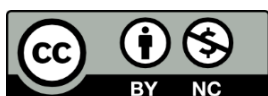


hybot
Enhancing hybrid teaching in higher education through chatbots

Mobile, flexible, and ready to use in a few steps: Hybrid Teaching at Bielefeld University



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INTRODUCTION

Hybrid teaching at Bielefeld University is a result of a joint effort of enthusiastic teachers and experts from Centre for Teaching and Learning. They designed and implemented a hybrid teaching scenario for the course German mediaeval literature and shared insights into the technologies used as well as strategies to engage with a hybrid students' community.

GENERAL CONTEXT OF THE HYBRID TEACHING PRACTICE

- Implementer: Bielefeld University (Bielefeld, Germany)
- Study program: German Philology (Bachelor degree)
- Course: German literature and Medieval studies
- Lifetime: October 2020 to February 2022
- Reference: Based on the interview with Dr. Fabian Schumacher, Centre for Teaching and Learning (Bielefeld University), as well as an interview with Birte Stiebing and Prof. Dr. Maximilian Benz, Professor of German Literature and Medieval Studies (University Bielefeld), in the blog inno.teach
https://blogs.uni-bielefeld.de/blog/innoteach/entry/prof_dr_maximilian_benz_dein
- Compiled and structured by Fachhochschule des Mittelstandes (Bielefeld, Germany)



Fig. 1. Dr. Fabian Schumacher
Center for Teaching and Learning



Fig. 2: Prof. Dr. Maximilian Benz
German Literature and Medieval Studies

PARTICIPANTS AND THEIR PREVIOUS EXPERIENCE

The case study was implemented within the course German Literature & Medieval Studies, which was offered under the full-time Bachelor study program German Philology at the Faculty of Linguistics of the University of Bielefeld, Germany. A total of around 200 students (mixed gender) took part in the hybrid lectures. Their age ranged from 18 to 28 years. Most of the students were experienced with online learning settings. The teacher was also familiar with online teaching and respective technologies.



INITIAL SITUATION

A strategy process on "Teaching and learning in the digital age" was initiated at Bielefeld University in 2018. This process has been supported by the Hochschulforum Digitalisierung¹ since January 2020. Under this initiative, teachers and students jointly discussed the design of digital and on-campus university teaching.

As one of the outcomes of this discussion, Bielefeld University offered their teachers different support services in media technology, media usage and technical aspects of digital teaching and learning. In particular, two types of teacher support services towards designing hybrid settings had been implemented: support in using media and technologies and didactical support. In this manner, teachers and students already got experience with online teaching resp. online learning, such as online lecturing, online collaboration as well as dealing with digital learning materials.

Hybrid teaching has been used since 2020 due to social distancing under pandemic conditions. One part of the students participated in the lecture on-site at the classroom while other students joined the lecture online via Zoom video conferencing system using their own laptops. It was already established practice to provide digital learning materials via an online campus portal. This approach was intended to enable students to participate as actively as possible in the lessons as well as to maintain contacts between students and teachers as close as possible.

CURRENT REASON

The current reason to carry out a hybrid course were the restrictions for classroom teaching in the first year of the pandemic. After trials with alternating models, many students increasingly attended lectures online from home. In order to mitigate the risks linked to the isolation of online students, a hybrid course was developed in 2020, which offered students the best possible participation in lectures in both, face-to-face and online mode. In this way, the lectures could be held on-campus with some of the students and at the same time were opened for online students. The winter semester 2020/21 started in hybrid teaching mode, but then had to be switched to the online format due to the rising infection rates.

BENEFITS FOR THE STUDENT

With the use of hybrid lectures, an attempt was made to make classroom teaching more attractive again by making it more flexible. The following benefits for the students were intended:

- Hybrid teaching should have positive effects on the accessibility of the learning environment. For instance, students with children could take part in the courses at any place.
- In hybrid teaching settings, the students (sometimes more than before) should take responsibility for the success of their learning process.
- On-campus students and teachers in hybrid settings should make use of digital tools that would enable online collaboration between both online and on-site students.

¹ <https://hochschulforumdigitalisierung.de/en> German Forum for Higher Education in the Digital Age to monitor, share and act as a source of information on important (inter)national developments in Higher Education.

LEARNING OBJECTIVES OF THE COURSE

Students were expected to understand the basic principles, topics and forms of German literature in the middle ages, and to demonstrate the acquired knowledge through creating an own podcast.

HYBRID TEACHING SCENARIO

A teacher conducted a lecture at the regular university lecture hall with a part of on-site students while other part of students virtually joined the same lecture via video conferencing.

A rollable all-in-one videoconference display (Fig. 3) was located in the lecture hall and was deployed for the video transmission of the online students.

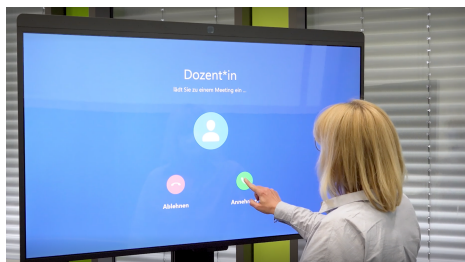


Fig. 3: Rollable all-in-one display

The display with the broadcasted online participants was visible only for teachers (Fig. 4 & 5).

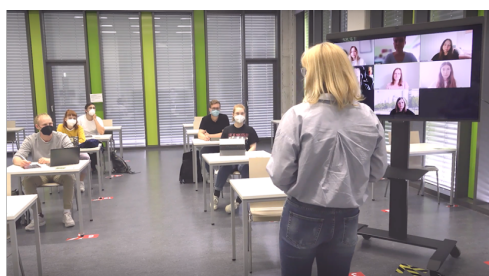


Fig. 4. Teacher in front of on-campus and online students



Fig. 5: Communication between teacher and online participants in the classroom.

For the on-site students, the PowerPoint slides were projected through a video projector. Online students could see the slides provided via screen transmission, as has already been successfully tested when online teaching.

HARDWARE AND SOFTWARE USED

The video conferencing system Zoom Rooms was installed on the devices that were deployed for hybrid teaching settings. Zoom Rooms enabled on-campus and online students to participate in a Zoom meeting without a personal login. Online participants could easily join the event's Zoom

meeting using their laptops (Fig. 6). The online participants thus had "eyes and ears" and the opportunity to be heard by classroom participants. With the Zoom functions, all people registered in the meeting could share screen content, including on-site students with their own laptops or mobile devices.

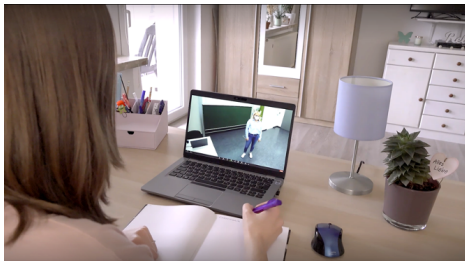


Fig. 6: Online student joining the hybrid lecture

CONTENT CREATION

Digital learning contents were provided to the students through the university online campus. Most of the contents had been already used in previous non-hybrid lectures, such as PowerPoint slides, PDFs, online self-assessment tests, exercises, materials for group work or glossary. Chatbots were not used in this event. There was no support needed for the content production.

INTERACTION AMONG PARTICIPANTS

On-campus students were much easier to engage with: they took part in the lecture on their own initiative. Online participants were less active and had to be specifically addressed by the teacher. The interaction and collaboration between online and on-site participants often found technical barriers since on-campus students could not see online students. From the very beginning, it was a challenge for the teacher to moderate the discussions and contributions of online and on-campus students that took place simultaneously.

ASSESSMENT TASK

Before the university switched to online and hybrid teaching, the assessment task consisted of submitting a written study paper on a selected lecture topic. Even then and increasingly when making transition to online learning, it was difficult to motivate students to make use of this assessment type, what led to the insufficient quality of the submissions and student dissatisfaction. Therefore, the teacher changed the exam format requesting students to create a podcast in group work. Initially, students were confused by the request of teacher to produce podcasts. Teacher solved this through learning by doing: he produced the podcasts himself and used them as learning materials.

STUDENT EVALUATION

The students experienced the hybrid lecture concept positively compared to a purely online lecture. They saw advantages in the greater spatial flexibility over the entire lecture period allowing them to



benefit from both modes. The opportunity of the face-to-face communication and exchange in the lecture hall was a clear advantage over online participation.

Online students positively stressed that they were "closer" to what was happening in the lecture hall comparing to a normal online lecture. Though, missing interaction between the online and on-site participants was stated.

TEACHER EVALUATION

The teacher primarily saw the limited social presence in hybrid teaching as a critical aspect. Hybrid teaching was particularly useful for students who were not able to attend lectures due to health risks or limited mobility. However, the division into online and on-site participation was unfavorable for students and teachers. Sometimes the online students felt lost when sitting alone in front of their webcams. Thus, it was more difficult to get in touch with them if they did not understand something. Furthermore, the sense of the community was missing. To promote a sense of "hybrid" community, teachers monitored the chats of online students and requests to speak.

Young students, in particular, were advised to take advantage of as many face-to-face offers as possible. Online formats were recommended as a useful supplement, as a recapitulation or as an alternative solution if they could otherwise not be able to participate.

According to the teacher interviewed, hybrid and online lectures required a different time structure than face-to-face lessons. Shorter lectures were easier to follow, especially by online students. Additional learning contents could be conveyed via asynchronous elements, such as podcasts.

At the beginning of the hybrid lecture series, spatial orientation between teachers and students was a little bit problematic. If the teacher looked into the camera, he had eye contact with the online students, but lost connection to the on-site students. This challenge was mastered over time through routine.

QUALITY ASSURANCE

Bielefeld University provided teachers with support for the further development of lectures via so-called "Quality Fonds". This included, for example, didactical exchange or peer reviews.

The quality of hybrid sessions was assured within the scope of the standard institutional quality assurance procedures, including evaluation by students.

TRANSFERABILITY AND SUSTAINABILITY

Under pandemic conditions, hybrid teaching has become an established format at the Bielefeld University. The hybrid "all-in-one" technical solution was installed at around 100 seminar and lecture rooms. The technical and didactic support was guaranteed through support teams.

However, once the COVID-19 related restrictions at the universities were eased, many lecturers returned again to purely face-to-face learning events.



CHALLENGES

A particular challenge that already existed before the pandemic and increased when teaching online was to engage with the students. To motivate them, podcasts were introduced by teacher as student assessment tool, which proved to be successful.

Another challenge was to foster a sense of hybrid community among online and on-site students that was considered a success factor for hybrid teaching. This was supported through the technical and technological infrastructure at the Bielefeld University.

For more information, consult the webpage (including video) below:

<https://www.uni-bielefeld.de/lehre/digitale-lehre/digital-lehren/hybride-lehre/>

IMAGE CREDITS

Fig.1: Dr. Fabian Schumacher (source: Fabian Schumacher, 2022) <https://www.researchgate.net/profile/Fabian-Schumacher> (Page retrieval 10.12.2022)

Fig. 2: Prof. Dr. Maximilian Benz (source: Maximilian Benz, 2022) https://blogs.uni-bielefeld.de/blog/innoteach/entry/prof_dr_maximilian_benz_dein (Page retrieval 10.12.2022)

Fig. 3: Rollable all-in-one display (source: Bielefeld University, 2022) Video Screenshot 10.12.2022: <https://www.uni-bielefeld.de/lehre/digitale-lehre/digital-lehren/hybride-lehre/> (Page retrieval 03.12.2022)

Fig. 4: Rollable all-in-one display (source: Bielefeld University, 2022) Video Screenshot 10.12.2022: <https://www.uni-bielefeld.de/lehre/digitale-lehre/digital-lehren/hybride-lehre/> (Page retrieval 03.12.2022)

Fig. 5: Communication between teacher and online participants in the classroom (image shared by Bielefeld University, 2022) Video Screenshot 10.12.2022: <https://www.uni-bielefeld.de/lehre/digitale-lehre/digital-lehren/hybride-lehre/> (Page retrieval 03.12.2022)

Fig. 6: Online student joining the hybrid lecture (image shared by Bielefeld University, 2022) Video Screenshot 10.12.2022: <https://www.uni-bielefeld.de/lehre/digitale-lehre/digital-lehren/hybride-lehre/> (Page retrieval 03.12.2022)