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ON A PATHWAY TOWARDS THE DIGITALISATION OF HIGHER EDUCATION: THE CASE OF LATVIA

Linda Daniela[1], Daiga Ivsiņa[2]
[1] University of Latvia, Latvia
[2] Ministry of Education and Science of Latvia, Latvia

ABSTRACT

The European project POWERHEAD (Empowering Higher Education in Adopting Digital Learning),[1] involving the Latvian Ministry of Education and Science (project partner) and the Flemish Department of Education and Training (project lead partner), aims to analyse the possibilities of digitising higher education. In order to identify the way forward, digitising higher education in Latvia and Belgium (Flemish Region) was mapped according to the methodology developed in the project, taking into account Laurillard's model of drivers and enablers.[2] The project aims to develop policy guidelines for partners at two levels: 1) guidelines for a national policy strategy on digital learning in higher education; and 2) guidelines including recommendations for higher education institutions to develop teaching and learning in this format and environment and to plan the next steps in the digitalisation of higher education. To this end, a multi-stage study was carried out to identify the situation in Latvia. The first phase consisted of a series of focus group discussions with higher education stakeholders (students, lecturers, business representatives and policy-makers). The second phase consisted of a survey of academic staff comprising 40 questions, two of which were designed to elicit demographic information, while the remaining questions were open-ended. The results (and related challenges) were analysed using content analysis principles. The key finding is that stakeholders are generally supportive of the digitalisation of higher education but point to a number of challenges that need to be addressed: support for lecturers in learning digital skills, collaboration between lecturers, and digital solution designers to ensure that digital solutions are of high quality and avoid the risks of knowledge fragmentation. It is also important to think about the principles of inclusive education so that the digital learning environment is accessible to everyone.

Keywords: *Digitalisation; higher education; digital support; technology-enhanced learningcontent analyses*

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Introduction

The digitalisation of higher education has several strands that are evolving and which present different challenges. The first strand is the learning process, where students, lecturers and available digital learning materials can be distinguished. The second is the management process of the university, where it is necessary to think about how to support students and lecturers, how to plan the study process, how to organise the circulation of data, and how to facilitate the internationalisation of the study process. The third is the research process, which is also affected by digitalisation. There may be new directions of research on the impact of digitalisation on technological innovation, and digitalisation also opens up new possibilities for both data mining and data collection. During the Covid-19 pandemic, when all educational institutions were closed and the study process moved to remote environments (Hodges et al., 2020), digital solutions helped to secure the learning process as they allowed synchronous connectivity. This created a situation where the use of digital technologies increased rapidly (Kedraka & Kaltsidis, 2020; Teräs et al., 2020; Jansone-Ratinika et al., 2021; Nuere et al., 2021; Rubene et al., 2021; Hou et al., 2022; Suoranta et al., 2022; Zaimakis & Papadaki, 2022) as did the level of digital skills. Given that this time was largely associated with distance learning, it is worth noting that the literature is sometimes terminologically confused between distance learning and technology-enhanced learning, which have much in common but also much that is different. Both use technology and various software, but the difference is that in a distance learning process, everything is connected on different platforms and can be synchronous or asynchronous, whereas in a technology-enhanced process, there can be both remote studying and face-to-face studying, using different technological solutions to address key issues in higher education.

However, despite the great opportunities of digitalisation and the lobby of technology companies (Mirrlees & Alvi, 2019), it is believed that too little attention is being paid to the human factor in the digitalisation of higher education and the needs of the pedagogical process are forgotten (Murphy, 2020; Suoranta et al., 2022). This often leads to a situation where digital solutions are available but are not designed to meet the needs of the learning process, which creates further challenges, such as educators having to spend a lot of their time adapting the digital solution to the learning process in order to develop digital learning materials that support the learning objectives. The challenge for pedagogy is to ensure that technologies support learning rather than using them just because they are available (Daniela, 2020; Daniela, 2021; Suoranta et al., 2022).

Inadequately designed digital learning tools and freely available information in digital environments can lead to knowledge fragmentation (Reznicek & Smutny, 2020). There can also be 'poisonous public pedagogy' which distorts views, opinions and judgements (Jandrić, 2018), which in turn can have unpredictable outcomes, as it can lead to new innovative ideas as well as to people not having a systematic understanding of certain facts and patterns, thus trusting fake news, data falsification, dupery and deceit, etc. (MacKenzie & Bhatt, 2020; MacKenzie et al., 2021). Higher education is responsible for ensuring that future professionals are equipped with the latest knowledge and are able to analyse information critically and pass on their knowledge or create new knowledge. The aim of this paper is therefore to analyse higher education faculty views on the digitalisation of higher education in order to build a knowledge base that will enable recommendations to be made for policy planners and other stakeholders.

Methodology

The research was carried out in Latvia as part of the POWERHEAD (Empowering Higher Education in Adopting Digital Learning) project as a follow-up to earlier focus group discussions with stakeholders (students, lecturers, business representatives and policy-makers) to identify the views of those involved in higher education on its digitalisation. A questionnaire with 38 open-ended questions based on the documentation prepared for the project and two closed-ended questions was developed for the study, and higher education lecturers were invited to give their opinion.

At the beginning of the survey, respondents were asked about their gender (the question anticipated that they might not want to indicate it) and their status in higher education, where they could indicate whether they were PhD students or elected or non-elected academic staff. The questionnaire did not ask for information about the respondents' place of work and did not require them to reveal their identity. This ensured that respondents could be open in the second part, and this approach makes the results reliable and allows them to be included in further analysis.

The two demographic questions were followed by open-ended questions, where respondents were free to express their opinions. These questions were divided into three blocks. The first block contained 17 questions summarising respondents' views on *current developments in the digitalisation of higher education*. The second block, *course and programme development*, had 13 questions. The third block, *resources*, had eight questions.

The questionnaire was designed using Google Sheets, and a link to it was sent out by e-mail. The questionnaire was anonymous, and respondents could stop participating at any time. In total, the views of 10 people were

obtained, and all ethical standards were respected. Based on the results of the survey, each of the project partners prepared their own national recommendations, and these will be compared with the results obtained by the project partner and will serve as material to help develop the project's joint recommendations to further the digitalisation of higher education at both a policy and an institutional level.

Results

The results were analysed using content analysis principles.[3] In the first block of questions, respondents were asked to answer questions about digital skills and how they are used in the learning process, and whether digitalisation can be seen as contributing to the principles of inclusive education.

All respondents agreed that digital skills are important in their daily work and are used every day, but one respondent could not single out digital skills over other skills because they are all equally important. When asked to describe areas where digital skills are integrated into course learning, the respondents cited e-learning courses where students have access to study materials (3), lecturers producing their own interactive learning materials (4), and the fact that their course teaches students to use digital tools that will be useful to them later in their professional careers (2). Nine respondents pointed out that the ability to study at any time, to access materials from anywhere and to be able to connect to studies remotely are essential parts of inclusive education. One respondent further stated that the ability to diversify materials to suit different people's needs helps to ensure inclusive education.

In response to the question of whether the digital environment can create barriers to inclusive education, two of the respondents felt that there are no barriers, but others indicated that the unavailability of different digital technologies and software can create barriers (3) and that when digital learning materials are developed, often no thought is given to how the information should be pedagogically arranged to guide the student's learning and how the materials should be arranged so as not to create additional barriers for the student in the learning process (2). One example was the screen layout, which can cause eye strain and trigger neurological problems. Another example of a barrier was that the digital environment does not allow full face-to-face communication, which can gradually lead to feelings of isolation (2).

[3] When describing the answers of the respondents, the number of people who expressed a given opinion is mentioned in parentheses.

Respondents were also asked to name 2–3 factors that could positively influence their willingness to use digital solutions. The following possibilities were mentioned: making work easier and more efficient (7) and recording lectures, motivating students to go deeper as lecturers feel that students watch the recordings (2). One person pointed out that the lecturer's proficiency in using digital tools also influenced their willingness to use them. Respondents were further asked to mention positive aspects of digital learning environments that can ensure accessibility, and here respondents mentioned the possibilities of studying remotely and accessing the study process and study materials from anywhere, regardless of whether there are any reasons that would prevent one from being face-to-face. One respondent, however, indicated that there are no positive aspects to digitising higher education.

As for the negative factors of the impact of digital solutions on higher education, the respondents mentioned the following: systems not working (3), the illogical architecture of the material (3), the reduction of human contact (2), and students' lax attitudes towards online lectures when they are listened to in parallel with other activities, thus dividing attention, which affects the quality of the perceived information (2). One respondent pointed to the uniform way of perceiving information through the screen as a problem. Another respondent pointed to data security risks, and another mentioned that the instructions for using digital solutions are too long and difficult to understand, which discourages people from consulting them.

Digital solutions help to ensure that everyone can learn at their own pace and sometimes in their own time. This learning mode requires students to have highly developed self-directed learning skills. The respondents were asked whether students could be considered to have well-developed self-directed learning skills and were asked to justify their opinion. Eight believed that students do not have well-developed self-directed learning skills and thought that this problem is rooted in the general education phase, where the idea is cultivated that teachers are responsible for students' learning achievements and must support students in their learning in any way they can. It is believed that this learning process creates a situation where young people do not acquire self-directed learning skills and are not prepared to make the effort to find information and complete tasks on time. These problems are particularly pronounced at the start of higher education, but they diminish from the third year onwards and are less pronounced at the Master's level. One respondent said that if students are motivated then everything will get done, but if they are not motivated then they do not have self-directed learning skills. Another respondent, adding to his opinion on students' weak self-directed learning skills, added that this requires a change in the organisation of the study process, with

more thinking directed towards the various mid-term examinations that are compulsory for students in order to support them and, to some extent, force them to learn. Some respondents pointed out that this lack of or poor development of self-directed learning skills also affects the work of lecturers, who constantly have to think of solutions to get students to learn. It was stressed that this is particularly relevant in the remote learning process, where it is not possible to monitor student activity, which can be used as an indicator for the lecturer to change the course of the lesson.

Respondents were also asked what they would recommend to promote the development of self-directed learning skills, and the following suggestions were made: the development of appropriate tasks that increase the amount of work, thus increasing the workload gradually (2); consistent, timely assessments (1); not accepting or downgrading work if submitted late (1); deadlines being respected by teachers (5); providing training for lecturers on how to foster the development of self-directed learning skills (3); more use of interactive activities that engage students (3); and raising awareness among university management of what self-directed learning means and how it can be implemented qualitatively in courses and study programmes (1). However, one respondent suggested that it is now just a buzzword. It was also stated that students need to see the benefits, as then they will have the strength to overcome obstacles and laziness (1), and that it is a big part of teaching in the first year when students slowly combine learning content by themselves with being provided with learning content by the lecturer (2).

Respondents were further asked to identify recommendations on how the flexible use of digital environments in higher education could be promoted. The recommendations were to be structured at three levels: the study process, the administration of the study process, and scientific research. The following recommendations were made to improve the study process: stick to the 50:50 split between what can be done remotely and what should be done face-to-face (1); develop different templates that lecturers can adapt for their own needs rather than having to redo them each time (1); use the e-shop principle in the learning process so that everything a lecturer needs can be found in one place in a digital environment (1); feedback on learning outcomes should be automated (3); and using artificial intelligence to test knowledge (3). It was also stressed that there is a need to train lecturers in the use of digital solutions (3). In the assessment of studies, the final examinations should be 'de-weighted' and the acquisition of different competencies during studies should be assessed.

The following recommendations were made regarding the administrative level: make the digital environment easier to understand and navigate so that its use does not require extra energy for either lecturers or students (1);

provide data analytics services (3); allocate time for lecturers to learn digital technologies and develop digital learning materials and allow time for the development of the materials themselves (4); support lecturers in the implementation of digital solutions (2); and pay for the extra work required for the development of digital solutions (3). It was further recommended that lecturers should work in a team with digital designers to ensure that the materials are not only correct in terms of content but are also arranged according to the principles of information architecture and digital design (2), and it was underlined that it is the responsibility of the administration to hire such specialists. Furthermore, digitalisation processes should be carried out simultaneously at all levels so that the study process, the research process and the management of higher education are digitised (2), a clear vision of what needs to be done and why it needs to be done should be developed so that these processes are understood by all (2), and it should be ensured that the environment is ergonomic, both in terms of the physical environment (where people spend time on the computer to work) and the digital environment (X).

At a research level, it was recommended that lecturers learn more about different data analytics software and improve skills in using different databases (2). Support is also needed in learning data processing software and data handling (1), and data availability and accessibility of analytical software need to be ensured (2).

Respondents were also asked about their views on how the digital environment can contribute to people's well-being and mental health, and they felt that, given that the use of various digital tools is a daily routine and that their development requires a considerable investment of time, time outside the digital environment is necessary (8) and the work-life balance should not be lost (9). One respondent believed that basic skills in using digital solutions, such as sharing and co-creating documents and using different learning platforms and communication platforms, are still very weak. He believes that only a small minority have developed these skills well and are therefore more digitally active, which masks the fact that basic digital skills are generally very low. Another respondent pointed to communication problems in digital environments, where being remote means that people gradually lose the ability to interact and converse in a real environment, and this can cause both stress and emotional health problems.

The respondents believe that student participation in the digitalisation of higher education should be promoted by encouraging them to participate in the development of different solutions and by providing them with digital communication opportunities and various co-creation opportunities (6). They also recommended greater use of co-creation platforms such as Miro

that allow all students to work on a problem at the same time, which is perhaps less possible in face-to-face studies where students go their separate ways after lectures.

Respondents identified the need for digital tools and for them to be easy to understand as motivators to use more digital solutions. They also pointed to the need for a specific consultant to use digital solutions in the learning process, as even though they have skills in using digital tools, they would still like to learn additional things and understand how to create more digital learning tools themselves. This also highlights the need for additional time (4). The need to find digital solutions to reduce the time spent on routine work (4), the importance of the design of digital solutions in choosing whether to use them for professional duties (3) and the desire for more funding for digital software, as often the software that can be used successfully is costly, were all stressed. Professional development was also recommended so that the same methods are used as in the study process but with more emphasis on hands-on activities.

A relatively small minority of respondents were positive about the internationalisation of the study process and believe that it is the future of higher education, something that they need to be aware of and start adapting to. However, one respondent, while agreeing that it is the future of higher education, was rather dismissive in his attitude and said that he will have to adapt but is not convinced this is necessary.

On the subject of the development of study programmes and courses, the first question was about quality assurance in the study process. The majority of respondents (7) said that quality is definitely something to think about, but it should definitely be taken more seriously. Insufficient resources, both financial and human, were cited as a reason for not monitoring quality at the required level. Process monitoring was also felt to be important to ensure quality (2), and there should also be staff training on quality assurance (1). In order to ensure a technology-enhanced study process, respondents recommend adopting good practices from abroad (2), strengthening cooperation between universities and employers (1), actively using different platforms (Moodle, a learning management system, was mentioned) (1), building cooperation between private and public universities to ensure diversity of programmes (1), investing in technology (2), paying for the extra work of lecturers that is now needed to work in a digital environment (1), and providing training for lecturers and students not only on technology but also on the psychological aspects of using technology (2).

When respondents were asked what characterises a good technology-enhanced learning process, the following answers were received: the inclusion of technology in all courses and the provision of a wide range of digital services (3), the use of automated solutions to reduce the routine

work that lecturers could devote to research activities (3), the involvement of experts in the field (1), and the possibility of providing distance learning and ensuring that academic integrity is respected (1). The skills that the respondents recommended lecturers acquire in order to ensure a technology-enhanced learning process included the use of Moodle, Zoom, and Microsoft Teams. Excel, R language and Word capabilities should also be learnt, as should tools to enhance learning (e. g. small group discussions), basic skills in data visualisation, presentation design, automated test creation, video recording, screen and sound recording/editing, etc. It would also be useful to learn basic programming, text and spreadsheet editing skills, the use of cloud services, how to make daily use of various shared documents, interfacing hardware with projector and speakers, etc. It is also important to pay attention to cybersecurity. One respondent mentioned that learning new technologies, such as blockchain, could also be useful.

Respondents were also asked how they felt about students' preparedness to learn in a digital environment. The participants indicated that students sometimes lack the basic skills to make full use of digital learning environments, and they believe that students need to learn the basics of programming, the basics of computing (how to connect computers and other hardware), and the use of different operating systems (at least Windows and macOS). Cybersecurity was considered important here too. It is also important for students to learn how to use online videoconferencing and the basic principles of electronic record-keeping, as the respondents reported having encountered numerous situations where students were unable to connect to a synchronous study process or manage their problems in a digital environment.

When defining recommendations for policy-makers, the following were received: learn good practices abroad that could be replicated in Latvia; organise studies or internships for lecturers abroad in universities or institutions with high levels of digital development; encourage inter-university communication between lecturers to get to know each other's situation and adopt best practices from each other; and develop a clear support plan for those who want to change and improve. It was also recommended to allocate sufficient funding for investment in digitalisation, academic and administrative staff, set appropriate ambitions in light of global education trends, facilitate the licensing of distance and remote learning software, and develop new solutions that can be easily used by Latvian higher education institutions.

Finally, the respondents were very laconic about the resources needed to digitise higher education, pointing to the need for investment in technology and software. It was highlighted that activities to help develop skills in using different digital tools need to be organised and lecturers'

time needs to be invested in the development of digital learning materials, indicating either that thought needs to be given to how this time can be paid for, recognising that this is work that the lecturer is investing time and resources in, or that outside professionals are brought in to develop the materials.

Conclusions

The aim of this article was to identify the opinions of lecturers from different institutions within the University of Latvia on the digitalisation of higher education, the opportunities created by digitalisation and the current challenges within the framework of the POWERHEAD project.

It can be concluded that many respondents now understand the term "digitalisation" more as a remote learning process than the full spectre of digital technologies use. This implies that there is a need to raise awareness of the possibilities of the digital environment, although the questions were formulated in such a way that the answers were expected to be about the possibilities of the digital environment, which includes more than just the distance education process.

The analysis of the data shows that developers of digital solutions need to think more about the intuitive design of these solutions to reduce barriers to their adoption, which is in line with the technology acceptance model (TAM), according to which the perceived ease of use of the digital solution is important (Venkatesh & Davis, 2000).

The majority of respondents believe that students have poorly developed self-directed learning skills, which affects their willingness to delve into and seek information beyond the material provided in e-learning. Lecturers recommend designing more activities that engage students in active participation and continuously assigning tasks and monitoring their completion within deadlines (López-Meneses et al., 2020; Sánchez-Caballé et al., 2020). Students' skills in using digital technologies and their views on the use of such technologies should also be taken into account (Zogheib & Daniela, 2021).

The respondents very often referred to the lack of time both to learn how to use new technologies and to produce interactive learning materials, which shows the need to be realistic about the resource-intensive process of developing digital learning materials and the need to ensure the quality of the materials produced. Resources need to be invested in this because remote learning and technology-enhanced learning are a reality, but if quality learning materials are not provided (because there is not enough time, knowledge or resources), then this risks fragmenting knowledge and, as a result, stalling national development. This means that at both

the policy planning level and the administrative level, it is necessary to think about how to support lecturers in order to reduce their overload and ensure a quality digital learning environment.

The respondents said they are happy to learn and use new tools as long as they are easy to use and make it easier to perform a function. This is consistent with the findings of the TAM, which states that digital solutions are used when there is a perceived need (Venkatesh & Davis, 2000), and with the idea that lecturers themselves should be the agents of change (Bacq et al., 2020).

The risk of social isolation that comes from fully digitising communication was also raised, and this is in line with other researchers' findings (Zaimakis & Papadaki, 2022). From an administrative point of view, it is important to remember that the study process is not only about acquiring knowledge and planning resources but also about students belonging to a certain educational institution and forming social networks with their fellow students. When thinking about a digitised study process, it is therefore necessary to think about how to preserve these values that can later act as a support network for young professionals and help them to stay in the profession.

Most of the participants in the study have given relatively little thought to aspects of inclusive education in digital environments, although Latvian academics believe this is essential if digital environments are to be accessible to everyone and support everyone's need to learn (Daniela & Lytras, 2018; Thompson & Copeland, 2020; Shopland et al., 2022). If digital environments do not take into account the different needs of individuals, then this can make the digital divide even wider. To mitigate this, it is necessary to pay very close attention to how the learning process is organised, how responsibilities are distributed among all stakeholders, and what the privileges or barriers in the digital environment are (Mehta & Aguilera, 2020).

It is also important to bear in mind that educational propaganda is very strong, and there are various claims about digital citizens and the death of the lecture(r) (Matthews, 2022), but learning processes must also be conducted in digital environments, and learning is not virtual but real (Gourlay, 2021). This means that pedagogical work in digital environments takes on different dimensions (Daniela, 2021). Digital learning tools, without the knowledge of how to use them, are transmitters of knowledge to an even greater extent than the educator, who is able to react to what is happening and change his/her teaching process accordingly. In remote learning, lectures themselves become digital artefacts that people watch and listen to, so there is no reason to claim that lectures are dead.

Higher education should be less driven by the business of educational technology and more about how to use educational technology to enhance

learning, bearing in mind that knowledge about both the use of technology and the specific content that students need to learn is important, but so is technological pedagogical knowledge, which includes understanding how to use technology to pedagogically enhance learning (Mishra & Koehler, 2006). The teaching process needs to learn how to make technology an additional tool to enhance learning. Technology creates the opportunity to transform learning from a one-dimensional process to a multi-dimensional process where learning not only takes place face-to-face using certain learning materials but also uses information found in the digital environment through the offer of virtual environments.

There are authors who point to the risk that higher education is becoming too supervised and controlled, more concerned with the balance between income and expenditure, which calls for making higher education a more accessible environment where everyone can choose what they want (Le Grange, 2020). There are also authors who warn that higher education should not normalise the processes that were put in place to respond to the pandemic when immediate solutions had to be found to ensure the continuity of educational processes. It is suggested that there is a need to think about what lessons can be learnt from this time and how to ensure quality higher education in the future (Murphy, 2020). This resonates to some extent with the views of those involved in this study, who expressed the view that it would be preferable to organise the study process by balancing face-to-face learning with remote learning.

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