

# Welcome!

## Enhancing **hybrid teaching** in higher education through **chatbots**

Educational and Dissemination Webinar  
Wednesday, October 30th, 2024, 10:00 – 13:00 CET  
Fachhochschule des Mittelstands



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# Speakers today



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# Agenda

10:00 Welcome and exploring HYBOT (Prof. Jochen Dickel, FHM)

10:20 Hybrid Teaching in Action: Practical Use Cases from Across Europe (Mag. Olga Zubikova, FHM)

10:35 Your Path to becoming a Chatbot Developer: Introduction to the Open Training Programme (Prof. Jochen Dickel, FHM)

11:00 – 11:15 Break

11:15 Introduction to the melibo Chatbot Development Tool and Prototype Showcase (Felix Stelzer, melibo; Jochen Dickel, FHM)

11:45 Meet LAICA: Your virtual assistant for distance learning at FHM (Prof. Dr. Tim Brüggemann, FHM)

12:00 Innovating Classrooms with Chatbots: Pilot Teachers' Real-World Experiments (Prof. Dr. Ralf Brüning)

12:30 Discover chatbots in education: free collection of teaching scenarios (Mag. Olga Zubikova, FHM)

12:45 Questions & Answers

13:00 End of the event

# Welcome and exploring HYBOT

## Prof. Jochen Dickel



# In a Nutshell:

## Objectives

1. Enhance teachers' skills to design and implement hybrid HEI teaching scenarios
2. Empower teachers to create and deploy chatbots in hybrid education
3. Improve learners' experience in HT + Chatbots

## Results

1. Compendium of hybrid teaching practices
2. Chatbot development tool
3. Open Training program on chatbots creation
4. Piloted chatbot-based hybrid sessions
5. Community of Practice

**Compendium of  
hybrid teaching  
practices**

**Chatbot  
platform &  
development  
tool**

**Open Training  
program on  
chatbots  
creation**

**Piloted chatbot-  
based hybrid  
sessions**

**Community of  
Practice**

## Two Guiding Questions:

**1. How can we improve the learners experience in simulating hybrid teaching in HEI?**

**2. How can we apply conversational chatbots to enhance hybrid teaching in HEI?**





# Learning experience **before** the pandemic:



Learner-centered  
Autonomous learning  
Learner's planning  
Flexible Social Forms  
Interaction  
Collaboration  
Lower retention  
Depending on location



# Learning experience **during** the pandemic:



- Teacher-centered
- Guided learning
- Lesson planning
- Higher retention
- Social forms
- Digital forms of interaction and collaboration
- Location-independent
- Compatibility to other aeras





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# Learning experience **during** the pandemic:



Hybrid Learning Environment  
for a Design Thinking  
Workshop with 50 participants  
in 2021, FHM Bielefeld (FHM  
Starters Summit)

## Learnings:

- 1. After the pandemic face to face teaching has expanded**
- 2. Learning becomes more hybrid**
- 3. This leads to changes in teaching**

Rethinking Teaching

**Student's needs**

**Teacher's role**

**Technology use**

Guiding Question:

What is the Impact of **hybrid learning** to promote a better students learning experience?

How can we improve the students hybrid learning experience through **chatbots**?

What are the **factors for a successful implementation** of hybrid learning settings and chatbots?



# Hybrid Teaching

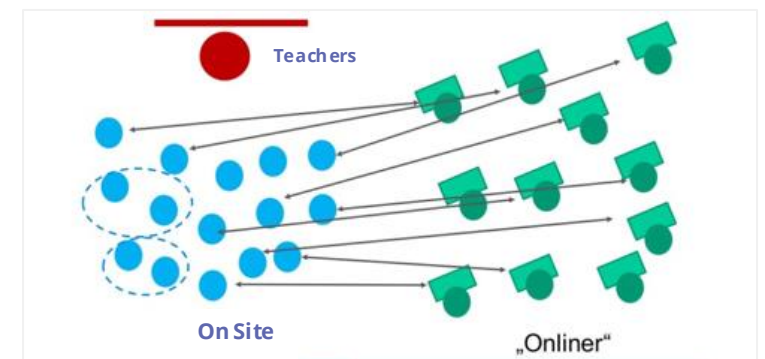
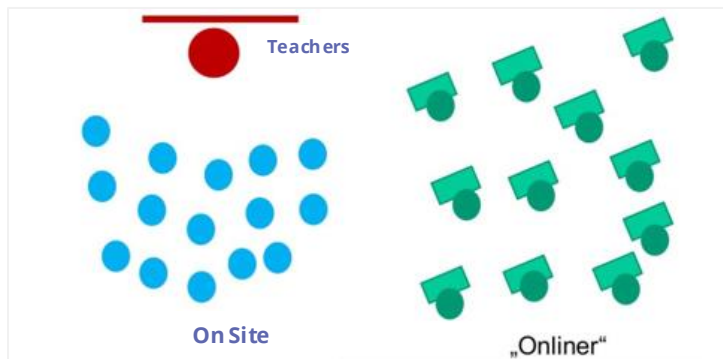
- educational approach or delivery mode
- combines traditional face-to-face instruction with online learning
- create a flexible and dynamic learning environment
- **both** on-site students and remote students attend **simultaneously** during synchronous (real-time) teaching and learning sessions.
- **Aim:** to leverage the advantages traditional **and** digital learning methods (Vaughan et al., 2013; Beatty, 2019; Armellini & Padilla, 2021).



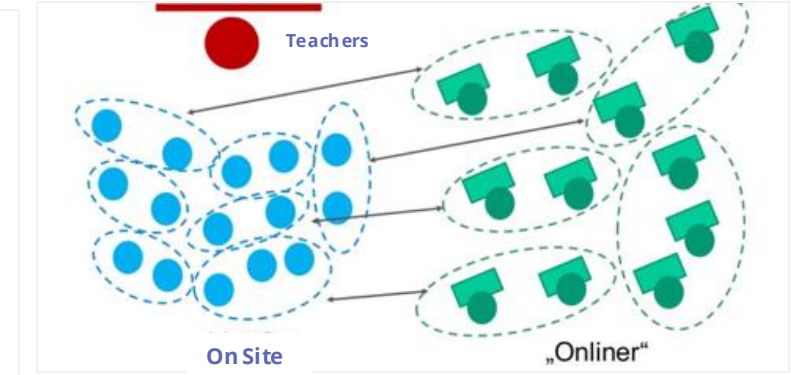
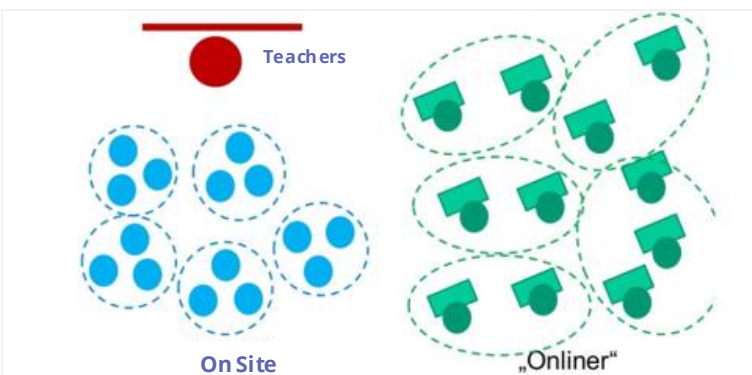


# Hybrid Teaching in different social formats

Synchronous hybrid courses initially take place in presence at the regular learning locations. The lecturer is on site with some of the students. Other students are not physically present and participate synchronously virtually via a video conferencing system. Participants from both groups can see and hear each other during the course and interact with each other.



Hybrid learning spaces enable individual as well as cooperative learning scenarios in different social forms. These range, for example, from individual work, tandem, small groups to plenary. Hybrid cooperation between "online learners" and "on-site learners" is also possible.

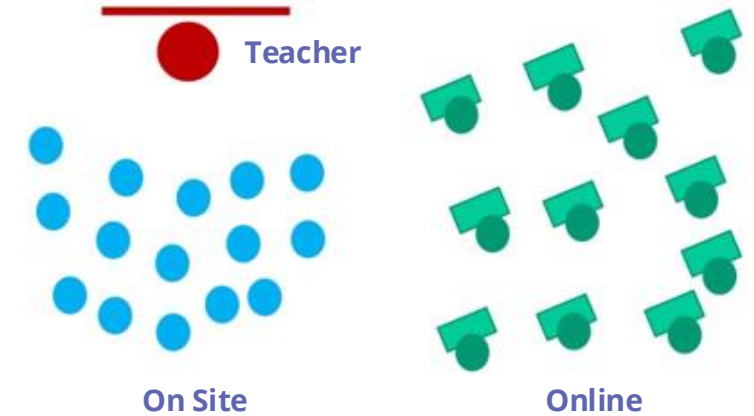




# Hybrid Teaching Example:



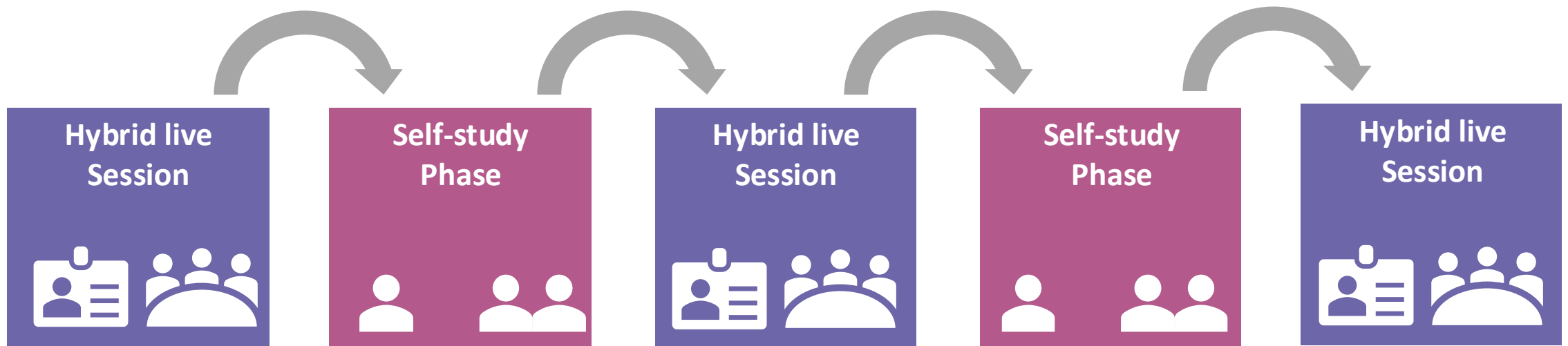
Hybrid learning at University Bielefeld





# Hybrid Teaching in Blended Learning settings

Hybrid lecture formats (like online lectures) can be integrated into blended learning. Synchronous hybrid lectures alternate with asynchronous self-learning phases.





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# Technical infrastructure for Hybrid Learning spaces



**On site participants view**



**Online participants view**

Example Zoom ROOMS Live Session:  
<https://www.microsoft.com/de-de/microsoft-teams/microsoft-teams-rooms?market=de>  
<https://www.cloudyit.co.uk/council-meetings-using-teams/>



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# Technical infrastructure for Hybrid Learning spaces



## 360° Video + Audio System



## Online Meeting View

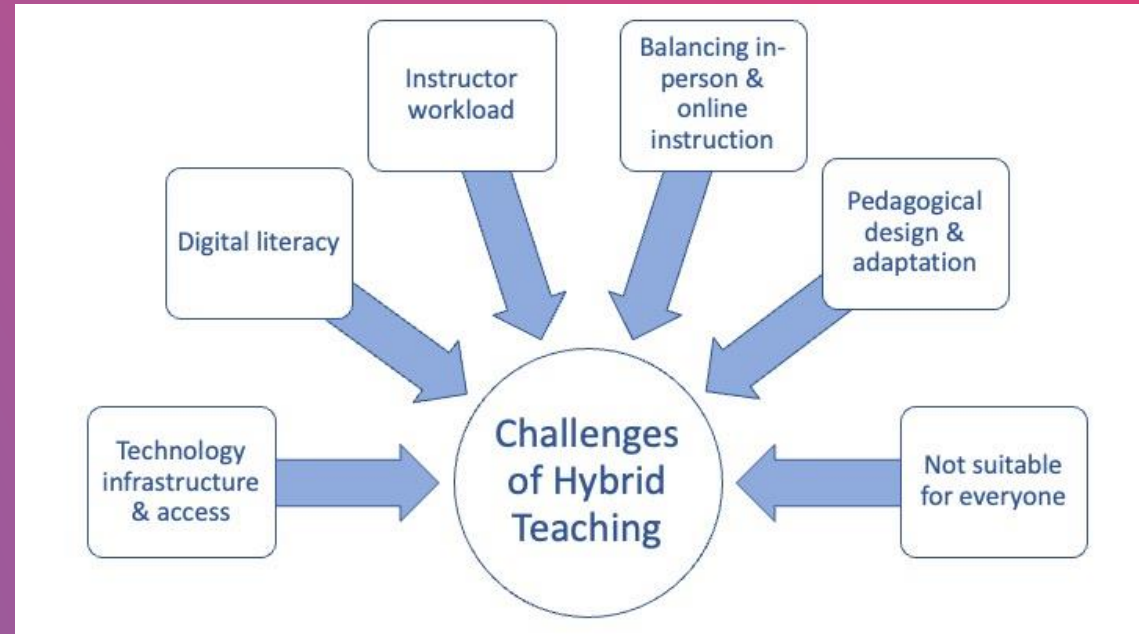
Meeting OWL Pro: <https://owllabs.de/products/meeting-owl-pro>

Comatibility: Zoom, Google Meet, Skype, Skype for Business, Microsoft Teams, Webex, GoToMeeting, BlueJeans etc.



# Challenges of hybrid Teaching

- Overcome teacher-centricity
- keep learner-centered
- Encouraging autonomous learning
- Enable individual learner support
- Flexible Social Forms
- Initiate collaboration





# What are Educational chatbots?

- **Educational chatbots are digital tools** that assist learners using natural language processing (NLP) and machine learning algorithms to **simulate human conversation**.
- **They can be integrated into learning management systems**, educational apps, and websites to offer a **personalized** and interactive learning experience.
- **Different chatbot types** and distribution channels are important to meet **various educational needs** and different learning scenarios.





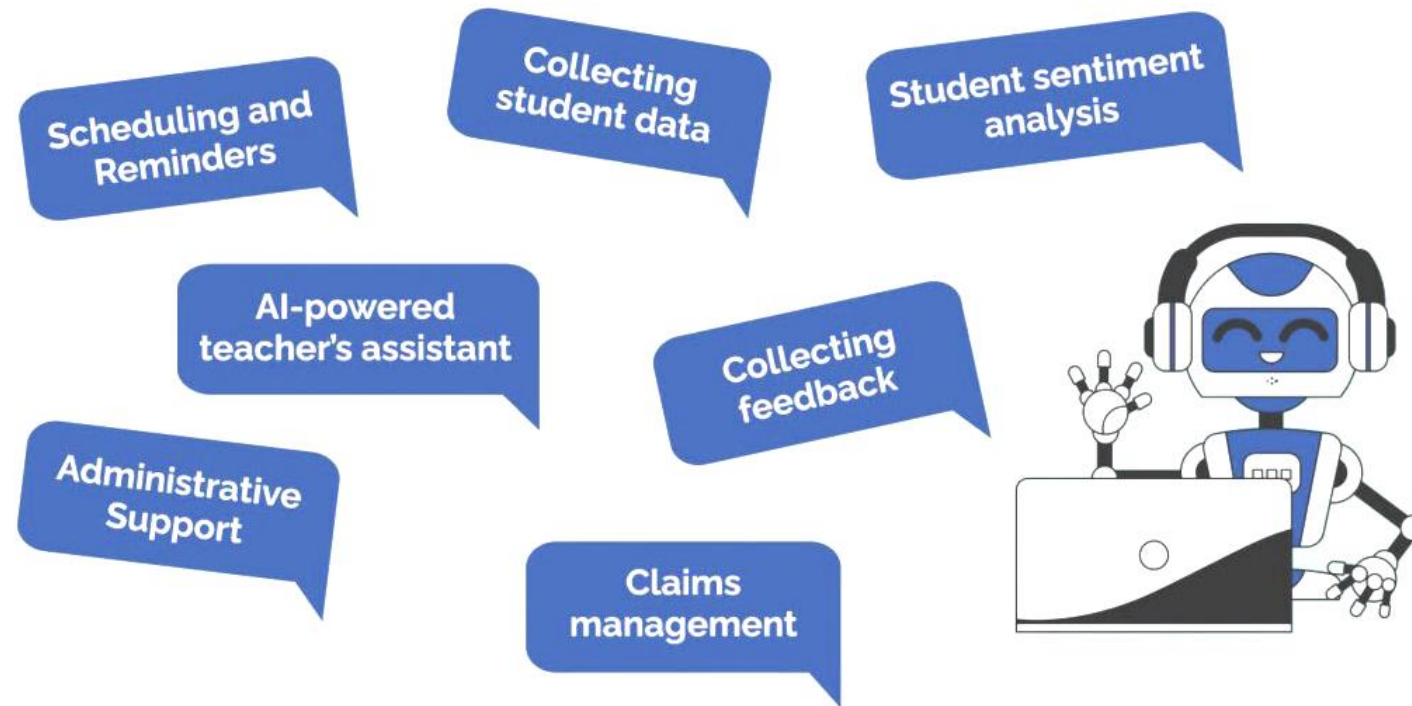
# How a Chatbot works:



<https://smartapp.technology/blog/ai-chatbots-in-education/>



# Chatbot Use Cases for Higher Education Institutes

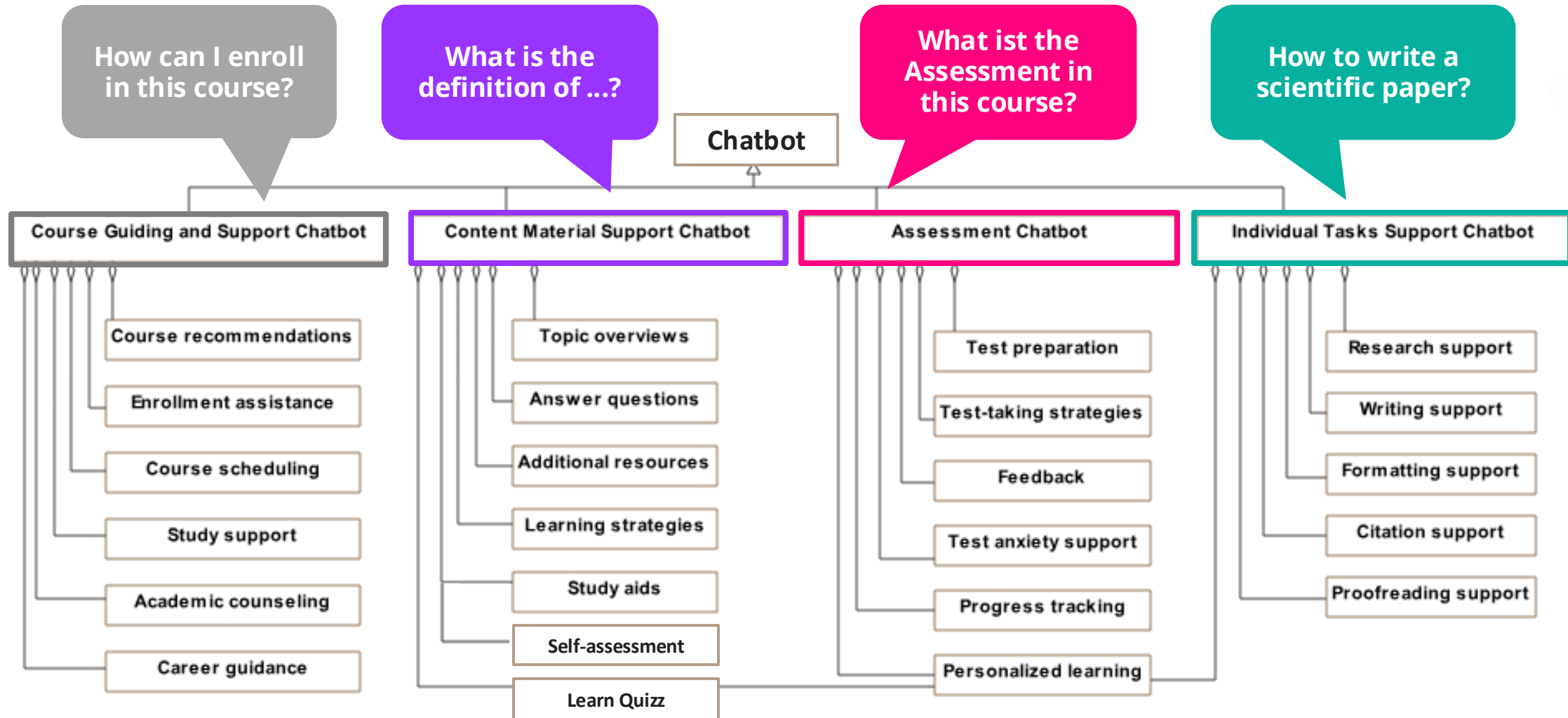


<https://smartapp.technology/blog/ai-chatbots-in-education/>

hybot – Enhancing hybrid teaching in higher education through chatbots – [www.hybot.eu](http://www.hybot.eu)



## Chatbot Use Cases for Students in HEI







# Chatbots can address diverse Learning Needs of Students



## Average Student

- Keeps pace generally, struggles with some concepts
- Benefits from additional explanations and personalized feedback
- Typical lectures: Lack detailed focus due to time constraints



## Struggling Student

- Finds lecture pace too fast and content too complex
- Needs slower, detailed approach with repetitive reinforcement
- Large lectures: Cannot offer personalized attention



## High Achiever

- Quickly grasps new concepts
- Often feels unchallenged by standard lectures
- Needs: Advanced materials and deeper exploration

**Stefan Bieletzke**

[https://www.researchgate.net/publication/380791601\\_SMARTA\\_-\\_CHATBOTS\\_AS\\_INDIVIDUAL\\_STUDY\\_COACHES\\_FOR\\_TACKLING\\_THE\\_TWO\\_SIGMA\\_PROBLEM](https://www.researchgate.net/publication/380791601_SMARTA_-_CHATBOTS_AS_INDIVIDUAL_STUDY_COACHES_FOR_TACKLING_THE_TWO_SIGMA_PROBLEM)

What makes a good Conversation?

**At the end of a conversation  
the conversation partners  
have changed.**

*Gordon Pask*

# Hybrid Teaching in Action: Practical Use Cases from Across Europe

Mag. Olga Zubikova, FHM



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# Hybrid Teaching in Action: Practical Use Cases from Across Europe

Mag. Olga Zubikova, FHM

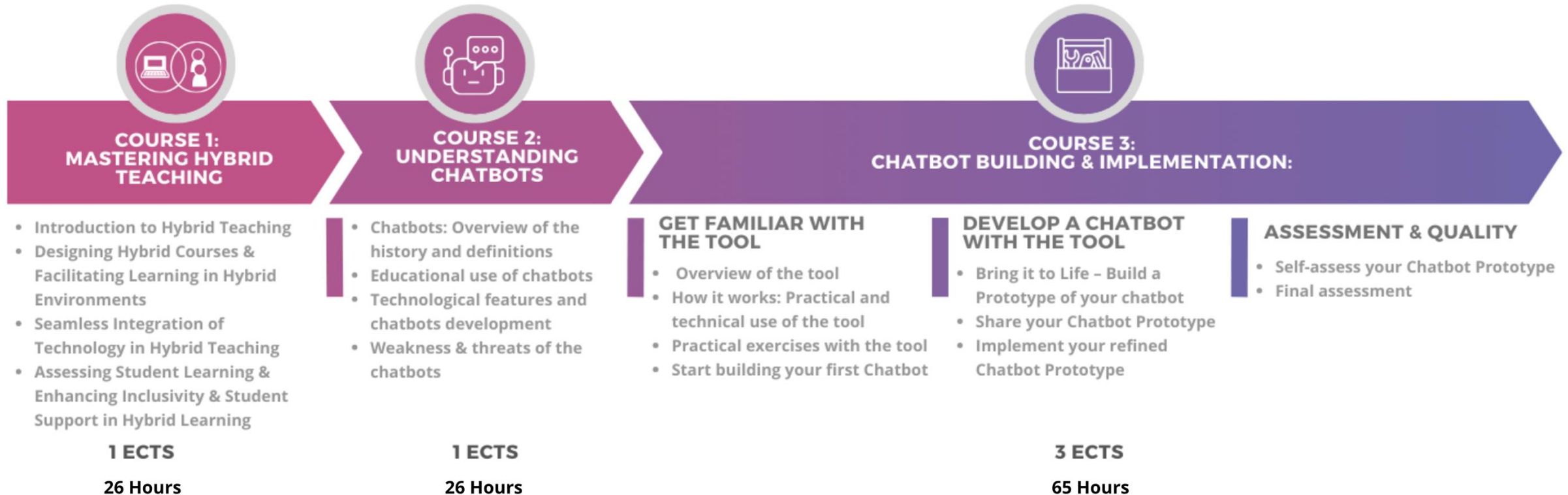
# Your Path to Becoming a Chatbot Developer: Introduction to the Open Training Programme

Prof. Jochen Dickel



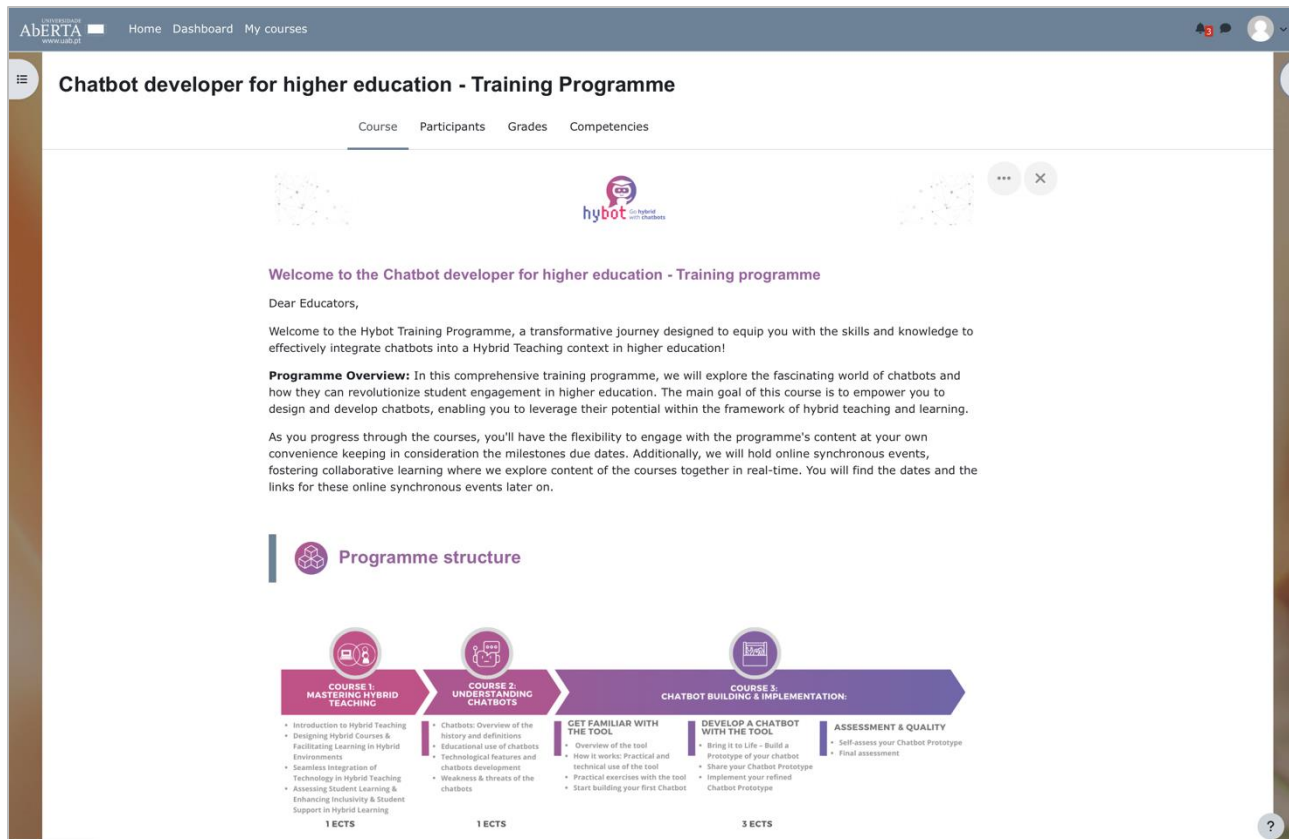


# Your Path to Becoming a Chatbot Developer: Introduction to the Open Training Programme





# Your Path to Becoming a Chatbot Developer: Introduction to the Open Training Programme



**Chatbot developer for higher education - Training Programme**

Course Participants Grades Competencies

Welcome to the Chatbot developer for higher education - Training programme

Dear Educators,

Welcome to the Hybot Training Programme, a transformative journey designed to equip you with the skills and knowledge to effectively integrate chatbots into a Hybrid Teaching context in higher education!

**Programme Overview:** In this comprehensive training programme, we will explore the fascinating world of chatbots and how they can revolutionize student engagement in higher education. The main goal of this course is to empower you to design and develop chatbots, enabling you to leverage their potential within the framework of hybrid teaching and learning.

As you progress through the courses, you'll have the flexibility to engage with the programme's content at your own convenience keeping in consideration the milestones due dates. Additionally, we will hold online synchronous events, fostering collaborative learning where we explore content of the courses together in real-time. You will find the dates and the links for these online synchronous events later on.

**Programme structure**

COURSE 1 MASTERING HYBRID TEACHING	COURSE 2 UNDERSTANDING CHATBOTS	COURSE 3 CHATBOT BUILDING & IMPLEMENTATION
<ul style="list-style-type: none"><li>Introduction to Hybrid Teaching</li><li>Designing Hybrid Courses &amp; Facilitating Learning in Hybrid Environments</li><li>Seamless Integration of Technology in Hybrid Teaching</li><li>Assessing Student Learning &amp; Enhancing Inclusivity &amp; Student Support in Hybrid Learning</li></ul>	<ul style="list-style-type: none"><li>Chatbots: Overview of the history and definitions</li><li>Educational use of chatbots</li><li>Technological features and chatbots development</li><li>Weakness &amp; threats of the chatbots</li></ul>	<ul style="list-style-type: none"><li>GET FAMILIAR WITH THE TOOL<ul style="list-style-type: none"><li>Overview of the tool</li><li>How it works: Practical and technical use of the tool</li><li>Practical exercises with the tool</li><li>Start building your first Chatbot</li></ul></li><li>DEVELOP A CHATBOT WITH THE TOOL<ul style="list-style-type: none"><li>Bring it to Life - Build a Prototype of your chatbot</li><li>Share your Chatbot Prototype</li><li>Implement your refined Chatbot Prototype</li></ul></li><li>ASSESSMENT &amp; QUALITY<ul style="list-style-type: none"><li>Self-assess your Chatbot Prototype</li><li>Final assessment</li></ul></li></ul>
1 ECTS	1 ECTS	3 ECTS



**COURSE 1  
MASTERING HYBRID TEACHING**



**COURSE 2  
UNDERSTANDING CHATBOTS**



**COURSE 3  
CHATBOT BUILDING & IMPLEMENTATION**

# Coffee Break

# Introduction to the melibo Chatbot Development Tool and Prototype Showcase

Felix Stelzer, Melibo & Prof. Jochen Dickel, FHM



# Chatbot Development Tool: how is it use?

## 1. Conceptual work

Chatbot  
Design

Chatbot  
Content-  
creation

## 1. Chatbot Development Tool: **melibo**

Chatbot  
Integration

Chatbot  
Testing

Chabot  
Deployment

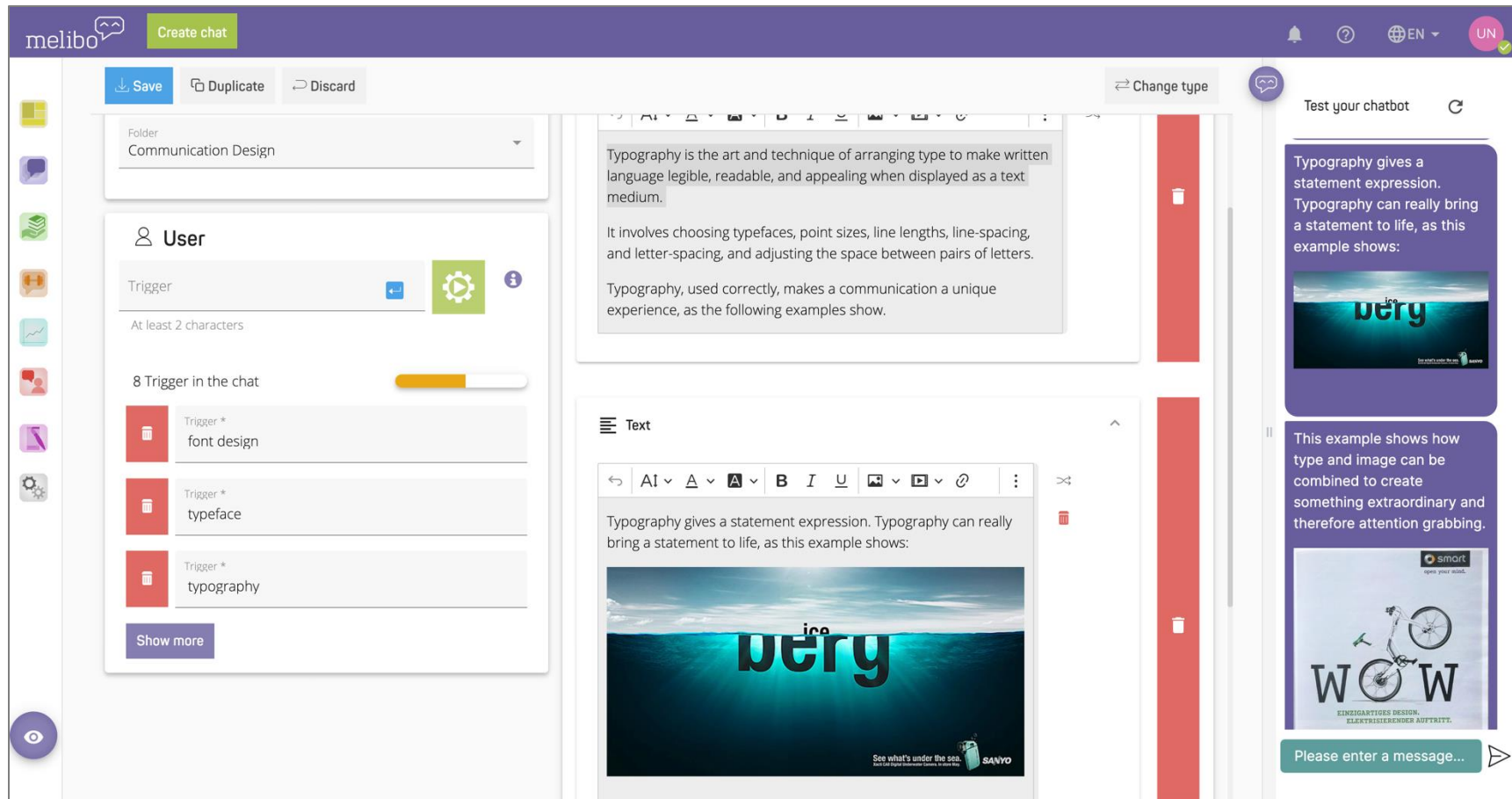
Chabot  
Improvement





## Chatbot Development Tool: melibo Interface

The main tool for creating the chatbot was the chatbot development platform **melibo**





melibo Create chat

Save Duplicate Discard Back Forward Change type

Add

Assistant  
Node: 17 | Node type: Dialog

Chatbot

Great, you want to start your challenge in Robotics and Internet of Things. Before you start you have to select one of the two Options below:

Option 2: assemble a Robot building Kit and program it with a No-Code Programming Tool (practical work)

+ Add paragraph

User

Choose an answer option Buttons

Button

Button Name  
Option 1

Connection  
17 → 2 +

Button

Button Name  
Option 2

Connection  
17 → 18 +

Robotics and Internet of Things (IoT)

10.06.2024

Hello 🙌 I am a chatbot and can help you, If you have a specific question or need help. I'm here for you 😊 What would you like to know?

Help me with my Challenge

Great, you want to start your challenge in Robotics and Internet of Things. Before you start you have to select one of the two Options below:

Option 1: design a Robotic and IoT based Solution (conceptual work)

Option 2: assemble a Robot building Kit and program it with a No-Code Programming Tool (practical work)

Option 1 Option 2

Cancel

Powered by melibo



melibo Create chat


Save Duplicate Discard Back Forward Change type

Add

Challenge Navigator – Option 1: Healthbot | Robotics & IoT / Assistant  
Node: 2 | Node type: Dialog

Chatbot

Welcome to your challenge for Robotic and Internet of things, IoT. As a chatbot I will accompany you through your **Challenge Option 1: HealthBot**




As you have choosen the option 1 for your Challenge you have to focus on the first two phases of developing a robot: **analysis** and **design**, as shown in the diagram below. Remember that you only have to cover these **two phases in this challenge**.

Your Final Submission for Assessment will be Presentation off your Robot Scenario for your **Healthbot**

Robotics and Internet of Things (IoT)

Option 1

Welcome to your challenge for Robotic and Internet of things, IoT. As a chatbot I will accompany you through your **Challenge Option 1: HealthBot**



As you have choosen the option 1 for your Challenge you have to focus on the first two phases of developing a robot: **analysis** and **design**, as shown in the diagram below. Remember that you only have to cover these **two phases in this challenge**.

Your Final Submission for Assessment

Back Cancel

Powered by melibo



melibo

Create chat

EN

UN

Save

Discard

Delete

Last updated: 19 days ago, Status: ✓

General

Title \*

about the course Robotics and Internet of Things

At least 2 characters

Folder

Robotics and IoT

Tags

course

about this course

course program

task for assessment

Knowledge piece

Text

about this course

what about the course Robotics and Internet of Things?

what is the overall aims of this course are?  
- provide a comprehensive understanding of Robotics and IoT,  
- different fields of applications, ethical implications  
- its different fields of applications, ethical implications

Who has developed the course "Robotics & Internet of Things"?

The online course "Robotics & Internet of Things" was developed under the Erasmus+ project "Challenge-based Learning in AI-enhanced Digital Transformation Curricula" (ASSISTANT) led by FHM Prof. Jochen Dickel. The project started on October 1, 2022, aiming to modernize and enhance and challenge-collaboration between (technology), Estonia, and Germany information about the smus.eu/.

Why is this topic important and relevant.

Robotics and Internet of Things (IoT) are changing more and more all areas of life. Automation and real-time data exchange enable smart solutions in healthcare, manufacturing, logistics and many other areas by increasing efficiency, precision and interconnectivity. However, these technologies also pose significant risks, such as privacy invasion, security threats, and potential job loss. To harness the transformative potential of Robotics and IoT, it is therefore crucial to understand their risks and to practice a responsible and ethical approach. The aim of the course is to provide a comprehensive understanding of IoT and Robotics, its different fields of applications, ethical implications, technical foundation and basic skills to design and model IoT and Robotics solutions.

What will you learn in the "Robotics & Internet of Things" course?

The "Robotics & IoT" course offers a comprehensive insight into the current trends in robotics and the Internet of Things (IoT). Upon successful completion, you will be able to:

- Define the main concepts and issues of IoT and robotics
- Identify various application areas of IoT and robotics
- Understand the fundamental principles of IoT and robotics
- Analyze ethical questions related to IoT and robotics

IBM Watson+ GPT4.0



Robotics and Internet of Things (IoT)

10.06.2024

Hello 🙋 I am a chatbot and can help you, If you have a specific question or need help. I'm here for you 😊 What would you like to know?

Tell me more about this course

Tell me more about this course

The course "Robotics & Internet of Things" provides a comprehensive understanding of IoT and Robotics, including their application areas, ethical implications, technical foundations, and basic skills to design and model IoT and Robotics solutions. The course is structured into six modules covering various aspects of IoT and Robotics. The learning outcomes include the ability to define, identify, understand, analyze, design, and develop IoT/robotics solutions. Additionally, the course will be delivered entirely using online learning

Bitte gebe eine Nachricht ein...

Powered by melibo





## Prototype Show cases:



Hi! Vivobot here 🙋 How can I help you today?



I am CopBot!



Willkommen! 🙋 Was wollen wir machen? Gemeinsam eine Übung durchführen? Dann schreiben Sie einfach "Übung".



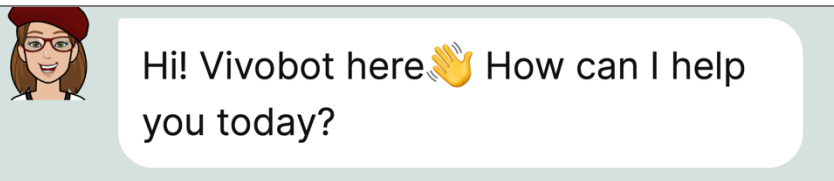
Hallo! Ich bin Sanolo, dein Markenexperte.



Welcome to RESOURCEbot  
(Resource Optimization and



## Prototype Show cases: Vicobot / I am a CopBot



### Vivobot (France)

**Chatbot for:** the Master's course "Instructional and Learning Design"

**Problem addressed:** lack autonomy, self-regulation, and self-directed learning skills or habits.

**Aim:** assisting transnational students in their learning journey around the clock.



### CopBot (Portugal)

**Chatbot for:** Higher Institute of Police Sciences and Internal Security in Lisbon.

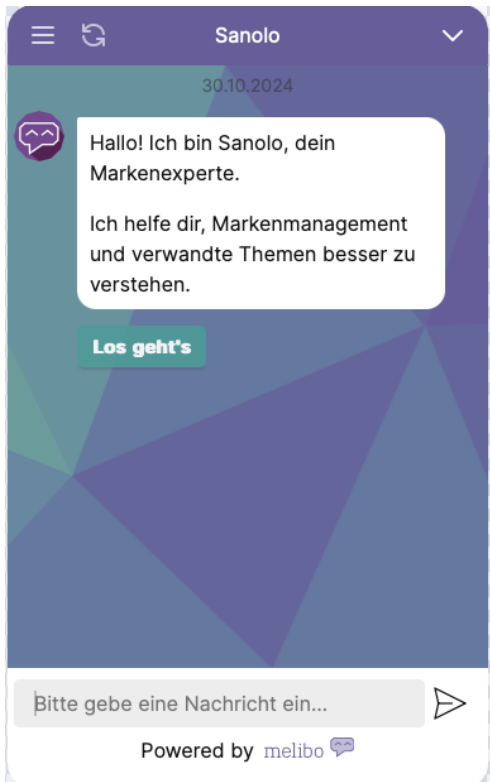
**Problem addressed:** filling the gap between theoretical knowledge and practical application

**Aim:** enhance the critical thinking skills of students in the course "Security Management and Leadership". Case studies and security strategies within the course





# Prototype Show case: **SANOLO**



## SANOLO (Germany)

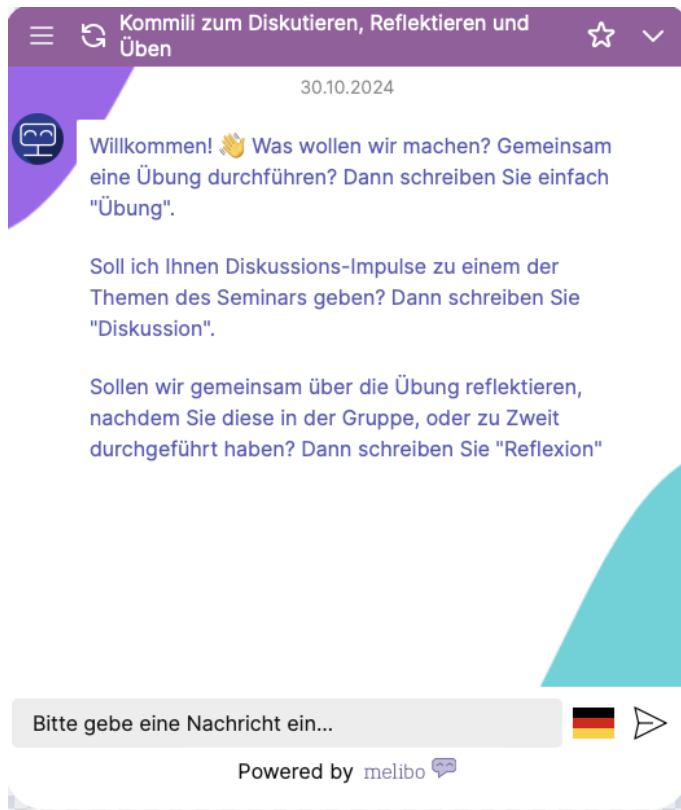
**Chatbot for:** BA course “Marketing management”

**Problem addressed:** lack autonomy, self-regulation, and self-directed learning skills or habits.

**Aim:** assisting students in Basics of Brand management



# Prototype Show case: DPR– Discuss, Practice & Reflect



## DPR– Discuss, Practice & Reflect (Germany)

### Chatbot for:

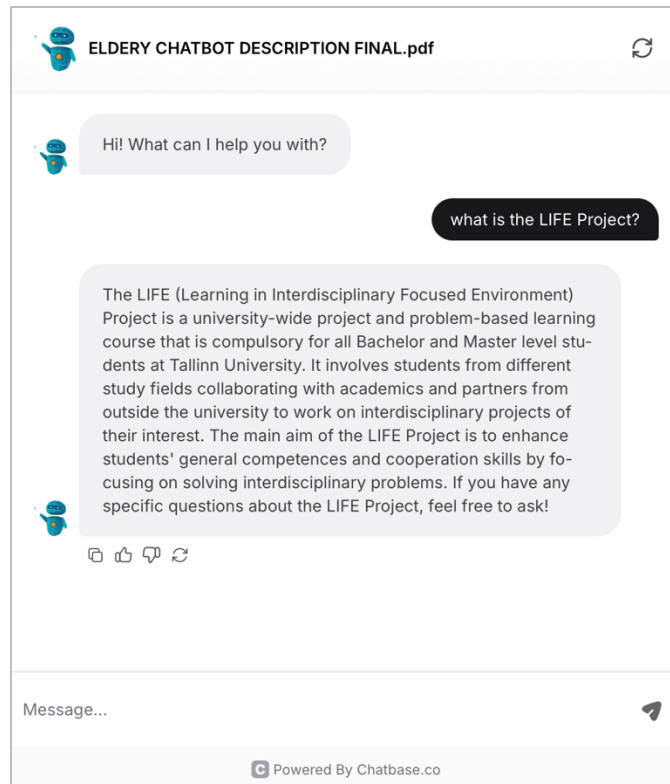
BA course "Communication Psychology "

**Problem addressed:** self-directed learning skills or habits.

**Aim:** assisting students in Communication Psychology Topics: Theory, Practice, Discussion



# Prototype Show case: ELDERY CHATBOT



## ELDERY CHATBOT (Estonia)

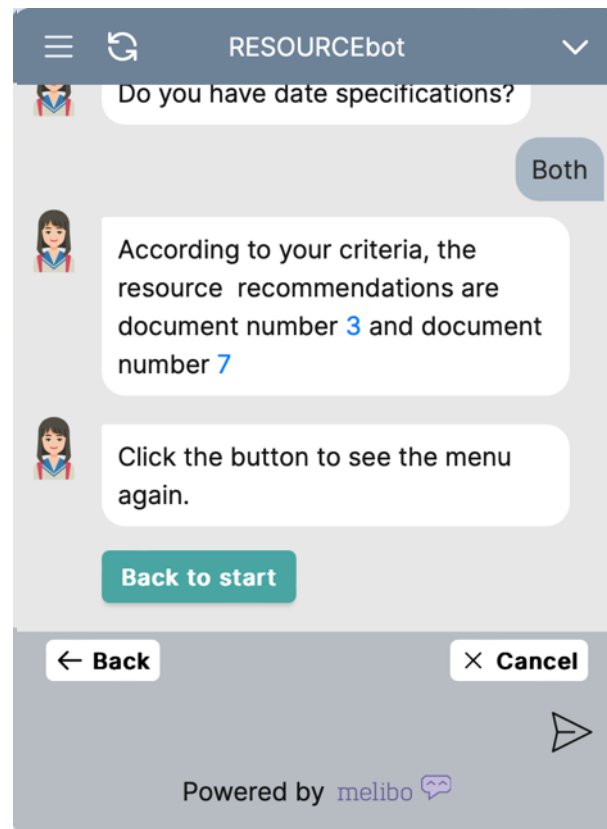
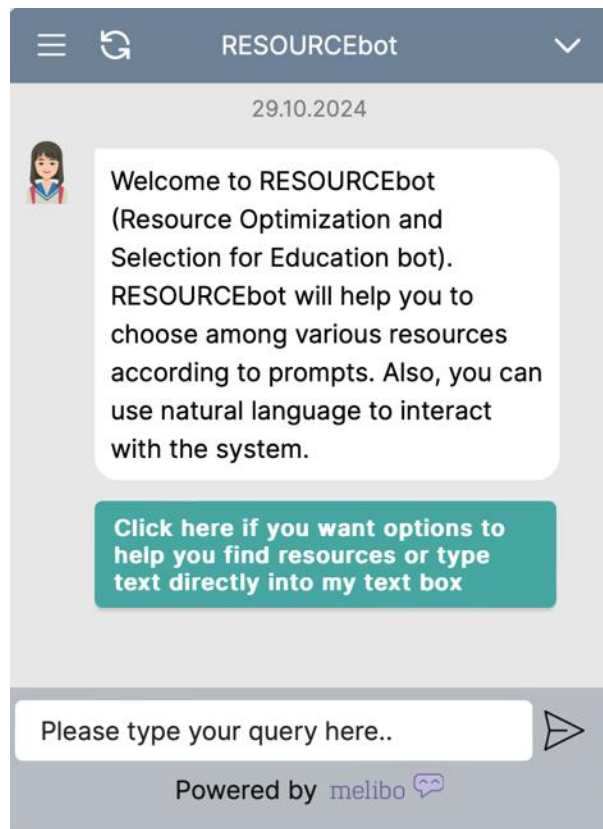
**Chatbot for:** Course “Enhancing Elderly Care Through Telepresence Robots”.

**Problem addressed:** each student has unique needs in this hybrid course. They come from diverse academic backgrounds, nationalities and educational levels (BA, MA)

**Aim:** This chatbot will serve as virtual learning assistant, providing personalized support to each student. The chatbot can guide students to understand what the LIFE project is and what is required to successfully complete all required tasks.



## Prototype Show case: RESOURCEbot



### RESOURCEbot (Portugal)

(Resource Optimization and Selection for Education bot)

**Chatbot for:** Students of the course  
Innovation and Knowledge Management

**Problem addressed:** limited time to  
select a resource, specifically a paper, for  
a scientific analysis.

**Aim:** assist students in evaluating  
resources and recommending those that  
best align with their queries. Suggesting  
resources based on specific topics,  
research methods, focus on people or  
data, or data analysis techniques.



## Prototype Show cases: Results



Our participants created  
**25+ chatbot-based use case scenarios** upon completion of the course.



Based on these scenarios, our pilot teachers implemented **10+ chatbot-based lessons that impacted X number of students**, these tested scenarios and their chatbots will be available for the general public.

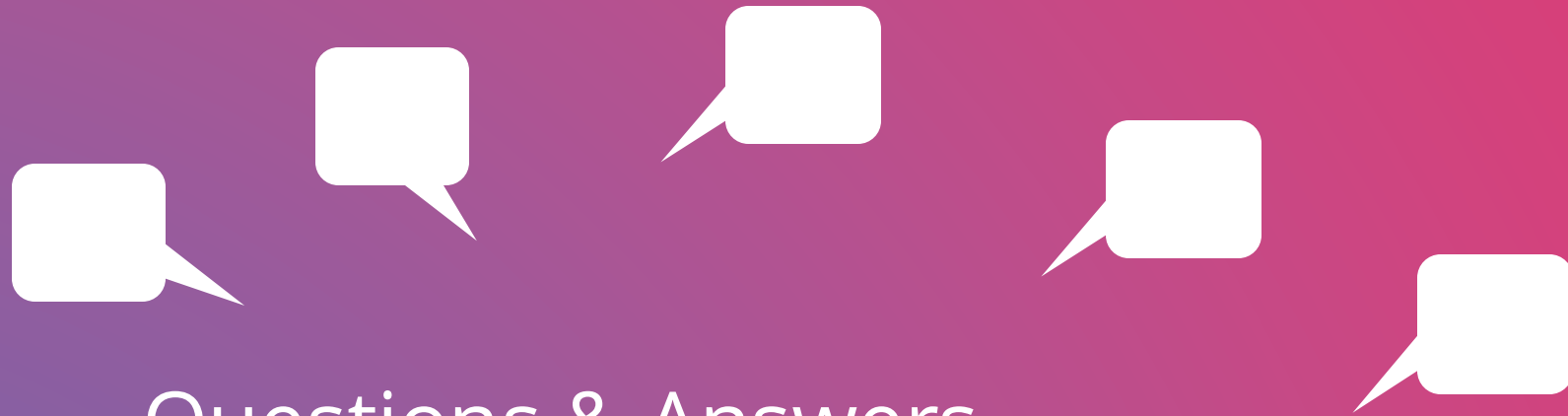
Meet LAICA:  
Your virtual assistant for distance learning at FHM

Prof. Dr. Tim Brüggemann, FHM)



# Innovating Classrooms with Chatbots: Pilot Teachers' Real-World Experiments

Prof. Dr. Ralf Brüning



## Questions & Answers



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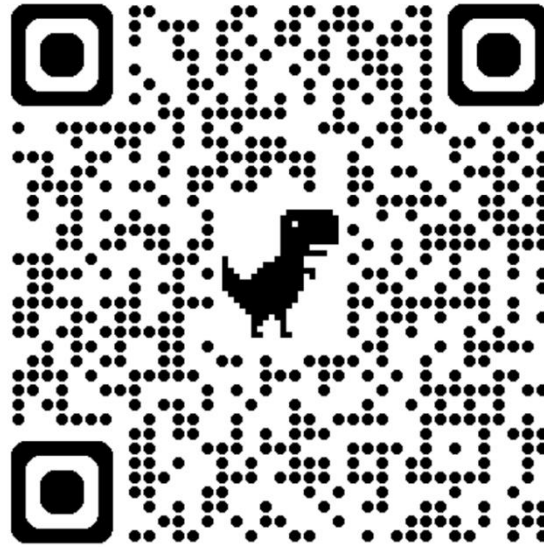
12:45 Questions & Answers

13:00 End of the event

Thank you for your participation!

## Follow us on LinkedIn

<https://www.linkedin.com/company/hybotedu>



**Program:** Erasmus+, KA220 - Cooperation Partnerships for Higher Education  
**Project's lifetime:** November, 2021 – October 31, 2024  
**Coordinator:** Fachhochschule des Mittelstands (FHM)

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