ProLehre | Media and Didactics
in the Institute for LifeLong Learning
Technical University Munich

CampusConnector

A guide to developing cross-location teaching concepts

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What is this guide about?

In this guide, we aim to demonstrate how cross-campus teaching concepts can be designed and implemented at TUM. In addition to a theoretical classification and foundation, we will use four different prototypical teaching scenarios as examples of a systematic conceptualization. In doing so, we will also discuss the possible objectives of choosing a cross-campus format, as this influences the design. We will then look at the technical and organizational framework conditions. The focus here will be on designing hybrid teaching formats. Finally, we have compiled examples of good practice in the form of interviews with lecturers.

What can you expect from this guide?

If you would like to create a new teaching concept or expand an existing concept with cross-location elements, you will find some suggestions and design options here that can support you in your project. Concepts with several lecturers at different locations are also presented. In addition, you will find tips and experience reports in our interviews to help you implement your project as confidently as possible.

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1 Why cross-campus teaching?

"Globally networked, rooted in Bavaria " is the motto on the Technical University of Munich homepage.[1] TUM is no longer limited to Munich's city center. Although its origins lie in Arcisstr., only a tiny part of the university remains here. Other parts are located in Garching, Weihenstephan, Heilbronn, Straubing (Figure 1), and, with TUM Asia, also in Singapore. There are also other locations and facilities.

The Technical University of Munich is organized into schools. A school is an academic unit that comprises several departments. These initiatives aim to integrate different scientific domains and specialize in transdisciplinary research and teaching, developing forward-looking solutions for people, nature, and society. As a result, some schools are spread across multiple locations; for example, the TUM School of Management has locations in the city center, as well as in Garching and Heilbronn, and the School of Life Sciences has locations in Freising and Straubing.

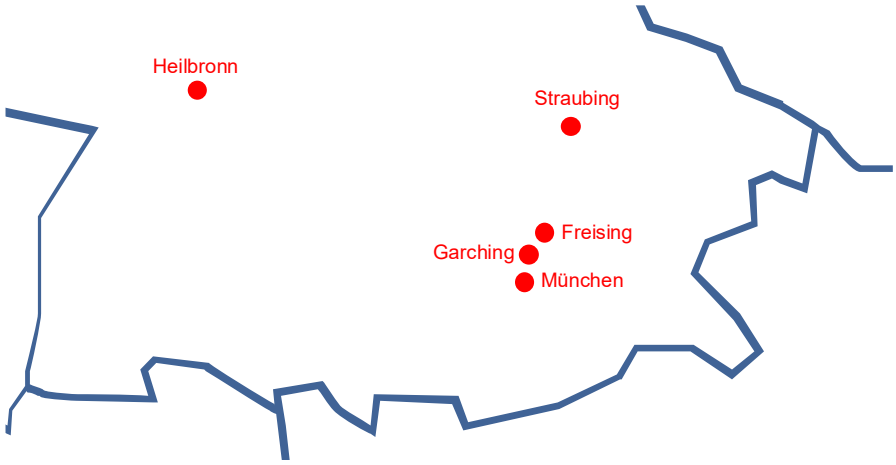

Figure 1: Some locations of the Technical University of Munich in southern Germany

Additionally, various efforts have been made to expand cooperation with universities in different cities and countries.

Different focal points with different expertise are bundled through this organization in schools, so it makes sense for many degree programs to integrate courses at various locations. Incorporating different perspectives, approaches, and research focuses is important when acquiring essential skills

[1] Further information on the locations and schools can be found at: https://www.tum.de/en/about-tum/locations

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such as solving complex problems. By incorporating different perspectives and expertise, synergies can lead to the development of new solutions (Moirano, Sánchez & Štěpánek, 2020; Strogilos, King-Sears, Tragoulia, Voulagka & Stefanidis, 2023), which may be particularly necessary for addressing many socially relevant research questions. However, this usually involves cooperation between different locations.

Within a school, the foundation for such cooperation is laid by a TUM community growing across location boundaries. To identify with this community, students should be able to participate and help shape it.

At the same time, the study ability of a degree program must be guaranteed, which is why the time required for relocation must be considered in the semester plans. The time gaps between two courses are often too small, so only short trips can be made on a regular basis. Longer distances are very challenging in terms of time, as they cannot be covered multiple times during the week.

This creates tension between the logistical problems described above (study ability), the strengthening of TUM communities, and the need to incorporate different perspectives into the students' education.

How can teaching be designed effectively in this area of tension? The challenge in developing cross-location teaching concepts is to combine online, face-to-face, and hybrid elements in a meaningful way. However, as it is more challenging to decide which elements are more suitable for a course's specific requirements than others, the *CampusConnector* project was launched. *CampusConnector, funded by Stiftung Innovation in der Hochschullehre,* is designed to support lecturers in developing their cross-campus courses. To this end, we utilize core elements to guide teachers in a systematic approach and present various prototype teaching scenarios.

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2 Why are in-person components essential in cross-location teaching concepts?

In this chapter, we would like to explain the principles that, according to current understanding, are essential for "good" teaching. It is important to emphasize from the outset that the choice of delivery format alone - online, face-to-face, or hybrid - can hardly explain differences in student learning outcomes (Means, Toyama, Murphy & Baki, 2013; Raes, Detienne, Windey & Depaepe, 2020). Nevertheless, it is essential to think about implementation. This is because, to optimally resolve the tension mentioned above, approaches that combine the strengths of the individual formats are needed. We are convinced that including attendance components in cross-campus concepts is essential. We want to explain this below.

If the delivery format has no influence, what influences learning success?

The most substantial influencing factors result from the specific design of a course; they include the structure and preparation of the course, the quality of the relationship between lecturers and students, and the motivational aspects on the part of the students (Schneider & Preckel, 2017).

Our understanding of motivation is built upon Deci and Ryan's (2012) self-determination theory. This states that every person has three basic psychological needs: the experience of autonomy, competence, and social integration. It is primarily due to the need for social integration that students strive for a sense of community among themselves, and a functioning lecturer-student relationship is essential.

Why should cross-location teaching concepts include in-person components?

The social interaction between lecturers and students and between students themselves forms the interpersonal relationships in a course (Wettstein & Scherzinger, 2021). Building and maintaining a relationship can be more satisfying in a face-to-face environment compared to an online environment (Cole, 2016), as social interaction (in physical presence) is perceived as more conducive to building a closer social bond and a more positive perception of the interaction partners (Okdie, Guadagno, Bernieri, Geers & Mclarney-Vesotski, 2011; Tichavsky, Hunt, Driscoll & Jicha, 2015). We humans perceive ourselves as more trustworthy in face-to-face contact than in purely online settings, which positively affects our interaction with other people (Bailenson, 2021; Okdie et al., 2011).

One reason could be that human communication in person leads to more intensive cognitive and emotional reactions, enabling a more comprehensive and engaged processing of social signals (Zhao, Zhang, Noah, Tiede & Hirsch, 2023). At the same time, it has been demonstrated that we require more

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cognitive resources when communicating via video conferencing and can only perceive subtle non-verbal signals to a limited extent (Bailenson, 2021). These findings should also be taken into consideration when building a community. Students find it easier to exchange ideas in class and network with new peers, especially at the beginning of their studies (Cyranka, Gerstner & Sedlmeier, 2022). It has been demonstrated that personal contacts, particularly those established in person at the beginning of a degree program or an event, such as a kick-off event, increase students' receptivity to subsequent online interactions (Jiang, 2020). For this reason, in the case of cross-location event concepts, consideration should be given to the schedule at which face-to-face elements are feasible and make sense.

Why can a balance of face-to-face and online components make sense?

In cross-location concepts, however, factors such as scaling cooperation options and student flexibility must also be taken into account. For this reason, it is essential to also offer the option of working remotely. The choice of flexible participation can also positively affect the motivation of all those involved - the keyword is experiencing autonomy (Deci & Ryan, 2012). Cooperation between different locations can also lead to other perspectives on content and new contexts, and thus enable more competence-oriented learning outcomes (Strogilos et al., 2023). This could also create greater relevance for students, positively impacting learning success (Schneider & Preckel, 2017).

The two almost contradictory concepts - face-to-face and online teaching - should be favorably combined in cross-campus teaching. Relationship building, community formation, and the development of a learning culture should be the primary focus of face-to-face teaching. In contrast, providing information and regular coordination can be covered online to ensure cooperation, exchange, and flexible access. We will use various concepts and examples to explain exactly what this combination can look like. In this handbook, we will also examine purely face-to-face options, such as a block course (see Chapter 8) or formats that enable individual support through face-to-face exercises (see Chapter 4.4).

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3 Core Elements of Cross-Campus Teaching

To facilitate access to cross-campus teaching and make it more tangible, we will discuss specific prototype scenarios with different focal points in Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**. To do this, it is helpful to introduce some core elements of the conception of such teaching formats in advance. We will use these as a structuring aid for teaching concepts across locations.

3.1 The goals - Why do you want to offer your course across locations?

"Why do you want to offer your specific course across locations?" Please address this question first. The focus is on conveying information, skills, and attitudes. At first glance, asking yourself this question is no different from the approach to an "ordinary" course. However, there may be additional reasons for deciding on a particular format for a cross-campus concept. Each of these aspects needs to be discussed and will influence the design of your course.

Goals for cross-campus teaching concepts

1. **Scalability.** One goal for a cross-campus concept can be spatial limitations. For example, it is only possible for some students to be accommodated in one lecture hall. A cross-campus concept can help to overcome this limitation.

2. **Flexibility.** Another reason may be to prioritize the study ability of the course and, therefore, choose a spatially flexible approach. Such a concept can bring together students who would only sometimes be able to attend the course due to different locations.

3. **Cooperation.** Different locations have different focuses. Therefore, another goal can be to actively promote collaboration between locations. These can be of a content-related or organizational nature. In this way, topics with different complementary perspectives can be addressed.

4. **Community.** When students are spread across different locations, one aim of a cross-campus course can be to promote a sense of community. This can be both motivationally beneficial and enriching in terms of content (see Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**).

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3.2 The teaching format - what do you want to do?

Once you have clarified the "why," ask yourself what type of course you want to pursue. What teaching format do you have in mind? Would you like to hold a seminar or a lecture? Should there be exercises to complement the lecture? Or would you like to do something completely different?

Your choice of teaching format directly influences the design and implementation options for your course.

3.3 The team - Who is on your team or can support you?

The next question is, "Whom do you want to run the event with?". Do you have colleagues who can complement your event usefully? Do you have tutors who can support you with exercises? The question that follows directly from this is: "Where is your team located?"

Some members of your team may be located in a different area. In such a case, consider how to distribute tasks and roles wisely and best use local resources for your course.

3.4 The students - What makes your students unique?

The last question deals with your students. Who are you dealing with here? Your concept depends on the number of students in your course, their study phase and program, and the location where they are based.

The answers to these (sub-)questions influence, among other things, the extent of supervision, the requirement for students to organize themselves, and the required infrastructure.

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4 Teaching scenarios - cross-campus teaching concepts

In the following, we present prototypical teaching concepts. Would you like more information on these scenarios? In Chapter 6, you will find concrete examples of implementation in the form of interviews with the lecturers responsible for the initiative.

We have defined core elements to structure and make the concepts more flexible. As a lecturer, this provides a wide range of possible combinations, enabling you to develop an optimal concept for your course. For each core element (objectives, teaching format, team, students), you can ask yourself what you want to achieve or implement here.

Let us take a look at the core element goal. Would you like a cross-campus teaching concept to scale your course or allow for flexibility? Do you want to facilitate thematic cooperation between two campuses, or do you aim to establish a large professional community? Each of these goals will impact your format, your team, and your students. For example, if you plan to scale your course across several locations, should all your students attend the course in person together, or would you prefer to offer it online or in a hybrid format?

Your students should only have to attend some courses in person, taking into account academic feasibility. However, they should be bundled together, for example, as a block course (see Chapter 8) or for a longer individual course in the semester. However, if you want to offer additional attendance components at each location, you will most likely need a team with representatives at each location. Exercises or in-depth studies could then be carried out there. You can also combine several objectives in your concept.

The conception of a cross-location teaching concept is, with the help of the core elements, a rearrangement of the individual (partly already existing) event formats (lecture, exercise, etc.). However, we can only present some combinations in this text. For this reason, we have attempted to concretize and elaborate on the various aspects of cross-location teaching using prototypical scenarios. If these inspire you, you can, as described above, take out individual elements and combine them in new ways. For example, if the live event is a hybrid in one concept, you can also hold it in your concept in face-to-face mode only. Your decisions should always be related to your objectives and keep the overall concept in mind. Figure 2 illustrates the various prototypical concepts. These will serve as visual anchors for these concepts, providing a systematic overview of the key ideas.

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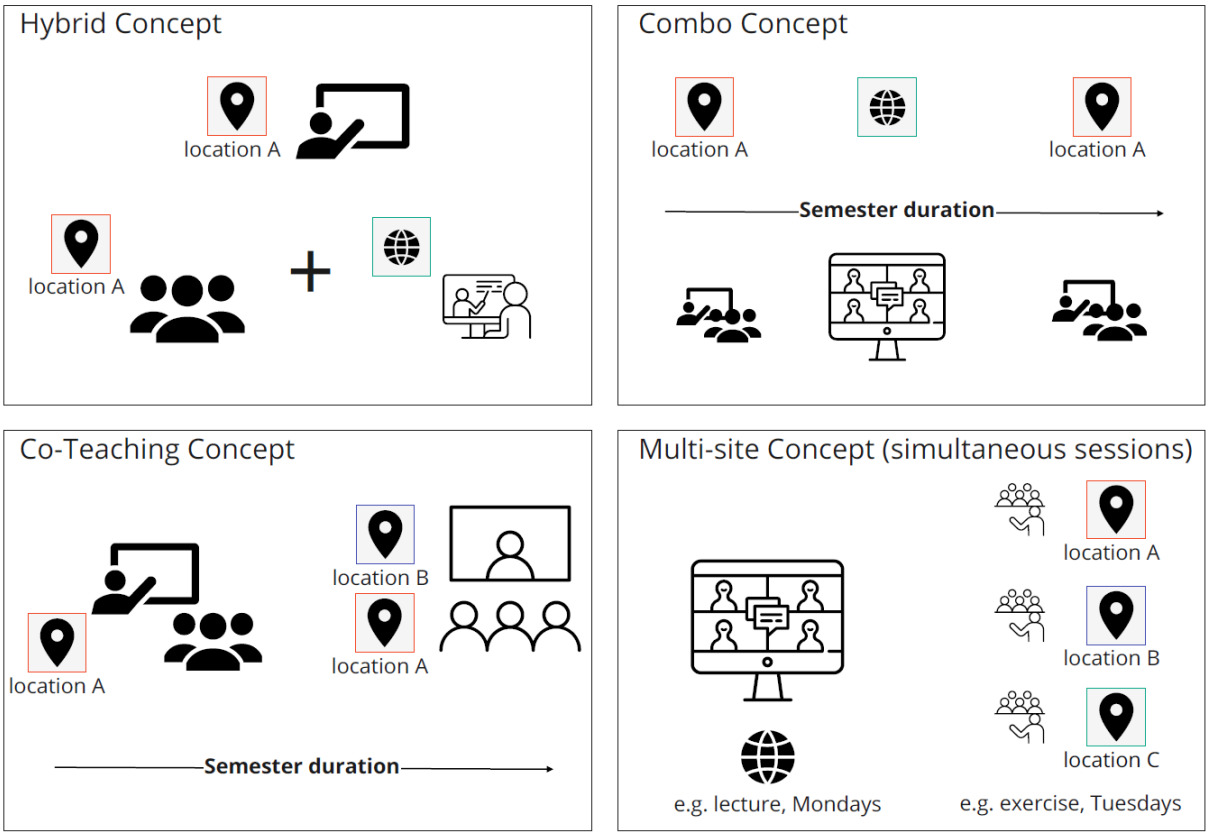

Figure 2: Overview of prototypical cross-campus teaching scenarios

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4.1 Hybrid Concept

In the prototype concept, we examine the design of a live event that is offered as a hybrid, i.e., the face-to-face event is streamed live during the course, which enables tremendous spatial flexibility for students. They can decide spontaneously before each event whether they would like to participate in person or online.

Goal: Flexibility and scalability - Every student can participate in the event, regardless of their location.

Teaching format: In principle, it is suitable for all event sizes, with increased opportunities for interaction, especially for smaller seminars.

Team: Lecturer on site. We recommend holding the event with a support person.

Students: They are independent of location and have the spontaneous choice of participation (either on-site or online).

Goal

Courses that are infrequently offered, in particular, have benefited from the switch to online teaching during the pandemic. This is because students from locations where these courses were not offered could participate via video conferencing systems. We aim to retain this flexibility for those who would need to travel from distant beach locations, while also taking advantage of the benefits of face-to-face teaching for local students (see Chapter 2).

Design

One such prototype concept is a hybrid event. This creates the opportunity to participate in the event in person and simultaneously online via a live stream. Students can spontaneously decide how to participate on the event day. The collaboration between the two groups - online (Zoomies) and in-person (Roomies) - takes place live at group tables. Roomies are equipped with smartphones or laptops to participate via online tools. Important content and results are compiled and recorded on an online whiteboard (e.g., Miro). This ensures that all students can access the content. Lecturers provide impulses, moderate the process, and try to supervise both groups equally.

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Adjustments

In principle, lecturers can implement this concept independently in their own classes, but we recommend providing support for beginners. This is because dealing with the two groups (Roomies and Zoomies) can quickly become overwhelming. A fundamental requirement for implementation is also a certain amount of essential technical equipment (see Chapter 5) and a well-planned process. The interaction between the groups is a further adjusting screw. Here, you can simplify the interaction, particularly if you are supervising more significant events. For example, you can separate roomies and zoomies for activities, allowing each group to interact only with its own members. Please note that this may make it more difficult for students to develop a sense of community. It is essential to mention this again: Be sure to keep interaction in mind, as this interaction and the activity of the students are of great importance for learning success (see Chapter 2)

Challenges

The biggest challenge with a hybrid format is coordinating and organizing the event. It should be considered that hybrid teaching is quite demanding, and new habits must first be developed. Novices should also avoid implementing a complex teaching concept in such a format.

It is easier to separate Roomies and Zoomies from each other, i.e., not mix them during activities. Although this is technically possible, it should only be done with a small quantity of experience, as technical difficulties can arise during implementation, such as feedback issues. Another common fear associated with hybrid teaching is that few or no students will participate in the face-to-face components of the course due to the possibility of online participation. Even if this autonomy positively affects student motivation, it can lead to demotivation among lecturers and have a negative impact on student learning. In such a case, we recommend clear communication with transparent expectations. On the other hand, you should consider the design of the attendance components. Can I increase the added value of on-site participation? Can I make my presence more attractive? Can I use the presence for more exchange and interaction?

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4.2 Combo Concept

The second prototype concept focuses on the number and timing of face-to-face appointments. In the combined concept, some dates are held in person (e.g., kick-off and conclusion), and the remaining dates are held online.

Goal: cooperation, flexibility, and community. Students from several locations should/can work together, travel times should be minimal, and a community should be built up through targeted presence.

Teaching format: Certain sessions are held in person at a single location, while the remainder are conducted online. This is suitable for all types of teaching formats.

Team: This can be completed alone or as part of a team. No (technical) assistance is required.

Students: From different locations. Students should be able to travel to the chosen location for the face-to-face sessions.

Goal

Students from one campus would like to attend an event at another campus. What may sound trivial at first glance poses significant challenges for students in practice. Depending on the distance and connections between the campuses, it is often difficult or even impossible to change location for regular appointments due to the travel times alone. Smaller locations typically require more personnel resources to host all events. At the same time, the advantages of face-to-face teaching (see Chapter 2) should be considered. For this reason, a concept is being sought that reduces student travel times and enables attendance. To this end, online and face-to-face sessions are combined.

Design

With the combined concept, the attendance component varies from one event to another. For example, two events can be held in person: a kick-off event and a final event at which results are presented. The kick-off event, in particular, should be designed to focus on students getting to know each other, exchanging ideas, and interacting with each other to maximize the benefits of attendance (see Chapter 2). In addition, groups may be formed at the end of the first event to collaborate on a specific topic/project over the semester and present their findings. The other courses are held online. Interactions should also be incorporated here. The conclusion, for example, is held in person with all students.

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Adjustments

The first adjustment screw concerns the number of attendance days. The number and duration of attendance dates depend on your learning outcomes and the purpose for which you will use the attendance. However, it is best to continually weigh the costs and benefits. Every face-to-face appointment means increased effort for students from remote locations. Your face-to-face sessions should not only serve the purpose of exchange, but excursions, project work, or practical units can also be offered to supplement or deepen your course content. You can also utilize the classroom elements to apply sophisticated working techniques, such as those used in the lab, presentations, or creative thinking skills like design thinking[2]. You can also organize the online sessions differently depending on your learning outcomes. You can also emphasize exchange and interaction in this context. Regarding the learning process, you should regularly incorporate phases in which your students actively engage with the content (see Chapter 2). If you want your students to become familiar with specific locations, consider alternating the locations where face-to-face sessions are held. This course concept could also be designed as co-teaching (see Chapter 4.3).

Challenges

The biggest challenge of such a concept is coordinating it with your students' regular semester schedule. Please clarify how this can be integrated into the semester schedule when changing locations, especially regarding attendance dates. If some students are unable to attend the course for this reason, it will negatively impact community building and their motivation. If you decide not to hold the course at your home campus, you will face some initial challenges, such as organizing space, obtaining keys, and ensuring access to technology. It may also be worth booking a room for the online-only sessions so that students already there for other events do not have to travel home. The group's heterogeneity could be challenging if you plan to offer your course to students from different degree programs (see Chapter 10). Try to integrate this diversity into the course. Encourage the participation of students from other degree programs, as the course can benefit from different/diverse perspectives. Consider what prior knowledge your students should have and how you (or they) can address any gaps in their knowledge.

[2] You can find an idea of what the Design Thinking method is and how it can be used in teaching here: https://www.celt.iastate.edu/instructional-strategies/teaching-strategies/design-thinking/

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4.3 Co-Teaching Concept

In the third prototypical teaching concept, we look at a unique feature of the teaching team. In the co-teaching concept, lecturers (if necessary, from different locations and areas of expertise) develop a course together.

Goal: Cooperation. Lecturers from various locations collaborate to develop a new concept, leveraging the expertise of each location to enhance the overall concept.

Teaching format: The course is conducted on a primary campus in person. Other lecturers can be integrated into this course online. Particularly suitable for more significant events or lecture series.

Team: Several lecturers at different locations. We recommend support at the main campus if lecturers are transferred.

Students: The students are from the main campus.

Goal

The objectives for course cooperation between locations can be summarized in two main reasons: a new development with different expertise or pooling resources for existing formats. The latest developments in teaching formats can benefit from different subject cultures, knowledge, and, for example, access to special equipment. This can illustrate the complexity and multifaceted nature of specific disciplines to your students, thereby creating a more profound understanding (see Chapter 2**Fehler! Verweisquelle konnte nicht gefunden werden.**). Pooling resources enables the conservation or more effective use of existing resources. A co-teaching concept could be beneficial for identical courses offered in parallel at multiple locations.

Design

A common variant is an introductory course offered at a single location by lecturers from different campuses. In planning, there is a primary campus with on-site lecturers, as well as lecturers who broadcast their courses live from another campus. The content is divided among the lecturers with different focuses in advance. It must also be ensured that any necessary technical infrastructure (see Chapter 5) is available at both locations. Depending on the topic, the event will be held in person or streamed into the lecture hall. During the stream into the lecture hall, a person is responsible for ensuring everything runs smoothly and moderates the event if necessary.

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Adjustments

This concept can be implemented in various ways. For example, students can be located at various places. Lecturers can offer their courses as a hybrid on their campus. Students from other places are then connected online. The degree of co-teaching can also vary. You should consider why you chose co-teaching: Is it about different perspectives, workload relief, contact with another location, or something completely different? This will also determine the frequency with which the event is streamed or held in person.

Challenges

In addition to the technical equipment, a fundamental prerequisite for such a concept is the possibility of support in the lecture hall. Lecturers who stream their events in the lecture hall depend on someone to support them on-site. In addition to technical support, this support can also include moderation, which requires a certain level of experience with content and a high degree of reliability. The explicit role of this person will again depend on your learning outcomes and the level of interaction. Especially if your students are new to this concept, we recommend considering the person and the didactic approach. To implement a co-teaching concept with a stronger focus on hybrid courses, consider the "Hybrid concept" (see Chapter 4.1).

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4.4 Multi-site Concept (simultaneous sessions)

In our last prototype teaching concept, we supplemented the co-teaching concept with an in-depth/practical component: a well-scaled online or hybrid event with exercises/practical training/deepening in presence at the respective locations.

Goal: Scalability. Students from different locations and degree programs should be able to participate, taking into account program-specific requirements.

Teaching format: Basic course online/hybrid and supplementary face-to-face elements such as exercises, practicals, project work, etc., each carried out at one location or for a specific degree program. Suitable for extensive courses, especially foundation courses.

Team: Lecturers for introductory courses online or hybrid, lecturers at the individual locations required for in-depth classes.

Students can participate in the live event and attend the exercises from anywhere, regardless of their location.

Goal

Fundamental subjects such as mathematics, physics, and chemistry are essential, especially in science courses. However, these basics are usually taught separately, even though the content is practically identical. The most significant difference here often lies in the application relevance and the course-specific context of the content. At the same time, it can make sense to supplement courses with a robust application or practical focus with exercises, practicals, or project work. It makes sense to carry out these additions in person, which can be challenging due to the need for resources to support cross-location concepts. How about a concept that redistributes resources and can be scaled up simultaneously? One possible solution is the multi-site parallel concept.

Design

The theoretical content is offered in the form of an online event. Students from various locations and degree programs can choose whether to attend the course online or in person with other students. In addition to online events, exercises are held in person once a week, and the course content is tailored to the specific context of the respective degree program. Here, great importance is attached to interaction and exchange in these contexts and applications, enabling students of each degree program to understand the greater relevance of the content for their discipline.

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Adjustments

The first adjustment screw is the presentation of theoretical content: This can be made available online, in a hybrid format, or asynchronously as a recording. As with the co-teaching concept (see Chapter 4.3), content can be shared between lecturers and, therefore, between locations. In this case, the event could also occur as a hybrid in the respective area. In the online or hybrid variants, students' questions can be answered or addressed in real-time. We recommend using a so-called backchannel in the form of tools such as "Tweedback" or "Cryptpad," especially for scalability and clarity. Alternatively, making the event available to students as a recording is possible. This could further increase flexibility. You have a further option for the supplementary face-to-face event. You have various design options, such as exercises, central exercises, excursions, or practicals. As with the other concepts, the specific structure depends on your learning outcomes. However, focusing on discipline-specific applications and skills, as well as networking among students, is advisable.

Challenges

The opportunity to ask questions can be challenging, particularly when there are a large number of students in the course and their understanding of theoretical principles is limited. Finding an effective workaround, especially when answering questions, requires some experience with the format and the chosen tools. If you receive too many questions during an event, you also have the option to answer them in the form of video messages or written responses. At the same time, an assistant could help moderate the questions. For a concept with a recording of the theoretical basics, you should think in depth about how to deal with possible questions: How can questions be asked, and how are they answered? Your students' interaction and activity also play an essential role in the recordings. Can you integrate interactions directly into the recording (e.g., via H5P elements), or are there quiz or reflection questions following the recording?

Coordination and consultation between lecturers at various locations can be challenging when implementing supplementary courses. Intensive coordination is necessary and recommended, especially if the application is to be directly aligned with the theoretical content. There should also be a common understanding of the concepts and theories covered; otherwise, there is a chance of contradictory statements in the various courses.

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5 Other organizational aspects: Premises and technical infrastructure

Depending on your chosen concept, you need to consider the room situation in advance:

Where do you need a room and what should it be like?

First, you need a room for every face-to-face event. The location of this room depends on your teaching concept, your area, that of your students, and, if applicable, the equipment required. To implement your idea, having a room with a flexible layout may be helpful. Especially if you have a course with much interaction, it can make it easier for your students to work together if you can adjust the room layout and seating arrangements.

It can also be helpful to consider the module plan of the degree programs involved. Especially when using online transmissions, it should be ensured that students can follow them in peace from their location. If other face-to-face events occur before or after your course, students often need a place to retreat to follow the live streams or online events. We recommend discussing this with your students to develop possible solutions.

What technical infrastructure do you need?

If you opt for a hybrid format, you will need essential technical equipment consisting of three components: a camera, a microphone, and a loudspeaker. In principle, there are two types of cameras: static and tracking. The section remains static; with the latter, your movements in the room are tracked. Consider which type of camera suits your teaching style. In addition to the image, the sound is particularly relevant. The microphone enables the Zoomies to understand the content of your event and the roomies' questions. The loudspeaker is essential so the roomies can hear the Zoomies' questions and answers.

You can also expand your setup as required. If you have any questions, we will be happy to advise you. Please contact us at support@prolehre.tum.de.

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6 Good practice: experiences with cross-campus teaching

6.1 The hybrid language course with Rosane Werkhausen

An alternative for students from different locations

Rosane Werkhausen's course is held weekly in a hybrid format, meaning it is simultaneously conducted in person and online. The online participants are usually located at other sites and can only participate in the course with this offer: Straubing, Weihenstephan, and Heilbronn. However, her approximately 14-18 students do not need to register in advance, whether they will take part online or in person, as the flexibility of her students is particularly important to her.

We spoke with Rosane Werkhausen about her concept, the challenges she sees, and what she recommends if you would also like to implement a similar concept.

Where did the decision not to choose a purely face-to-face format come from (after Corona?)

I am still determining precisely when the idea came about. When we resumed our in-person courses, some students asked me how we could continue. Some students from Freising and Straubing were unable to or did not want to travel to the main campus every time. At the same time, I had to rely on a sufficient number of students to participate in my courses, as they could only take place with nine or more participants. Attendance should also be increased, so a purely online format was out of the question. While researching a suitable format, I came across hybrid teaching concepts. We have already tried this out with universities in Brazil.

How do you maintain an overview during the event (face-to-face and online)?

When planning the course, I had already decided which group to focus on and when to do so. Then, I switch my attention between the roomies and Zoomies during the course. I clearly communicated this procedure at the beginning, ensuring that the expectations of all participants were clear. I also use different activities - with some, my focus is more on the Zoomies, while others focus more on the Roomies. If I act in a plenary session and someone wants to say or ask something, it makes no difference whether it is a Roomie or a Zoomie. They all have equal rights. I also keep an overview via two screens. One screen is dedicated to my documents and is also the one shared in Zoom. That way, I always have my presentations or other material there. The other screen is exclusively for the Zoom participants. This way, I ensure that I can see my students and that they are aware if they have any questions.

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What would you recommend to someone who wants to implement a concept like this?

The first thing I recommend is to say goodbye to paper. Regarding tools, you would be better off with an online rather than a face-to-face course. For example, I no longer have a blackboard; instead, I use the virtual Zoom whiteboard. I also only make worksheets available online. This has the advantage that all participants have the same conditions during the course, and I do not have to adjust my camera to the whiteboard, for example. Next, I recommend approaching the concept with the personal attitude that something new is being tried and that not everything has to work immediately. I offer my students flexibility, so I can also be flexible to a certain extent. Moreover, it can be simplified if something works differently than I imagined. However, it should also be planned and tested in advance, as some habits differ from those taught in person. Especially if you have little experience with the technology, you should take the time to try out the setup beforehand.

How satisfied were your students with the new concept?

In general, the evaluations are promising. What I have noticed, however, is that the dropout rate has fallen significantly. Before the new concept, students regularly did not show up if they missed two appointments. The hybrid format allows them to participate in other locations or an excursion. This makes it easier for them to keep up, and they are more likely to stick with it. My students also tell me they are active online or in person. Therefore, despite the intensive use of online elements, the dynamic during the course is reminiscent of a face-to-face course. Moreover, I continue to receive feedback that students from other TUM locations appreciate the opportunity to participate, which motivates me to adhere to my concept.

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6.2 Combo Concept with Prof. Luisa Menapace

A solution for students from another campus

This example pertains to the course "Introduction to Value Chain Economics," an elective module for students in the Bachelor's degree programs of "Management and Technology" and "Agricultural and Horticultural Sciences." Approximately 70 students participate in the course, with the majority attending the main campus. However, Prof. Menapace's chair is in Weihenstephan.

Initially, the course was held in person at the Weihenstephan campus in Freising. The revised course will now take place online, with two dates scheduled in Munich (main campus). The first face-to-face meeting takes place at the beginning of the semester, allowing students to get to know one another and form teams. During the semester, lectures are held online. The students prepare a comprehensive report on the entire course, which is submitted and presented at the end of the semester. These presentations, in turn, take place in person at a final meeting.

We spoke to Luisa Menapace about her concept, the importance of the kick-off event, and how she makes her online events interactive.

How is your course structured?

The course is designed as a mixture of lectures and exercises. To convey the content, I use slides, application examples, and discussions to give context and relevance to the technical knowledge. I expect the students to be curious and actively participate in these discussions. We worked extensively with lists of questions discussed and answered during the lecture.

Why didn't you go back to the face-to-face format after the pandemic?

When the course was still face-to-face, most students from other locations rarely attended or often withdrew from the course at short notice. This has changed noticeably with the online format. Students from various campuses participated and completed the course. This showed me that students from other campuses are generally interested in this course. That is why I wanted to try out this combination of face-to-face and online events when they were possible again. We decided on two face-to-face sessions at the main campus, as most students registered for the course have studied there. The commute is reduced for students not studying at the main campus, as they only have to travel twice a semester.

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What relevance does the first face-to-face session have in your concept?

The face-to-face sessions are designed to build a relationship between the students and us as a teaching team. The first appointment is particularly relevant for this and should be a lasting experience ("anchor experience"). Therefore, the first appointment should be less about content and more about what my students expect from this course and what I expect from them. I also use this appointment to build a connection and a culture with the students, so that they get to know me and feel comfortable asking questions or expressing their opinions. The rest of the semester is built on this foundation.

How did you manage to make the online appointments interactive?

During the online sessions, I not only present content, but we also discuss it and clarify questions. Interaction is easier when we can see each other, so I invite students to switch on their videos. I have had excellent experiences with this when I explain to them transparently why it is essential, and most of them join in willingly. Nevertheless, I do not exclude students who do not participate, as long as it does not harm the others. I send students to breakout rooms during regular breaks to encourage interaction and exchange ideas. The assignment is random, allowing students to get to know one another. I often try to define themed breakout rooms, such as "I am looking for someone to do group work." This makes it more efficient to exchange ideas.

What would you recommend to anyone who wants to implement this concept?

First, I would inform all students via email before the start of the first session about how the course works, what is expected of them, and the rules that apply to the course. I would also explain why I have designed the course this way and the advantages it would bring to them if they actively participated. Additionally, all aspects of the organization should be clearly communicated, including which events will be held in-person, when and where they will take place, and which events will be held online. It helped me a lot to clarify in advance where the room is located (it is a different campus, after all), who has the key to it, and who is familiar with the technology in the room. As the first appointment is necessary, an alternative should be considered for students who are unable to attend.

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7 Additional core element: the examination

When designing your cross-campus course, you should also think about your examination in terms of *Constructive Alignment*[3]. This is because changes to your teaching concept can impact the design of the examination. Planning and coordinating the exam involves several decisions: Should the exam be held online as a distance or face-to-face exam? If face-to-face, should everyone be together at the main campus or at all locations in parallel? Can the (oral) exam also co-occur at several locations in person or online in parallel? These questions could also be further subdivided. You should also bear in mind that the examination may need to be adapted to the module description.

The best way to determine precisely what to consider in your case is to contact your school.

If you have any questions, please do not hesitate to contact us. Please write to us at support@prolehre.tum.de.

[3] *Constructive alignment* is a fundamental concept in higher education didactics developed by John Biggs. In essence, it involves defining learning outcomes at the beginning of a course planning process: What should my students be able to do after the course? In the next step, you should consider how you can check whether your students have achieved the defined learning outcomes, i.e. the assessment method. In the final step, you should consider how you will get your students to your goal, i.e. the teaching and learning activities. You can find a short video on this here: https://youtu.be/fZTYfMZ3UN8?si=JMcevSbQgktOJXcg

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8 Excursus: Block courses

To develop specific skills, taking significantly more time as block courses can be helpful. This involves students from one or more locations coming together at a common location to work intensively on a subject area over a specific period. This concept should also be listed here for completeness, as it is sometimes suitable as a cross-location variant in some instances.

Block courses are primarily defined by their schedule and, therefore, independent of location. They can be held in the laboratory, lecture hall, or online. A hybrid of the above prototypical concepts would also be conceivable (see Chapter 4). Some studies indicate that block courses can, among other things, promote students' learning success better than "traditional" formats spread over the semester (Swain, 2016; Trinh, Ghapanchi & Purarjomandlangrudi, 2022). There may be various reasons for this: On the one hand, students perceive block courses as less stressful than "traditional" courses during the semester (Klein, Kelly, Sinnayah & Winchester, 2019). On the other hand, it has been shown that there is more interaction between lecturers and students and between students themselves in block courses (Klein et al., 2019). However, the results pertain to smaller event sizes and should be applied to larger events with caution.

The learning-promoting effects of block courses also face several challenges in terms of implementation. First and foremost is the organization and logistics of the block course. This is even more complex when different locations are involved in the implementation. Where do students from other campuses stay during this time? Should they handle this themselves, or is there a central office for the organization? How do the students get to the venue? These questions are particularly relevant if a "classic" block course is to be held in person.

Depending on the specific format, it may be essential to consider the composition of the teaching team. How many lecturers or supervisors do you need? It would be beneficial to also consider the scalability of your block course. With an in-person concept, the capacities of the classrooms and the procurement of accommodation or transportation options must be considered, especially if students come from different locations. A block course, mainly in-person, is therefore only suitable for significant events to a limited extent.

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9 Idea box: Community building

We have already examined the success factors for exemplary teaching in Chapter 2. This showed that the relationship between students and between students and lecturers plays an essential role in learning. For this reason, in this chapter, we aim to provide a few ideas and insights that can promote community building. To this end, we would like to outline some **crucial principles** below that you can use to **create community building**:

1. **Regular exchange:** The basic idea is to actively invest time in the event to build an atmosphere and community conducive to learning. For example, you can start each event, including online ones, with a short discussion about the previous week. Set up open breakout sessions in which your students can exchange ideas informally.
2. **Use the classroom elements:** It is beneficial to facilitate more social interaction in the classroom, as it works more easily here than online (see Chapter 2**Fehler! Verweisquelle konnte nicht gefunden werden.**). You could regularly introduce short exchanges or discussion rounds with the people beside you. Opportunities to ask questions before or after the event can also increase the benefits of being present.
3. **Kick-off event as a milestone:** Lay the foundation for your community with a kick-off event in person, right at the start of your event. Every further social interaction during the semester will build on this.
4. **Walk the talk:** Live your culture! As a lecturer, you also serve as a role model and can contribute to fostering a culture of exchange in your course by "leading by example." Communicate right from the start that exchange is essential to you and create opportunities for exchange. Show interest in your students and ask them about their motivation for the event. Always ask your students for their opinions and ideas on different topics. Share with them your motivation and what inspires you about this subject.
5. **Inclusion in the scientific community:** Give your students access to the scientific community by regularly relating the content to current research - especially your research. Inviting colleagues can also make this community more visible to everyone.

For more information on this topic or to request a customized solution for your teaching concept, please contact us at support@prolehre.tum.de.

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10 Idea box: Dealing with heterogeneous groups

If you offer a cross-campus course, students from different subject areas and with varying prior knowledge may participate. This heterogeneity can challenge you to do justice to all students. At the same time, however, it can also present opportunities.

We recommend the following measures to minimize the **challenges** as much as possible and, at the same time, exploit the **potential**:

1. **Set clear rules:** Right at the start of your course, describe how your course works, what you expect from your students during and between sessions, what you offer students, and what contact options there are. The more precisely you make the rules of your course explicit at the beginning, the less surprised your students will be and the better they will be able to adapt to them.
2. **Compensate for a lack of prior knowledge:** First, determine the prior knowledge required for your course. Think about how you can compensate for any lack of knowledge. An online test at the beginning of the semester helps identify knowledge gaps. Then, suitable materials (self-created or existing resources, such as publications, videos, and podcasts) should be offered so that students can catch up on any missing knowledge. It is also effective to repeat essential basics in your course.
3. **Use different prior knowledge:** Make the heterogeneity within your student body visible and transparent in your course. At the beginning of your course, ask which degree program the students come from. Get students' opinions from different subject areas when you ask (open) questions.
4. **Students in different roles:** Proactively involve your students. Students with prior knowledge can effectively explain content and topics to their weaker peers. Use this idea for group work as well: mix your groups so that students with previous knowledge or different subject cultures work together. To achieve this, ensure that other perspectives are incorporated into the assignments and encourage students to share their unique perspectives on their subject area.

Do you have any questions on this topic? Feel free to contact us at support@prolehre.tum.de.

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