

# Learning by building and using models in business education

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*ISDC, Bergen 2000*

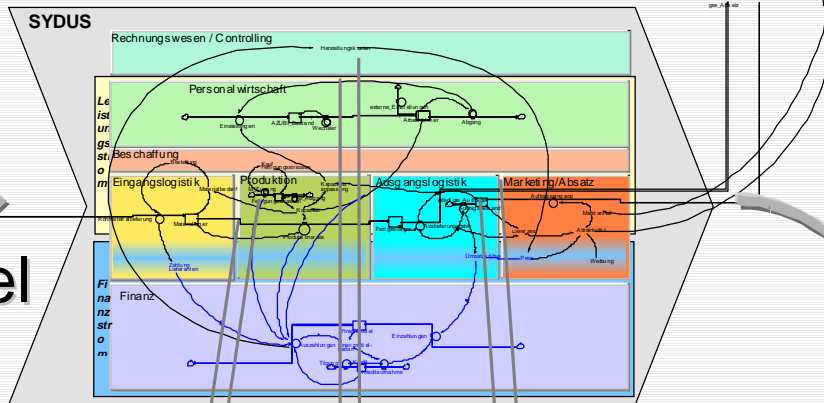
# Agenda

- **Complex learning environment**
- **Approaches for learning episodes**
- **Elaboration of Mental Models by means of simulation and modeling**
- **Impact of simulation „Shifts of Elaboration“**
- **Analyzing the process of modeling with tracing-software**

# A complex learning environment for simulation and modeling in vocational training

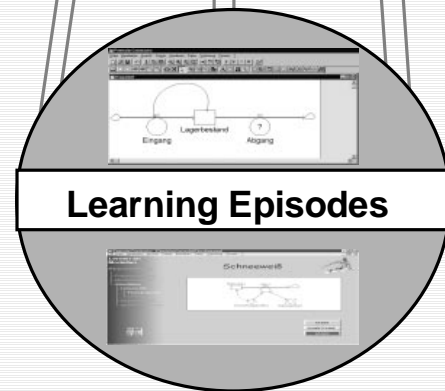
## SYDUS

A glassbox model with generic, systemic, structures of an industrial enterprise



## Learning Episodes

Episodes concerning to SYDUS for the elaboration of typical economic subject matters



# Approaches for learning episodes

## Learning modes (sensu Bliss 1993):

### Explorative

- exploration of given models
- interactive simulation
- interpretation

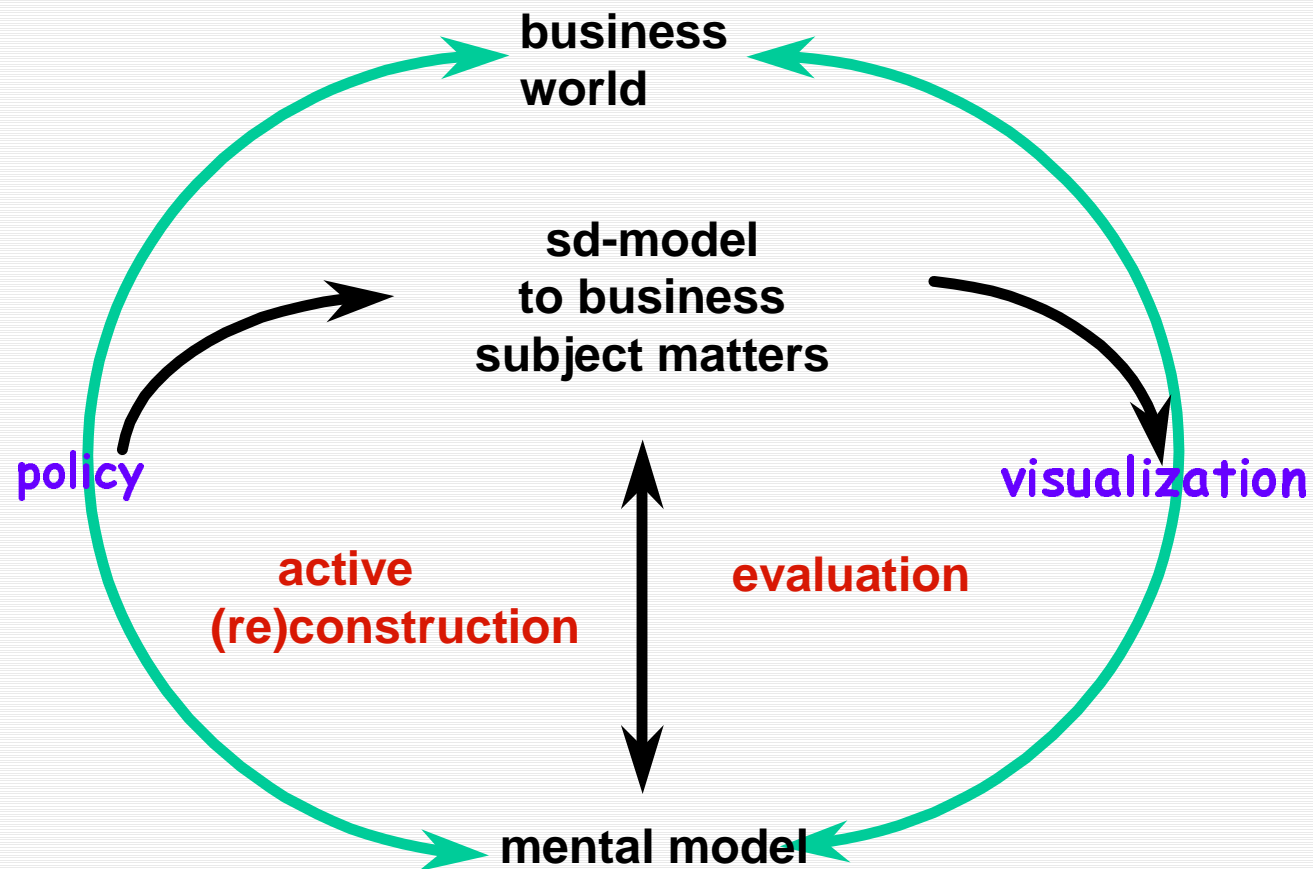
similar to applications of  
management flight  
simulators (training)

### Expressive

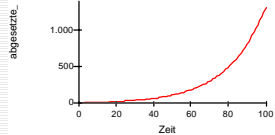
- construction of models by students
- interactive simulation
- interpretation

used as cognitive tool to  
elicitate, visualize and  
respectively re(construct)  
student mental model of  
business subject matters

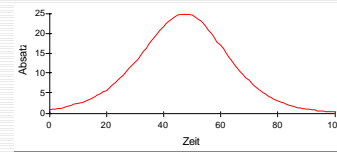
# Elaboration of the Mental Model



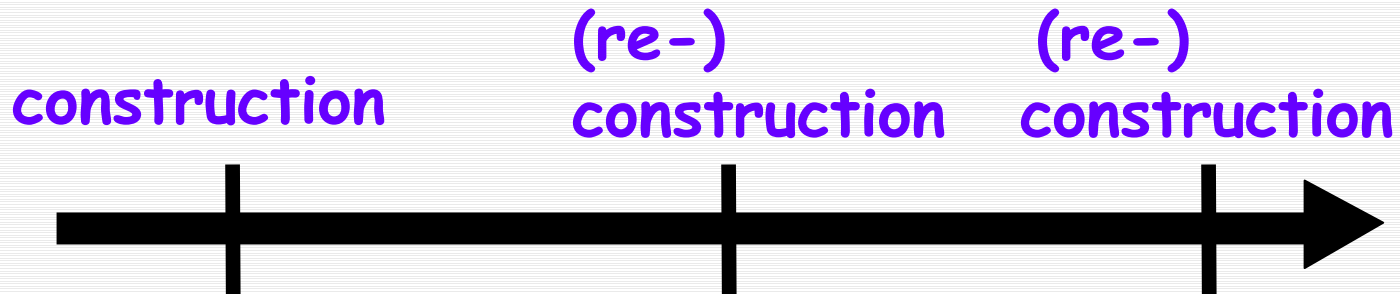
# Impact of simulation on the process of modeling



simulation



simulation



Hypothesis: „Shifts of elaboration “



# First results and perspectives

- **Students are able to build appropriate SD-models to business subject matters and to explain their behavior with instructional support given**
- **Multidimensional representation of the individual elaborations based on the models developed with inclusion of the corresponding explanations (content analysis / knowledge structure)**