



## Digitalisation of University Education and Research as Consequence of the Covid-19 Pandemic – A Paradigmatical Change

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### Abstract

The compulsion to work from home and contact restrictions has given digitalisation a greater push than it ever had before. As is often the case when a development process is not slow but forced and accelerated by external influences, dislocation occurs because people are rather slow to adapt to new circumstances. We see a quick change in teaching methods, a digitalization of teaching, but at the same time we see tendencies to continue behaviours of face-to-face teaching and not to adapt to the new processes. This applies equally to both students and lecturers. The article is based on a presentation of the author at the '1st Multidisciplinary International Conference on Potential of Research during Pandemic' on 15.-16. December 2021 at the Universitas Muhammadiyah Surabaya. It aims to give an exemplary insight of legal and didactic issues in university law teaching in Germany. Most of these issues may be transferrable to the teaching situation in Indonesia. The paper concludes that the accelerated digitalization of university teaching, which may be more than just an intermediary substitute to traditional teaching methods, needs behavioural changes of lecturers and of students. Furthermore, it pleads for a more pragmatical approach in data protection law.

**Keywords:** digitalisation; teaching methods; data protection; examination law.

### 1. Introduction

At the beginning of my faculty's last term in summer 2021, I created a short film that was prompted by my experiences with online teaching within the months before. I put the film on my professorship's website and asked all my student groups to watch it at the beginning of the lecture. The rather sparse viewing figures of the film show that the social reality of studying - at least in Germany - has not kept pace



with the changes that the Covid19 pandemic has forced us to make as teachers and researchers.

This article is deliberately not particularly scholarly; indeed, it is not even purely legalistic. The purpose of my presentation is twofold: firstly, it aims to show how much we need flexibility and pragmatism in university teaching in the face of this global catastrophe, which affects not only teachers and researchers, but also our students. Secondly, I would like to use the brief presentation of the legal aspects that online teaching raises in my home country, Germany, to ask whether we are facing a paradigmatic shift in our understanding of data protection. Is the current prohibitive concept of data protection law still appropriate considering the pandemic experience, or does data protection, or at least its exceptions, need to be reconceptualised?

## 2. Discussion and Result

### 2.1. The Acceleration of Digitalisation through the Covid-19 Pandemic

The compulsion to work from home and contact restrictions has given digitalisation a greater push than it ever had before. If I take my own faculty as an example, it shows that many lecturers, including myself, were teaching via life-conference for the first time and working with hybrid teaching concepts for the first time. Some of us suddenly became vloggers, recording YouTube-videos and creating case work via stream. I suspect that software like Zoom, BigBlueButton or Teams would still be widely unknown to many teachers and lecturers today had we not been forced to use them.

As is often the case when a development process is not slow but forced and accelerated by external influences, dislocation occurs because people are slow to adapt to new circumstances. We see a quick change in teaching methods, a mechanisation of teaching, but at the same time we see tendencies to continue behaviours of face-to-face teaching and not to adapt to the new processes. This can be observed in lecturers who sometimes refuse to hold live webinars and instead discuss 1½-hour preproduced video recordings, and it can be observed in students who take advantage of the poorer possibility of addressing the lecturer in webinars to behave even more passively in lectures than would be the case in face-to-face lectures.

On the other hand, the German news magazine '*Der Spiegel*' headlined in its January 2021 issue: "*Wie Corona eine neue Generation Studierender hervorbringt*" ('*How Corona is creating a new generation of students*') (Mass, 2021). The article leaves the reader less pessimistic. According to it, a survey of 27,000 students and 650 professors by the Centre for Higher Education Development (CHE) reveals the desire of most respondents for the continuation of elements of digital teaching to complement classroom teaching. However, it seems that this desire on the part of the students largely relates to the provision of recordings of courses that can be accessed at any time. However, it is precisely this element of digital teaching that appears to be the most important, firstly because it at least changes, if not ends, the dialogical character

of teaching, and secondly because it raises the question of domination over the spoken word.

## **2.2. The Influence of Digital Teaching on Teaching Conditions and Communication**

If many participants surveyed in the above-mentioned survey welcome the flexibility of digital teaching and would also like to see this for the time after the end of the pandemic, then in my personal experience with decades of teaching at universities, this does not indicate a significant change in studies towards genuine digitalisation. At any rate, this applies to the wish to have online lectures made available on the internet as recordings that can be accessed at any time.

On the contrary: in this wish, which is also expressed again and again by students in my own lectures, I believe to see the tendency of many students, carried into the era of digitalisation, to avoid unprepared dialogues with the lecturers, to avoid to (try to) seek unpredictable academic discourse and to be able to learn the material of the final exams as predictably as possible. It was precisely this tendency that led me many years ago not to provide textbook-like lecture notes for my lectures. A university lecture in my personal understanding is meant to awaken understanding of contexts, to stimulate one's own reading of various sources and thinking, and to encourage critical questioning and open discussion between students and lecturers. A university lecturer is not there to present a bunch of facts that students learn by heart and then test in the exam. When I studied law for a semester at the University of Salamanca in the 1980s, I was surprised that my fellow students did not bring any law texts to the lectures. The lectures consisted of the professors slowly dictating a teaching script and the students memorising this dictated script – and nothing else – for the exam. I don't think you can train good law students this way. Even though it is not so bad in university teaching in Germany, I have had the experience that handing out written-out scripts makes some students stop attending lectures and prepare for the exams shortly before the deadline in a kind of 'crash learning' with the script. This cannot be in line with the spirit of scientific education.

The accessibility of recorded full lecture sessions seems to me to lead to a similar effect: Students stay away from lectures and instead believe that they are adequately prepared by watching the recordings shortly before the exam. Whether this is the case in terms of learning psychology may be indeed doubted. Concentration on the subject matter while driving a car or cooking dinner could be less than in a live lecture, and retrieval statistics of my digital teaching materials show that a not inconsiderable proportion of those retrieving the videos do not watch them to the end. However, on the other hand, the recordings are sometimes accessed by fewer students than were present in the lecture, especially in master lectures which are chosen by students particularly interested in legal topics. This shows that live webinars are still preferred by some of the students. Ultimately, care must be taken that university teaching does not continue to lose its dialogical character and become a mere process

of conveying facts, which is largely anonymous and, in the absence of a life presence, impersonal. The publicised case of a deceased professor at a university in Montreal, whose recorded online lectures continued to be offered until 2021 without students and the university being aware of the professor's death in 2019 (*Virtually Normal: Montreal Student Tries to Contact His Online Prof, Only to Learn He's Dead*, 2021), shows the danger which can arise from the digitalisation of teaching.

In summary, it can be said that communication, which is particularly important for academic studies, is significantly reduced in online teaching. This affects the social contacts on campus that are important for studying. But it also affects the feedback to the lecturer, which is essential for good teaching. We thought we had left behind the days of podium lectures, in which professors more – or also often – less dynamically presented the subject matter at the lectern and students were reduced to mere listeners. Modern lecturers have long since become accustomed to dialogical teaching, which depends on student response to be flexible and lively. One could walk into the rows of students, address them directly, use their bored, amused, sleepy or interested faces as an occasion to dynamically adapt the 'flow of the lecture'.

The digitalisation of teaching therefore also requires a new type of student who has adapted to the digitalised lecturer-learner relationship, who dares to communicate more offensively in online teaching to step out of the digital anonymity and who still wants to be more than an avatar in a computer platform. Students should not use the webinar form to hide behind the computer. They must be even more active than they were in traditional teaching. Online teaching also forces students to strengthen their autodidactic skills. The greater flexibility which digital teaching allows requires greater discipline and initiative also from the side of the students.

### **2.3. Digital Teaching and Legal Questions**

#### **Data Protection**

With the 'zoomification' of lecturing, lecturers are forced to sit in front of 'computer monoliths' with cams and deliver the liveliest possible lecture to an audience consisting of a list of names and abbreviations in a small window on the screen. From the perspective of Indonesian universities, this may be less of a problem, since here lecturers can ask students to turn on their cameras and microphones, and since this request usually must be obeyed by the students at least due to the respect the students feel towards the lecturer. In the spatial scope of the European GDPR, this is not possible without violating data protection rules.

This results from the following aspects:

1. The use of conferencing software based on server locations in the USA, such as Zoom or MS Teams, is fundamentally problematic because Art. 44 ff. GDPR strictly limit the transfer of personal data to third countries. Even the login data constitute personal data, so that the use of this software alone for the purpose of lecturing or

school teaching is problematic. Although the data subjects can consent to the transfer of data, this consent would not be voluntary if the students have no alternative means of accessing the lectures other than logging in via the software. This applies even more to electronic distance examinations. Here, however, Sec. 8 of the Bavarian Distance Examination Testing Ordinance (*Verordnung zur Erprobung elektronischer Fernprüfungen an den Hochschulen in Bayern - Bayerische Fernprüfungserprobungsverordnung - BayFEV*, 2020), for example, stipulates that a parallel face-to-face exam must always be offered as well, which ensures voluntariness.

Even more problematic is the use of such software in home-schooling, on which we were dependent during the pandemic and are likely to continue to be again. Here, in some cases teachers who used corresponding software to keep school lessons going were threatened with fines by data protection commissioners if they did not use data protection-compliant alternatives to US-based software (Thüsing, 2021). University lectures were also required to use 'alternatives' instead of the tried and tested software options. However, it has turned out that the alternative software options not always come close to the performance of the known software products and do not always make a smooth teaching process possible.

The question is therefore: should data protection law be interpreted more pragmatically, at least during the pandemic conditions? Based on a trade-off between the interest in allowing teaching and training to continue as effectively as possible and the interest in applying to the letter a data protection law designed for a normal situation, many committed colleagues have opted for the continued use of US-software products.

2. The control of electronic remote examinations conducted via conferencing software poses special problems. In most cases, video proctoring is used for this purpose. In addition to the problems of data transfer to third countries mentioned above, questions of privacy protection also arise here. The use of proctoring is not excluded in principle in legal sources for distance learning, such as the mentioned Bavarian Distance Examination Testing Ordinance (Sec. 6) but is subject to strict legal requirements. For example, room monitoring is not permitted in addition to switching on the camera and microphone function of the computer. Automated evaluation of image and sound data of video supervision is only permitted under very strict conditions if supervision by university staff is excluded due to a lack of capacity overload to be documented and the electronic examination is offered as an alternative to a face-to-face examination. The use of facial field scanners that record and interpret eye movements, for example, is all the more impermissible.

3. Corresponding questions of data protection arise with the use of data cloud software. The storage of students' written work or lists of grades in a cloud whose

server is in a third country will be considered a data security breach incident that leads to a reporting obligation under Article 33 GDPR. Correcting exams or bachelor's and master's theses in the home office on a private computer that is permanently connected to a cloud such as Apple's iCloud or Microsoft's OneDrive, for example, turns out to be risky.

All in all, the strict prohibitive data protection law of the European Union does not seem to be suitable in part to properly accompany the extraordinary challenges of the pandemic to teaching. Lecturers are often *de facto* forced to systematically circumvent legal rules, because the maintenance of appropriate teaching may seem only possible in this way. Law that is enforced inconsistently or cannot be enforced consistently due to external circumstances is ineffective (Koos, 2021 [1]). Therefore, a 'pragmatisation' of the strict European data protection rules may be considered (Koos, 2021 [2]). Currently, there is still a lack of adequate digital offerings on the territory of the European Union, so that US offerings are widely used. This highlights the need for effective innovation support in the EU.

#### **2.4. Electronic Online Examinations and Examination Law**

The pandemic has increasingly raised the question of distance examinations and electronic online examinations. At least in my faculty, these options have not been often used yet. The reasons for this, apart from the issues of data and privacy protection described above, lie in problems of examination fairness. For example, it must be ensured that all candidates have sufficient and equally suitable technical prerequisites. The question of the burden of proof arises if a candidate claims to have had technical failures during the examination. It must be avoided that difficulties in the examination design led to a general lowering of the factual examination requirements.

A major problem with distance examinations is the potential for cheating. Students could collude, communicate via messengers. If it turns out that the exam outcomes are unusually good, even though the level of difficulty is raised, this can lead to the assumption that the exam design is not suitable for determining the academic achievements properly and effectively. In Germany, this poses a constitutional legal problem because university examinations are prerequisites for access to a profession, which constitute an encroachment on the freedom to choose a profession under Article 12 of the German Basic Law (*Grundgesetz*, GG). Such encroachments on fundamental rights must always be proportionate. However, proportionality is not given if the examination is not suitable at all for the proper determination of the student's qualification.

Electronic examinations require new forms of knowledge retrieval. Examinations must ask stronger for transfer knowledge. It will probably not be possible to completely dispense with face-to-face examinations in the future.

## 2.5. Copyright and Personality Rights

At the beginning of 2021, a case from a university in Montreal became known. A student at the university had been watching a professor's lecture as an online stream and had a question about the lecture. He therefore searched for the professor's email address on the internet and found that the professor had already died a long time ago without the university noticing (*see reference above*).

The internet forgets nothing. However, lecturers cannot always avoid to be present on the internet, the professor from Montreal even beyond his death. Webinars and online conferences are streamed and recorded and published on platforms like YouTube. Here it must always be kept in mind that the spoken word that is recorded is subject to copyright. In German copyright law, for the continued storage of lecture recordings or online materials beyond the respective lecture of a semester, an explicit transfer of rights of use must be made to the university. In addition, such recordings are personal data that must be processed strictly for a specific purpose in accordance with the GDPR applicable in the EU. Accordingly, further storage beyond one semester or even beyond death is regularly prohibited. The justification given by the University of Montreal for the continued storage of the lecture, that it was online teaching material to support other lectures, would not work under European law.

Another problem arises when a faculty wants to convert its entire curriculum uniformly to online or hybrid teaching. Under the current legal situation, lecturers and professors can hardly be forced to go along with this, at least not if the teaching is to be made accessible outside the narrow circle of students in the course. Here, too, it becomes apparent that the digitisation of teaching under the existing strict European and German data protection and intellectual property law standards is still largely dependent on the personal innovativeness of the individual actors.

## 2.6. Automatized Translation

In research, caution is required when translation software is used. Especially in the case of confidential texts or research texts that have not yet been published, there is always the question of what happens to the texts to be translated in the software. Modern translation software uses artificial intelligence for translation, which relies on deep learning due to the complexity of linguistic tasks. Such systems need training data, and some will analyse the transmitted texts and store them on servers to use them for training their AI. Here, Google's general terms and conditions are particularly problematic from a European perspective, insofar as they grant the company far-reaching rights to use the transmitted texts. Thus, considerable data protection law, but also copyright and patent law issues arise here, especially if texts contain personal data of third parties or if inventions for which patents have not yet been applied for are described (key point: novelty harm). At least in the field of the automatized translations some options already exist, which use servers within the European Union and are supposed to be data protection conform. The leaking

problem associated with the use of translation software is still relatively little discussed at universities. If translation software is to be considered insecure, its use would immediately be considered a data protection violation. The promotion of workable own software solutions in the European Union is indispensable to prevent the transfer of sensitive data to third countries.

### 3. Conclusion

The current pandemic will not end in the foreseeable future. When it finally does end, humanity will have to reckon with new events of this kind. It is impossible to imagine what our lives would be like if we did not have digital technologies. It is necessary to make sensible use of digitalisation, to promote appropriate technologies and to reasonably adapt and, in some cases, liberalise overly restrictive legal norms to the needs of a necessarily digitalised society. This is especially true for science and teaching. However, as teachers and students, we individually also must go through a process of adaptation. Digitisation in teaching and learning is here to stay.

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