University of Erfurt

The following text is a report by Professor Dr. Gerd Mannhaupt, Vice President for Student Affairs and Director of the Erfurt School of Education at the University of Erfurt.

The University of Erfurt has been using WISEflow since 2020.

Context

Since its new foundation in 1994, the University of Erfurt has firmly established itself in the higher education environment, both nationally and internationally, through an exceptional cultural and social science profile. With its focus on religion, humanities, cultural studies, society and teacher training, the University of Erfurt is a centrally located educational and research institution that comprises approximately 6,000 students, about 100 professorships, as well as about 400 academic employees and 300 administrative employees.

As a reform university with an appealing and at times unusual teaching and research style, the University of Erfurt, incidentally certified as "family-friendly", has relied from the very beginning on bachelor's and master's degree programs as well as interdisciplinarity. It addresses and explores the major societal challenges of our time and is committed to increasing international scientific cooperation with regard to global partaking in knowledge and science.

The University of Erfurt promotes in-depth study and interdisciplinary research. It is acting as a role model for other universities with its mentoring system, the "Studium Fundamentale" and vocational orientation programs. Additionally, it has two professional schools based on the American model: the Willy Brandt School of Public Policy and the Erfurt School of Education, which is responsible for coordinating a teacher training that can be deemed as exemplary nationwide.

A catalyst for change

Professor Dr. Gerd Mannhaupt: First of all, I would like to start out with noting that the reason for the introduction of digital exams in Erfurt was not just the result of the COVID-19 pandemic. At our university, we had been discussing the digitisation of exams already for two years before the coronavirus had emerged. Colleagues who conducted exams with many students, but had no technological support, were particularly in favor of it. Some of them mainly use multiple-choice tests, and for these exam types a digital exam is much easier to implement than a pen-and-paper exam. So, we were already looking for a solution.

Personally, I've wanted to get rid of printed, written submissions for a very long time. In the past, all students had to send me an email with one or more PDF files: Everything had to be submitted to me electronically. From my point of view, it wasn't just a matter of writing the exams digitally, but of digitizing the entire examination process. That was the decisive reason for switching, and is one of the main strengths of WISEflow! My research had shown that, apart from WISEflow, there were not a lot of suitable alternatives for us. We chose WISEflow because it is much more than simply a digital examination software for long distance exams. We liked the automatic text recognition and the anti-plagiarism services included in our license.

Decision process and privacy policy

Right from the start we noticed that WISEflow has been developed by people from within higher education. Everything that you usually keep in mind as an examiner and lecturer at a university can be found in it. And you experience that right from the beginning. That's why I think that anyone who has already worked with WISEflow will not accept any other solution.

I don't think that another open-source system will be developed that could even come close to matching the performance of WISEflow. When we first started to consider the introduction of digital exams, I asked the head of our data center, who is responsible for all IT matters: "how long would it take to develop our own examination system?" He replied that it would take at least two years. In my opinion, two years would not be enough time. These are hand-crafted systems, so if one lecturer says, "I want it to be this way," then that needs to get programmed. And then the next person comes along and says, "but I need something else." All universities that have decided to build their own systems seem to come to the conclusion that two years are not enough. No university can single-handedly develop the same features that WISEflow is offering.

It's not just a matter of time either - developing your own system requires a lot of resources. In terms of cost, WISEflow was and still is a comparatively inexpensive system. It would have been foolish for us to decide differently.

Very early in the process, we involved the State Commissioner for Data Protection („Landesbeauftragter für den Datenschutz") as early as July 2020, before the first examination period. In the meantime, the Thuringia Higher Education Act has been amended to allow for digital exams. It now contains exactly what we need to be able to execute our undertaking in a meaningful fashion. We have adapted our examination regulations as well. These specify, for example, in which way digital exams are to be conducted. All of this is now part of the general, permanent examination policy at the University of Erfurt.

WISEflow uses AWS servers hosted in the cloud; the entire processing takes place exclusively in encrypted form. The State Commissioner for Data Protection has audited and approved the process.

From my perspective, we learn weekly of a public facility that has been compromised in some way. No one is now claiming that the location of the servers should be in Thuringia because of these breaches - you should never believe that you're secure just because the backups are stored locally, right? Surely you can build a good backup system where maybe the last day's data is uploaded before a cyber-attack, but local servers are only as secure (or insecure) as the servers that AWS runs in Ireland. So, what's the difference? I'd say, AWS servers are more secure because there is a greater expertise in security technologies there.

Adoption of the platform at the university

The implementation was relatively quick. We signed the contract in June 2020, and the first exam day was on July 13. Which means that we implemented it within eight weeks. At that point, the UNIwise staff said it was going to be a close run. One reason we managed to implement it virtually unnoticedly was that we took advantage of the Corona situation from an early point. All the colleagues from other universities that we had talked to, who had only started thinking about digital exams afterwards - when the pressure by the COVID-19 lockdowns had already tapered off - had to deal with enormous resistance from the teaching staff. There were also universities here in Thuringia that, even during the lockdowns, tried to somehow manage everything via attendance because they hadn't been able to convince their faculty. They didn't make sure to take the lecturers along with them on this journey.

Here at our university, on the other hand, colleagues and students asked me, "When are we going to get an electronic examination system?" The idea was met with widespread approval. The smaller programs would go along with it anyway, but what was really important was to win over advocates in the larger programs that execute written exams with 300 or 500 students.

Everything went off without a hitch and worked flawlessly. There was not a single incident in the exams during the pandemic. All our exams were written on the days that they were set out for previously in the March 2020 course catalogue. Not one exam was cancelled. So that's the result - it was good! 6,000 students here have used the system and were absolutely happy that they all would get their certificates in September 2020 and not have to wait a year or two - or even a semester - because the exams can't take place. And the students gave us a lot of credit for the fact that there were no delays. We've gotten a lot of positive feedback from them.

Bringing the employees on board

Personally, I feel very confident with the use of WISEflow. In the beginning, I attended every available training session. And by now, of course, all our employees are up to date as well. It's important to involve all the stakeholders of the project during the implementation phase to really get everyone on board.

Even if it doesn't correspond to the common belief, lecturers at universities essentially have a conservative stance. As innovative as their research may be, they are conservative in regard to structural questions. Everything is supposed to stay the way it is, or even better, go back to the way it was years ago. As I said, according

to our examination regulations, digital exams are the norm. But the examiner of a master's thesis can also check off in the digital registration form that they want a paper version. In that case, students must submit a second version of their thesis so that the marking can be done on paper. So yes, that still exists, but it is very limited. At the Erfurt School of Education (ESE), this is not a big problem. There is always one discussion: What is the best way to correct the students' submissions? In every modern workplace there should be at least one computer that is designed for the use of a digital pen, with software better than Acrobat, on which someone can make handwritten corrections in the PDF files. That is how I do it. I have a special software for this, and it works smoothly for such tasks. I can read and write with it just like I do on paper. If I didn't have that option as a lecturer and had to do all my annotation work with a keyboard and mouse, then I wouldn't want to correct or edit digital exams either. But our data center has now introduced digital pen-enabled devices for marking, so now more and more lecturers are using this option. That's why there are no more reservations.

Compliance with university regulations

According to our regulations, we have to store exams and papers for five years. Thanks to WISEflow, we are now gradually getting rid of tons of paper from our shelves and metal cabinets. All papers are being moved onto WISEflow's electronic archive instead. We are literally seeing tons of paper disappear from cabinets and shelves. Now everything is neatly archived and available at any time, and according to our license agreement with UNIwise, everything is deleted after five years, just as it should be. In other words: the physical archive system belongs to the past. This feature, which we first became aware of during the

presentation of WISEflow, was the decisive factor in our selection of the platform. I didn't just want a provisional system for online exams for the time of the COVID-19 pandemic – the consideration was, and still is, that we introduce a system here once and for all and maintain it.

It is also regulated in the examination regulations that, for example for master's or final theses, the submission of the paper version is no longer the legally binding hand-in date (we don't even want a paper version anymore), but instead the date of the electronic hand-in. The deadline for the submission is the end of the flow in WISEflow.

In January 2021, several students approached the Erfurt School of Education (in short, "ESE"), which is our Center for Teacher Education and Educational Research, of which I am the director. They called us and asked if ESE knew which copy stores were open during lockdown. Then, problems arose. "How are final papers going to be printed for submission in lockdown if all the copy stores are closed?" The ESE asked me how we were going to solve that, and I said we could do it via WISEflow without any problems. You must keep in mind that by far most master's theses are written at the ESE: 300 to 350 master theses. That means that during this examination period, there were 350 students who could not submit the printed versions because it wasn't possible to get four copies of their thesis printed. So, we just quickly set that up digitally at the ESE.

You can't submit papers by email. That's not legally possible. If you require digital exam documents from the students, they have to be sent via WISEflow. Everyone is absolutely convinced of WISEflow's features. All faculties are using WISEflow and all master's theses are processed through it.

Advantages of digital exams for the University of Erfurt

One of the advantages of WISEflow as a system is that changes are relatively unproblematic to execute. You can easily extend the whole thing with an individual examination period. And another big advantage: archiving is no longer necessary. We had meters of exam papers in our archives. If you have a lot of written exams, you have a lot of paper. All that is no longer necessary.

Teachers can effortlessly provide students with the submissions along with their own comments. It is important to emphasize that according to a ruling of the European Court of Justice, every student has the right to a copy of their work with the examiner's comments. To comply with this, all you have to do is choose whether you want to share inline feedback with students. A simple click enables you to share that feedback easily. All in all, the efficiency of the system was simply compelling.

The enormous amount of time I save as a lecturer can now be used elsewhere. Grades had to be entered beforehand and checked again, then usually transferred to Excel. Such tasks have completely fallen away. Judging from my own experience, I would say that about half the reading time is being saved compared to handwritten exams. I always create essay exams, and digital papers are just much faster to read than handwritten ones. Currently we are working on making students aware that texts can also include a structure, and that they can work with headings. That is the next challenge. Otherwise, they literally write 1,000 words in a single block. There's

not even a paragraph. That's just a win-win for all of the teaching staff, from a reading perspective.

Another advantage - cost savings. We save on infrastructure costs, say for furniture and equipment. A single exam period costs us as much as the WISEflow software for a whole year with all its accompanying customizations. We also save money because student assistants no longer have to deal with all the paper, not to mention printing costs. We used to have to print documents, exams and instructions for hundreds and thousands of students. That's all in the past. For us, the price of the system is one of the strongest arguments.

Adaptation of processes to incorporate digital exams

Semesters with 300 students are using WISEflow, but so do smaller courses like our Faculty of Catholic Theology, which sometimes only involves five or six students per course. We created a special training course for this faculty as well. It uses WISEflow for small exams and many of the written assignments.

The examination culture differs depending on the faculty and the person who administers the exams. In the Faculty of Educational Science, the lecturers set up the exams themselves, meaning that I set up the exams for my 230 students myself, along with other colleagues. In our Faculty of Political Science, the secretarial staff is primarily commissioned with setting up the flows.

We have two people on staff who provide structured support. There are weekly consultation hours for both students and lecturers regarding questions about WISEflow. In addition, support is also available by phone or email.

We have adapted our processes so that everything can be clearly understood by our students. We now allow for remote digital exams and digital exams written on campus, with the explicit consent of our students, and the use of secure cloud servers is clearly regulated. If students say: "no, I don't want to use my own computer, I don't want to install the lockdown browser, I don't want to use face recognition", then the only option for those students is to write the digital exam under in-person supervision on computers provided by the university. That is the process that we are clarifying now. When students write their exams on-site on campus, they don't have to worry about facial recognition. They don't need reference photos in that case, meaning all students who are enrolled in a master's program with us and don't write exams won't have a reference photo in the system or on the servers.

When it comes to digital exams on our campus, we don't know if we can execute that with our infrastructure. We have 100 computers that we can use for this purpose, so we'll have to figure out if it is possible. I have 230 students, and 222 of them have stated they would like to write their exams from home. Remote examinations have been completely abolished at other universities, but we are sticking with it because we have a space problem. Right now, we can't accommodate very large exam groups. The largest, which is developmental psychology, has almost 500 students. We couldn't even spread them all out on campus in a way where we could get a reasonable distribution of seats, so that only every other seat is occupied – this kind of seating reduces the capacity of the lecture hall by 75%. So, for us, it really is a problem of space. Other institutions don't have exam groups of this size.

We are also holding on to remote exams to accommodate for students who can't come

to campus. For example, we have a course unit together with the Willy Brandt School where around 100 international students from all over the world are participating – they need the option of a remote exam. However, once the spatial and technical conditions are in place, digital on-campus examinations are the ultimate goal for us, not remote examinations.

Our strategy in the long run is to continue with this. Faculty members receive training sessions every semester, which we now conduct ourselves. New lecturers are introduced to the system through training courses as well. We also usually hold an afternoon session to introduce new features of new versions, and that's enough to maintain the existing high level of acceptance toward the system. We are managing it well; there are no problems.

For the staff, we created a "single point of truth" after the implementation phase, where all relevant information can be found, and messages can be exchanged. We are talking about a Moodle room here. We use it to draw attention to workshops, for example on new versions of the system. In addition, the support documentation for all kinds of circumstances is available there, too.

The students do not get a big introduction. It happens more naturally along the way, and partly via mock exams in WISEflow. These have two functions for us: firstly, they allow us to check whether the lockdown browser works for all students. Secondly, some lecturers use them for didactic purposes, so that their students have an idea of what questions and what kinds of assignments they will face later on.

I think this is the reason why our teachers conduct mock exams quite often. Not only to make sure that the technology works, but also to provide didactically very valuable content to their students. That's why I think mock exams are important. Every exam, every written test, is a little bit different and students want certainty and orientation. Mock exams are a good tool in this regard.

Integration into the systems of the University of Erfurt and working with UNIwise

WISEflow is synchronized with the system we use at the University of Erfurt. Our system is called ELVIS - "Erfurter.Lehr. Veranstaltungs.Informations.System". We are talking about an examination and room management system – in other words, a small campus management system. Together with the latest amendment to our examination regulations, the integration works quite well now. Students not only use it to register for their courses but also for individual exams. The module exam is thus more or less like a course in itself. That means you can go and say that there is also a written exam for your lecture and the flow could be created directly in the ELVIS system, at least for the participants, and I can enter the rest myself.

If we ever had problems working with UNIwise and needed support, we were helped quickly. We are enthusiastic developers - power users, so to speak - and we constantly have ideas about what else WISEflow should be able to do. Many of our suggestions have already been implemented. In terms of support, we have absolutely no reason to complain.

Innovations in examination and a look into the future

My favorite exams are the ones at the Language Center: Reading comprehension, listening comprehension, and written and oral language skills must be examined. This is all done in WISEflow. In WISEflow, they actually get students into an audio flow or speak and note; students record their translations in WISEflow and the Language Center teaching staff can then listen to it and evaluate the results. This was an assessment format that I had naively believed would only be possible in attendance. But no, it works beautifully in WISEflow. After the lockdowns were over, the colleagues at the Language Center wanted to return to face-to-face exams, but it turned out that the presence of a recording is of tremendous importance in oral exams when it comes to subtleties like pronunciation and sentence structure. In a face-to-face oral exam, what is said is not of long duration, and the examiners, unlike recordings, have to evaluate in the moment. I would rather sit down afterwards and listen to the whole thing again in WISEflow. The recordings are not extremely long, and they can be accessed more easily. I found the realization of this exam to be outstanding.

In general, I don't know anyone who has had any complaints about WISEflow. It has become part of everyday life. I am happy - happy that I chose the right system. It was a rapid process and as the person in charge, it makes me happy to know that I made the right decision. I'm glad I discovered WISEflow for us, and I'll tell that to anyone who asks.