

CORNERSTONES OF DIGITAL TEACHING

Orientation for teachers:
Clarification of terms, suggestions
and typical scenarios

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Clarification of terms, suggestions and typical terms

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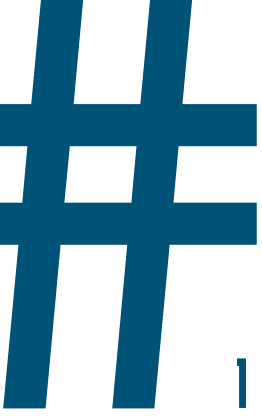
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I INTRODUCTION

With its mission statement on teaching¹, the University of Potsdam has set itself a strategy for the design of teaching and studies. Formerly, basic criteria for e-learning were defined with the regulation for crediting e-learning to the teaching load.² After two years of intensive use of digital media in teaching due to the pandemic, this handout offers cornerstones for the implementation of digital teaching, based in particular on the mission statement, teaching load regulations, and the evaluation results.³

Teaching is oriented towards student learning. In the sense of a shift from teaching to learning, this approach aims to promote not only the acquisition of knowledge but also the development of professional and interdisciplinary competencies in student-oriented scenarios and to enable students to learn independently.⁴ In this context, teaching is not to be understood as a finished product, but rather as a dynamic system of constantly evolving, non-conclusive practice, which is planned, implemented, reflected upon and continuously developed by the teachers, just like their own teaching activities. In connection with the e-learning strategy of the University of Potsdam⁵, the increasing integration of digital media is seen as a logical step in development, also in order to think about new possibilities in university teaching. The use of digital media should be target-group-specific, competency-oriented, and subject-related, and offers additional opportunities for contemporary university teaching that promotes learning.

1 See: <https://www.uni-potsdam.de/de/zfq/leitbildlehre.html>

2 See: <https://www.uni-potsdam.de/de/zfq/lehre-und-medien/services/anrechnung>

3 See: https://pep.uni-potsdam.de/articles/eval_online-lehre_2020.html

4 See University of Potsdam (2020). See also Thissen (1997); Siebert (1999); Metz-Göckel et al. (2018).

5 See: <https://www.uni-potsdam.de/de/zfq/lehre-und-medien/services/e-learning-strategie>

2 CLARIFICATION OF TERMINOLOGY

2.1 E-Learning/digital teaching

“E-learning” is an umbrella term for all teaching and learning formats implemented with digital media. It first appeared in the 1990s and has since become increasingly differentiated. The term “digital teaching” is used in a similar way.

2.2 Blended learning (integrated learning)

“Blended learning” describes the alternation of face-to-face and online formats within a course and was the most recommended e-learning format at universities in German-speaking countries until 2020. There is blended learning as a face-to-face and as an online variant. The common feature is the alternation of joint/synchronous phases, in which the teaching-learning group comes together, with asynchronous elements.

Inverted Classroom or Flipped Classroom concept

The inverted classroom model (also known as flipped classroom concept) involves teaching/learning scenarios in which students acquire the content through self-study, supported by videos and scripts, for example. The time spent together in presence is then predominantly used to give more space to social teaching/learning activities. In-person instruction focuses on exchange and cooperation as well as further questions. With regard to the interaction of synchronous, collaborative teaching and asynchronous self-study phases, this is a variant of **blended learning**.

2.3 Hybrid teaching formats

The term “hybrid teaching formats” describes teaching-learning scenarios in which some students attend the course in person while others can participate simultaneously remotely via conference technology.

2.4 Online teaching/virtual teaching

The terms “online teaching” and “virtual teaching,” which are mostly used synonymously, include all online/virtually implemented design variants (e.g. guided self-study phases, synchronous and asynchronous teaching-learning sequences, etc.) that do not take place in person.

3 ORIENTATION POINTS FOR THE IMPLEMENTATION OF DIGITAL TEACHING

Digital teaching should consider the following key points:

3.1 Active support and feedback

Students are actively supervised by teachers. Teachers provide qualified feedback on student academic performance.

3.2 Comprehensible structures and requirements

The e-learning portions are provided with didactically structured self-study portions and/or feedback mechanisms that enable students to work independently. Objectives, teaching-learning design and examination are coordinated and become transparent.

3.3 Activating digital elements and methods

The e-learning components go beyond the mere provision of media formats (texts, videos, ...) in the degree of interaction possibilities.

3.4 Low-barrier, inclusive design

Accessible teaching means taking into account the needs of students with disabilities in particular when planning, designing and organizing courses. For example, it is crucial that teaching and learning materials are prepared in such a way that they are accessible, and that appropriate technologies are selected. In principle, it should be noted that both students and teachers benefit when digital teaching is designed to be inclusive.

3.5 Doing justice to diversity

The path to more diversity-sensitive digital teaching takes into account several fields of action: from the (self-)perception of teachers, the choice of subject content and teaching-learning methods, interaction, to performance assessment and the framework conditions. Existing differences are recognized as equal, and signs of disadvantage(s) due to these differences are counteracted at an early stage.⁶

3.6 Learning-friendly and flexible digital testing

The digitization of university teaching also includes the development of digital examination practice. This opens up opportunities for more competency- and practice-oriented examination formats as well as greater flexibility in terms of time and location. Innovative (formative) examination formats can be implemented, for example, through automated feedback or e-portfolios. Open book formats are becoming more relevant for digital distance examinations, and the tasks must be didactically adapted accordingly.

⁶ Mattern, K. (2009), p. 10.

4 TYPICAL SCENARIOS

4.1 Digitally supported lecture

4.1.1 What is at stake?

Lecturers present content to an auditorium, usually in units of 45/90 minutes. The lecture is usually supplemented by direct communication with the participants (question rounds) or by small work assignments (one-minute papers, “marble rounds”). In smaller groups, lectures are often supplemented by an open classroom discussion.

4.1.2 Which elements can be used for the digital scenario?

Thus, the “lecture” course type combines elements of teaching that concern knowledge acquisition, discussion and collaboration.

Knowledge acquisition⁷

| Conventional (analog) method | Digital technology |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Presentation, lecture • Reading books, essays or scripts (preparation, follow-up) • Observe (technical) processes/ experiments • ... | <ul style="list-style-type: none"> • Video conferencing system, Video transmission • Digital texts and books • (Learning) videos, recordings • View/Read multimedia content or web pages • Podcasts • Use open educational resources (OER) • ... |

Discussion

| Conventional (analog) method | Digital technology |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Plenum discussion • Discussion groups • Questions and answers • ... | <ul style="list-style-type: none"> • Online discussion groups (e. g. chat, forums) • Video conference systems • Shared online documents • Digital online whiteboards • Email discussions • ... |

⁷ According to Hawelka (2021).

Collaboration (e. g. tasks)

| Conventional (analog) method | Digital technology |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Read books and essays together • Small group work and discuss results • Develop projects together • ... | <ul style="list-style-type: none"> • Work on shared documents, digital whiteboards • Small group projects in online forums, wikis, chats • Small group work in video conference rooms • Work together on a digital product or project • ... |

Related links

- [Online video conference rooms and web conferencing](#)
- [Pre-created \(media-\)content](#)
- [eTEACHiNG-compass No. 14](#): Digital recording of teaching content

4.1.3 What must be observed?

Using online conference rooms and web conferencing requires good preparation and a certain familiarity with the technology. When creating content, a minimum quality of sound and image recording should be maintained. For all the options mentioned here, the content should be well structured and divided into shorter sequences.

4.2 Digitally supported seminars/exercises

4.2.1 What is at stake?

In seminars and exercises, students work together in a small group on a specific topic. The students should actively participate, e.g. by solving tasks, in discussions, presentations or even their own projects.

4.2.2 Which elements can be used for the digital scenario?

A wide variety of elements can be used for online seminars. The use of a Moodle course is recommended, as well as the ability to manage the seminar group. For content presentations, we recommend formats such as online video conference rooms and self-created media content, such as audio recordings, presentations set to music or videos. These can also be made or performed by the students. The course type “seminar/exercise” can combine elements of teaching that involve **discussion**, **collaboration** (see above) and **knowledge application**, principles of **inquiry-based learning** and the **creation of products**.

Applying knowledge

| Conventional (analog) method | Digital technology |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Edit exercises • Practical projects, laboratory work • Excursions • Role playing • ... | <ul style="list-style-type: none"> • Virtual method • Simulations • Virtual laboratories and tours (VR/AR) • Online Role playing games • ... |

Research-based learning

| Conventional (analog) method | Digital technology |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Using texts, studies, data, etc. Answer questions • Analyze information from different sources • Collect and analyze data • Compare texts • Search and evaluate information • Get to know and reflect on research methods • ... | <ul style="list-style-type: none"> • Internet research • Analyze and evaluate ideas and information from various digital sources • Use digital tools for data collection and analysis • Compare digital content • ... |

Creating a product

| Conventional (analog) method | Digital technology |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Construct theses, questions • Prepare essays, reports • Drafts/Designs • Demonstrations • Artifacts (models) • Create models • Create posters • ... | <ul style="list-style-type: none"> • Create digital documents, presentations • Display designs • Create digital artifacts (animations, models, photos) • Make videos • Blog posts • E-portfolios for combined presentation of different elements • ... |

4.2.3 What must be observed?

Seminars and exercises thrive on exchange and collaboration. Communication and feedback between you and the students as well as between the students themselves is crucial.

For typical scenarios see also the

- Website on [alternatives to classroom teaching](#)

4.3 Digital exams

4.3.1 What is at stake?

Written examinations can include „open questions, closed task formats (e.g. multiple choice tasks), analysis and processing of cases.“⁸ Written examinations require, among other things, a specified processing time, the description of permitted aids as well as supervisory guidance and identity control.

4.3.2 Which elements can be used for the digital scenario?

Exams

| Conventional (analog) method | Digital technology |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Open questioning with defined aids • Closed questioning (e.g. multiple choice tasks) with defined aids • Open/closed questions with free choice of tools | <ul style="list-style-type: none"> • E-exam: Closed and open questions are conducted on a PC in an examination room (PC pool) in the examination system. Supervision and identity control take place in the examination room. • Online exam: Closed and open questions are asked on the PC at a remote workstation performed in the examination system. Supervision and identity control are performed via the video conferencing system. • Mass examination (e.g. identification with PUCK card, marking of examination with barcode) |

⁸ Schaper et al. (2013), p. 33.

4.3.3 What must be observed?

It should be noted that students may not have the necessary technical and organizational equipment (Internet connection, workstation, hardware) to be able to participate in an online examination. When creating closed questions (MC questions), a quality check (e.g. multiple-eye principle, pre-test with students) should be considered from the beginning. Question catalogs are a very helpful working tool in the medium term if they are created in a structured manner.

Further information can be found on the

- [Website of the e-assessment-project](#)

4.4 Types of courses in connection with the deputy regulation

A Senate resolution from 2019 distinguished three course types for the regulations on the crediting of online teaching to the teaching load.⁹ These distinctions refer exclusively to the proportion of classroom teaching that is replaced by online teaching. The format of the online teaching (e.g. synchronous video conference sessions or asynchronous work in Moodle) is irrelevant if the criteria are met.








A distinction is made between:

- Course type 1: Enrichment
 - Classroom sessions are not replaced by e-learning components.
- Course type 2: Integrative scenario
 - Up to 50 percent of the contact time (in SWS/semester) is replaced by e-learning components.
- Course type 3: Virtual teaching
 - Between 50 and 100 percent of the contact time (in SWS/semester) is replaced by e-learning components.

⁹ Due to Corona semesters, in December 2021, the cap on the amount of face-to-face time that can be replaced by online instruction was increased from 80% to 100%.

All information on the regulations for crediting e-learning (here: online teaching) can be found on the

- Information pages on the crediting of [e-learning towards the teaching obligation](#).

| Crediting of e-learning courses towards the teaching load | | | |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| |  |  |  |
| | Type 1: Enrichment | Type 2: Integrative scenario | Type 3: Virtual teaching |
| Period of required attendance has been replaced?  | No | Yes, up to 50% | Yes, up to 100% |
| Features of the e-learning phases  | Complementing teaching and/or supporting independent learning phases | Degree of interaction that exceeds the provision of materials; active supervision by the teacher | |
| Crediting towards the teaching load  | as before for face-to-face events | entirely | entirely |
| Special application procedure  | No | No | yes, brief concept + evaluation at the end |

5 LIST OF SOURCES

- Hawelka, B. (2021). Curriculumsentwicklung – so einfach wie das ABC. In: Lehrblick – ZHW Uni Regensburg.
Accessed on July 4 2022 at <https://lehrblick.de/curriculumsentwicklung-so-einfach-wie-das-abc/>
- Mattern, K. (2009). Impulse zu Gender und Diversity im e-Learning. Praxisleitfaden zur Berücksichtigung von gender- und diversitygerechten Aspekten in Online-Bildungsangeboten. Wien: FH Campus Wien.
Accessed on June 1, 2022 at https://www.fh-campuswien.ac.at/fileadmin/redakteure/FH_Campus_Wien/Gender_and_Diversity/Dokumente/e-Learning-Web.pdf
- Metz-Göckel, S., Kamphans, M. & Scholkmann, A. (2012). Hochschuldidaktische Forschung zur Lehrqualität und Lernwirksamkeit. *Z Erziehungswiss* 15, 213–232.
<https://doi.org/10.1007/s11618-012-0274-z>
- Schaper, N., Hilkenmeier, F. & Bender, E. (2013). Umsetzungshilfen für kompetenzorientiertes Prüfen. Hochschulrektorenkonferenz.
Accessed on June 1, 2022 at <https://www.hrk-nexus.de/fileadmin/redaktion/hrk-nexus/07-Downloads/07-03-Material/zusatzgutachten.pdf>
- Siebert, H. (1999). Pädagogischer Konstruktivismus. Eine Bilanz der Konstruktivismusdiskussion für die Bildungspraxis. Neuwied: Luchterhand.
- Thissen, F. (1997). Das Lernen neu erfinden. Grundlagen einer konstruktivistischen Multimedia-Didaktik. In U. Beck & W. Sommer (ed.), *LearnTec '97* (Conference publication) (pp. 69–79). Karlsruhe: Springer-Verlag.
- Universität Potsdam (ed.) (2020). Leitbild Lehre der Universität Potsdam.
Accessed on June 1, 2022 at https://www.uni-potsdam.de/fileadmin/projects/zfq/Leitbild_Lehre/2020-04-15_Leitbild_Lehre_UP_01.pdf