

Pedagogical patterns in Seamless Learning

“Insights into a Seamless learning ecosystem”

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Background of Seamless learning

- Ideas to support context-crossing learning and integrate learning experiences (co-)exist for more than 30 years (e.g. Kuh, 1996, Hofstein & Rosenfeld 1996)
- Ideas raised within various disciplines and educational levels – broad understanding of contexts (Wong, 2015 / Wong et al. 2019)
- Rusman (2019) highlights, that learning in different and across different contexts has the potential to enhance learning overall

“Seamless learning is when a person experiences a continuity of learning, and consciously bridges the multifaceted learning efforts, across a combination of locations, times, technologies or social settings.” Sharples et al. (2012: 24)

- But:
Durak & Cancaya (2018): lack of conceptually founded design principles to design seamless learning environments

From Seamless to Seamaware Learning an Hochschulen



Versch. Sozialstrukturen



Verschiedene Modalitäten
(digital – physische Präsenz)



Verschiedene Arten
Wissen zu strukturieren

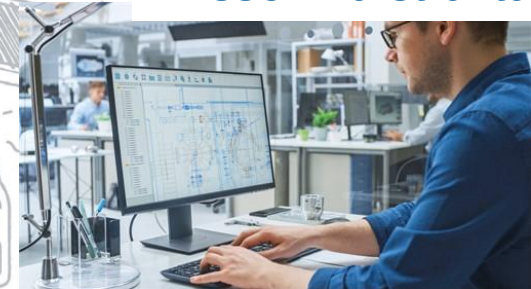
Different timing

Verschiedene
didaktische Ansätze



Formelles –
Informelles Lernen

Verschiedene Lernorte



Verschiedene
Lernmaterialien

Verschiedene
Lernwerkzeuge

seamless
learning



Internationale
Bodensee
Hochschule

Labs

Educational / pedagogical pattern

- Bergin (2001): “Pedagogical patterns try to capture expert knowledge of the practice of teaching. [...] The intent [of pedagogical patterns] is to capture the essence of the practice in a compact form that can be easily communicated to those who need the knowledge.”
- Kohls (2017): Good pedagogical patterns show design decisions and implementation

Pedagogical pattern

They are specific and general at the same time

Specific to an
educational challenge



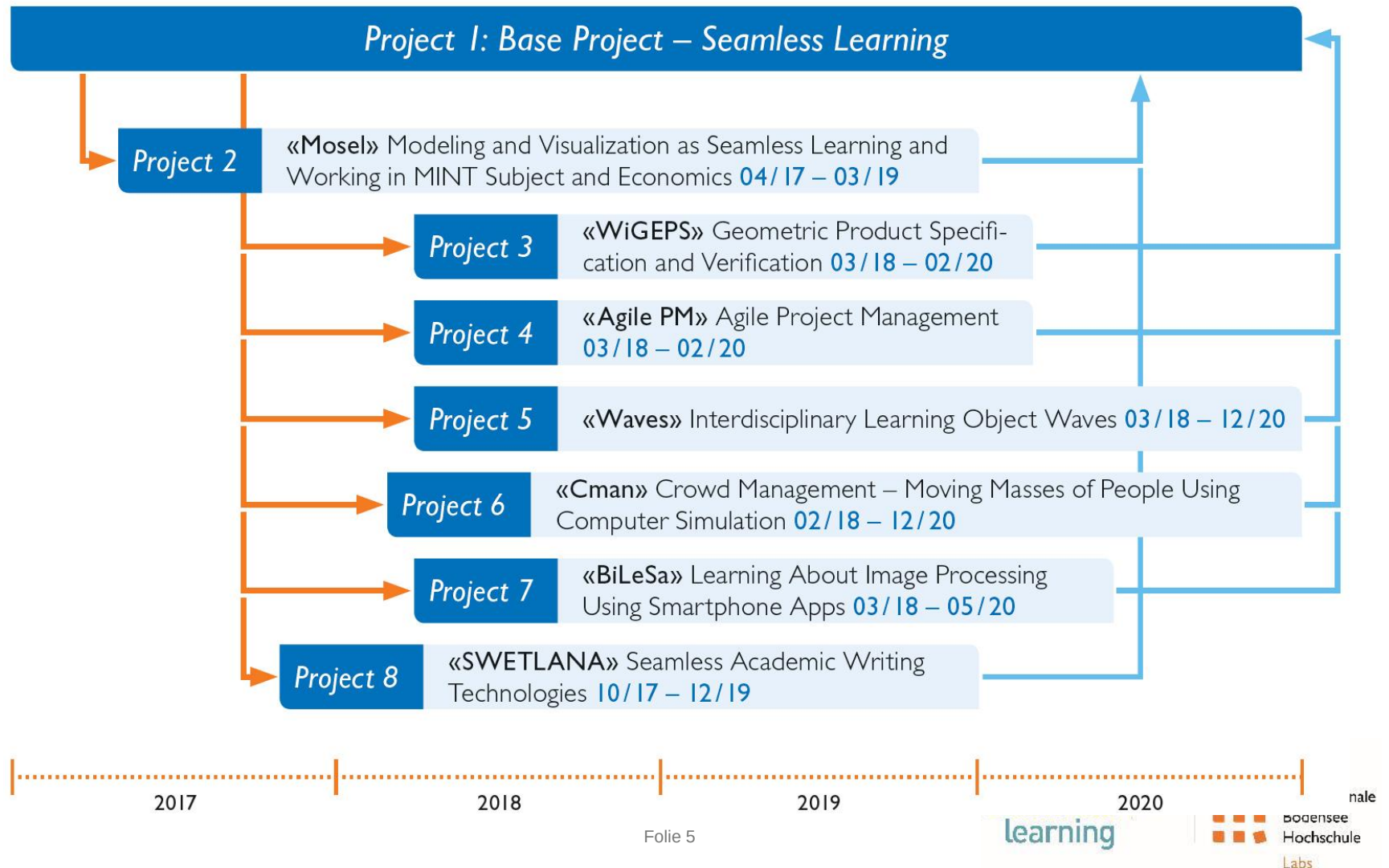
General in the sense of
design principles,

Show problem



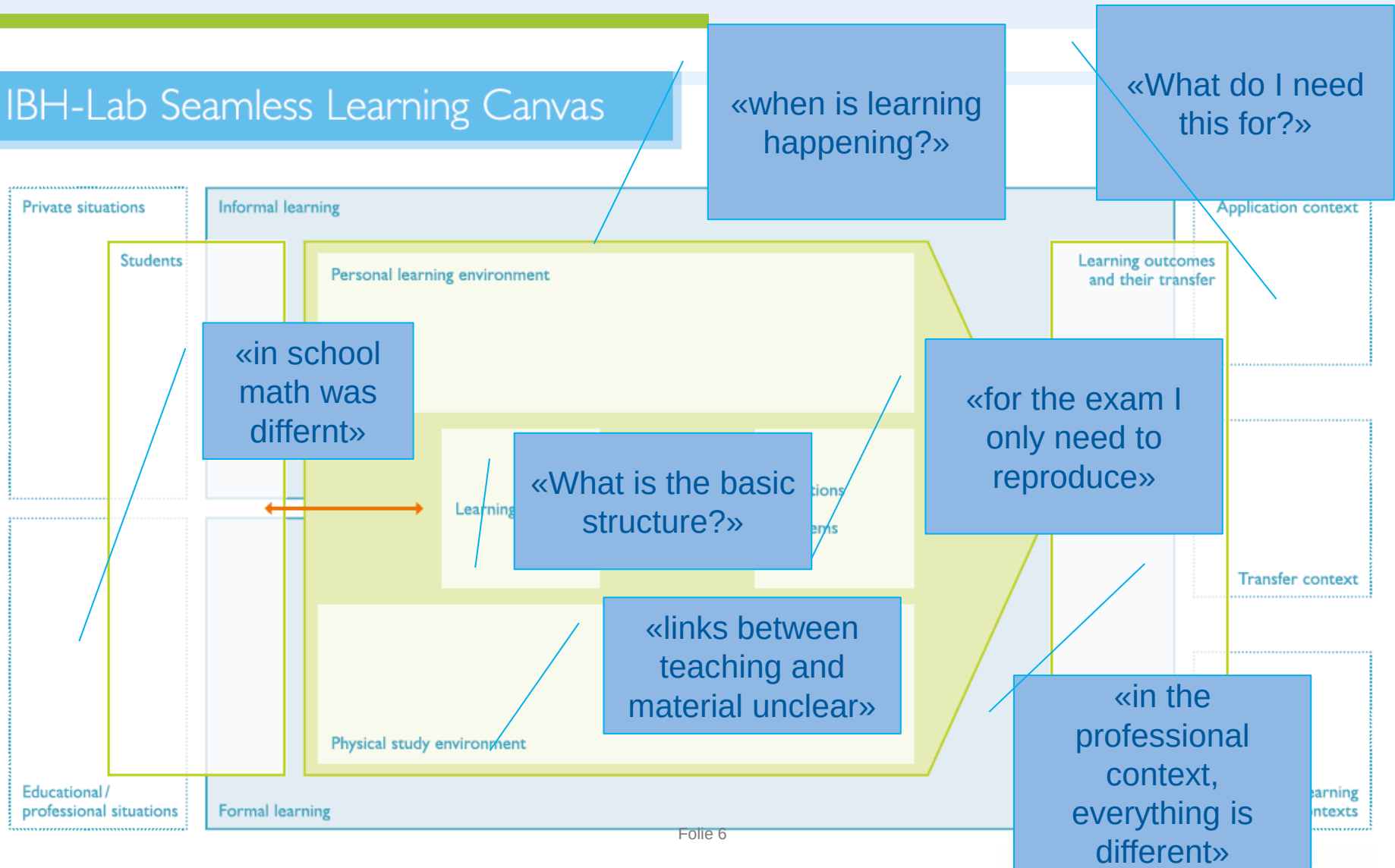
and solution

The empirical field: Projects within the Seamless Learning Lab



Pedagogical Challenge Canvas

IBH-Lab Seamless Learning Canvas



Didactical Design Principles

Starting point: «High Impact Pedagogies»

- problem-based learning,
- experience-based learning,
- enquiry-based learning,
- situated learning,
- peer learning,
- game-based learning,
- design-based learning,
- project-based learning,
- self-regulated learning,
- ...

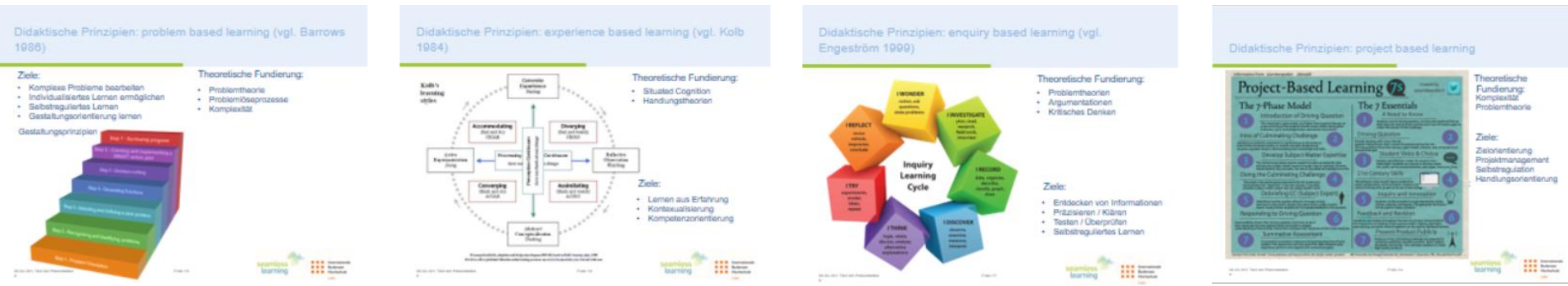
 Higher Education
Academy | TRANSFORMING TEACHING
INSPIRING LEARNING



 seamless
learning

 Internationale
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Labs

From Pedagogical Approaches to Didactical Design Principles



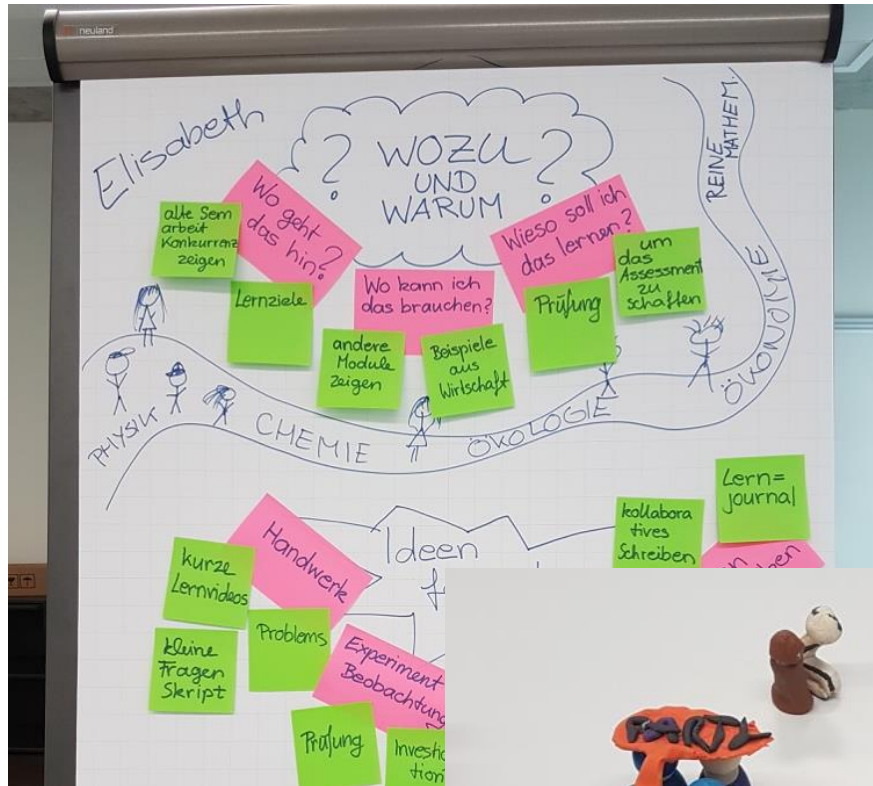
Pedagogical Approaches

Intentions

Conceptual foundation

Design principles

Seamless Learning Design Prototypes



Didactical Design Canvas for Seamless Learning

Didactical Canvas IBH-Lab Seamless Learning

Course: Term:

Target Group 	Seamless Learning Dimensions / Gaps 	Evaluation Criteria 
Specifics of the target group	Didactical Principle	Evaluation criteria
	Phases in the Learning Process	
Learning Objectives 	Didactical Designs / Interventions 	Assessments 
	Tools 	assessments
		Specific intervention design
Learning objectives	Technology / tools	

Results: Dominante Pedagogical Challenges

- Seam of **knowledge synthesis** is addressed as prior challenge in the majority of the seamless learning concepts in higher education

Disciplin

Math

Physics

Technical
norms

Fields of application

Image editing
Crowd management

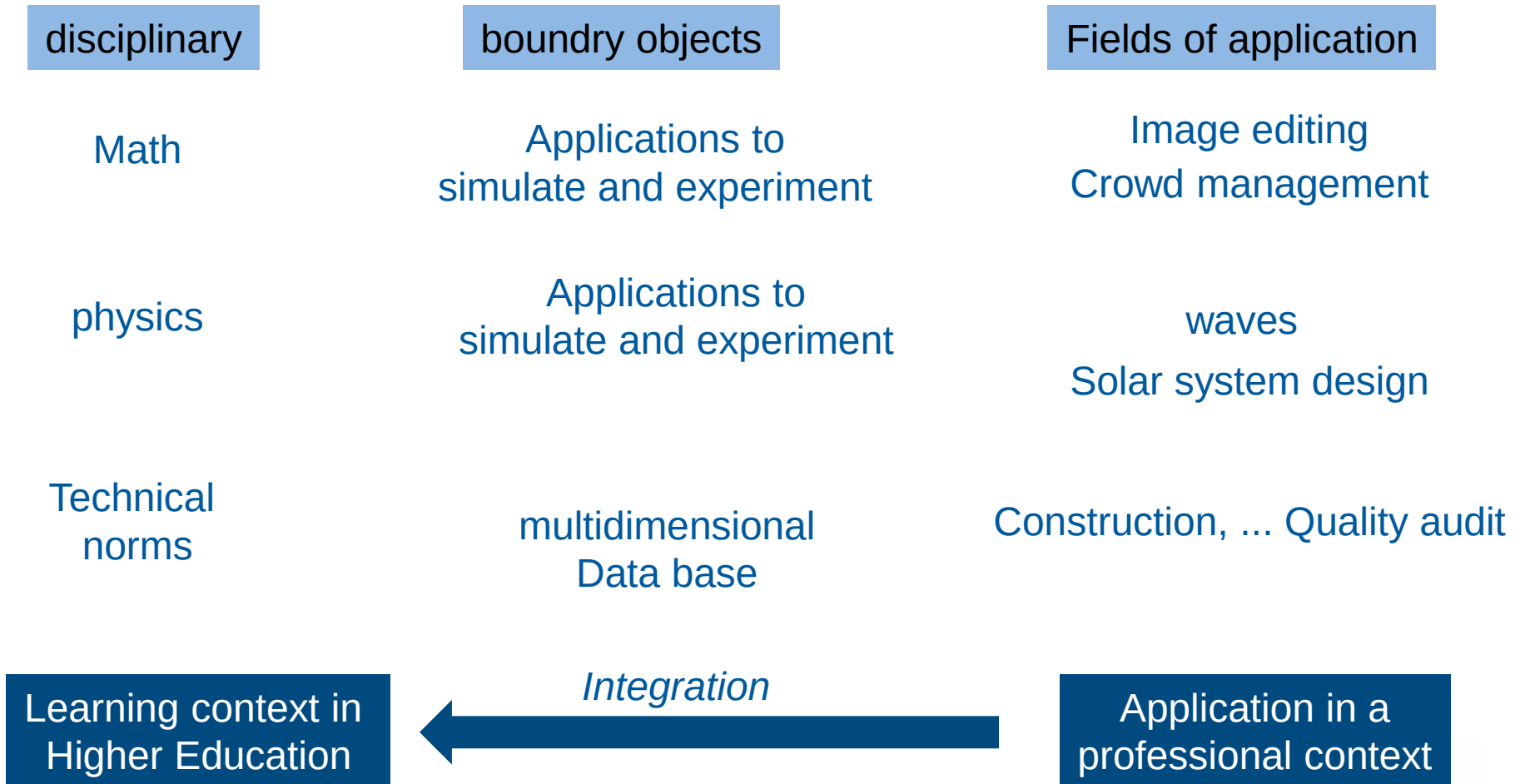
waves
Solar system design

Construction, ... Quality audit

Results II: Design Principles

- Pedagogical approaches and design principles are not used in their „pure form“
- Mix of design principles are used
- Aspects from:
 - experience-based learning,
 - problem-based learning and
 - inquiry-based learning are used the most in the design of seamless learning concepts in higher education
- Learning tasks and scaffolding for learners to experiment and reflect on different abstraction levels of knowledge – enhancing knowledge synthesis

Results III: Introduction of Boundry Objects



(Methodical) challenges and limitations

Regarding Seamless Learning

- Narrow approach towards seamless / seamaware learning
- Not making use of the full potential

Regarding the project structure:

- Self selection of the faculty
- Our double Role as consultants and researchers: Impact of work with different canvas, consultations in the different steps of the workflow
- Involved institutions where mostly University of Applied Sciences and their faculty, dominant form math / physics discipline

Intention to adress also the implicit practical knowledge of faculty / training

- Coding different materials (how to code prototypes?)
- Pre-structuring the design decisions with canvas-work
- Integrating different institutions as partners in the seamless learning concept; while mainly the higher education institutions got the funding

- Thank you very much for your attention and now,
- get cross-contextual with your questions and points for discussion

Literature

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Back-up

Problems behind the Seams

MSL-Dimensionen	Surface	Learning problems underneath
MSL 1: Informal – formal	Different institutional contexts Higher Education – workplace - sparetime	intentional vs. spontaneous learning explicit vs. stealth learning
MSL 2: Personal – social	Different social structures	subjective vs. inter-subjective knowledge Implicit vs. explicit Communication feeling vs. expressing
MSL 3 Across location	Bonding to surroundings different feelings of affordance	Prepared Context for learning vs. Usage of Contexts as learning contexts
MSL 4: Across time	Timing Sequencing	Given timetables vs. individual time management Adapting to or design of timeframes
MSL 5: Ubiquitous access to learning resources	Accessibility, Existence	Pre-selected and curated material vs. own evaluation, choice and curation

Probleme hinter den Brüchen

MSL-Dimensionen	Oberfläche	Probleme mit den Brüchen
MSL 6: physical - digital	Different tools and sysetms	Different representations, transformation, syntactic and semantic representation
MSL 7: multiple devices	Existence, accessibility	Pre-selected and introduced tools vs. individual evaluation, choice and usage
MSL 8: multiple learning tasks	flexibility	Vorhersehbare Aufgaben in Variationen vs. Umgang mit Unsicherheit und zukunftsffenen Aufgaben.
MSL 9: knowledge synthesis	Coherence, consistency, comprehensiveness	Learning outcome vs. knowledge construction, Integration, Evaluation and Reflection
MSL 10: multiple pedagogical models	Choice of effective approach	Adaptation to given or choice of and design of individual mode