Inclusion of videos in seminar design

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Sandra Morgenstern[i]

Abstract

In my seminar sessions, I aim to stimulate discussions, whether about methodological approaches, theory building or ethical considerations. However, in my seminar, generally at least half of my students are exchange students coming from different European universities for one semester. The different university backgrounds lead to different levels of knowledge in, and thus a strong self-imposed imbalance in, seminar discussions (i.e. more men, fewer exchange students). To counter this problem, I am applying one of the lessons of the post-pandemic period in my face-to-face seminar sessions - the ability to exclude parts from seminar sessions by using technological tools that allow students to learn at their own pace. I have produced short videos on different topics of 'advanced academic practice' that students watch and align in preparation for the seminar sessions so that we can start the discussion at the same level in the seminar session. In the name of Open Science, all videos are on the university website and an OER repository for free availability to teachers and students.

[i]Sandra Morgenstern, Postdoctoral Researcher, Mannheim Centre for European Social Research (MZES), University of Mannheim, A 5, 6, D-68159 Mannheim; Contact: Sandra.Morgenstern@mzes.uni-mannheim.de.
All videos are freely accessible (for watching and downloading) at https://www.uni-mannheim.de/academic-practice-nuggets/ and can also be downloaded from ZOERR.

Diversity in the seminar rooms in terms of prior knowledge brings its challenges. In most cases, this leads to self-imposed unequal active participation, often to the detriment of minorities and stigmatized groups, such as women, immigrants, exchange students, and first-generation academics. Therefore, with the goal of stimulating discussions, I build components of advanced academic practice into each seminar session (lecture style) to compensate for uneven prior knowledge. The disadvantages of this are that the instruction is still not at an individual pace and that the lecture component takes time away from the actual topic of the seminar session. To counter this problem, I am applying one of the lessons learned from the pandemic period to my face-to-face seminar sessions - outsourcing segments from seminar sessions by using technical tools. The short instructional videos in "animated black board" design are easy to understand by being explained from the student perspective of the main roles Hans and Amanda. This innovative course design is intended to reduce student imbalance, improve student engagement, and integrate technology into traditional face-to-face classes in a beneficial and interactive way. Given that videos are a common medium of the young generation their usage in teaching may additionally break down barriers.

The (problem) setting

In my seminar, usually at least half of my students are exchange students coming from different (mostly) European universities for one semester. Different university backgrounds are associated with different prior knowledge and sometimes even different teaching and learning practices. However, this is only an addition to the normal diversity we (fortunately) have in seminar classrooms at the university. While diversity in minorities and stigmatized groups is an important component that universities have achieved (or attempted to achieve) in recent years, most advanced[1] academic practices are not taught; they are expected to be learned by oneself, from peers, or from one's family environment. Aspects that might follow an inherently unequal pattern.

Role model pandemic practices

Teaching during the pandemic could basically be classified in two styles: Zoom-live and Inverted Classroom. The latter describes the process of lecture recordings as videos, which were usually combined with a Zoom-live Q&A (Question and Answer) session. Given the circumstances, the recordings were often quick-prepared, produced with unsatisfactory equipment, and of course, came short about interactive components. Still, feedback-conversations with students showed: the recordings have their advantages. Students valued that they could pause the video to take notes or repeat sections for a better understanding. Additionally, (at least some) students enjoyed the flexibility with regard to timing, watching the videos when they feel to be in their most attentive time of the day. In short: videos from the inverted classroom technique fostered learning at an individual pace. Leaning at an individual pace is particularly important for students with different (knowledge) backgrounds.

Inclusion of videos in seminar design

The seminar in which the "Academic Practice Nuggets" were applied for the first time – Bachelor student main seminar "Field Research on Emigration in Developing Countries" - is composed of three types of sessions: 1 "Introduction", 2-11 "Content", 12-13 "Mini-Conference". For the preparation of the "Content" sessions, students read two content texts and prepare a "Discussion Preparation (DP)" of

[1] Advanced' refers to competencies that go beyond the basic skills of scientific work, such as source work and building a research paper. Examples are 'ethical reflection', 'open science and transparency in research', 'giving constructive feedback'.

100-200 words for them. A DP example would be 'Discuss the ethical aspects of study X'. In the seminar itself, the texts were discussed and in line with the assignment in the DPs, a certain aspect was discussed in depth (small groups and plenary). Already in past semesters, in which the seminar was offered, it became apparent that in order to keep the discussion on a high scientific level as well as inclusive between the participants, an input talk (in the example 'Ethical Reflection in Science') can support. From a learning theory point of view, these input talks have a stronger effect if they take place before the DPs.

The "Academic Practice Nuggets" Videos

The learning nuggets in the form of short videos replace an input talk and last on average about 10 minutes. The videos are summarizing and descriptive, using 'animated-blackboard' design and are dedicated to different areas of advanced scientific work. The content conception, script, design and creation of the videos took place in strong collaboration with three bachelor students in order to include the student perspective in the best possible way. This is also reflected in the design of the videos: all videos are described from the perspective of the (fictional) students Amanda and Hans.

Video creation: We created the videos in a nine-steps procedure. First, the topics were selected. At the beginning the goal was to create 10 videos and they were supposed to last 6 minutes each (as can be seen in Appendix 1, we ended up with 15 videos taking 10 minutes each). Each student got three to four videos to be responsible for – this was particularly useful at the beginning. Second, we drafted the content in bullet points using the literature. This became a back-and-forth process between the PI (Principal Investigator, Sandra Morgenstern) and the three students. At this stage we realised that we need to make some sub-sessions and therefore ended up with more videos than planned. Third, the content drafts were sent to postdoctoral colleagues of the PI for review. Fourth, after incorporating the feedback in the content-drafts, we started the planning for an overarching design of all videos (see corporate video structure). Fifth, we created the final scripts for the videos. This was again a back-and-forth procedure between PI and the students. Sixth, and this was mostly in the hand of the students, the visual material of the videos were created using the software Doodly. The students worked together on all videos – although each student was in lead for "their videos". Seventh, the PI checked the scripts and their video fit for final control. Eighths, (after a voice training with a vocal coach at the University) the students recorded the scripts in the sound studio of the University of Mannheim. Nineth, using the Software Camtasia and the Software Doodly, we put sound and picture together, resulting in the final videos.

Corporate video structure: Each video starts with the learning objective ("After watching this video you should be able to ….") and with the question "why do I need this?", which is answered by a situational setting of the two main characters Amanda and Hans. Afterwards, the main part of the video follows. All videos end with another situational setting of Amanda and Hans, followed by the outro. The outro starts with "Thanks for watching", followed by the names of the PI and the students creating them, a thanks to the reviewer of the script and the funding organisation (Stiftung für Innovation in der Hochschullehre).

The aim of the Nugget videos is to enable the students to individually adapt their knowledge to good academic practice. Due to the video format, students can - in contrast to a live frontal input - play the video at the required speed, take breaks if necessary (e.g. for taking notes or reflection) or watch it repeatedly. Especially for students with less pre-knowledge this is an advantage - not only for practical learning, but also from a psychological point of view the individual learning of skills from the perceived category of "I should certainly already be able to do that" (generally unjustified, but especially in scientific work widespread perception and especially common among already disadvantaged groups in Academia such as first-generation students, female students, or students with migration background)

enables a 'safe space'. The short-lived nature of the videos, their flexibility, and activating designs are intended to combine knowledge absorption with enjoyment and motivation. At the same time, video input improves seminar preparation, session participation and inclusion, which increases both the learning climate and learning output. In addition, the video content is indirectly tested in the grade-based presentation, peer feedback (also graded), and seminar paper.

Transfer to other seminars / lecturers

From the onset on, it was a central aspect of the project that a key contribution shall be its longevity and transferability. In addition to being used in other seminars by the PI in the coming years, the videos shall also be used by other instructors. In creating the scripts and material, we have deliberately made sure that each video can stand alone, independent of other videos, their order, the seminar topic, the university, or the year of creation.

I will not use space to explain any lecturer how to use the video material, as I am sure each lecturer knows best how this material may support their seminar style and their students' needs. Instead I want to report some examples of my colleagues. One colleague had troubles in getting the students to give feedback to each other. Potentially fearing that their peers would get a bad grade, they continuously feedbacked that the presentations or research proposals were 'all fine'. In one trial session she showed the "How to critique?"-Video before the student presentation. She reported that the students became more engaged in the feedback and that she had the feeling that it was also well received that another teaching tool was used. Another colleague simply made an additional folder on the Universities' learning platform Ilias and told the students to check the videos on topics they might feel insecure about. Of course, here it's hard to hear or see the impact. Another feedback was that although the videos are intended for undergraduate students, several graduate students and even a professor informed us that they learned something new from these videos and emphasized that academic practice is a topic that cannot be heard/seen/read often enough on all academic career levels. Besides these first examples from colleagues, within the University the faculty and the centre for teaching and learning reported about the videos in their newsletter, and the centre for writing of another university also posted the link to the videos on their website. Again, here is no evidence yet on how this was received by other instructors or students. It is just mentioned to complete the list of examples.

Since inclusion and open teaching are important to both students and colleagues, all videos are freely accessible (for watching and downloading) at "https://www.uni-mannheim.de/academic-practice-nuggets" and can also be found on ZOERR (Open Science OER Repository), including the teaching concept.

Future Steps

Depending on feedback and interest from colleagues, as well as financial resources, additional videos on other topics will be created in the future. I am happy for any feedback, ideas and suggestions in this direction. Please don't hesitate to email me any thoughts in this direction to morgenstern@uni-mannheim.de.

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Appendix 1

Videotitle	Learning objective
Time efficient and effective reading	After watching the video, you should be able to read scientific texts (time) efficiently and effectively
Reflect critically	After watching the video, you should be able to critically reflect on what you have read and challenge implications derived from it.
Scientific critique	After watching the video, you should be able to identify uncertainties and weaknesses regarding internal and external validity in scientific texts.
Causality	After watching the video, you should be able to understand what causality means in the research context.
Causality II	After watching the video, you should be able to understand how to methodically achieve causality (not, partially, completely).
Theory Basics	After watching the video, you should be able to distinguish the two types of research procedures in terms of theory and point out their core elements.
Causal Graphs for theory driven social research – theory representation	After watching the video, you should understand the basic idea of causal graphs and be able to apply it to theory representation and theory reflection.
Causal Graphs for theory driven social research – translation into an empirical research design	After watching the video, you should understand the basic idea of how to use causal graphs in adequately translating a theory to an empirical model.
Ethical Considerations	After watching the video, you should be able to fully reflect on and critique scientific research in relation to ethics.
Theory argumentation	After watching the video, you should be able to structure your term paper according to one central argument, as well as convincingly apply a theory corresponding to your argument and derive expectations from it.
Research Question with Design Thinking	After watching the video, you should understand the central idea of "Design Thinking" and be able to apply it to finding a research question.
Open Science	After watching the video, you should be able to outline the basic idea and components of open science and reflect the current state of this movement in academia.
How to critique?	After watching the video, you should be able to appropriately question, criticize, and improve the research work of others, but also be able to accept criticism yourself.