

# Best of both worlds?

## Erfahrungen hybride Lehre im Projekt PPRE-digital

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AG Energietechnologie Institut für  
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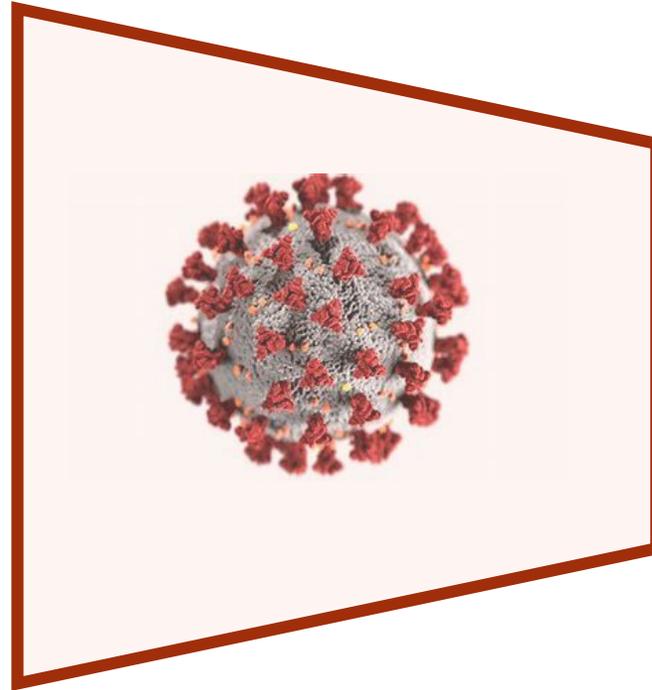
[HSD: Hochschuldidaktik]: Mittagstreffen  
19.09. 2023

# Agenda

- Motivation
- Lehr-Lern-Konzepte
- Evaluationsergebnisse

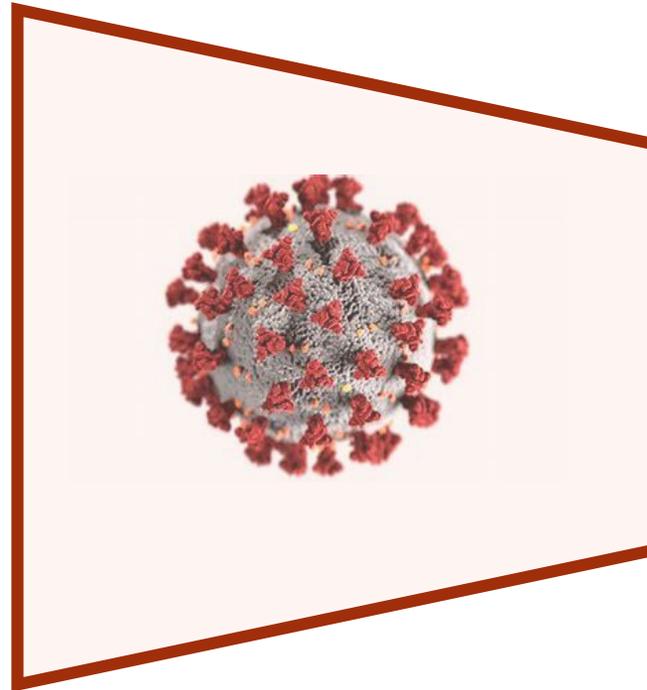
# Motivation

## Was bisher geschah...



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„Emergency remote teaching“  
(Lockee, 2021; Hodges, et al. 2020)

„DIY teaching survival strategies“  
(Leitner 2021 )



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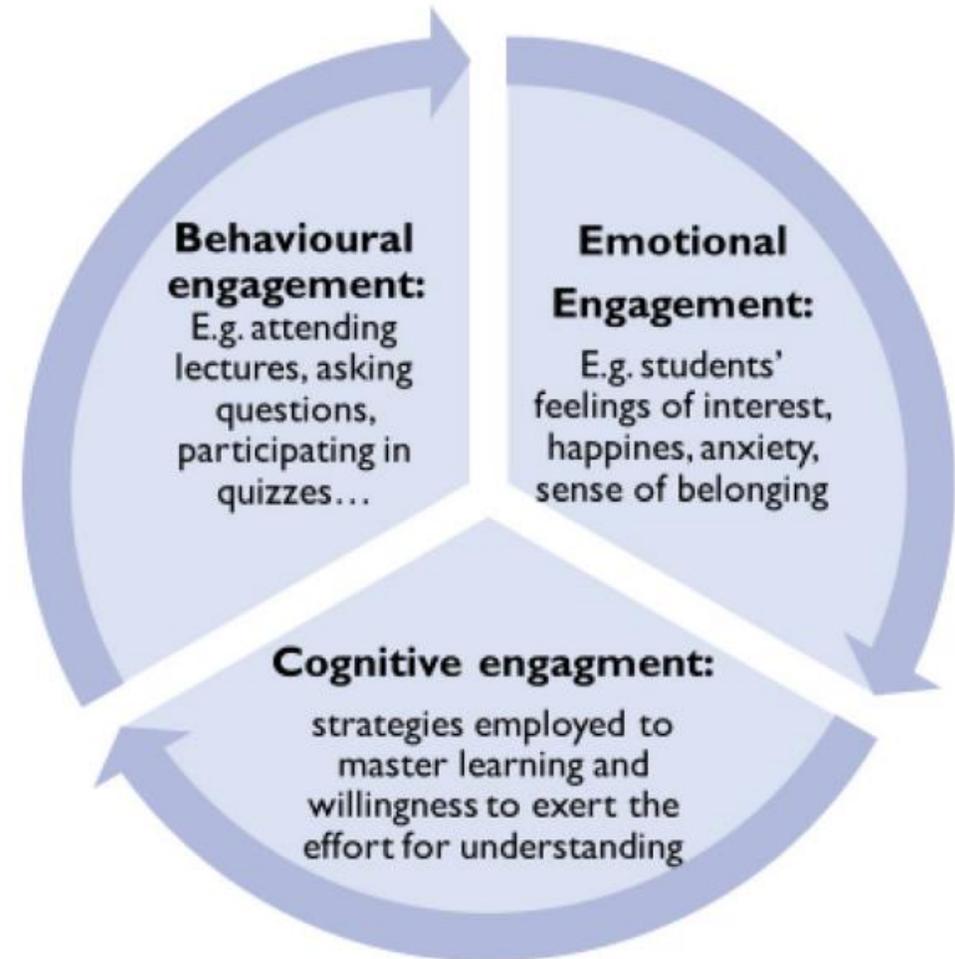
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# Motivation

## Was wir bisher wissen...

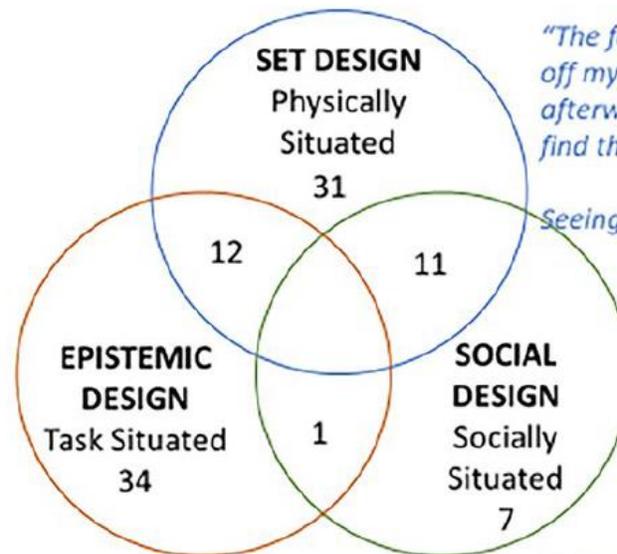
Three component model of engagement  
(Fredricks et al. 2004)



# Motivation

## Was wir bisher wissen...

What is according to you the most determining factor for engagement?



*"The fact that the teacher can see you. I also often turn off my camera or often look at the recordings afterwards, but I always regret that. It's because I don't find the motivation."*

*Seeing the professor and other students.*

*"Interaction, providing personal examples"*

*"The interaction of the teacher. This does not have to be personal, but just a way of interaction (can even be polls)."*

*"Asking questions to students "behind the camera", even if they not there, asking the question to them."*

*"Being surrounded by people"*

*"Sitting together with other student in the lecture hall. Behind a screen, I often feel like a forgotten student."*

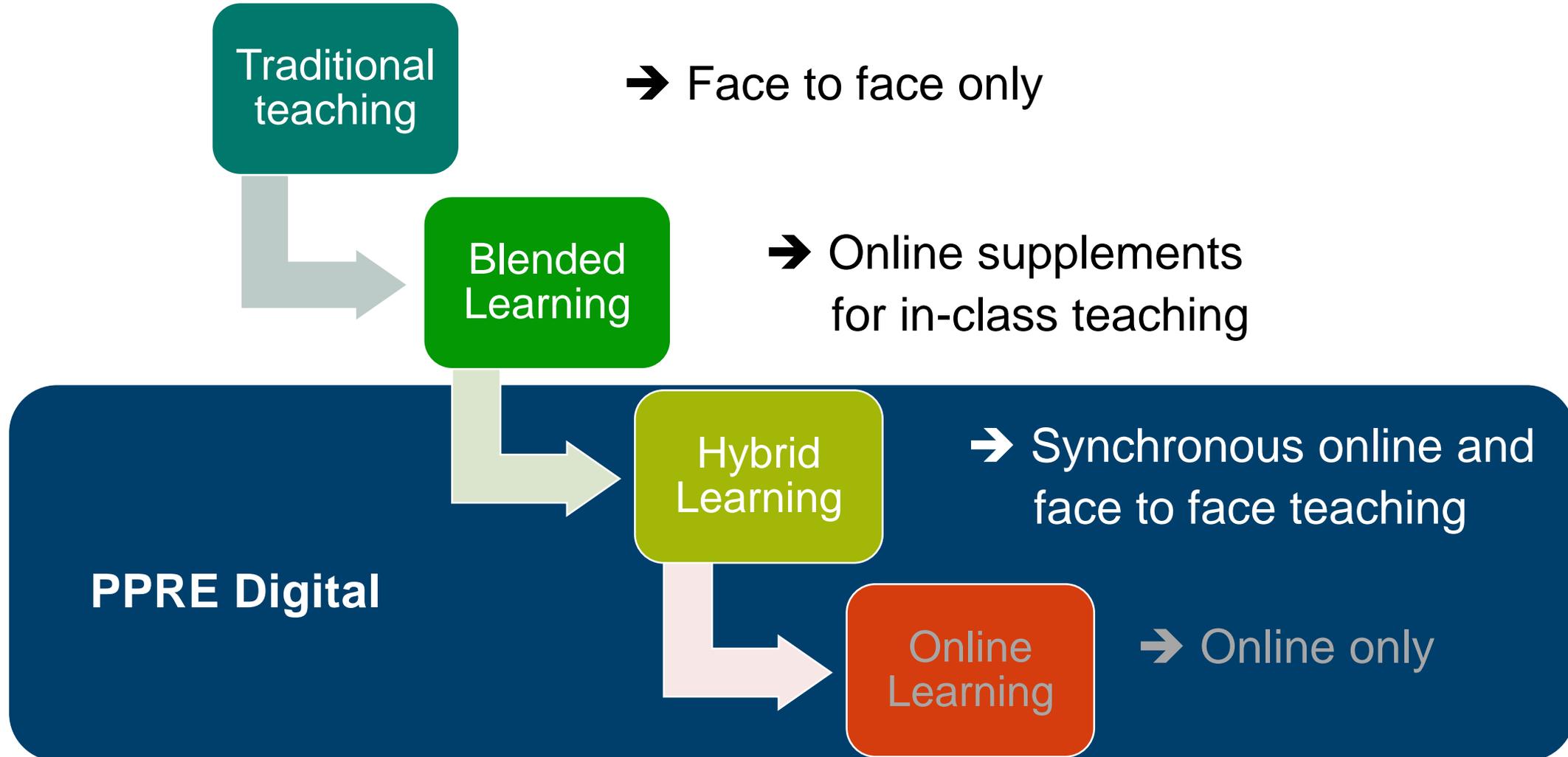
*"Not feeling lonely, so having the feeling that you follow the course together with your peers".*

# Agenda

- Motivation
- Lehr-Lern-Konzepte
- Evaluationsergebnisse
- Datenschutz und Rechtliches

# Lehr-Lern-Konzepte

## Überblick Lehr-Lern-Konzepte

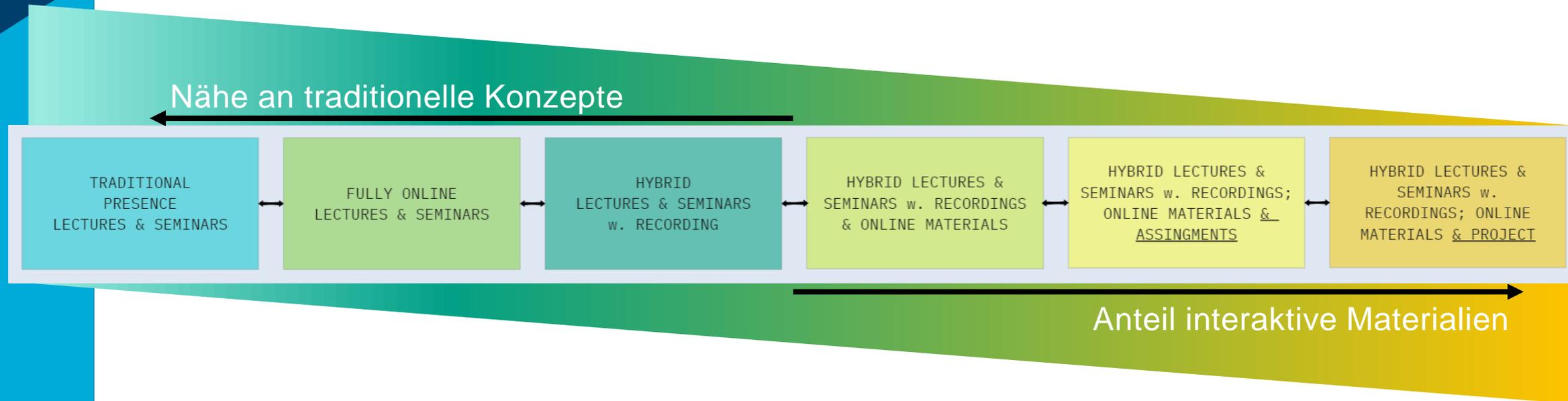


# Lehr-Lern-Konzepte

## UnserE „hybridE FormatE“

**Im Kern:** Interaktive Übertragung (streaming) des Geschehens im Vorlesungsraum – verschiedene Lehrszenarien

Verschiedene konkrete Umsetzungen



# Lehr-Lern-Konzepte

## Eigenschaften erprobter Konzepte

### Online learning design options (moderating variables)

Modality	Instructor Role Online	Role of Online Assessments	Student-Instructor Ratio	Online Communication Synchrony
<ul style="list-style-type: none"> <li>Fully online</li> <li>Blended (over 50% online)</li> <li>Blended (25–50% online)</li> <li>Web-enabled F2F</li> </ul>	<ul style="list-style-type: none"> <li>Active instruction online</li> <li>Small presence online</li> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Determine if student is ready for new content</li> <li>Tell system how to support the student (adaptive instruction)</li> <li>Provide student or teacher with information about learning state</li> <li>Input to grade</li> <li>Identify students at risk of failure</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 35 to 1</li> <li>36–99 to 1</li> <li>100–999 to 1</li> <li>&gt; 1,000 to 1</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous only</li> <li>Synchronous only</li> <li>Some blend of both</li> </ul>
<p><b>Pacing</b></p> <ul style="list-style-type: none"> <li>Self-paced (open entry, open exit)</li> <li>Class-paced</li> <li>Class-paced with some self-paced</li> </ul>	<p><b>Student Role Online</b></p> <ul style="list-style-type: none"> <li>Listen or read</li> <li>Complete problems or answer questions</li> <li>Explore simulation and resources</li> <li>Collaborate with peers</li> </ul>		<p><b>Pedagogy</b></p> <ul style="list-style-type: none"> <li>Expository</li> <li>Practice</li> <li>Exploratory</li> <li>Collaborative</li> </ul>	<p><b>Source of Feedback</b></p> <ul style="list-style-type: none"> <li>Automated</li> <li>Teacher</li> <li>Peers</li> </ul>

Source: (Hodges, 2020)

# Lehr-Lern-Konzepte

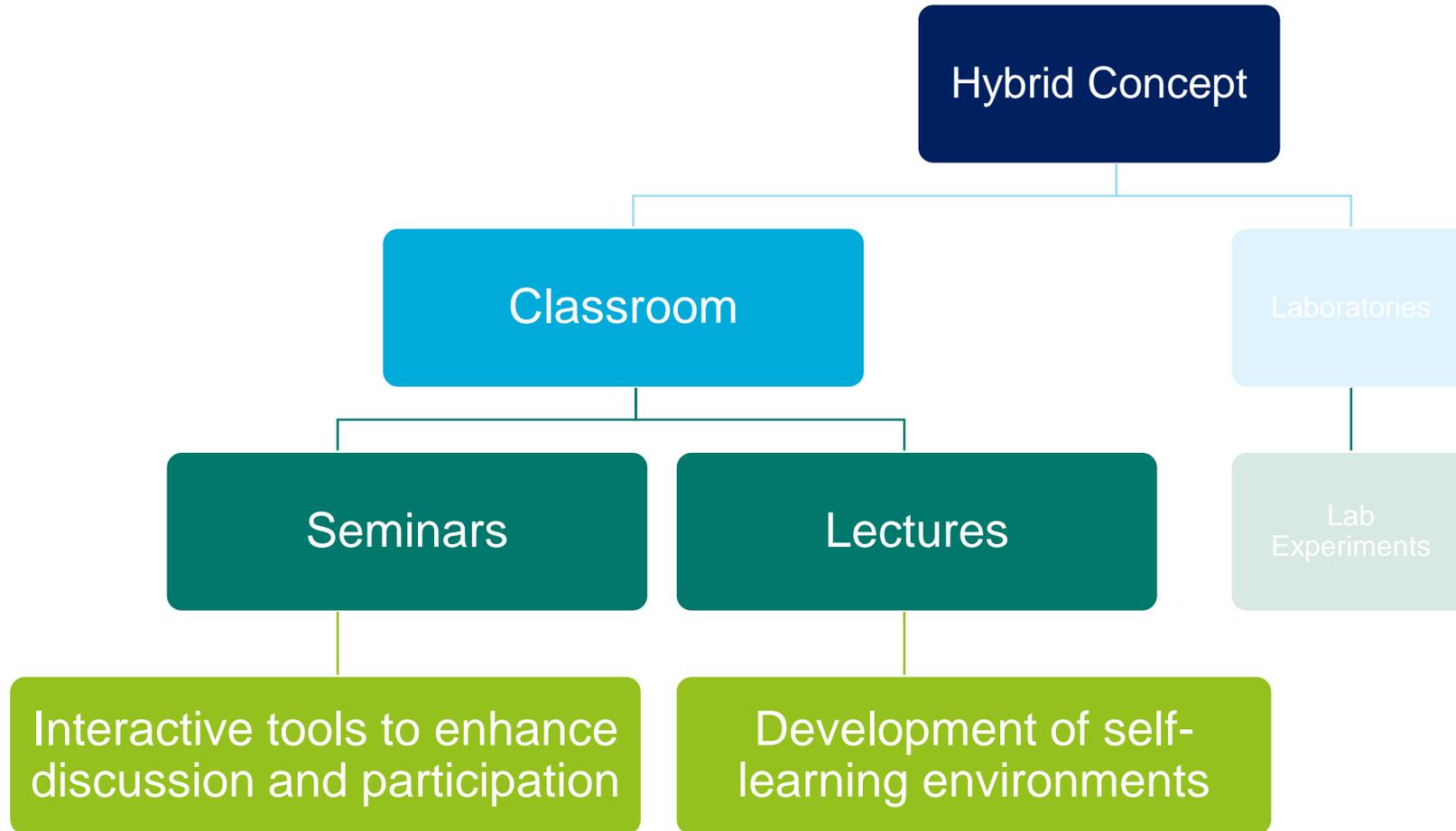
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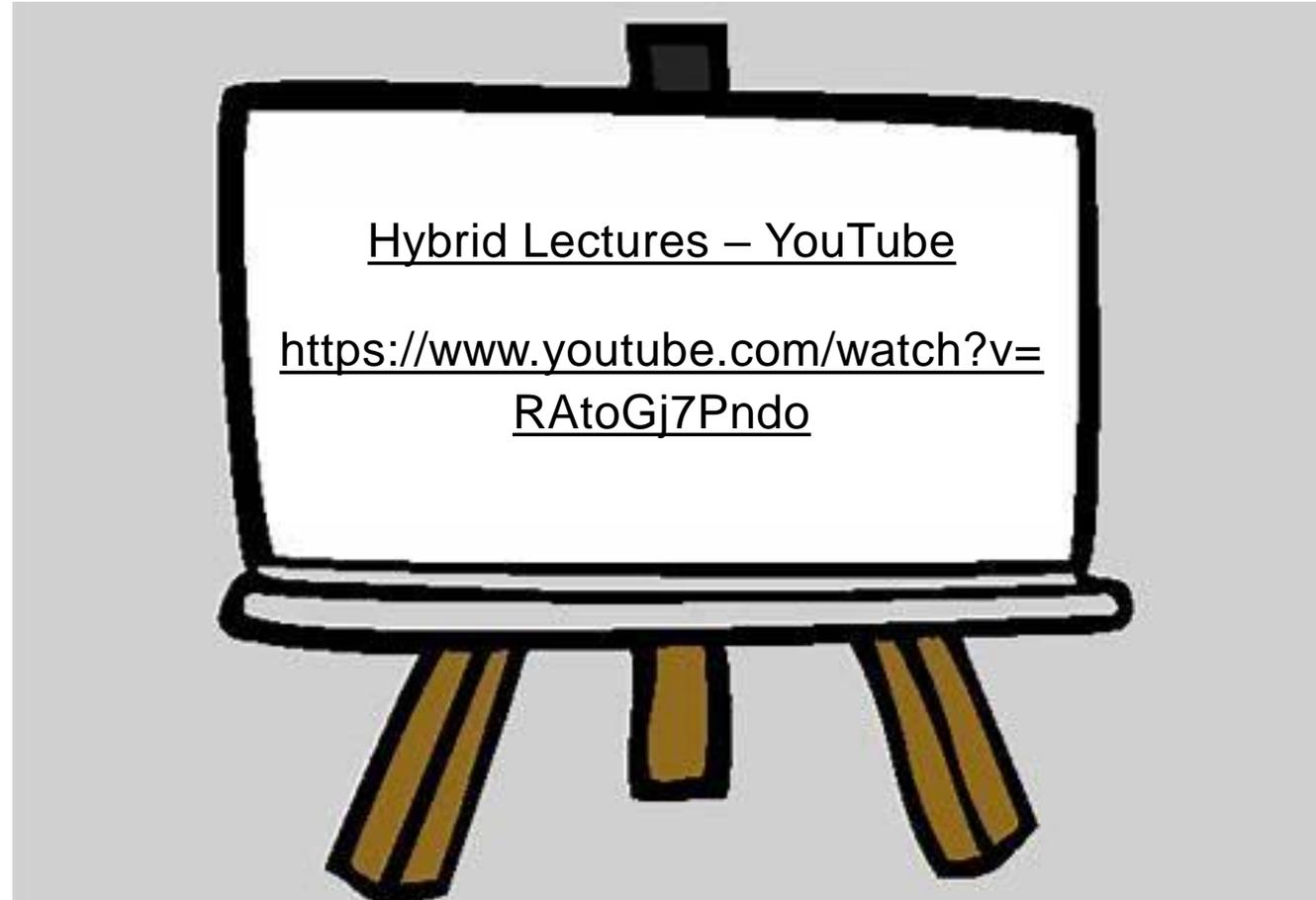
# Lehr-Lern-Konzepte

## Unser „hybrides Format“



# PPRE Digital: Eindrücke

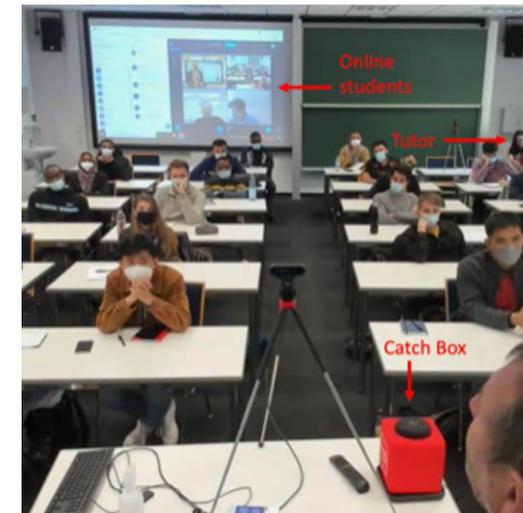
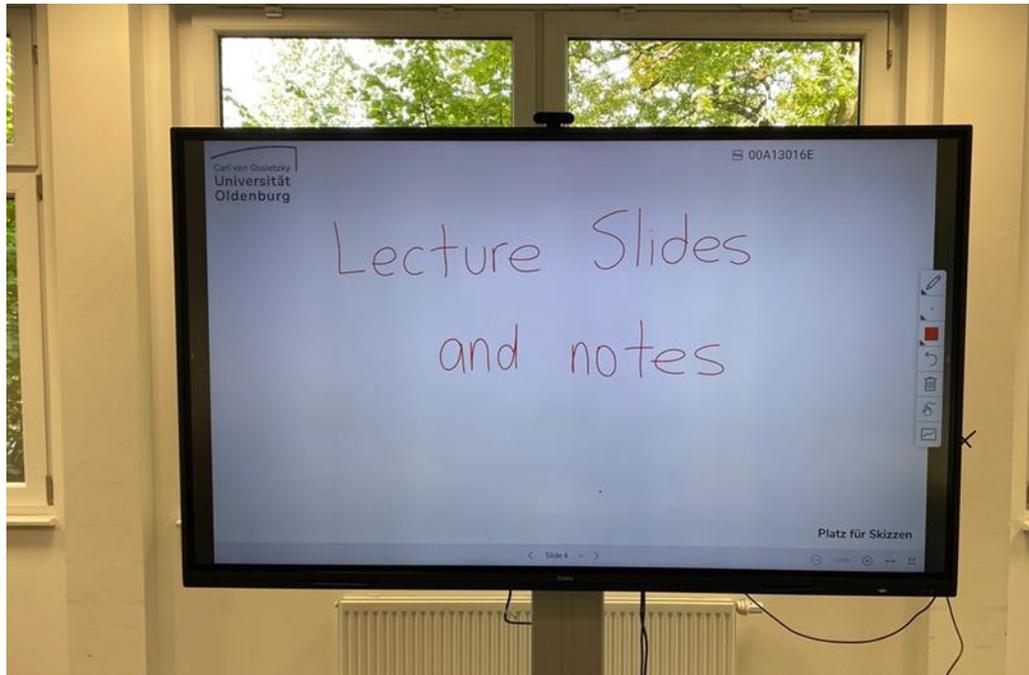
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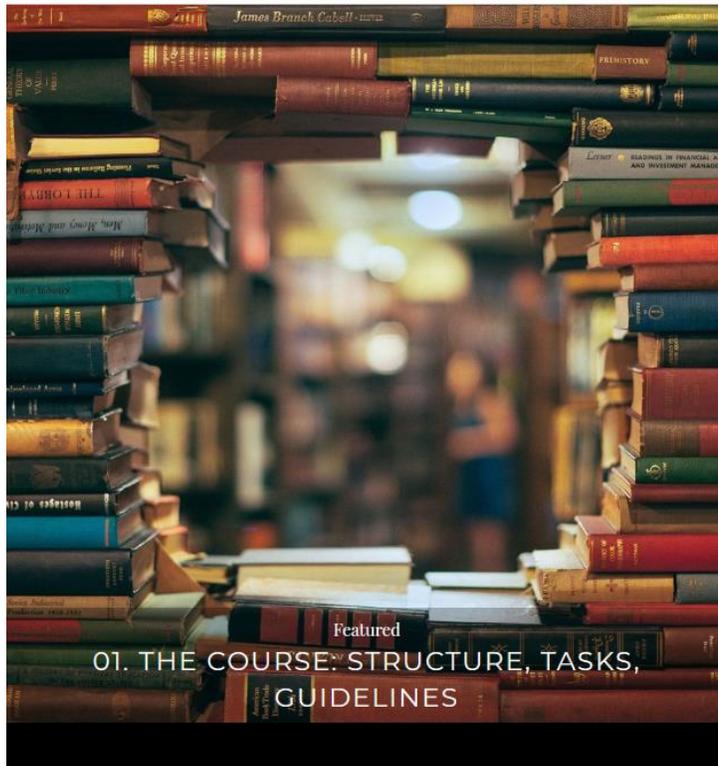


# Lehr-Lern-Konzepte

## Eindrücke von „unsere“ digital Tools

### Blogs as courseware tool

SUSTAINABILITY OF RENEWABLE ENERGY (SOSE2021)



# Lehr-Lern-Konzepte

## Eindrücke von digital Tools

### Blogs as courseware tool

#### BASIC PROCEDURE



Arrange the following boxes, in order to have the correct order for the basic procedure.

SUS05\_Drag\_and\_Drop\_MCDM

Seeking alternative systems for feeding need of objectives

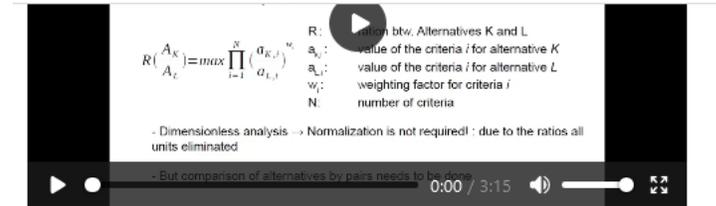
Finding and presenting an optimal alternative for evaluation

Finding all the criteria affecting system based on objectives

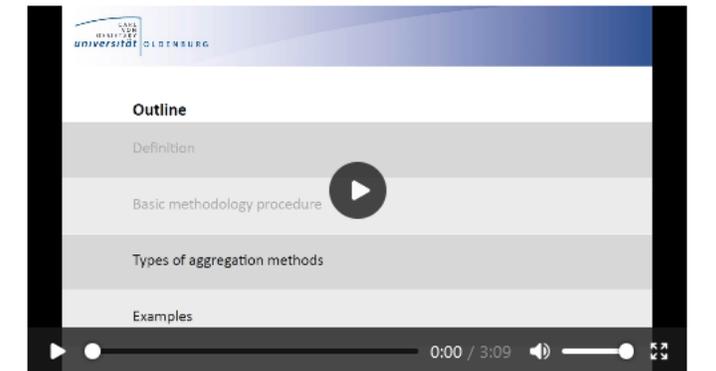
Defining a system with objectives to be met

Setting priority/weights to alternatives

Selecting MCDM method for the purpose



#### Revised Analytic Hierarchy Process



#### Comparison

Both methods, WSM and WPM need a transformation so that all criteria have the same impact in the final decision

True  False

# Lehr-Lern-Konzepte

## Eindrücke von digital Tools

### Digital Whiteboard

**miro** | Decoupling Workshop ☆ | ↑

Share 148

**Short Miro-Instructions:**

- you can zoom in and out
- you can add sticky notes, mind maps or other tools (located within the left bar) to help you brainstorm
- this map is very HUGE! So before you add any tool, zoom in a lot!

**Workshop instructions:**

• Identify a goal (on table on the right) and get to know it...  
• ...but there is not that to what you need to achieve the required 45% reduction reduction in 2030. That means a global reduction rate of around 100% of global emissions of -15% per year.

• Calculate the (approx) rate of environmental impact from your land and transport it to:

a) An equal rate in the required emission reduction (10 min)

b) A distribution of the emission reduction proportional to their current production. Global emissions 2019 of global emissions: Riechland 15%; Regional 10% of global emissions (10 min)

c) Discuss suitable scenarios for reaching the goals in a) and b) in your land (10 min)

**Riechland**

**Space to brainstorm:**

**Techland**

**Work space 1**

**Work space 2**

**Brain storming area**

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- **Evaluationsergebnisse**

# Evaluationsergebnisse

## Evaluation methods

### **Focus Group Interview**

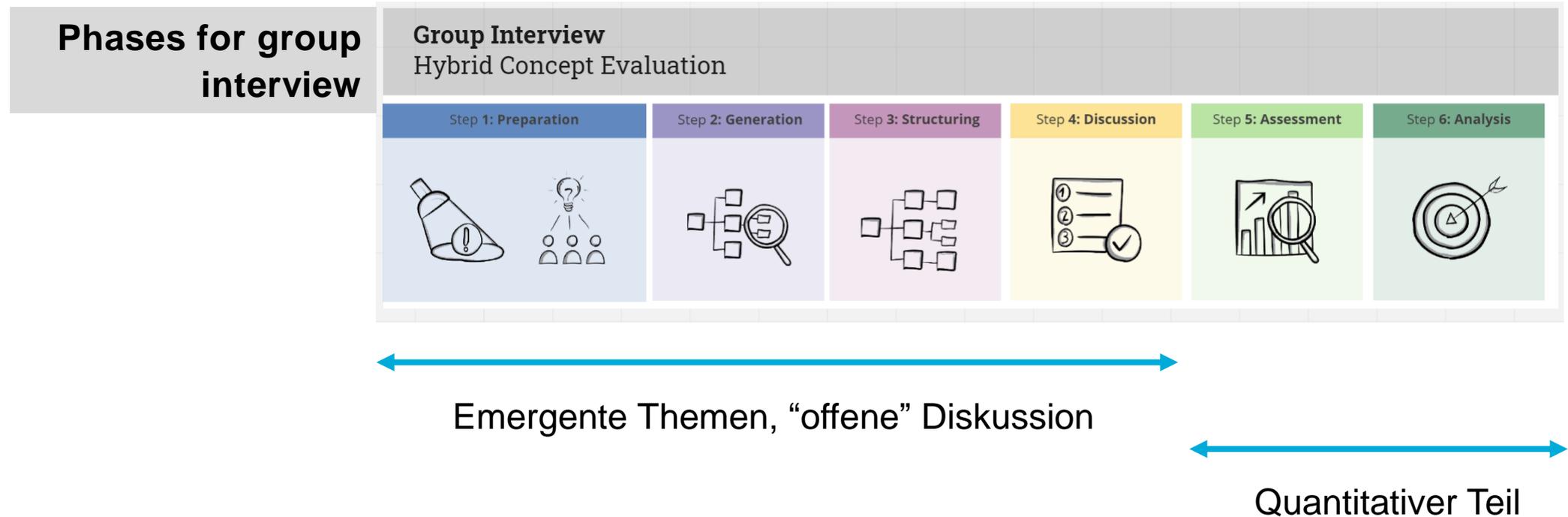
- Hauptfokus auf gemeinsame Bewertungen der TN, divergente Meinungen und Interaktion zwischen den Perspektiven der TN
- Homogene Gruppe, N = 15 TN (1 und 3 Semester Masterand:Innen)
- In Präsenz
- **Concept Group Mapping (CGM) and qualitative analysis**
  - Mixed method zur Datenerhebung und Strukturierung des Workshops
  - Semi-strukturiert durch ein vorbereitetes miro-board
  - qualitative and quantitative Analyse

# Evaluationsergebnisse

## Evaluation methods

### Focus Group Interview

- **Concept Group Mapping (CGM) and qualitative analysis**



# Evaluationsergebnisse

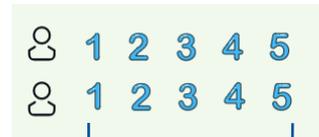
## Evaluation methods

### Focus Group Interview

- **Concept Group Mapping (CGM) and qualitative analysis**

#### Phases for group interview

- Voting



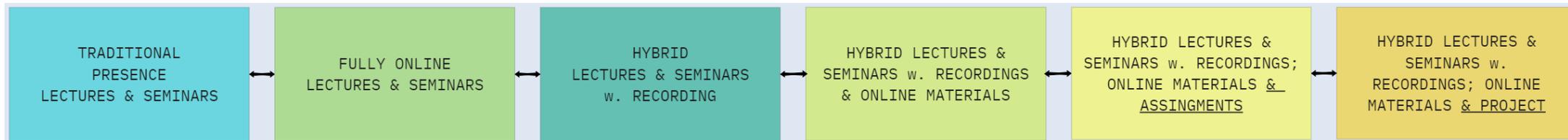
Awfull

Great



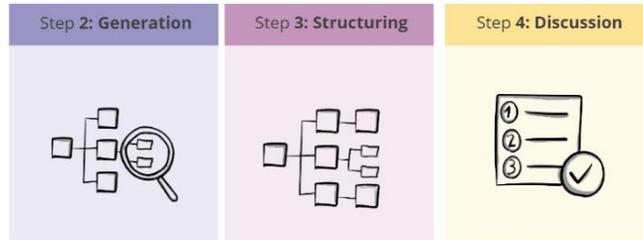
### Step 5 – (quantitative) Assessment

#### Categories



# Evaluationsergebnisse

## Focus Group Interview



### The benefits of presence, n=4

**Committment** „presence is the best method to follow content on a daily basis“, n=3

„...however videos+tasks are also a good option“

**Format** „Traditional lecture online is difficult to follow, presence better“, n=1

### The benefits of hybrid teaching, n=10

**Flexibility** Hybrid formats allow flexibility n=4

**Motivation** Difficult to stay motivated and attending the lectures, n=2

**Tools** Allow including everyone (online/presence), n=1  
But depends highly on the use of the tools by the lecturer, n=3

**Assingments** „hybrid lectures with assingments is a good way to grasp a topic“; „projects are more engaging“, n=10

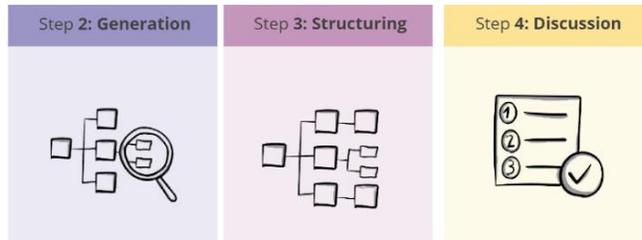
Weekly assingments help following regularly the content, n=2

**Interaction** Positive evaluation of using class time for Q&A and assingments, n=5

**n=14**  
The benefits of activities/projects

# Evaluationsergebnisse

## Focus Group Interview



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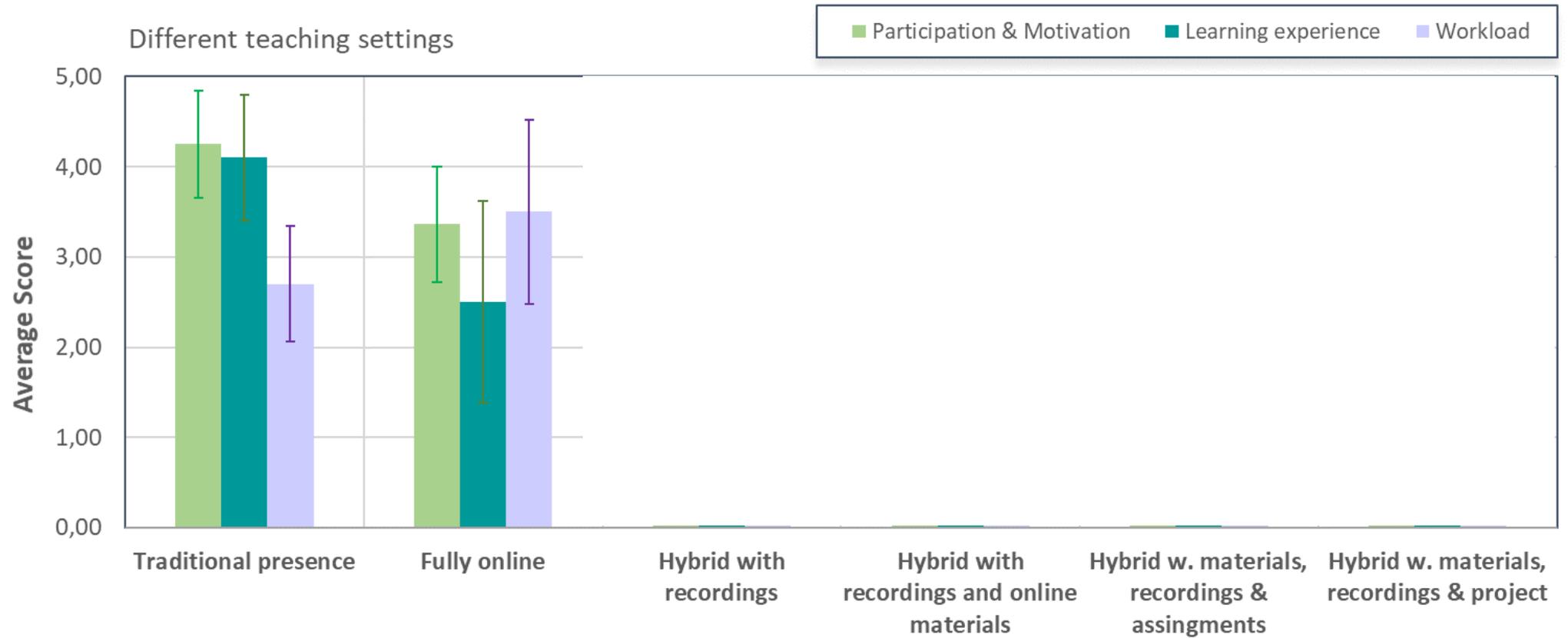
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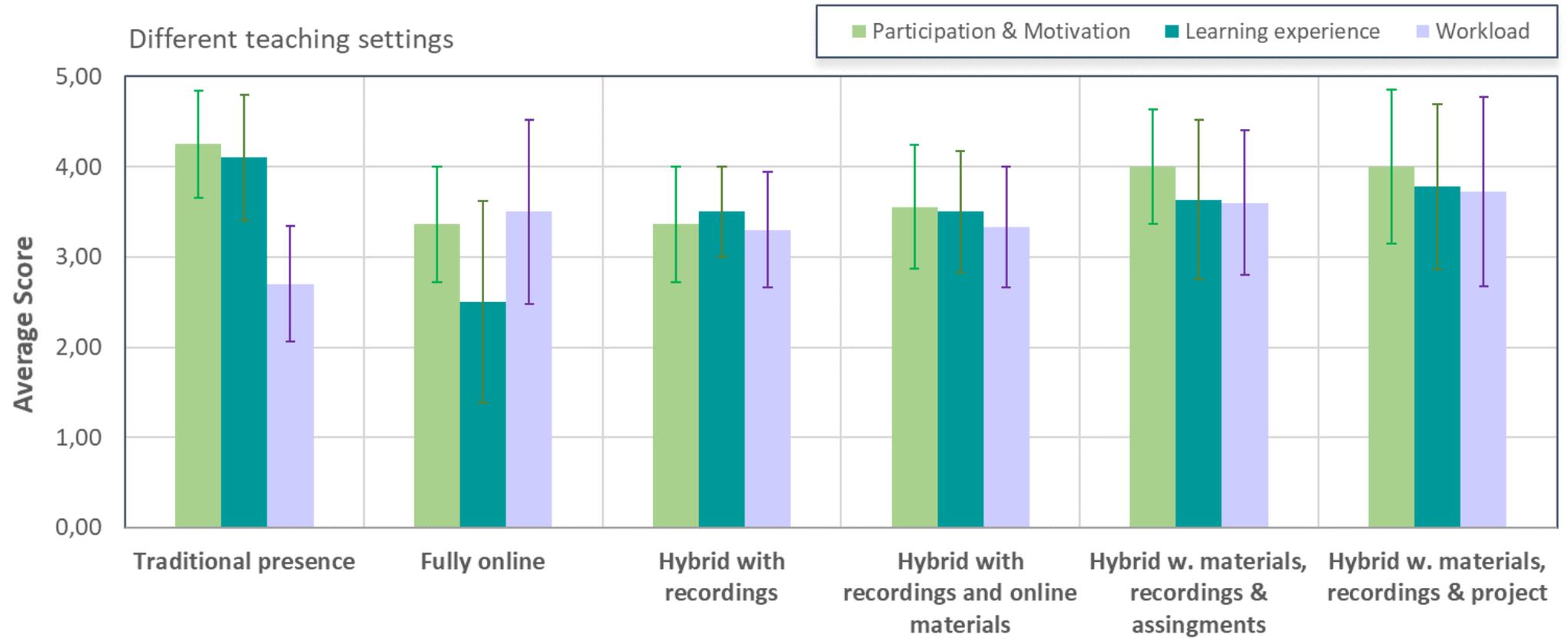
# Evaluationsergebnisse

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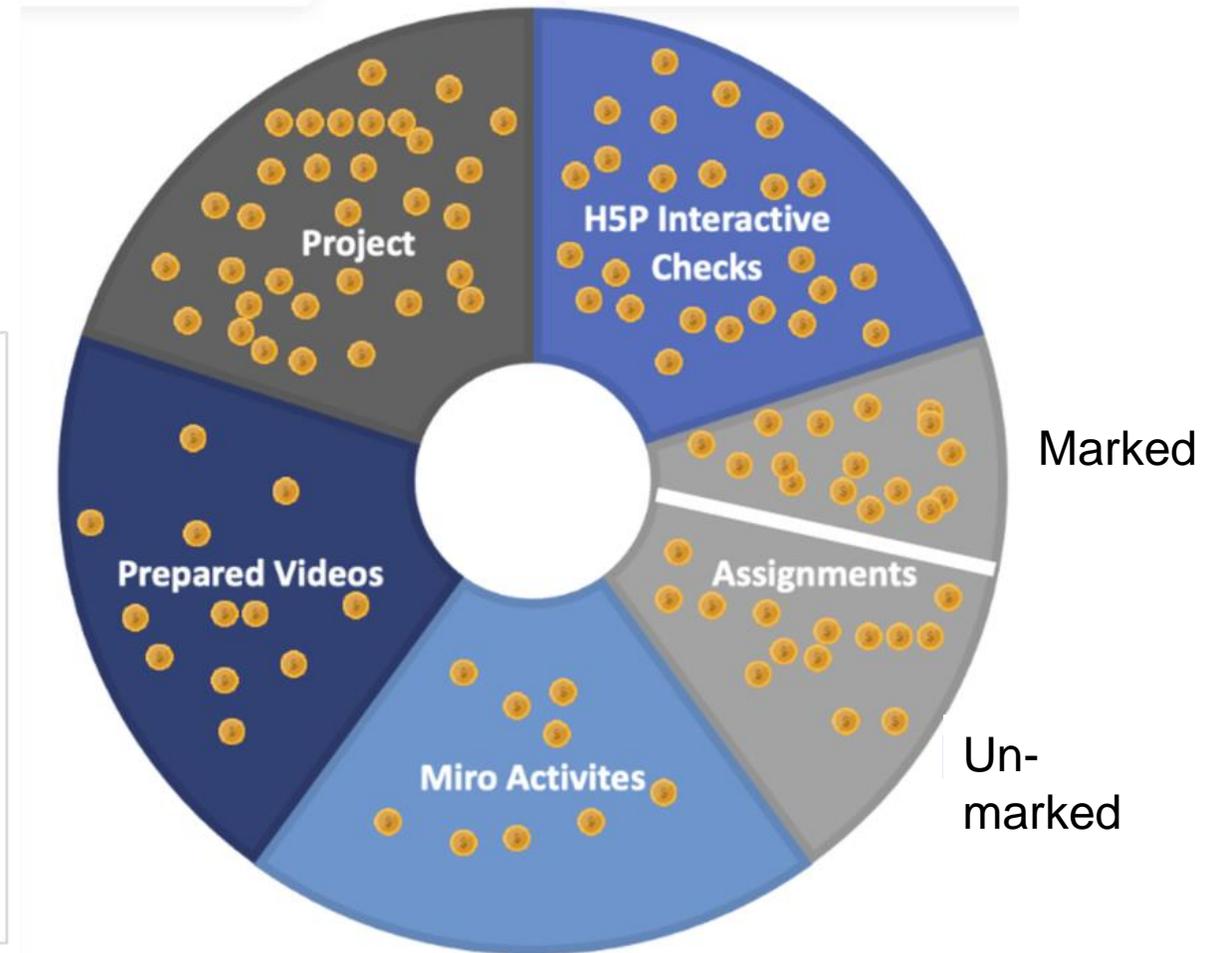
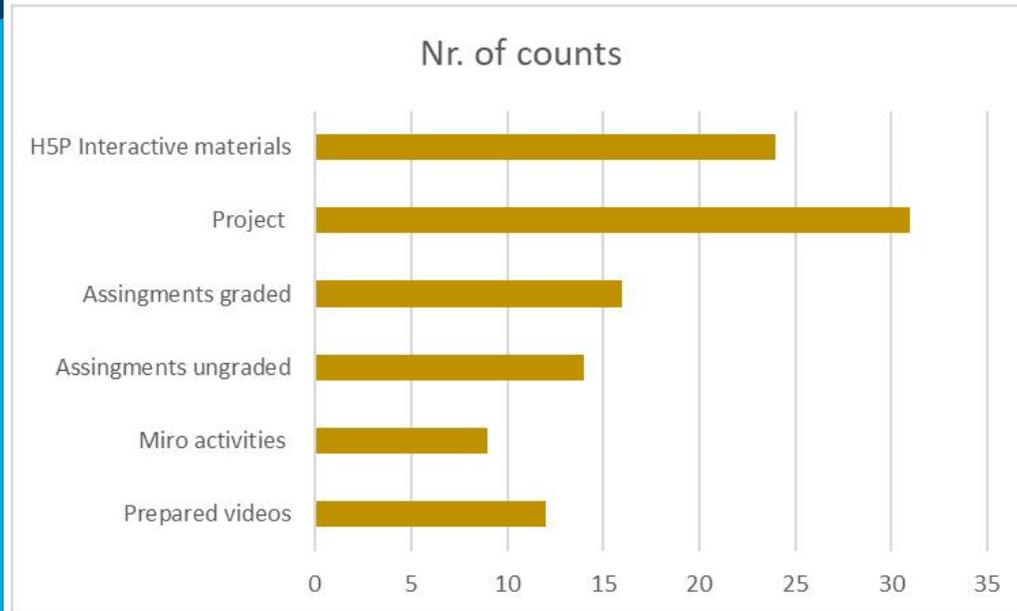
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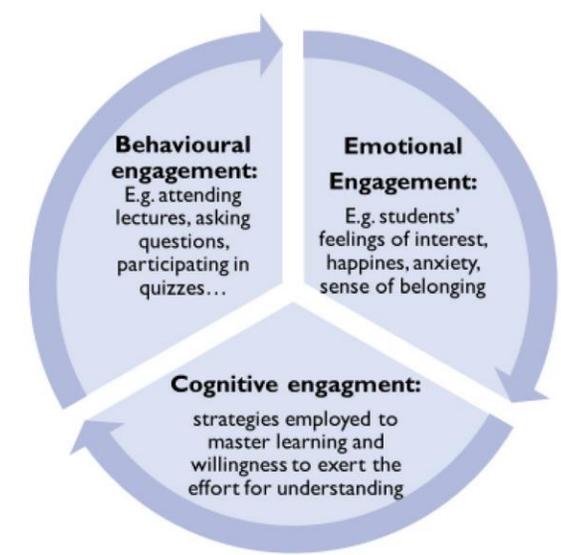
# Evaluationsergebnisse

## Focus Group Interview



# Evaluationsergebnisse

## Take-aways



- Hybride Lehre hat eine hohe Akzeptanz zwischen den Student:innen
- Besonders wird die **Flexibilität** geschätzt
- Interaktion (Dozent:innen - Student:innen) ist zentral für eine motivierte Teilnahme an der Lehre
  - Bedeutung von **hybride Settings** („verlängertes Auge“)
  - entsprechende Ausstattung notwendig!
- Tiefere Interaktion Student:innen –Inhalte schafft einen fruchtbaren Boden für eine engagierte Teilnahme und erfolgreicher Lernprozess
  - Bedeutung von **Assignments/Projekte**

# Thank you for your attention!

Now...

Let us discuss about it!

