

# The University in the Digital Age

Wolfgang Schmale

Dear Rector! Dear Dean! Dear colleagues, dear students!

I am grateful for the honour bestowed upon me today. For many years I have been closely connected with the University of Sofia “Saint Kliment Ohridski”, especially in the field of European studies and the study of the 18th century. Perhaps it will be possible to bring the great international congress on the study of the 18th century to Sofia University in 2027.

The decision on this will be made by the International Society of Eighteenth-Century Studies at its congress in Rome in 2023.

In today’s short lecture, however, I do not want to deal with the 18th century, but with the University in the Digital Age. This is a topic that has accompanied me from the very beginning of my university career.

I’m not a digital native, because you couldn’t be in 1956 when I was born, but for most of my life the digital has always played a role. Most of

it, however, is still ahead of us. So it's worth thinking about "The University in the Digital Age".

[1] The *Digitalization of the Lifeworld* is progressing rapidly, at least in certain areas. It has long since taken hold of industrial and agricultural production, medicine, our everyday lives and social communication, to name just a few examples. Nevertheless, the Covid 19 pandemic has revealed large white spaces, especially in education and wherever *Digital Humanism* is called for.

[2] Digitalization follows partly spontaneous dynamics, without it always being clear where it will lead. There is no real mastermind; the development processes are predominantly self-directed. This has advantages, but also disadvantages.

[3] Digitalization is fundamentally Janus-faced. That is, it can improve our lives and make our lives easier, but it can also lead to more and more control and surveillance. This reduces the amount of freedom. Instead of

opening up more possibilities for action, digitalization can lead to digital slavery. It can, but it doesn't have to.

[4] *Artificial Intelligence* is a central aspect of the digitalization of the lifeworld. It is already taking over much of what was previously the preserve of human creativity. This development is also Janus-faced. On the one hand, many hopes are pinned on AI because AI "understands" complexity much faster than humans and enables conclusions and instructions for action much more quickly. On the other, AI raises fears – for example, the function of culture creators and mind workers could become superfluous. What we don't know is how much humans will gain in problem-solving skills through AI, and how much they will lose in humanity in return. In Science Fiction, the fusion of the robot as the machine embodiment of total AI with the human body has already taken place.

[5] After all, digitalization means that several petabytes of data are produced every day. This has given rise to a new interdisciplinary branch of science called *Data Science*. "Digital Age" therefore means that the characteristic of digitality, which used to be limited to a machine, the

computer, now encompasses the entire lifeworld. The most important areas we have to deal with are the *Digitalization of the Lifeworld*, *Digital Humanism*, *AI* and *Data Science*.

Where does the University stand in this process of the Digital Age?

[6] Universities are first and foremost institutions with specific tasks. As with any other institution, the work and action processes are being digitised. At one university this is well advanced, at another this process is only just beginning.

[7] The well-known side effects of digitalization are the same at the University in this respect as elsewhere: processes can be simplified and accelerated, but often the opposite happens because not all users have the same application competence and because not all programmers have sufficiently learned that the most important principle with regard to users is barrier-free access. The requirement of barrier-free access does not

only apply to people with disabilities or special needs, but in principle to all potential users of digital applications.

[8] As elsewhere, digitalisation at the University means that data is created and that it can be analysed. This can serve science, it can serve to improve the system, but at the same time data protection must be observed and uncontrolled use of data must be avoided.

[9] Digitalization *can* quickly lead to dehumanisation, because the individual diversity that characterises people is not sufficiently represented.

[10] In this respect, a university is no different from other institutions, but we must ask the question whether it would not be better if it were positively different from other institutions in this kind of digitalization of processes.

[11] Another aspect concerns what universities produce: Scientific teaching, scientific research, in short: science, knowledge and skills.

Where does digitalization stand in this relationship?

[12] In the Covid 19 pandemic, it became clear that in many countries neither schools nor universities were prepared for digital teaching instead of face-to-face teaching. Face-to-face teaching has great advantages, but we would be well advised not to simply return to the old, but to expand digital teaching. We don't know how long the Covid-19 pandemic will last. We also need to be prepared for new other pandemics. The emergence and spread of new viruses is amplified and accelerated by man's destruction of nature. We will have to get used to regularly occurring pandemics again. Digital teaching will remain necessary and important for this reason alone.

[13] In addition, the innovative potential of digital teaching can be exploited. I am thinking in particular of forms of interdisciplinary teaching and the internationalisation of teaching: digitally, academics from one discipline or interdisciplinary from several disciplines can teach together and thus transcend the boundaries of their own discipline as well as the boundaries of national academia without having to travel long distances. Joint and interdisciplinary teaching increases the quality of studies and teaching.

[14] Digital tools can have an added didactic value. Competences that many students have already acquired in the field of social media can be usefully brought into study and teaching. Interdisciplinary and internationally organised teaching means in practice that a common language must be used. Mostly this is English, but one could also imagine using language recognition and translation software, training it intensively and thereby perfecting it so that everyone can speak and write in his or her own familiar language. Especially in the humanities, this opens up a wide field for the use of AI in the service of interdisciplinary and international scholarly communication.

[15] So far, AI used in translation engines is often poorly suited for scholarly communication. This must be changed. AI is well suited to preserving cultural and linguistic diversity without having to do so at the expense of interdisciplinary and international scholarly communication. A lot of development work has to be accomplished here.

[16] Universities are involved in the development of Artificial Intelligence, but it is often commercial companies that lead the way. Data Science is becoming increasingly important in companies as well as

universities. Medicine, the natural sciences and life or biological sciences, as well as disciplines that work with mathematical and statistical methods, are generally well positioned in this area. However, the Humanities are often still lagging behind, and in some cases the importance of Data Science for the Humanities has not even been recognised. This is also true with regard to AI, which most subjects from the Humanities are hardly concerned with.

[17] If you ask where the University stands in the process of digitalization, the results are very mixed. Universities are competing internationally. Universities must try to be at the forefront of digitalization, Data Science, AI and Digital Humanism in all the subjects they teach, otherwise they will suffer a worrying loss of importance. It is already the case that, especially in the field of Humanities, a company like Google is superior to most subjects from the field of Humanities at most universities in terms of AI and Data Science. I refer to the use of AI specifically in image recognition (which is enormously helpful for

pictorial science), to the translation engine Google Translate, and to the data science tool called Ngram Viewer in the field of linguistics.

[18] The answer to the question of what role universities should play in digitalization is fundamentally a socio-political one. A socio-political framework must be set for digitalization. Within this framework, the position of the University must be determined.

[19] Since digitalization is part of globalisation, it would not make sense to determine the socio-political framework nationally. In detail, national priorities may of course be necessary.

[20] I will start with those aspects that cannot be considered in any other way than globally. This involves, for example, ecology and climate change. What contribution should and can university research make to solving problems? How can it itself contribute to the reduction of climate-damaging and environmentally harmful consequences through digitalization?

[21] The study of the environment and climate is one of the basic tasks of the University. In the course of research, data is generated that helps to understand the problems precisely. Climate models can be developed, for example. But there is untapped potential. For example, in reviewing the deadly floods in western Europe this summer of 2021, it has become apparent that historical information about mega-floods some 200 years ago has been disregarded in the data-based generation of forecasts of floods of the century. Of course, such historical information is imprecise compared to the data commonly used today. However, this is not a reason to ignore it, rather it poses a challenge as to how this historical information can be translated into data to be incorporated into computational models.

[22] Reports on so-called natural disasters are often local because the events are local and are therefore readily overlooked. So we have to change the way we look at things. This, incidentally, is a social function of the University: To ensure that limited or deficient ways of looking at things are changed. This has an effect on the individual disciplines, which have to develop new questions and methods.

[23] The people who are educated at universities are usually among the professional elites of society after graduation. They then have, or could have, influence in their sphere of action. It is therefore all the more important that they have learned to view and use digitalization from an ecological perspective. If the University uses digitalization to act in a more environmentally friendly way itself, it has the potential, via its graduates, to have an impact far into the professional world and society. This means that politics must also commit to the University.

[24] A political commitment is all the more credible the more it is expressed in an adequate budget for the country's universities. This is needed, inter alia, to introduce Data Science in all subjects, including the Humanities.

[25] Data Science means that even in subjects where research is often conducted individually, research is being switched to more teamwork. In the Humanities in particular, data must often first be generated and then analysed with the help of Data Science. The generation of Big Data and its analysis is part of the future of research in the Humanities. This requires a comprehensive digitalization of the empirical material. In the

case of objects, this includes 3-D digitalization. It is about nothing less than translating our historical-cultural environment as completely as possible into digital data. When Big Data is available, complex questions can be addressed. To do this, the data must be networked internationally and interdisciplinarily.

[26] One of the University's tasks is what is often referred to as a Third Mission. How should this be understood in the context of digitalization?

[27] The amount of data and information that is available digitally and in open access is enormous. However, the correct handling of this information and data must be learned. The University is helping to increase this data and information, but that alone is not enough. Nor is much gained by making as much open access available as possible. Here the buzzword of the democratisation of knowledge is often used. Data and information do not in themselves constitute knowledge, let alone science, and do not in themselves contribute to democratisation. Knowledge emerges from them if the user has methodological competence. Society needs to be trained in the use of data and information. The University must become more involved in this. In

return, it must be given better access to data that originates outside the University.

[28] The nature of digitalization in recent years has turned the spotlight on something new called Digital Humanism.

[29] Digital Humanism is about how “[digital technologies \(can\) serve as a means of strengthening and spreading positive social values and visions](#)”. This flips the view that has become habitual: “[Digital Humanism is about a shift away from computer-literate people to people-literate technology.](#)”

[30] Digital technology should consequently address more than before, or even entirely, tasks related to cohesion in a society on the basis of shared values. In addition, value-based considerations of the future, possibly “visions”, should drive technical development – instead of being driven by technical possibilities just because something is technically possible.

[31] The humanism aspect is to be taken literally: What digitality is particularly necessary in lifeworld terms? What does a society need in

order not to become unintentionally inhuman in a pandemic? The way of digitalization often leaves behind older people or accessibility is not considered. Digital Humanism could be a guiding concept in defining social and public tasks. What should the social and welfare state be like in the 21st century? It should be Digital Human! This also means that the digitalization of communication, especially in the form of the so-called social media, has led to a new kind of violence called “digital violence”. Thus, the study of the role of violence in societies is a traditional topic in the Humanities. This is equally true for the social sciences and psychology. Here, many fields of interdisciplinary cooperation are emerging for which Big Data is needed and for which joint research fields can be developed within Data Science and Digital Humanism.

[32] The University could or should play a leading role in the development of Digital Humanism. In my opinion, Digital Humanism encompasses so many aspects that it is worth setting up a separate master program. The same applies to Data Science, which also involves ethical and fundamental rights issues.

[33] Digitalization encompasses the entire lifeworld, without it being clear how much this changes people. Historically, it is a cultural revolution that we as a University need to explore.