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Practical Implementation of Learning Fields in
Vocational IT/CS Education –
A Guideline for Designing Learning Situations

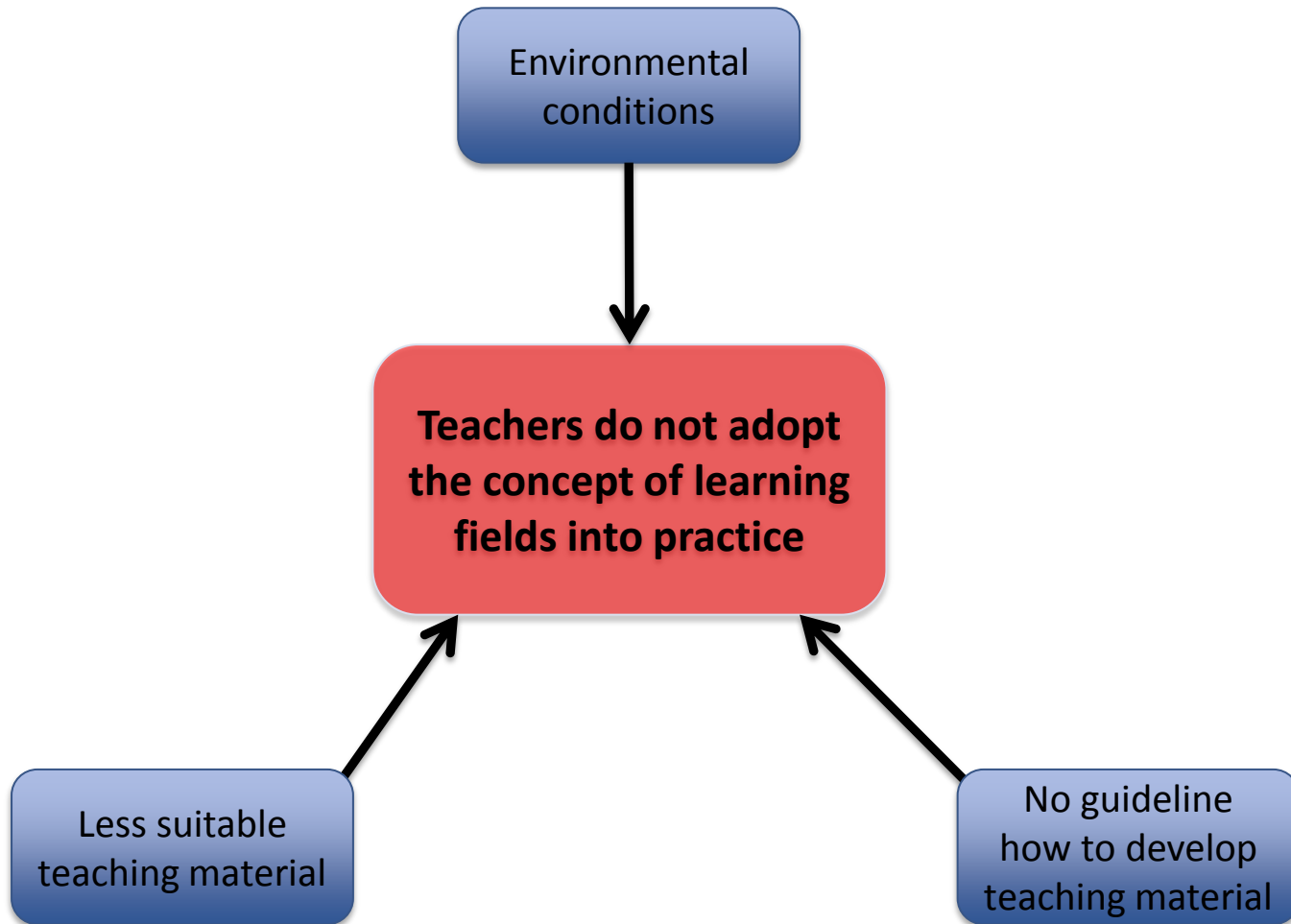
Simone Opel¹, **Alexander Höpfl**² and Torsten Brinda¹

¹University of Duisburg-Essen, ²University of Erlangen-Nuremberg

Agenda

- 1. Current Problems in Vocational IT/CS Education
- 2. How the Guideline was Developed
- 3. A Guideline for Designing Learning Situations in IT/CS
- 4. Evaluation of the Guideline

Current Problems in Vocational IT/CS Education

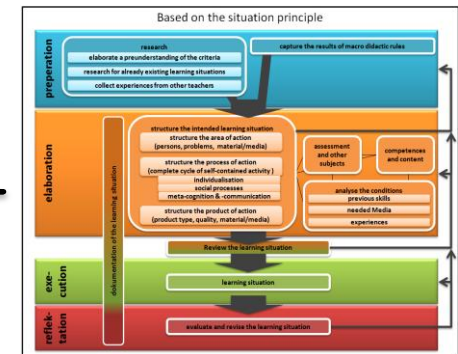
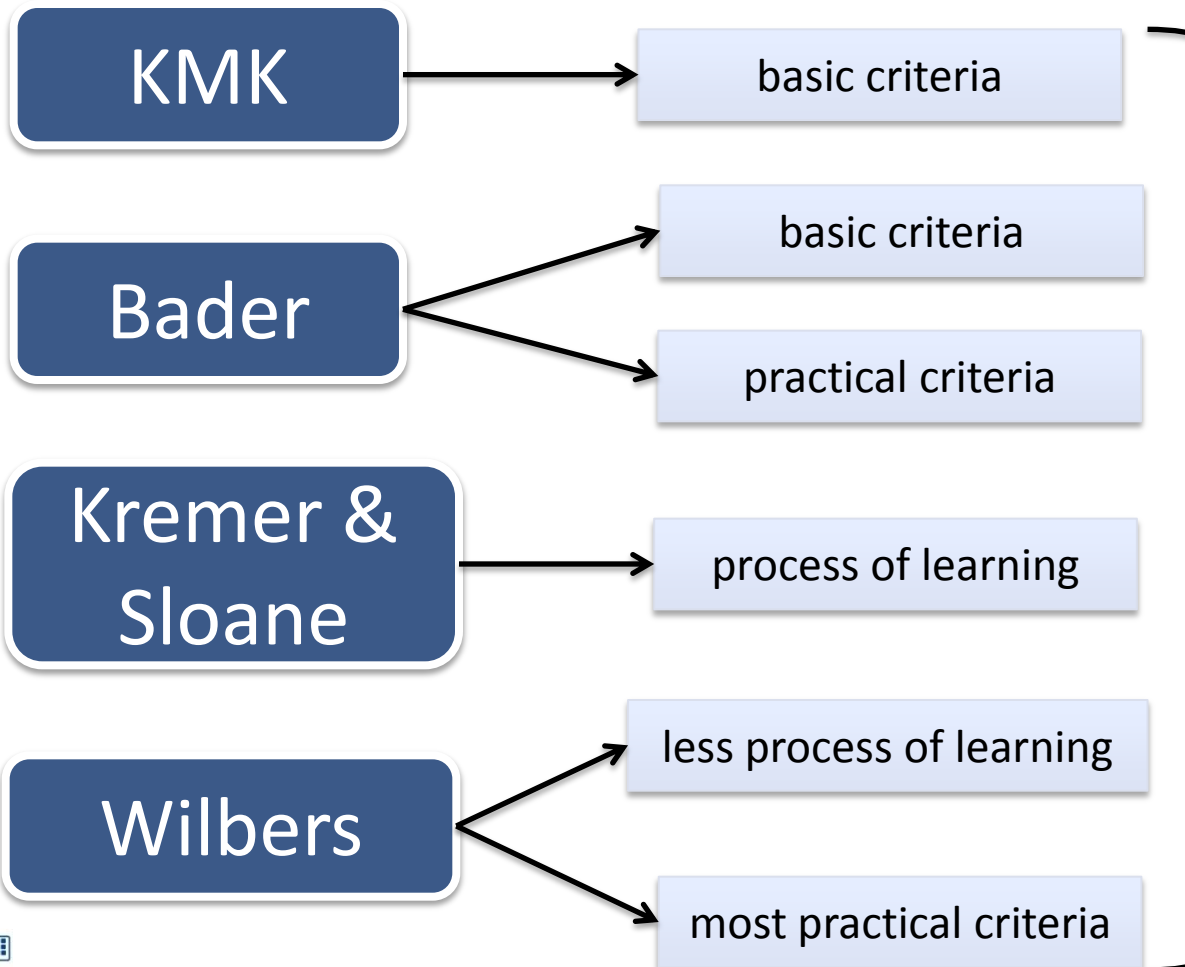


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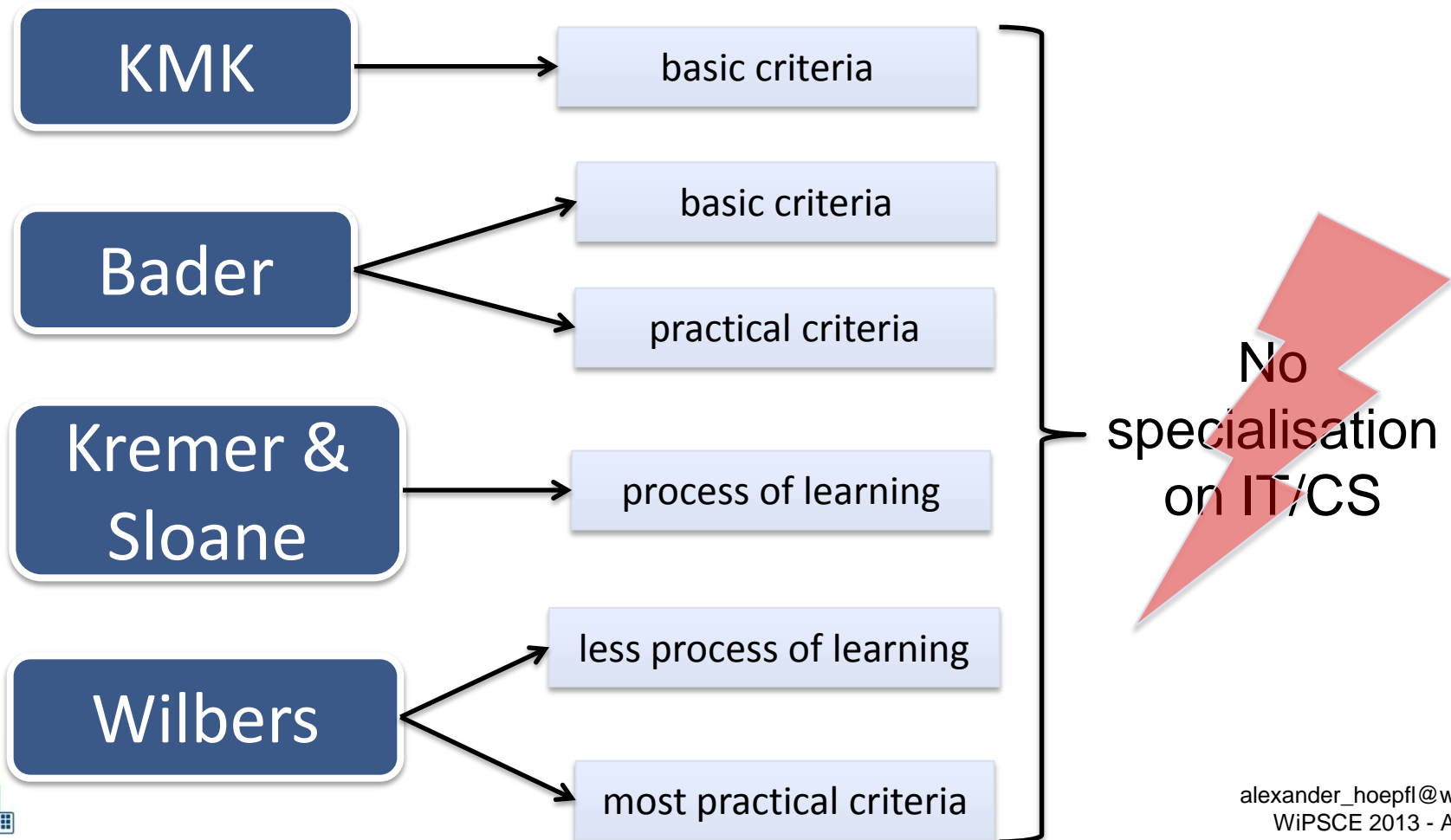
How the Guideline was Developed

Analysis of existing criteria a learning situation should comply with



How the Guideline was Developed

Analysis of existing criteria a learning situation should comply with





Literature about didactics of IT/CS

vocational education

general education

only less literature
in IT/CS



Main reason for developing a
specific guideline for
vocational IT/CS education

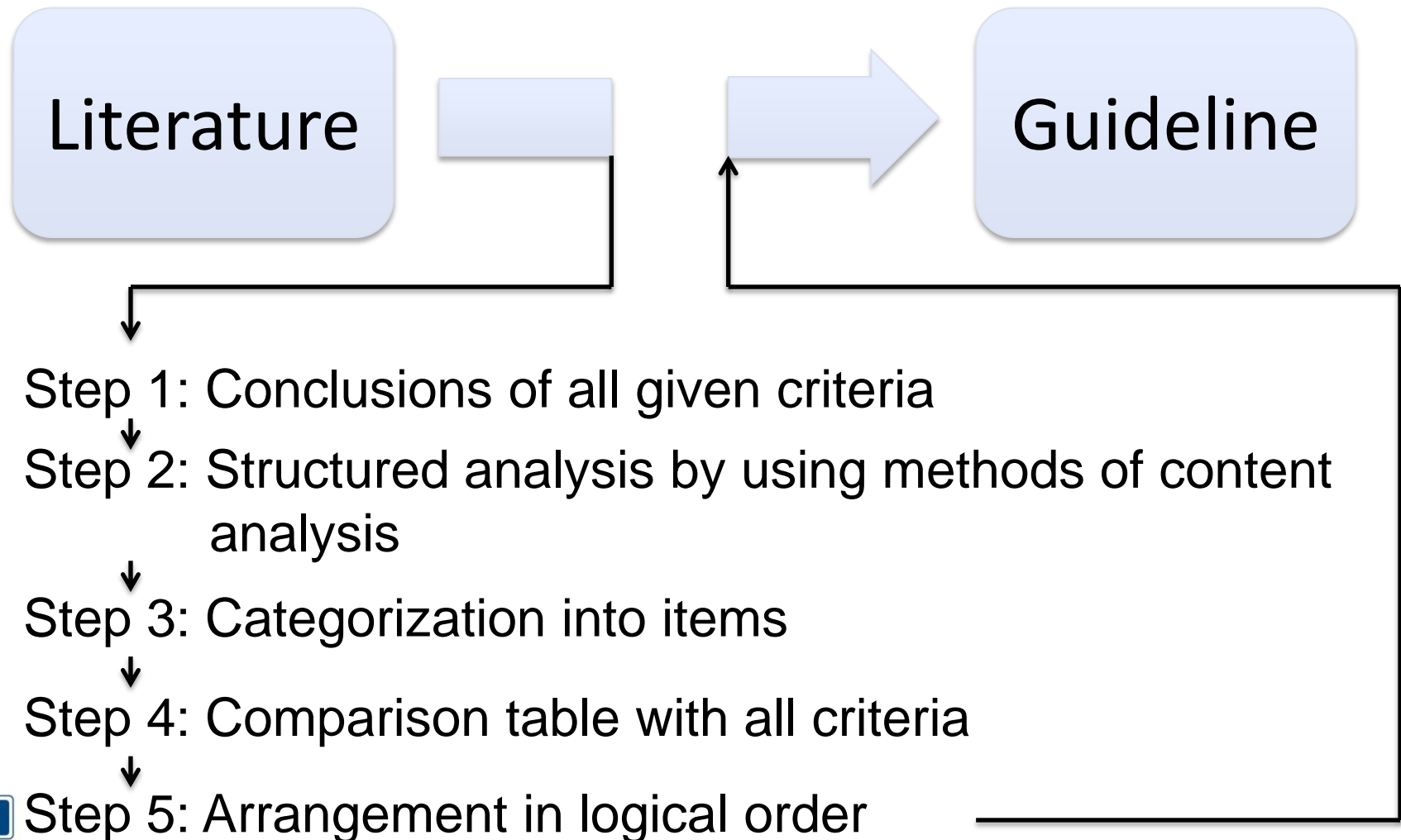


e.g. IniK
(German IT/CS-specific
open working group)

How the Guideline was Developed



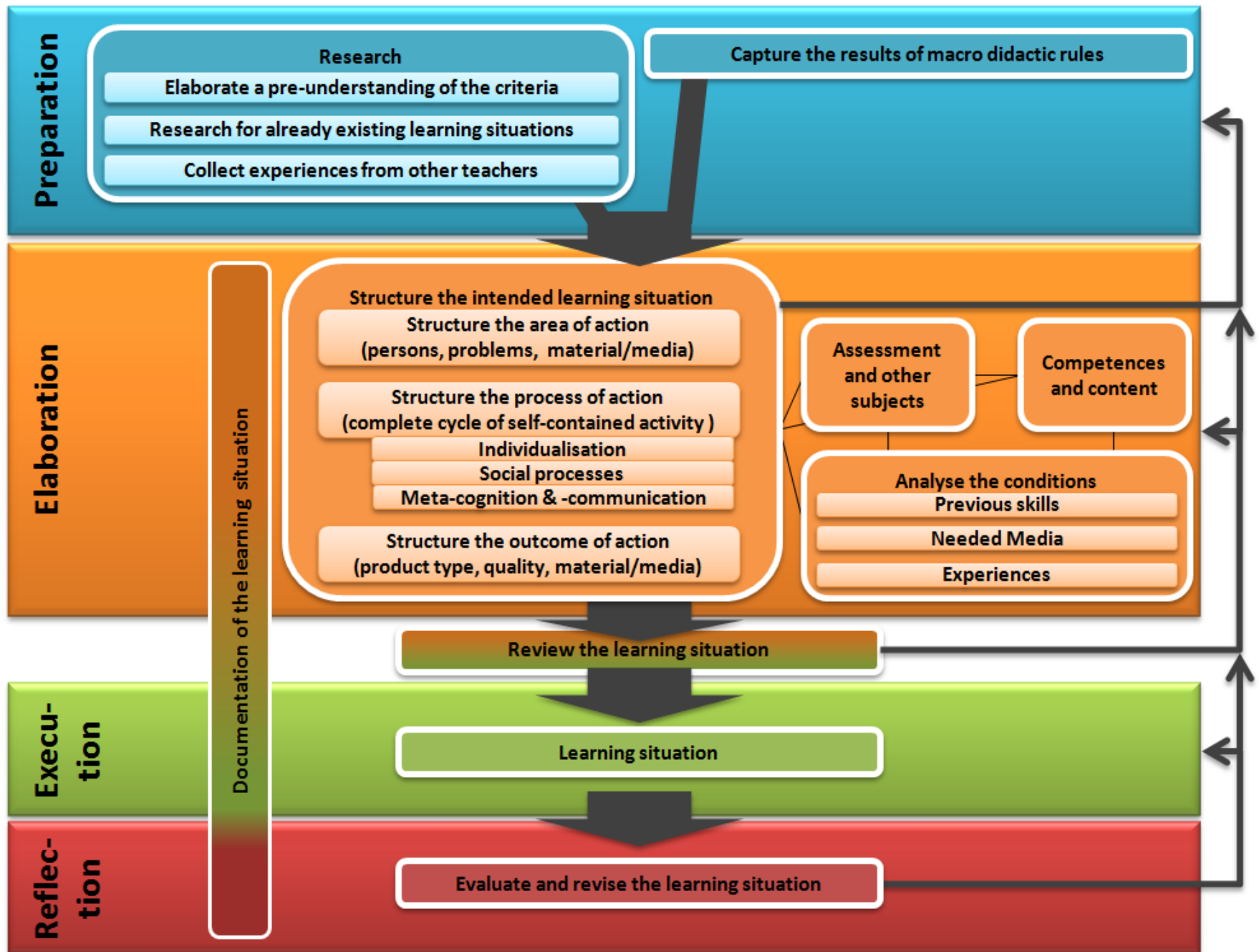
How the Guideline was Developed



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Guideline based on the Situation Principle



A Guideline for Designing Learning Situations in IT/CS

Step one: Preparation

Preparation

Research

Elaborate a pre-understanding of the criteria

Research for already existing learning situations

Collect experiences from other teachers

Capture the results of macro didactic rules

“Analysis of existing criteria a Learning Situation should comply with”

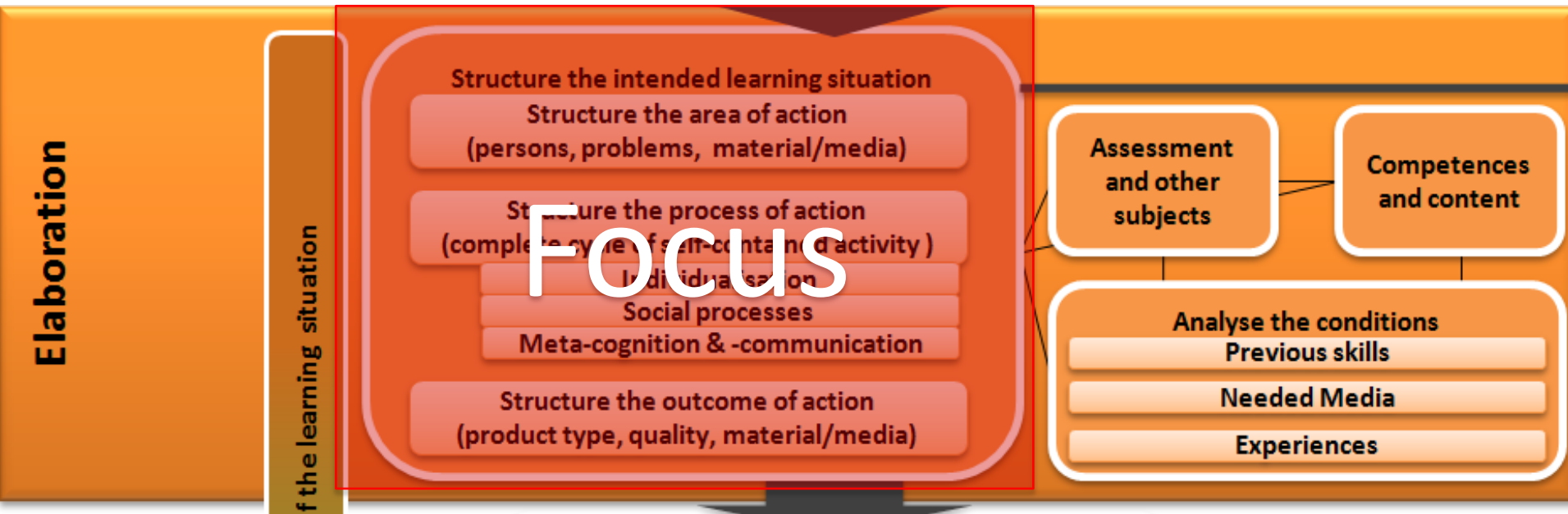
Do not reinvent the wheel!

Take care of cooperation between teachers!

Take care of didactic agreements between all teachers!

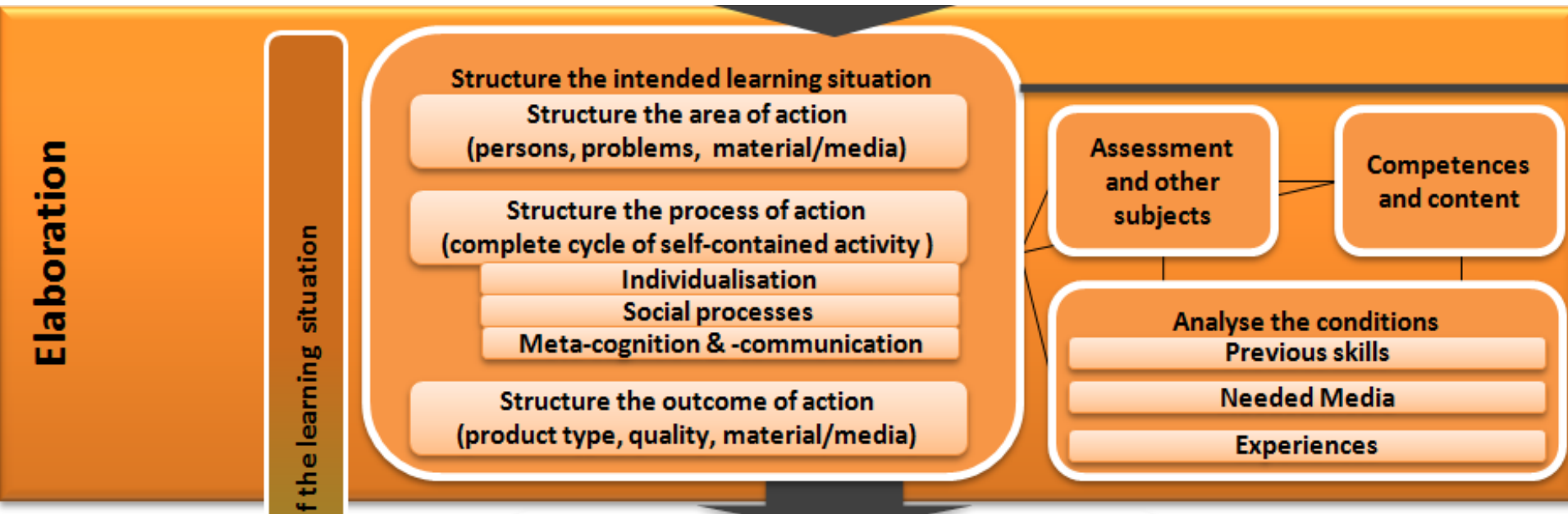
A Guideline for Designing Learning Situations in IT/CS

Step two: Elaboration



A Guideline for Designing Learning Situations in IT/CS

Step two: Elaboration



Develop complete *action model of self-contained activity*:
Orientation, **I**nformation, **S**trategy, **E**xecution and **R**eflection

Each change in one aspect will probably be followed by changes in other aspects!

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Between step two and three: Review the Learning Situation



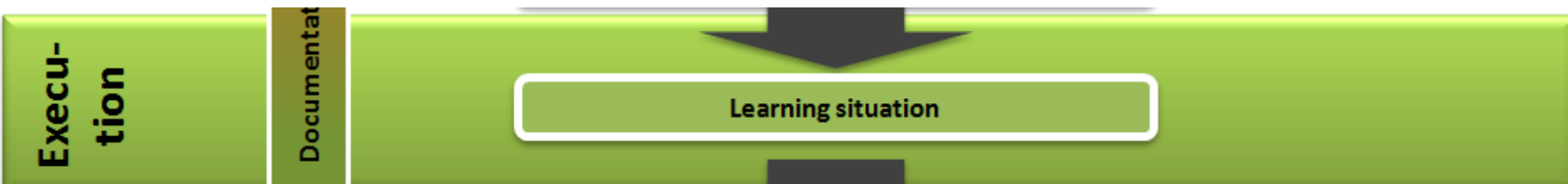
Review the learning situation

Main Questions:

- “Does the Learning Situation match to the criteria?”
- “Does it fit to the curriculum?”
- “Is it suitable for the target group?”

A Guideline for Designing Learning Situations in IT/CS

Step three: Execution



The Learning Situation can now be applied in class

The area of action and the given problem have to be introduced to the students

A Guideline for Designing Learning Situations in IT/CS

Step four: Reflection

Reflec-
tion

Evaluate and revise the learning situation

Students
involved

Teachers duty

During step two to three: Documentation of the learning situation

Documentation of the learning situation

Essential basis for:

- Multiple usage of the learning situation
- Sharing the learning situation with other teachers
- Evaluation and further development

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Evaluation of the Guideline

- Evaluation of usability by developing an exemplary learning situation
 - Learning field: “*Application development and programming*”
 - Title: “*A marketing game: Developing a playful way of marketing in Java*”



- Results:
 - The learning situation could be designed in a structured and clear way.
 - Actual steps: Usage of the guideline to develop further learning situations
 - The designed learning situation was suitable for the target group and can easily adapted for other classes



Thank you for your attention!

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