



Universität St.Gallen

Institut für Wirtschaftspädagogik

Pedagogical Pattern in Sustainability Education – A promising Approach?

SFDN conference 2023 – scholarly discussion

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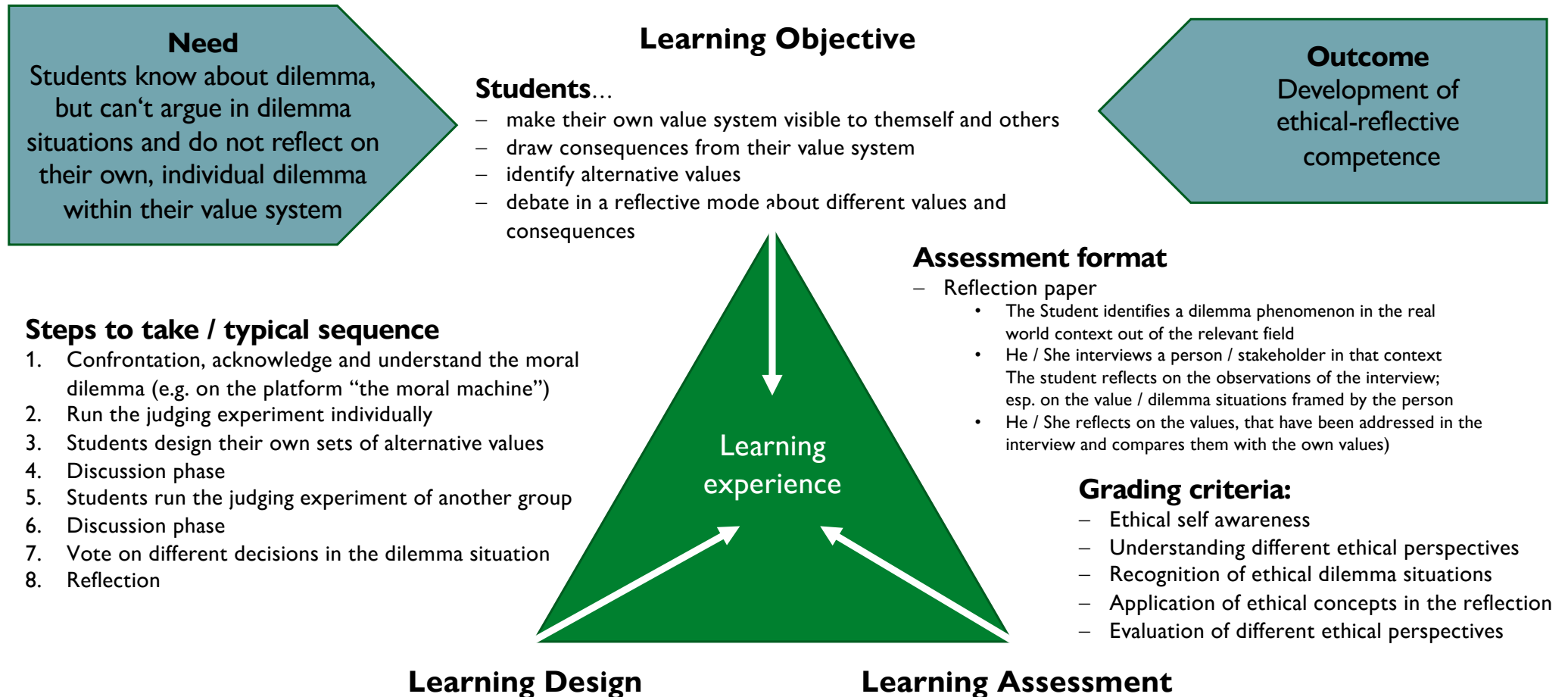


Agenda

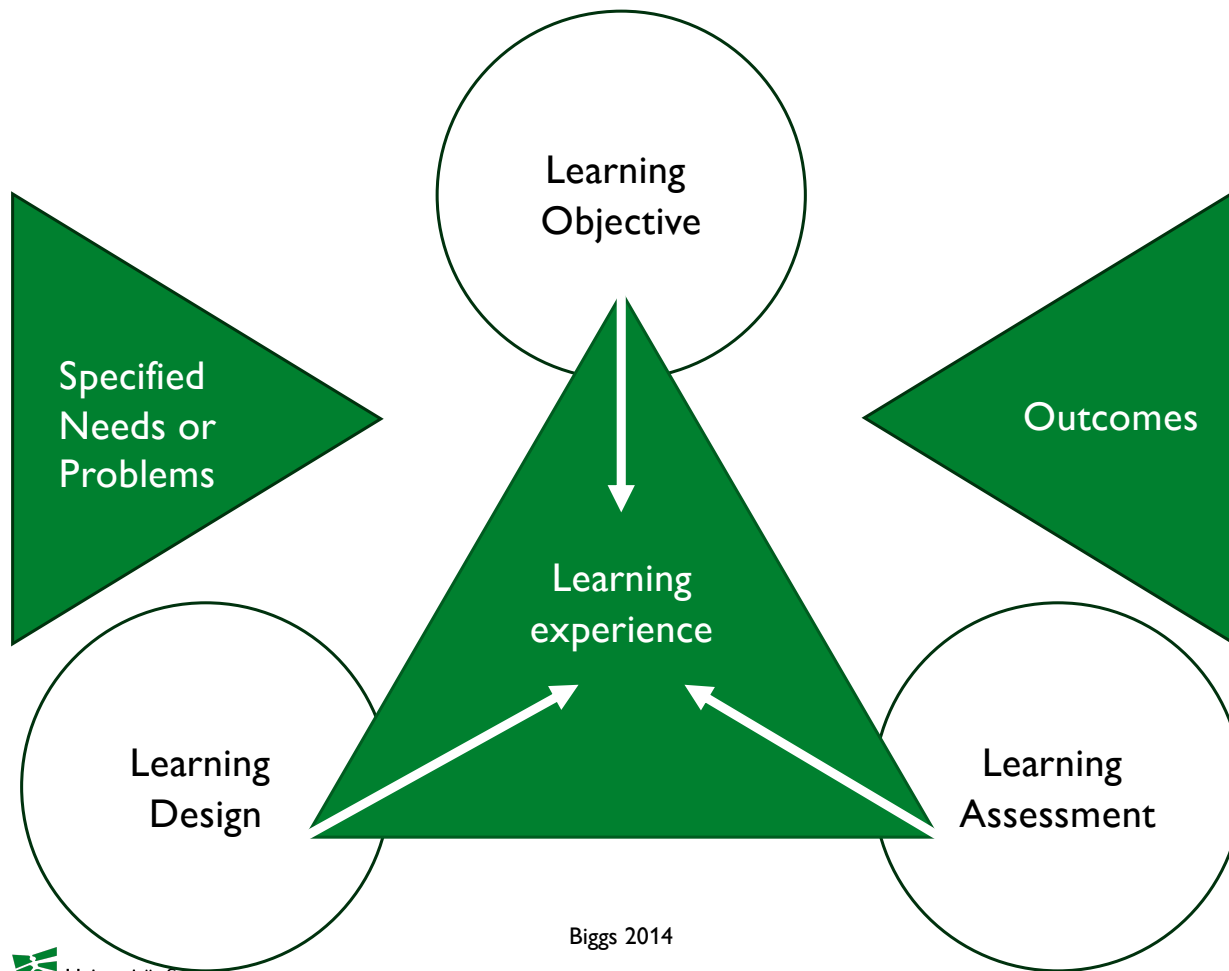
1. Example of a Pedagogical Pattern
2. About the Project
3. Pedagogical Patterns in SE
 - needs and learning objectives
 - pedagogical methodologies
 - assessment and outcome
4. Outlook & Discussion



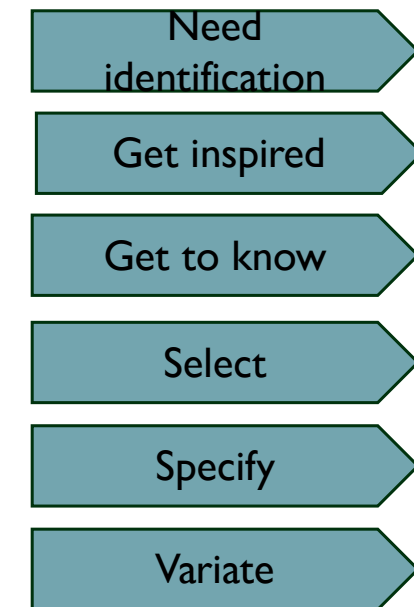
1.1 An Example – A pedagogical pattern in sustainability education



1.2 Basic Concept of pedagogical patterns in SE-HE



How to work with pedagogical patterns



2. About the context of the DBR-Project

Research Project:

Center for Research and Development
in Higher Education

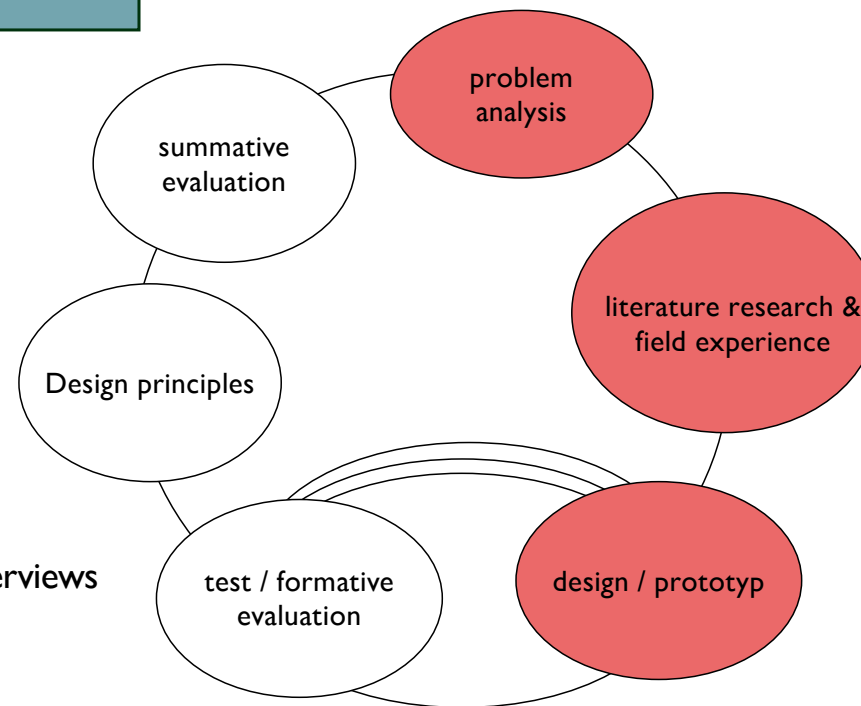
Conceptualizing Sustainability
Education in HE (SE-HE)

Literature research:

- Approaches in SE
- Learning objectives in SE
- Pedagogical Methods in SE
- Assessment approaches in SE
- Examples
- Platforms with material

Qualitative analysis of field
experiences (gained through Interviews
and Document Analysis)

Design of the prototype



Context:

Initiative at the University
St. Gallen, Switzerland

Adapted strategic mission
of the university

Curriculum Reforms /
additional certificates which aim to
integrate sustainability competences

Faculty training and counselling in
Sustainability Education

Workshops for teaching faculty

Teaching Analysis Polls in courses
with explicit learning objectives in
regard to sustainability



3. Educational Patterns / Pedagogical Patterns



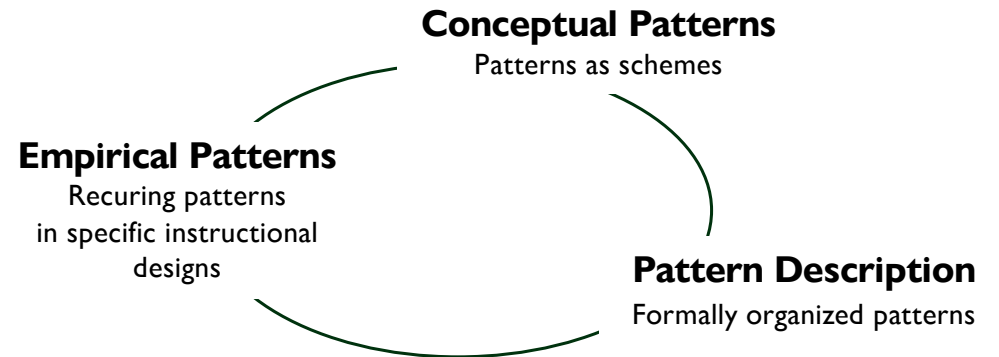
Ch. Alexander

Design Patterns in Architecture
«A Pattern Language» 1977
“Each pattern represents our current best guess as to what arrangement of the environment will work to solve the problem presented.”
(Alexander 1977, p.xv)



H. Aebli – F. Oser

Hans Aebli, «12 Grundformen des Lehrens» 1983
Fritz Oser, «Basismodelle des Unterrichts» (Oser & Patry 1990)
Basic instructional designs (choreographies) for 12 different classes of learning objectives (operations)



Kohls & Wedekind 2008

Based on best practice examples the recurring components of successful instructional designs will be analysed with the aim to use proven methods for the design of new didactic scenarios.

Pedagogical Pattern Project

“In essence a pattern solves a problem. This problem should be one that recurs in different contexts. ... These problems do recur in slightly different form each time.”

3.1 Needs & Problems – Learning Objectives – Outcomes

“I want my students to engage more in debates”

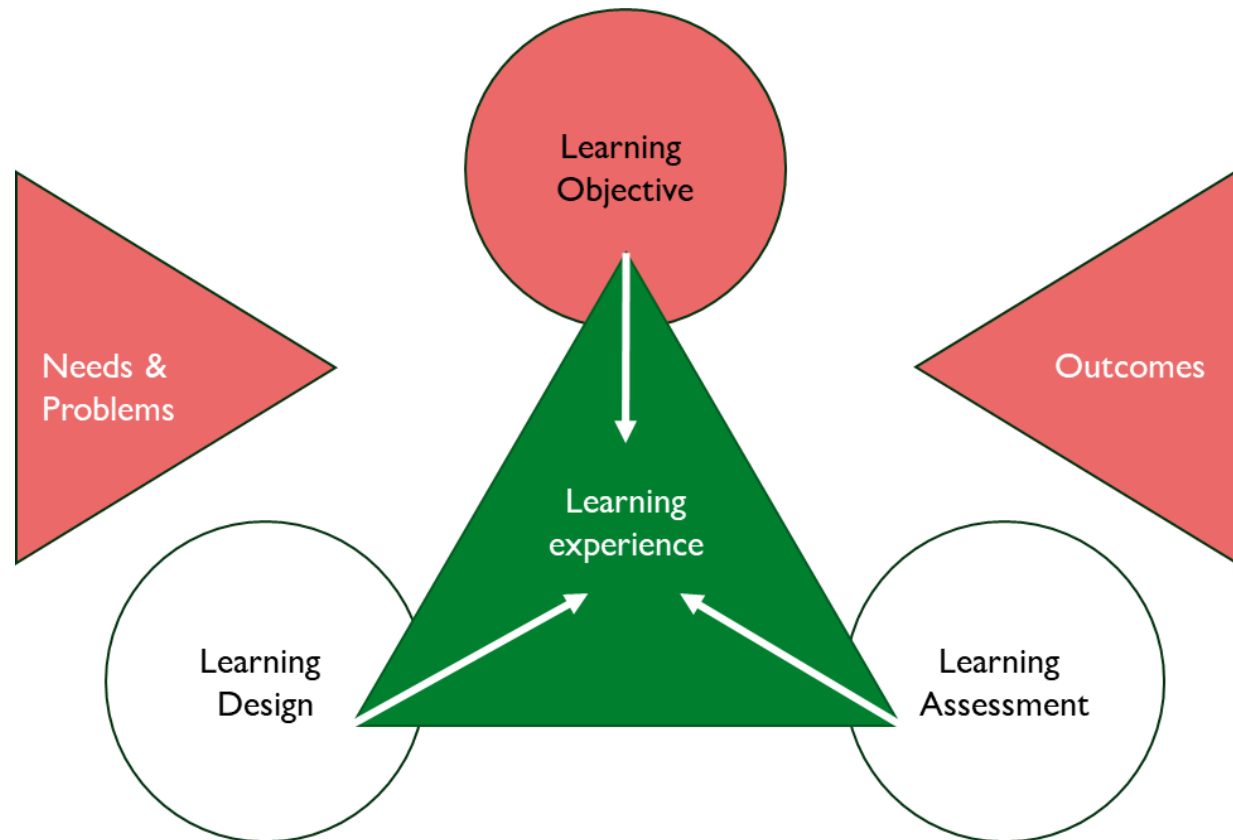
“My students do not reflect deeply enough”

“They are not used to critical thinking anymore”

“There is more need for value discussion”

“There is a need to develop changes in the mindset of the students”

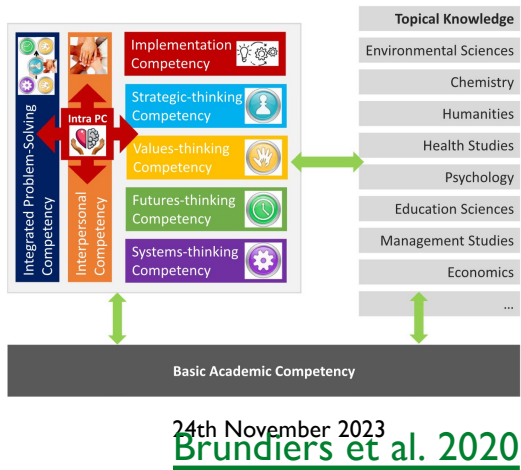
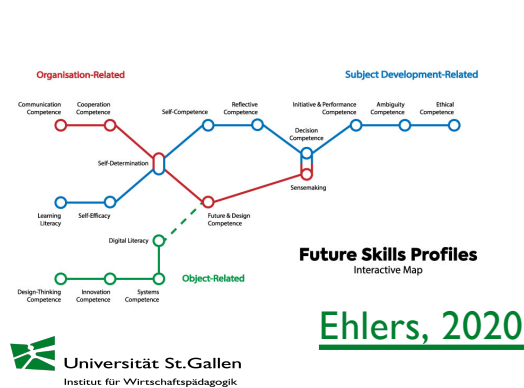
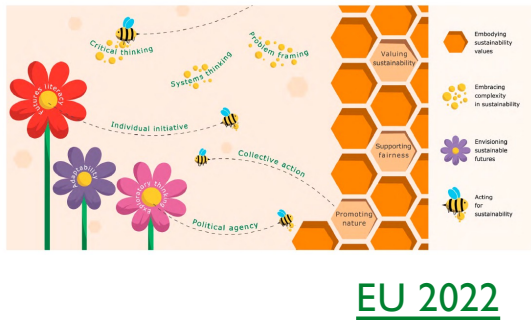
“We do much about knowing and doing, what about the being”



Biggs 2014

24th November 2023

3.1 Sources for Competences as Outcome



3.1 Needs & Problem Classification

Value	Fostering working with ambivalence
	Fostering value discussions and engagement with embedded values
Complexity	Fostering problem orientation
	Fostering multi perceptiveness
	Fostering real case confrontation
	Fostering temporal development
	Fostering research and design orientation
Relating with others Inter-Action (social)	Fostering interdisciplinary argumentation
	Fostering debate
	Fostering interconnectedness
	Fostering civic engagement
Relating with self Intra-action (self)	Fostering self reflection
	Fostering self exploration & monitoring & regulation
	Fostering self transformation

3.2 Identifying “workable” or “recommended” learning designs



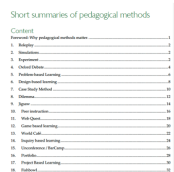
Materials from NGOs



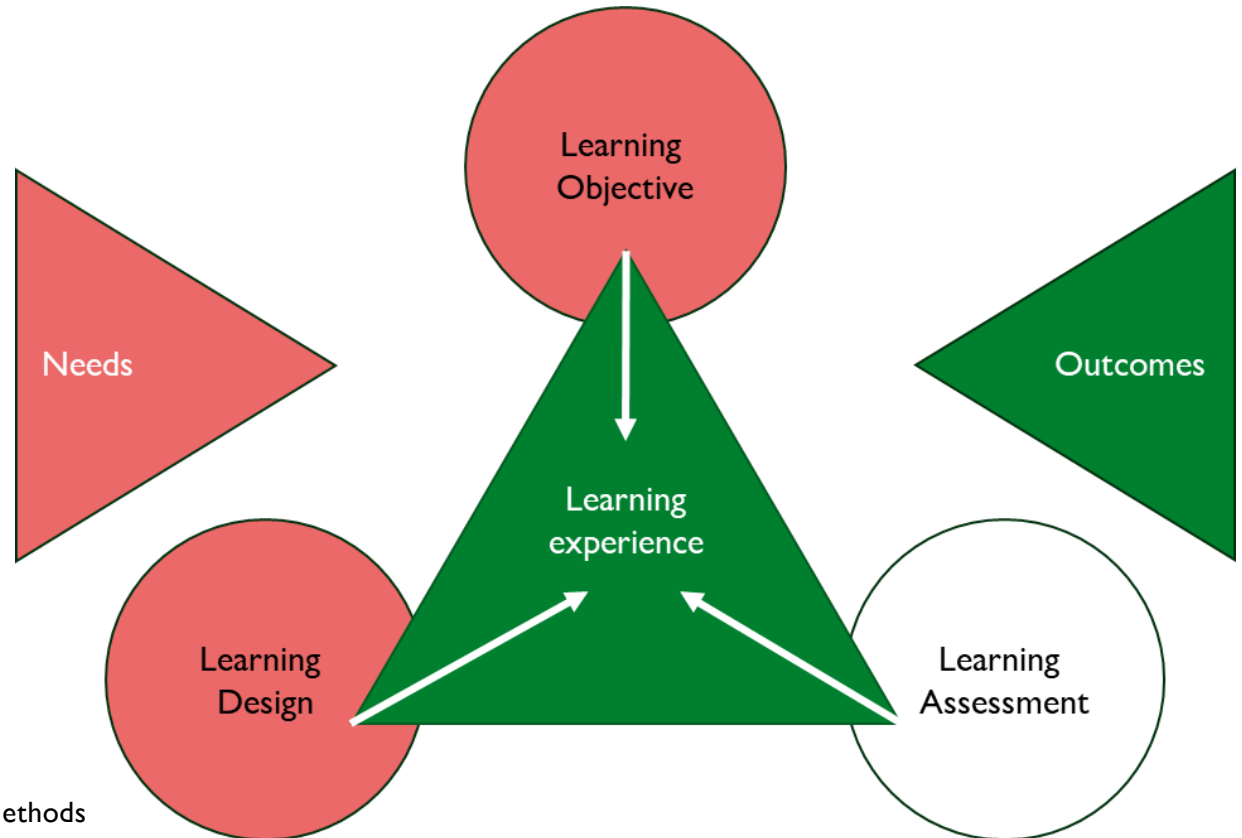
Studies / Reports



Policy Papers



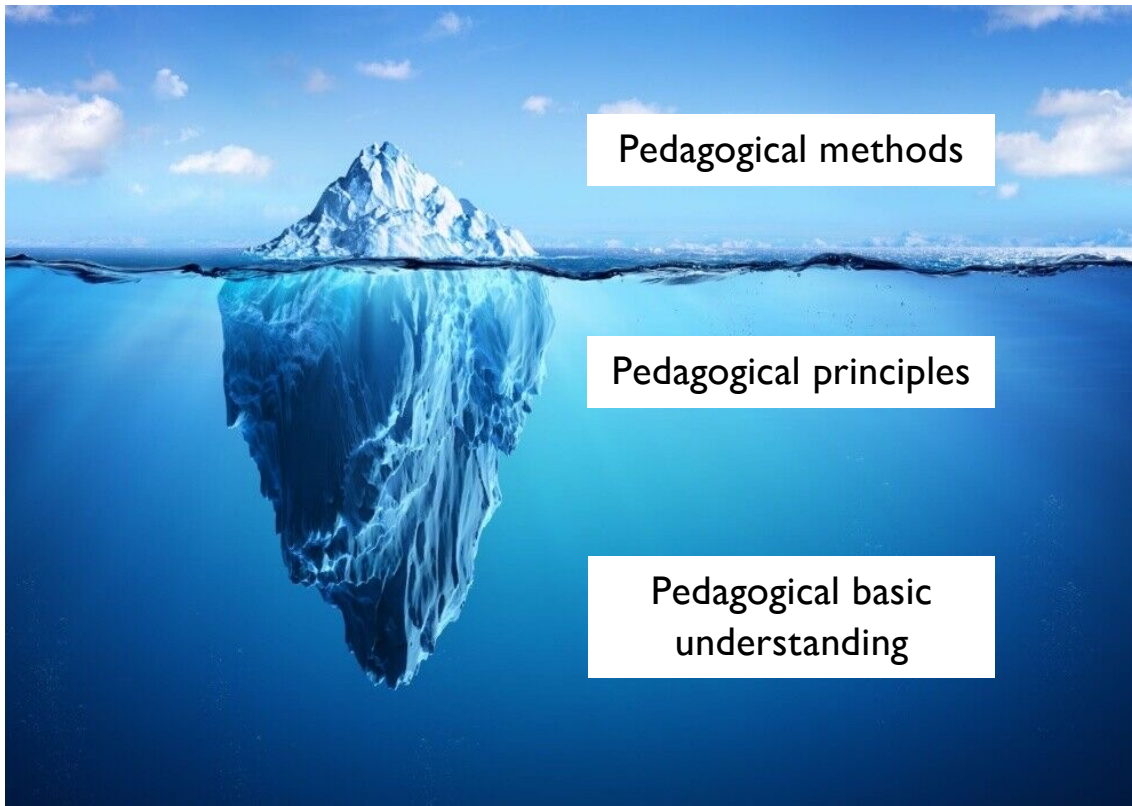
Collections / Platforms of Pedagogical Methods



Biggs 2014

24th November 2023

3.2 Pedagogical methodology: Difficulty to find the right level of abstraction



Examples of learning designs

7-step-PBL, case studies, enquiry-circles, roleplay, simulation, project learning, challenged based cycle, design thinking, oxford debate, dilemma method, ...

problem-based learning,
enquiry-based learning,
design-based learning,
research-based learning,
case-based learning,
game-based learning,
moral education, ...

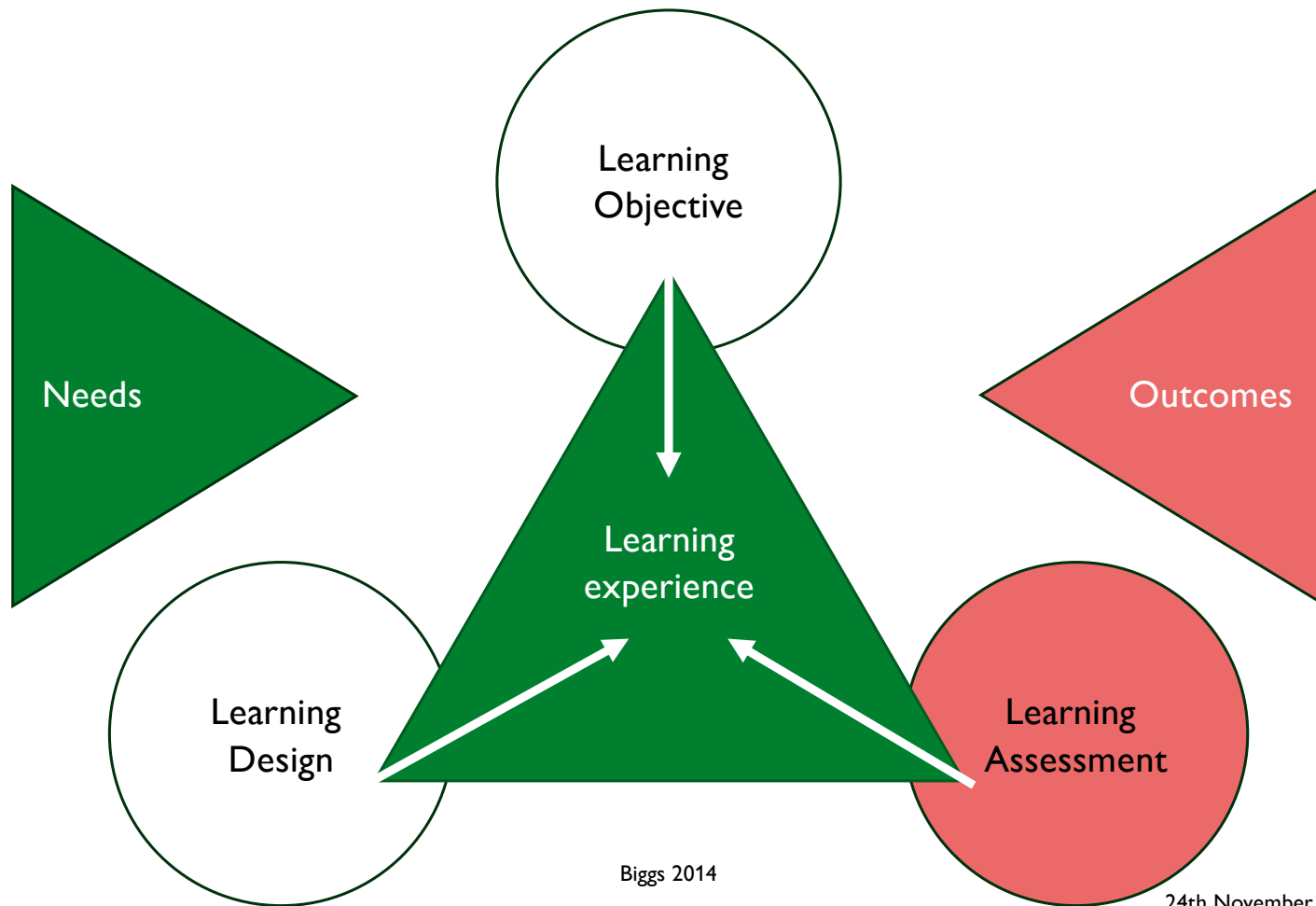
experience-based learning

situated learning

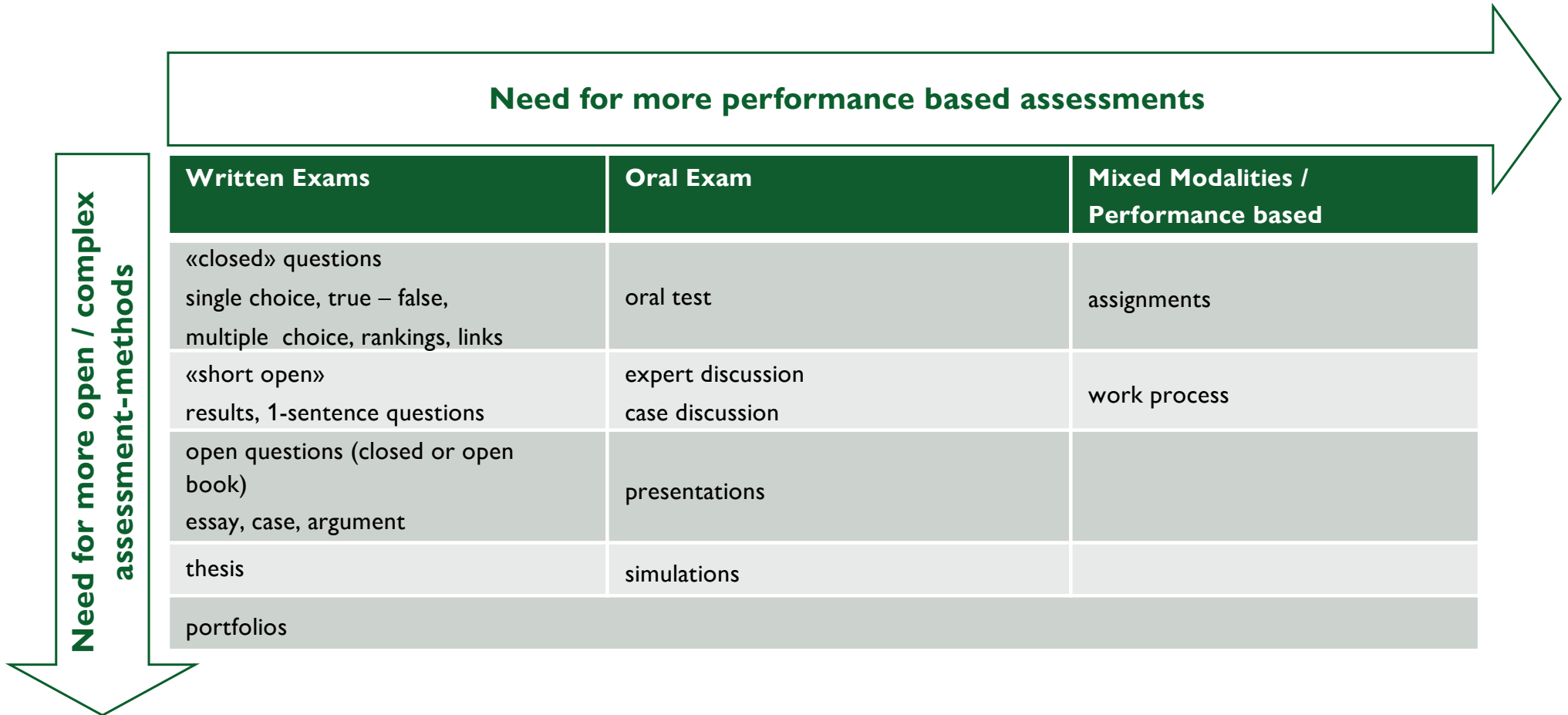
3.2 Needs & Problem Classification linked to Pedagogical Methods

Value	Fostering working with ambivalence	moral dilemma method
	Fostering value discussions and engagement with embedded values	dilemma experiments, shadowing
Complexity	Fostering problem orientation	PBL, 7-Step, ...
	Fostering multi perceptiveness	Roleplay, shadowing,
	Fostering real case confrontation	case study, project-based learning,
	Fostering temporal development	scenario techniques, simulations
	Fostering research and design orientation	Research-based learning, design-based learning
Inter-action (with others)	Fostering interdisciplinary argumentation	Enquiry-based learning,
	Fostering debate	Oxford debate, stakeholder conference
	Fostering interconnectedness	Collective decision experiments
	Fostering civic engagement	Service-based learning
Intra-action (self)	Fostering self reflection	Reflection portfolio
	Fostering self exploration & monitoring & regulation	Value prioritising, Awareness-Exercises
	Fostering self transformation	Journaling, contract with one self

3.3 Assessment & Outcome



3.3 Assessment & Outcome



Learning Outcome

CRITICAL THINKING VALUE RUBRIC

for more information, please contact value@aacu.org

Definition

Definition

Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark. (cell one) level performance

Performance Levels

Levels (4,3,2,1,0)	Capstone	Milestones			Benchmark
	4	3	2	1	
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.	
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.	
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.	
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis, hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis, hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.	
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.	

Qualitative Variation

Dimensions

Performance Descriptors

3.3 Assessment in fostering sustainability – making use of catalogues and developing others

Rubric examples for Higher Education AACU – Value Rubric

Civic engagement

Creative thinking

Critical thinking

Ethical reasoning

Global learning

Information literacy

Inquiry and analysis

Integrative learning

Intercultural knowledge and competence

Life long learning

Oral communication

Problem solving

Quantitative Literacy

Reading

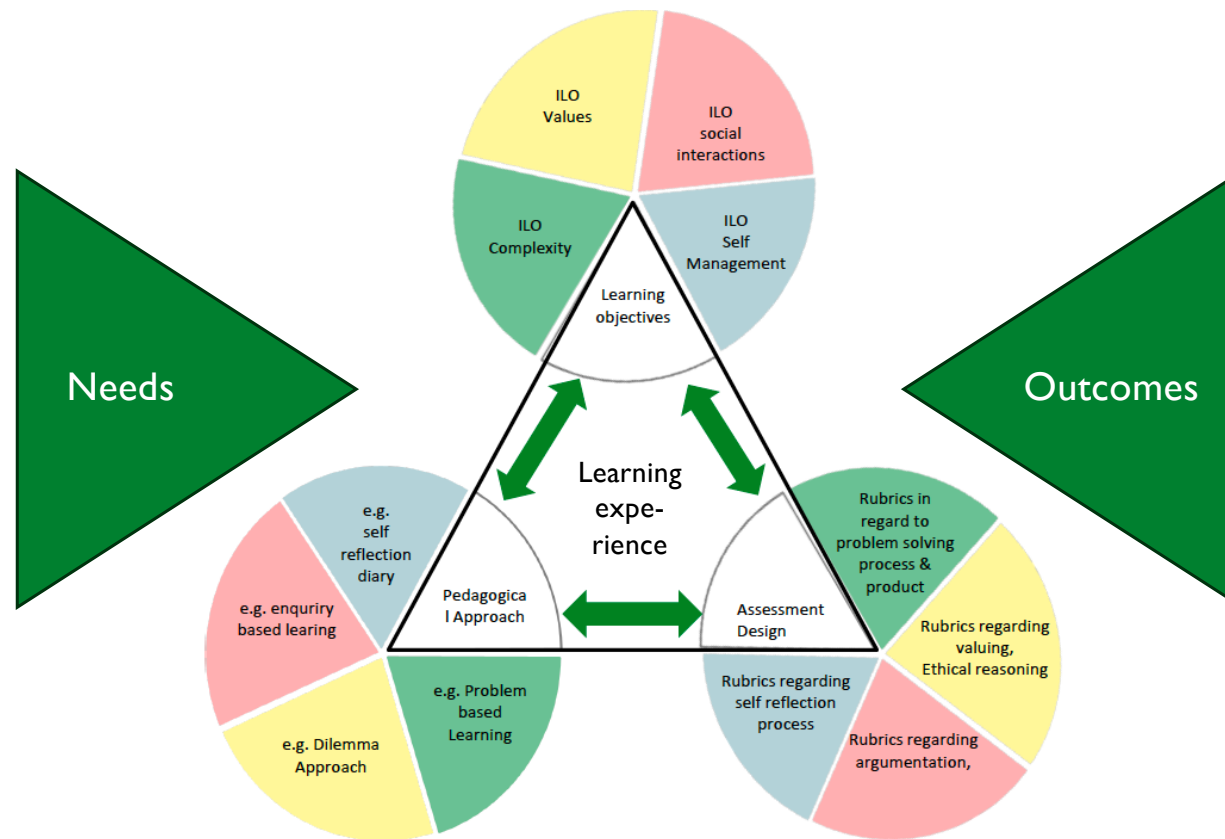
Teamwork

Written communication

Developing rubrics for:

- Self reflection
- Ethical-reflective thinking
-

4. Outlook: Pedagogical Pattern Navigator – collection and different angles



Scholarly Discussion

Round I: Opportunities and Risks within the field of SE-HE

Round II: Benefits and Limitations of the Pedagogical Pattern Approach in SE-HE

Round III: Prerequisites and Added Value



4. Discussion: Development / Trends in the Field of Sustainability Education in HE

**Opportunities
within the
field of Sustainability
Education in HE**

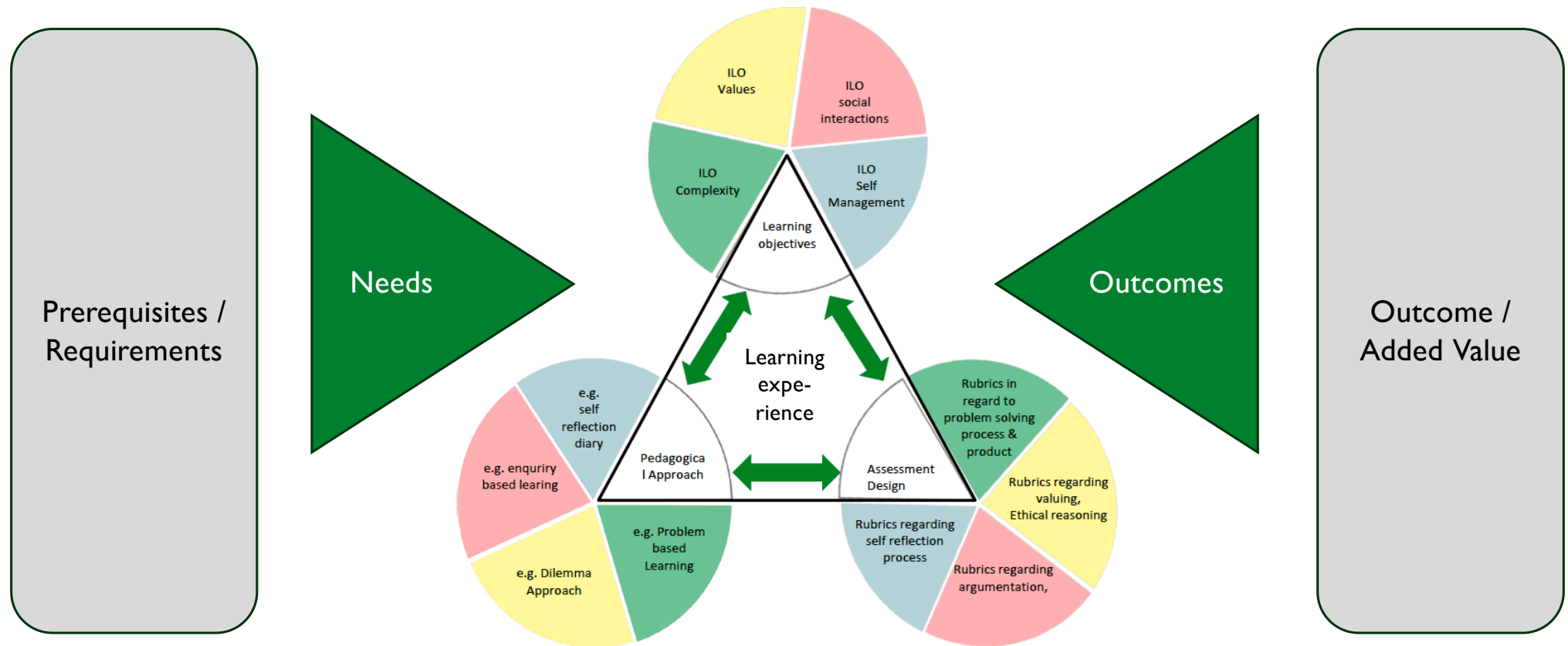
**Risks
within the field of
Sustainability
Education in HE**

4. Discussion: Potentials and Limitations for the Pedagogical Pattern Approach in Sustainability Education in HE?

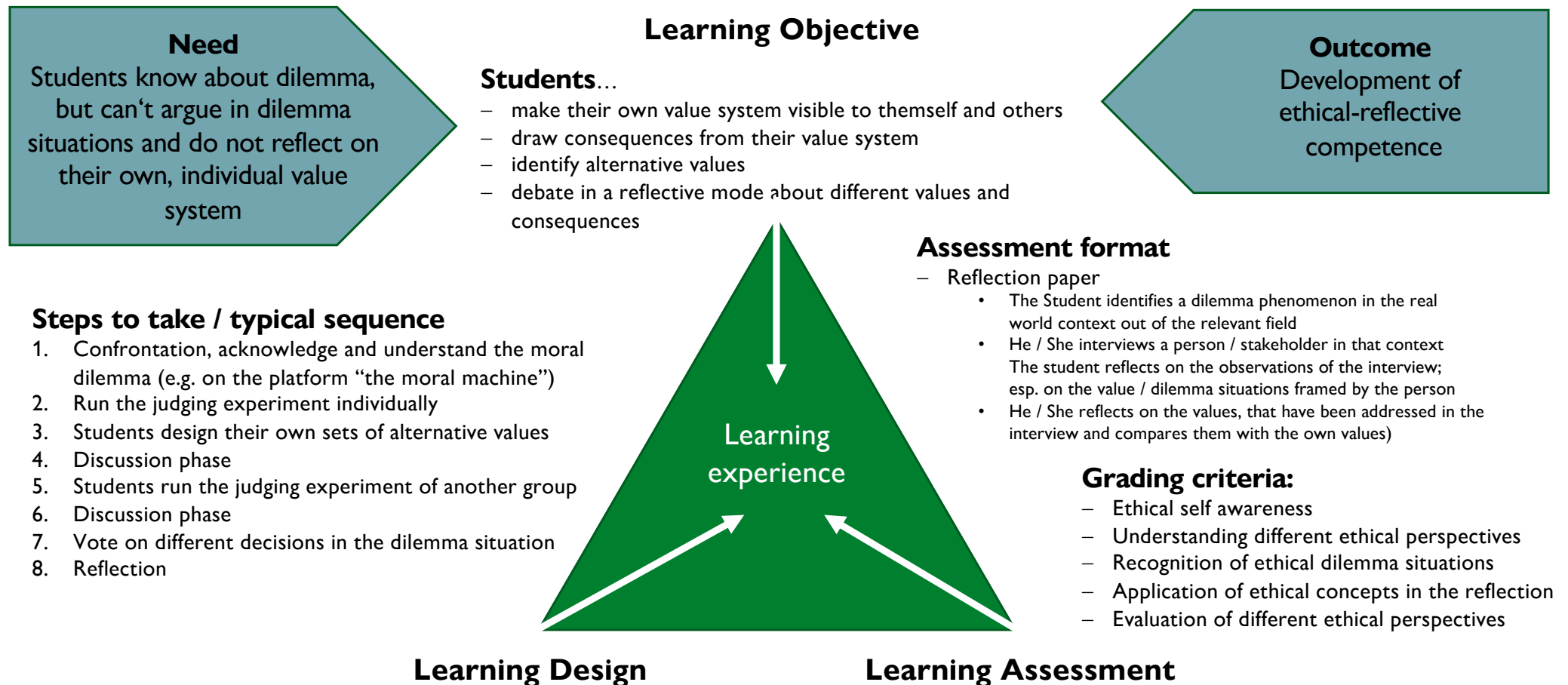
**Potential Benefits
of the Pedagogical
Pattern Approach in
SE-HE**

**Limitations
of the Pedagogical
Pattern Approach in
SE-HE**

4. Discussion: Pre-Requisite and Added Value of Pedagogical Pattern Approach in SE-HE



4. Outlook: Pedagogical pattern in sustainability education



Literature

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Thank you very much for your Attention

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