge

- Collection of all ideas that are considered to be true
- Complex, networked and dynamic system
- Differentiation in
 - Professional knowledge
 - Application knowledge
 - Operational knowledge

[Dreyfuss et al. 1987; Jarz 1997]

Competence

- Acquisition of knowledge in a specific field
- Development of capability of applying knowledge to solve given problems
- Differentiation in
 - Professional competence
 - Method competence
 - Social competence

[Pätzold 1996]

Learning

Change in an organism's behavior or behavioral potential in a specific situation, which results from repeated experience of the organism during this situation (Bower 1983).

Learning Theories

- Behaviorism (1913-1960)
- Cognitivism (1960-1990)
- Constructivism (since 1990)

Modern learning approaches

- Situated, case- and role-based learning

- [...] *achievement of knowledge was always 'situated,' dependent on materials, tasks,*

and how the learner understood things (Bruner 1996, p. 132)

- Most realistic and complex situations in complicated, multi-conditional context
- Focus on individuality and situatedness of learning and application processes
- Focus on social contact and interactive teamwork

- Anchored Instruction

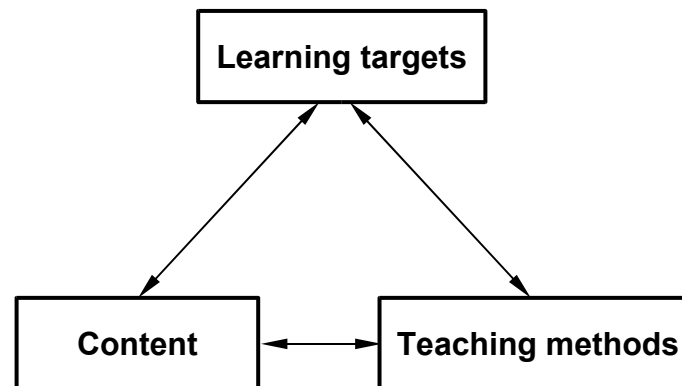
- [...] *students may possess calculus skills without recognizing that they are applicable to a particular physics problem or without knowing exactly how to apply them (Simon 1980, p. 82)*

- Explorative, open learning approach provoking *Intrinsic Motivation*
- Use of an *anchor* in the beginning of the lecture
 - Harvard Case Studies

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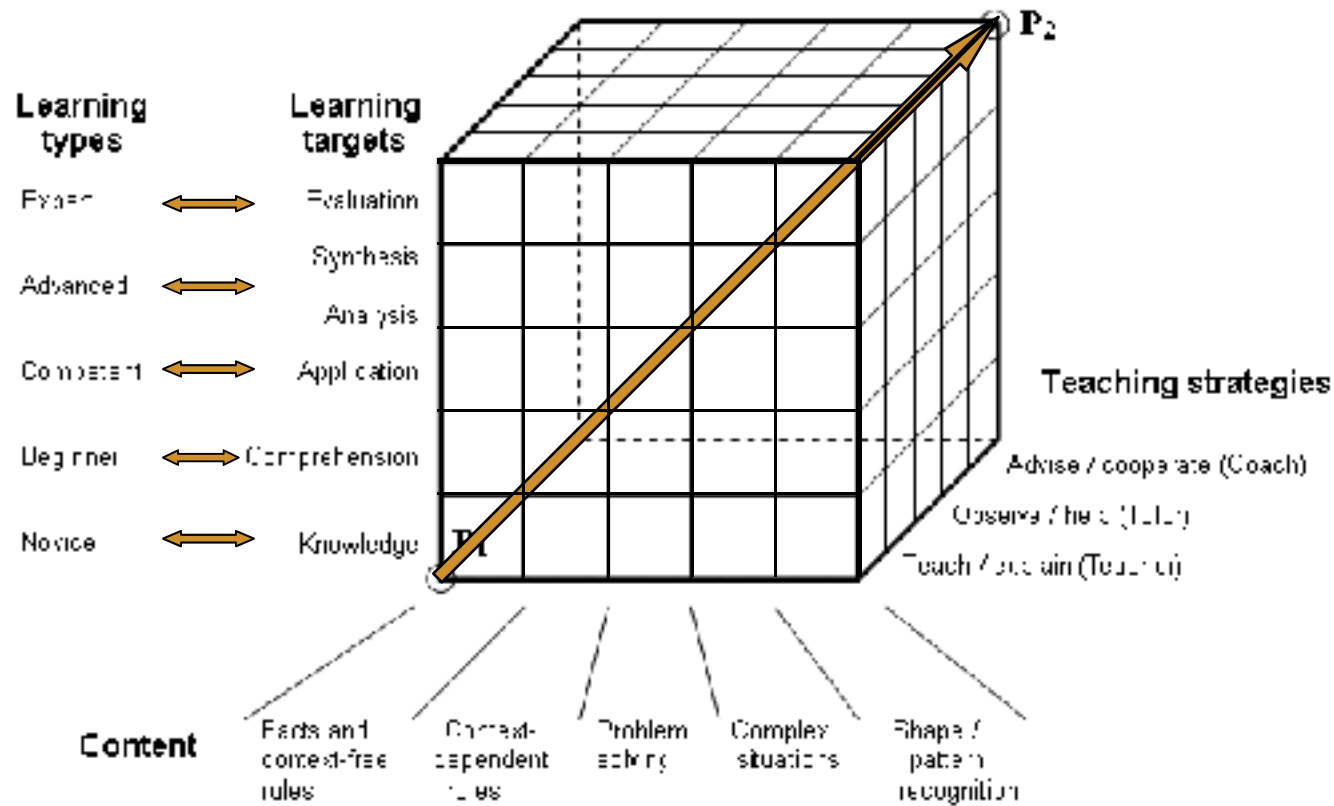
Classic learning model

- Education as a system with three essential factors
- Organizational and executive form of learning and teaching



[vgl. Döring 1971; Klimsa 1993]

Three-Dimensional learning model



[Baumgartner/Payr 1993]

Competence fields – learning targets

Competence fields						[Pätzold 1996]
Professional competence		Method competence / social competence				
Learning types						[Freter 1996]
Novice	Beginner	Competent	Advanced	Expert		
Cognitive learning targets						[Bloom 1976]
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	

Learning targets – content

Cognitive learning targets

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Content					
Facts and context-free rules	Context-dependent rules	Problem solving	Complex situations	Shape / pattern recognition	

[Bloom 1976]

[Baumgartner/Payr 1993]

Learning targets – content – teaching methods

Cognitive learning targets

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Content					
Facts and context-free rules	Context-dependent rules	Problem solving	Complex situations	Shape / pattern recognition	
Teaching methods					
Speech / Lecture					
Conversation / Discussion			Discussion		
	Exercise				
	Business game				
		Role play			
	Case study				

[Bloom 1976]

[Baumgartner/Payr 1993]

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Teaching concept “Teaching Integration”

- Developed at the Department of Technical and Business Information Systems (ITI) at Otto-von-Guericke-University Magdeburg, Germany

- First mentioned in 2003 (Weidner 2003)

- **Goal**

Improvement of teaching the concept of Integration in the field of Business Informatics.

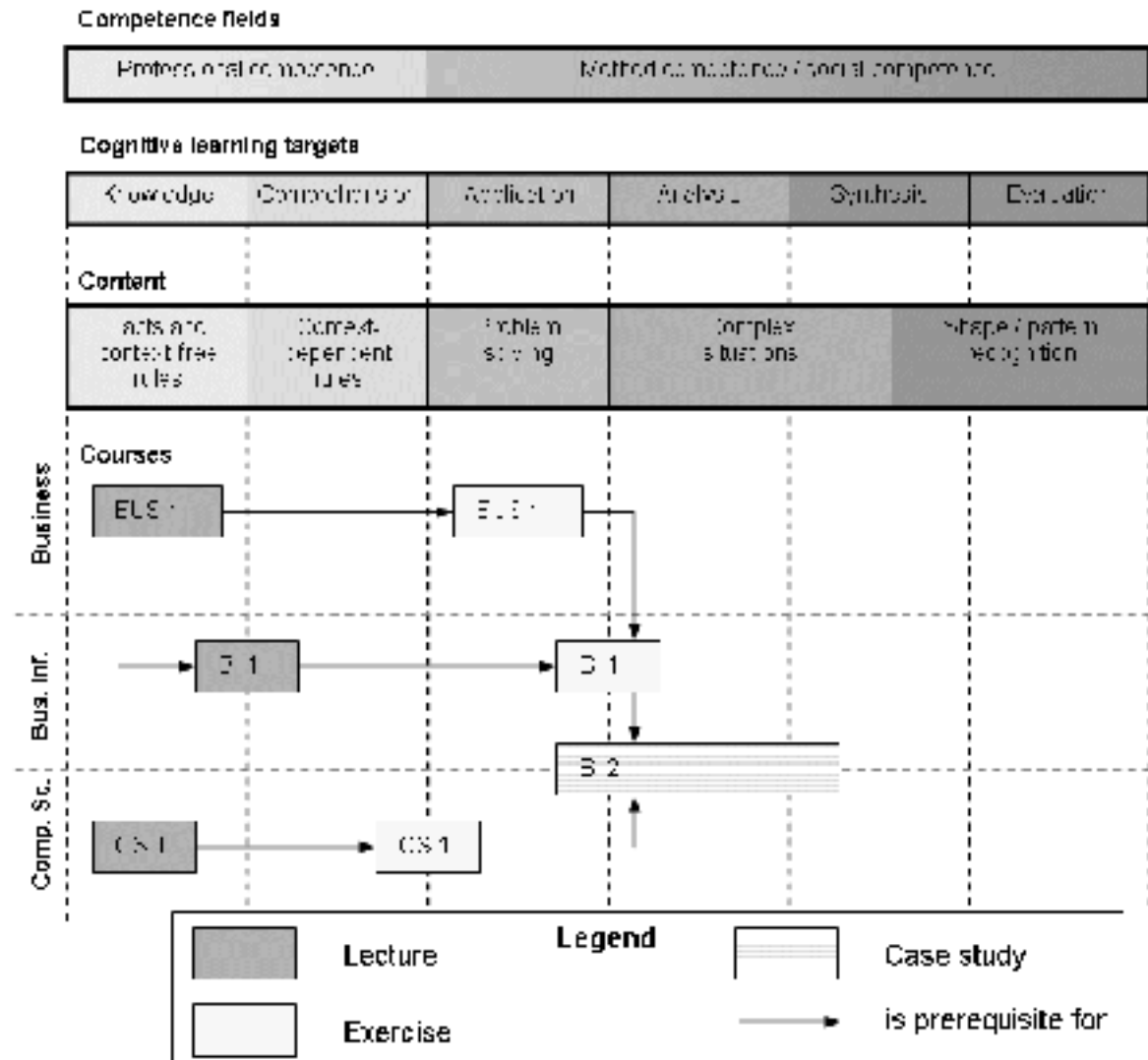
- **Idea**

Identification of adequate teaching methods for

- new teaching modules and
- already existing and taught lectures

on the basis of learning targets and content.

Curriculum example



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Teaching approach “Integrated Teaching”

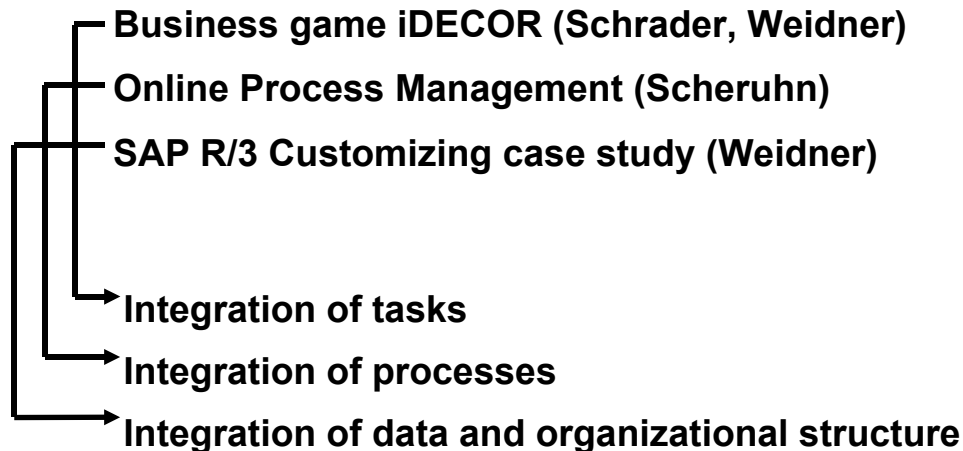
- Why and how courses need to be integrated
- Based on Situated learning (realistic and complex situations in complicated, multi-conditional context)
- Similarities to Anchored Instruction (anchor → scenario)

As a result of using similar or the same underlying examples, the learner comprehends the concept of integration in a course-spanned and process-spanned manner (Weidner 2003).

→ First lecture series in Winter Term 2002/2003

Lecture Series “Business Informatics”

- Three modules

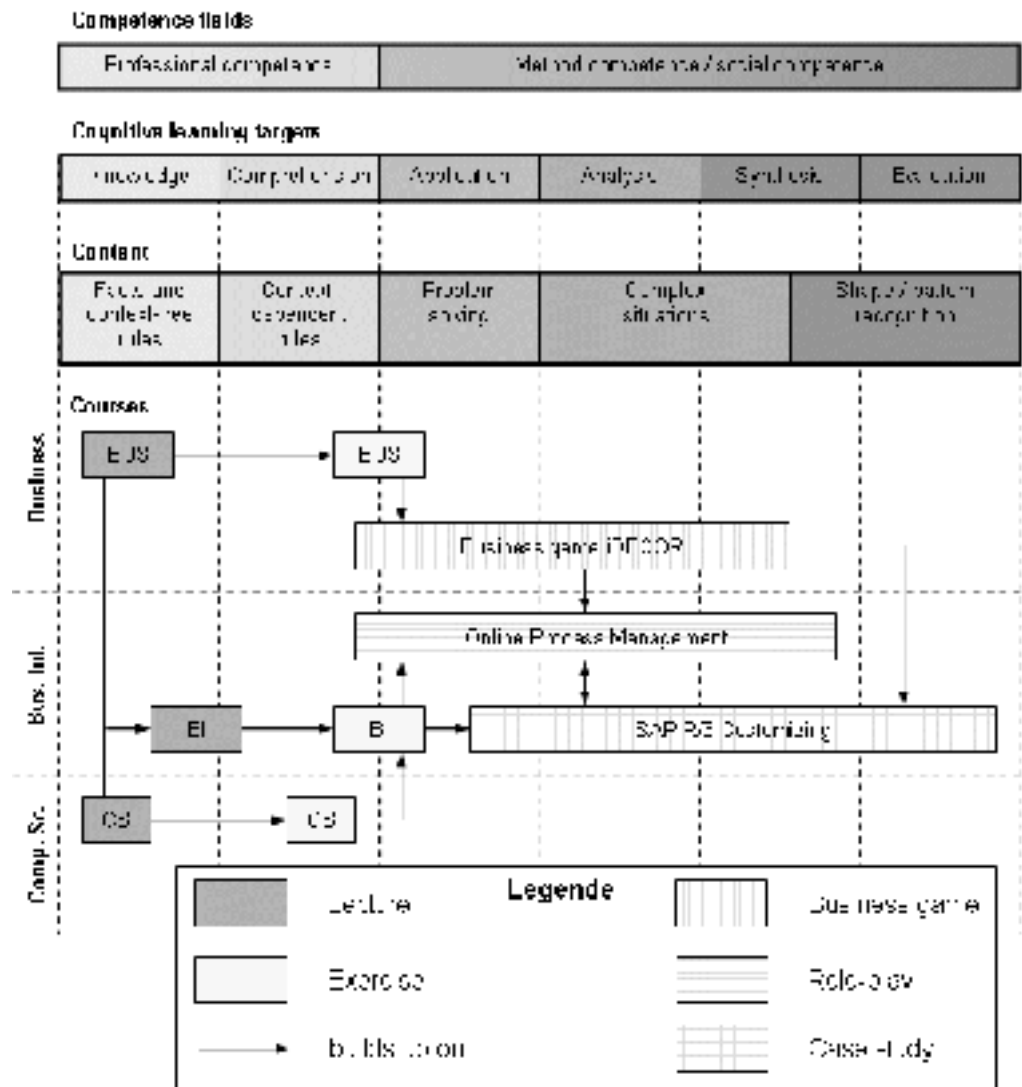


- Teaching evaluations show:

“Personally very time-consuming, but it is worth the time.”

Lecture Series

“Business Informatics”



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Conclusion

- **Difficult to combine both theoretical fundamentals and constructive methods with social competence in one course**
- **Exemplary lecture series proved that it is not enough to teach content on integration, but integrated content.**
- **Teaching modules need to be integrated based on a central scenario.**

Prospects

- **International practice**
- **Further development of the 3-Dimensional learning model**
 - Learning forms
 - Cultural / social aspects
- **Standardization of module descriptions**