Annex A. Summary of stakeholder engagement

As part of the European Commission-Hungary-OECD project "Supporting the Digital Transformation of Higher Education in Hungary", the OECD conducted virtual interviews, roundtable discussions and an international expert meeting with a wide range of stakeholders in the Hungarian higher education system. This annex provides a summary of the input received during these activities.

Stakeholder interviews – September/October 2020

The Hungarian Ministry for Innovation and Technology (MIT) identified 29 key stakeholders, representing 25 bodies in the higher education system, who were invited to participate in stakeholder interviews with the OECD. Of these, 26 individuals from 21 institutions (see Table A.1.) accepted the invitation and were interviewed from 21 September to 13 October 2020.

The interviewees can be grouped into the following categories:

1. **Policy makers**: Senior government officials responsible for developing Hungarian higher education policy
2. **Government agencies**: Agencies that play a policy development or implementation role in areas relevant to higher education
3. **Supporting bodies**: Bodies outside of the public administration that play a key role in, among others, shaping the quality, financial support and structure of the higher education system's activities, actors and institutions
4. **Student representatives** from both undergraduate and graduate programmes
5. **Representatives from higher education institutions** (HEIs), in the vast majority, institutional leaders and heads of the teaching and learning research centres at each university
6. **Non-profit and private entities** engaged in supporting specific components of the higher education ecosystem (e.g. internationalisation, teaching and learning).

All interviewees received an interview guide containing guiding questions to prepare for the discussion with the OECD team. None of the interviews was recorded, to encourage open and frank conversations. The OECD conducted the interviews, and European Commission's Directorate-General for Structural Reform Support (DG REFORM) and MIT representatives were invited to attend the interviews as observers.

The sections that follow present key findings organised according to the questions posed to participants in the interview guide.

Challenges in the Hungarian higher education system

Interviews began by asking all participants to comment on general challenges facing Hungarian higher education. Interviewees identified several key issues, presented below.

Declining enrolment, changing expectations, and growing competition place significant pressure on HEIs

Consistent with an ageing Hungarian society, higher education enrolments have generally been decreasing since 2005 (apart from a slight increase in the last year). Despite the significant share of foreigners enrolled in Hungarian higher education, which helps to counterbalance brain drain and provides financial resources to institutions, the ability to attract international students is under strain due to increased international competition for students in higher education.

Some stakeholders noted that distance has become less of a barrier for students to access labour market-relevant degrees and that individuals look for flexible learning opportunities more often during their careers. They suggested that while opportunities exist to attract new types of learners, these require institutions to adapt in a swift and targeted way. At the same time, they suggested that programme and institutional prestige remain key in attracting students and that remaining attractive is tough for many institutions. The number of English-taught and double degree programmes as well as the level of pedagogical innovation, which could bolster the profile of institutions, are insufficient, according to some interviewees. A few stakeholders also stressed that the high number of HEIs in the country has fostered competition rather than collaboration, while also lowering quality as institutions compete for students.

The teaching profession is viewed as unattractive, and institutions as insufficiently focused on aligning programmes with labour market needs

The management of human and financial resources in HEIs, such as hiring and procurement processes, were described by many interviewees as bureaucratic and inflexible. The change of the governance model of HEIs to a foundation status is expected to help address some of these challenges and was received with prudent optimism by several stakeholders. Flexibility, efficiency (especially in human and financial resource management), and a more diversified pool of funding (e.g. through commercialisation opportunities) were noted as potential benefits of this new status, given how underfunded the sector is, according to many interviewees. However, some stakeholders warned that poor managerial skills and the possibility of contentious decision-making processes between existing and new leaders might dissipate efficiency gains. Some stakeholders highlighted that insufficient information was available about the change of governance model.

Almost all stakeholders reported the low remuneration of higher education teachers as a major issue. They highlighted that a limited number of graduates consider a career in academia, as teachers often need to hold multiple jobs (inside or outside HEIs) or opt for an alternative career in the private sector where more attractive conditions are offered. Career progression was also reported as problematic. The criteria for promotion are viewed as limited, with seniority and status (e.g. being a member of the Hungarian Academy of Sciences) being valued while teaching quality was not, for example. These factors, combined, were reported by many stakeholders to contribute to the low social perception of academic teaching.

The absence of labour market considerations in the design and delivery of higher education programmes was also a widely shared concern. Many interviewees pointed to shortages in key fields of study (e.g. science, technology, engineering, mathematics [STEM]), a burdensome programme approval process, and the lack of structured co-operation between HEIs and employers as evidence of this problem. The alignment of programmes and pedagogies with labour market needs (e.g. project-based work), a greater focus on transversal skills, and more lifelong learning opportunities were some of the areas where many stakeholders would like to see improvements.

Students struggle to prepare for, access and complete higher education

Access to higher education continues to be a concern, according to some stakeholders. Despite recent reforms to make higher education more accessible, for example by promoting access for under-represented groups (i.e. those with disabilities, minorities) and the provision of government financial support to most admitted students, several stakeholders reported that a significant share of students still has to balance study and work obligations. In addition, according to some interviewees, the retention in

and completion of higher education by students from under-represented groups are insufficiently monitored, and these groups are insufficiently supported during their studies.

The wage premium of tertiary education graduates in Hungary, which is above the OECD average, was reported as motivating enrolment in higher education. Yet, the dropout rate remains high, and some stakeholders deemed the preparedness of admitted students insufficient to complete higher education and enter the labour market.

The state of digitalisation of Hungarian higher education

Interviewees converged on a generally positive impression of the response of the Hungarian higher education system to the coronavirus (COVID-19) pandemic. Yet, there was also agreement among stakeholders that digitalisation of the higher education system needs improvement, and that the pandemic provides an opportunity to understand how more and better digitalisation can be achieved.

Low motivation and insufficient skills of academic staff, administrative staff and students to use digital technologies hampers progress

Many interviewees agreed that teachers have few incentives to either acquire digital skills or to teach in the digital environment, given that professional development is not considered in the promotion process, and that teacher pay is based on the number of in-person contact hours. According to some stakeholders, because dedicated support structures for digital teaching are not widely available, teaching staff have very heterogeneous levels of preparedness and knowledge of digital methodologies, and many remain hesitant to adopt digital practices.

Some interviewees identified the absence of pedagogical innovation and collaboration in general – not just with respect to digitalisation – as an impediment to the higher education system's ability to deal with new questions in the digital world (on assessment and academic integrity, intellectual property or privacy, for example) and to the wider adoption of digital practices. Stakeholders were almost unanimous in this diagnosis. While effective in supporting the continuity of learning, the switch to online learning in the spring of 2020 was seen as suboptimal, as lectures were often recorded as if taught in person and notes published on line without further engagement on the part of the teaching staff. Some stakeholders highlighted the contrast between student expectations of an engaging, flexible and high-quality learning experience, with the rudimentary digital skills of many academic teachers and students.

Fragmentation, lack of expert support and low co-ordination creates an uneven level of digitalisation within and between institutions

Most stakeholders agreed that basic digital infrastructure is generally available in Hungary due to recent investments in broadband access and essential hardware for classrooms and libraries (laptops, databases). Almost all interviewees, however, described the digital infrastructure of HEIs as fragmented, with different platforms and tools being adopted within and across HEIs, without a framework or expert advice guiding those decisions. For most stakeholders, the absence of a co-ordinated approach, in which a single platform is used by the whole higher education system, limits the opportunities for collaboration, interoperability and economies of scale. At the same time, others identified insufficient access to specialised software and valued the opportunity of staff to choose systems suiting their needs. In addition, the centralised public procurement system was widely described as burdensome and ineffective in responding to institutions' information and communication technology (ICT) infrastructure and equipment needs within a reasonable amount of time.

A clear policy framework sustained by adequate funding is needed to enhance adoption of and effectiveness in using digital tools

Stakeholders generally welcomed recent policy efforts in promoting a digitalisation-oriented agenda. However, many interviewees admitted their lack of understanding of the impact of past policies and of the

vision, priorities and governance of existing strategies on digitalisation, and that it would be important that higher education policies clearly identify digitalisation as a priority focus. Some stakeholders noted that it is hard for many in the higher education ecosystem to grasp how digitalisation can be beneficial for their pedagogical or administrative needs. Others noted the importance of improving support structures in HEIs to help staff become more familiar with digital tools, their use and their implementation.

Some stakeholders also highlighted the importance of ensuring that broad policy tools support the digitalisation agenda. They highlighted, for instance, the value of more strategic use of available funds, especially European Union (EU) structural funds, more systematic monitoring and a better articulation of strategies across educational cycles, as useful to strengthen digitalisation in higher education.

Opinions were divided as to how to stimulate further uptake of digital practices in higher education. Most interviewees advocated for an incentive-based approach, while a few argued that only centrally imposed requirements and oversight could lead to progress (e.g. requiring digitalisation-oriented actions in the development plan submitted by each HEI). Many stakeholders agreed that state funding should continue to invest significantly in the sector, but some interviewees pointed to the private sector as a funding source whose role should increase (e.g. through third-mission activities).

Benefits of digitalisation

Digitalisation may boost access, quality and the labour market relevance of higher education

Many stakeholders underscored the potential of digitalisation in strengthening digital skills and other labour market-relevant skills (e.g. transversal skills) if HEIs harness digital tools to modernise their programme offering and teaching methodologies to better match training needs (e.g. project-based work, on-the-job training). Stakeholders often suggested that the digital environment also holds the potential to provide more individualised support and expand access to high-quality study materials, as well as informal, flexible learning opportunities, especially for groups who face barriers in accessing higher education, such as cost, work and family duties or distance.

Administrative and managerial duties are expected to be more efficient, and active collaboration and data-driven decision making to be facilitated

Some stakeholders highlighted the prospect of more efficient and flexible use of time, including in student-teacher interaction, staff meetings and reduction in travel. A few interviewees were also optimistic about potential cost savings, especially in support functions and teacher contact hours, if a more paperless administration and hybrid teaching methods became the norm. Many stakeholders emphasised how digitalisation may open new possibilities to collaborate both at the domestic and global levels as well as to collect more granular data to strengthen decision-making processes within HEIs and in government.

Risks of digitalisation

Learning quality may deteriorate if staff and students are not supported, engaged, and safe

Most stakeholders emphasised that some features of in-person teaching, such as student engagement, personalised support and teacher mentoring, are vital for a good learning experience and should be preserved in a digital environment. Many interviewees expressed concerns that low pedagogical planning and engagement (e.g. re-using the same, outdated materials), as well as student isolation, may lead to a deterioration in learning outcomes unless proper incentives and support structures are created. Some stakeholders noted that security concerns might heighten the level of discomfort experienced by staff and students on line, reporting, for instance, that some institutions struggled to implement practices compliant with the General Data Protection Regulation (GDPR).

Widening inequalities and poor strategic planning may diminish the benefits of a more digitalised higher education

Many stakeholders reported that digital teaching and learning can be a challenge for many students and families, especially those who cannot afford stable Internet connectivity and efficient digital devices, or lack basic digital skills to learn and interact on line. Some suggested that while social interaction is critical to student development, it is largely missing in an online environment. Many stakeholders described digitalisation as potentially reinforcing the gap between higher- and lower-performing students, and between more and less advantaged students. They also noted that it might increase dropout rates, given the uneven availability of resources to support both staff and students across HEIs.

A few stakeholders warned against using digitalisation as a cost-saving tool that they thought could harm an already underfunded sector, noting that quality in higher education is costly to preserve. They suggested that, as digitalisation will require significant, sustained, additional efforts, these must be adequately funded. If not, stakeholders expressed concerns that the system's resources would be under severe pressure, generating inefficiencies and significant stakeholder pushback. In fact, according to some stakeholders, it is important not to interpret what they see as an adequate pandemic response as a "digitally-ready" higher education system. These interviewees suggested that the rapid obsolescence of technology and the evolving needs of institutions, staff and students require both long-term and flexible planning.

Digital infrastructure

Stakeholders interviewed by the OECD broadly agreed that basic digital infrastructure, such as broadband Internet, computers and access to learning management systems (LMS), is generally available across HEIs. Yet, they suggested that challenges remain in several areas.

Progress on digital infrastructure is limited by rigid procurement processes

Centralised procurement processes, albeit considered to be well functioning by policy makers, were viewed as a key barrier by many higher education stakeholders, which described the procedure as lengthy, burdensome and unresponsive to needs in a reasonable time. Instead of relying on state approval to purchase relevant equipment, often of low monetary value, a few stakeholders suggested that greater autonomy at the HEI level – either by shifting its governance towards a foundation-like status or adopting strict performance metrics around purchasing – could be more effective mechanisms.

Investment in digital infrastructure has fulfilled basic needs, but gaps in access remain

Stakeholders agreed that institutions are generally equipped with basic digital infrastructure (laptops, connectivity), especially regarding administrative functions. Yet, the reality is heterogeneous across institutions. A few interviewees reported that they still experience shortages in critical teaching tools (e.g. software subscriptions, interactive boards), which leads them to resort to leasing equipment or using personal devices. Other stakeholders noted that, even if mostly available at HEIs, basic infrastructure is not accessible to all households, especially those less privileged. Many interviewees suggested that funding needs for digital infrastructure are likely to remain significant, given current underfunding and the cost of maintaining and renewing digital infrastructure, some of which may quickly become obsolete as new technologies and tools develop.

An efficient approach to purchasing digital equipment based on user needs is necessary

Stakeholders reported that there is a wide range of digital solutions available to staff and students, but the absence of a policy framework and expert advice to help institutional leaders make decisions around digital infrastructure has led to a fragmented and inefficient use of digital tools. Many stakeholders reported how different tools were adopted even within the same HEI, generating inefficiencies, as students and staff needed to change software within their own institution to participate in different courses or activities. For many interviewees, efforts should be devoted to aggregating these fragmented efforts into a single, standardised solution to be adopted across the board.

For this purpose, a few interviewees highlighted that: 1) user needs, which must be better understood, should guide purchasing decisions; 2) one-off, project-based investments should be replaced by longer-term, sustainable programmes on digital infrastructure; and 3) there should be staff in each HEI able to develop and manage digital infrastructure and to support teachers and professional staff in using that infrastructure. Several stakeholders suggested that there are currently untapped opportunities to leverage the Hungarian ICT sector, described as well developed, to improve digital learning infrastructure in higher education.

Digitally enhanced teaching and learning, research and engagement

In general, stakeholders were hopeful regarding the promise of digitalisation. Past and future challenges around digital teaching and learning in Hungary were outlined along three main lines.

Teaching career prospects and pay do not incentivise digital practices

There was ample consensus among stakeholders on how the teaching career is not in line with the goals of a digitalised higher education system. Promotion of academic staff is driven by scientometric indicators and seniority, rather than by metrics reflecting a balance between digital and in-person teaching, teaching quality and professional development. Pay is low and uncompetitive with private-sector salaries, especially for recent graduates.

Based on the number of contact hours and the salary guidelines of public-sector careers, teachers often need to hold multiple jobs to earn enough income (except for fields of study with research income). There are no incentives to engage in digital teaching, and pedagogical innovation and assessments of teaching quality are absent from the teaching career. Yet, despite challenges of measuring quality and workload in a digital setting, many stakeholders argue that this is important to develop adequate incentives for teaching staff, which are critical to generate change.

Undervaluing professional development and collaboration harms digital readiness

Almost all interviewees stressed that many teaching staff are reluctant to engage with the digital transformation of higher education. According to many stakeholders, this is because many teachers have yet to realise the wide range of pedagogical and administrative benefits of digital tools. The lack of training around teaching methodologies and the use of digital infrastructure (including for teaching assistants, whose training is reported as mostly focused on administrative rather than pedagogical tasks) may help explain, according to many interviewees, why digitalisation is undervalued by academic staff. However, some stakeholders cautioned against mandatory, centrally imposed training requirements.

Many stakeholders described the teaching culture in higher education as traditional and insufficiently focused on collaboration and professional development. The absence of a requirement for pedagogical training among higher education teachers (unlike other educational cycles) and the hierarchical teaching culture were noted by a few interviewees as particularly counterproductive in the digital environment where peer learning is critical. Some stakeholders suggested that concerns around intellectual property rights for digital content may also help explain the reluctance of staff to engage in digital teaching and research. Other interviewees advocated that, instead, open access to materials and tools should be the key principle to facilitate collaboration.

The learning experience can be enhanced if adequate supports help improve teaching quality and student engagement

According to many stakeholders, the sudden shift to online learning in spring 2020 revealed particular challenges for HEIs in providing student support, ensuring academic integrity and conducting assessments in a digital environment. Many interviewees also emphasised that a high-quality experience on line has a range of key features, including: 1) good study materials; 2) flexible, individualised learning paths; and 3) attributes from in-person teaching, such as active student engagement. While there was broad agreement

that a quality online experience looks different depending on the field of study, stakeholders interviewed agreed that Hungarian higher education is still far from consistently providing high-quality online learning experiences.

Many interviewees stated that the high number of digital tools available to teachers and students has been counterproductive for teaching and learning. Many highlighted that the lack of co-ordination in developing and/or acquiring these tools, together with the insufficient expert support in HEIs and nationwide to help with the use of these tools, have slowed down adoption by academic staff and students. A majority of stakeholders interviewed proposed that some standardisation of digital tools and the support of well-resourced teaching and learning centres are promising avenues to facilitate the transition to a digital higher education system.

Learning processes and outputs

Educational attainment may increase if programmes are more flexible, individualised and articulated with labour market partners

Student expectations and employer needs are changing. For most stakeholders, learning opportunities focused on labour-market-relevant areas, but also with flexible schedules, tailored learning paths and of shorter duration, are increasingly in demand. Yet, according to many interviewees, the programme offering in Hungarian higher education is still lagging in this respect. One possible explanation may be the excessive length and burden of programme approval and quality assurance processes, which some stakeholders recommended simplifying.

Digitalisation can strengthen digital skills and facilitate the acquisition of labour-market-relevant competencies through novel methodologies

All interviewees described the digitalisation of higher education as a key opportunity to bolster the digital skills of students as well as academic and administrative staff. A few stakeholders also noted they expect the introduction of new pedagogies, which digital tools can facilitate (e.g. project-based work, independent study) to stimulate the development of labour-market-relevant (e.g. transversal) skills. Some interviewees suggested that the introduction of digital skills courses across higher education programmes and an assessment of digital skills upon entry and graduation from higher education would help improve digital readiness for all students and graduates.

Alignment with priority fields of study and a broader engagement of labour market actors can increase the relevance of higher education

According to many stakeholders, shortages in priority fields, such as teaching and STEM, should be tackled by aligning higher education degrees with labour market needs. Yet, for some interviewees, labour market actors can contribute to the higher education sector more widely. Examples of further collaboration cited by stakeholders include higher education-industry co-operation in specific research fields, employer-financed training in labour-market-relevant areas and the further commercialisation of research outputs. Digitalisation can also be helpful, according to some stakeholders, in providing further tools through which economic actors and HEIs can engage. This can include identifying job opportunities and matching graduates to jobs, co-designing courses or sharing information about activities of HEIs and labour market actors that may be of mutual interest.

Institutional roundtables – January 2021

Following the initial set of interviews with a range of higher education stakeholders, the OECD organised institutional roundtables with a diverse group of representatives from Hungarian HEIs. The MIT, in close collaboration with the Hungarian Rectors' Conference, selected nine institutions to participate in the

roundtables. The goal was to select a sample of institutions that could represent the diversity of the Hungarian higher education system, in terms of size, location (e.g. urban/rural), orientation (research/teaching), status (e.g. public, private, church-related, foundation status) and level of digitalisation (i.e. at different stages of their digital development).

Each institution was then asked to nominate a delegation, comprising one member from each of the following categories: 1) institutional management; 2) academic staff; 3) professional staff in charge of digital infrastructure, teaching and learning; and 4) students.

Thus, 36 people, representing 9 institutions in the Hungarian higher education system, were invited to participate in this process. Of this, 35 individuals from the 9 institutions (see Table A.1.) accepted the invitation and took part in their respective roundtable between 20 and 22 January 2021.

All representatives received an information note providing context about the event and a list of guiding questions to prepare for the roundtables. A preparatory webinar took place on 14 January 2021 to provide participants with an overview of the project, of the stakeholder input collected so far, as well as of the goals, logistics and discussion questions of the roundtables. The webinar was attended by 43 participants.

The institutional roundtables were not recorded, to encourage open and frank conversations. The OECD conducted the interviews, and representatives from the European Commission's DG-REFORM and MIT were invited to attend as observers.

The sections that follow present key findings organised according to the questions posed to participants in the information note.

Policy framework

Participants were asked to reflect on the policies and strategies shaping digitalisation at their institution, including any policy barriers, as well as on the channels and actors contributing to the consideration of stakeholder needs in the design and implementation of digitalisation policies and practices at institutional and national levels.

Uneven levels of preparedness across the system and concerns around the sustainability of recently adopted practices may hamper long-term digitalisation

All participants noted that the COVID-19 pandemic bolstered most of the existing digitally-oriented practices in Hungarian higher education. This sudden push met some scepticism and low capacity in some institutions but was received positively in other institutions. Stakeholders indicated that HEIs with pre-existing experience and intentional focus on digitalisation coped better with the many requirements of digital teaching and learning.

Notwithstanding, most participants recognised that institutions and staff still lack the necessary levels of preparedness (skills, funding, access to infrastructure) to build the well-digitalised higher education system Hungary needs. Many individuals reported concerns regarding the sustainability of the policies and practices currently being adopted to develop a more digitalised higher education system, especially whether the facilitating environment (e.g. additional funding) would fade in a post-pandemic environment.

Multiple barriers, from financial to regulatory, slow the pace of the digital transformation of Hungarian higher education

Many participants underscored the need for a different regulatory framework, namely one that recognises blended learning and replaces contact hours with a more adequate measure for both teaching workload and student credits.

Some described the current policy framework as disproportionately centralised (e.g. student admissions), rigid (e.g. procurement) and unresponsive to the new challenges faced by HEIs (e.g. delivering more flexible, shorter learning opportunities). One stakeholder disagreed, describing the existing regulatory

frame as more flexible than many imagine, as evidenced by the existence of distance learning for over a decade, but still recognised the need for more flexibility to be introduced.

On the other hand, issues around equipment purchasing, such as shortages in equipment supply, lack of funding, a limited pool of suppliers (which seems to impact the quality of available solutions), were reported by many stakeholders. A few of them also stressed that financial limitations at the institutional level could be more easily mitigated if an adequate long-term strategy on digitalisation were in place to guide decision making.

Communication with policy makers is limited, while existing national strategies are often not reflected in institutional practices

While many participants were aware of national strategies currently in place on digitalisation and higher education, these same stakeholders underscored that only a few people (often those with decision-making power in the institution) are aware of their existence, intents and impact. According to some participants, the digitalisation of higher education has also been less prominent in the policy agenda than the digital transformation of other cycles of education.

There seems to have been a limited take-up of nationwide strategies at institutions. Few stakeholders reported having institutional-specific plans on digitalisation, most of which emerged post-pandemic or were developed several years ago and only targeted traditional distance learning. In the view of several participants, it is individual staff's motivation and initiatives – through their ideas, projects and collaboration – that are currently driving the digital transformation of the system. A few stakeholders emphasised that actions at the EU or international level (e.g. the European Universities Initiative) provide an opportunity to work collaboratively and adopt new practices on issues that have not yet received significant attention domestically (e.g. credit recognition of digital courses, virtual mobility, joint programmes).

Many stakeholders noted the existence of formal bodies (existing bodies, consultative bodies) to communicate with the government but noted these channels do not always seem adequate to exchange on fast-changing issues relevant to digitalisation. In the instances where stakeholders reported being consulted outside of these structures, they noted that these consultations focused on operational rather than strategic issues. However, some institutions noted that membership in institutional structures, such as student unions or academic councils, can provide useful opportunities to communicate with government authorities on various issues, including digitalisation.

Digital infrastructure and data systems

Institutional representatives shared their experiences when it comes to accessing, using, developing and managing digital infrastructure at their institutions. The quality and quantity of available dedicated support, the balance between customisation and standardisation, and procurement were a particular focus of the discussions.

Access to digital infrastructure and support and motivation to use digital tools is uneven

Most stakeholders agreed that basic digital infrastructure is generally available at institutions, despite some gaps remaining in rural areas and at state-owned institutions. However, several staff members and students noted a lack of access to specialised software (rarely bought by students individually, given its cost), as well as a lack of digital devices and reliable Internet at home, where they also need to fulfil their academic responsibilities. Supply shortages conditioned access at the beginning of the pandemic, and organisations such as student unions have mobilised their own resources to support those lacking the necessary tools.

While some stakeholders emphasised that adoption depends on the extent to which one can use digital tools (besides having them), others stressed that without the necessary infrastructure, there is no chance

to ensure equitable access to opportunities. For example, at one institution, the academic staff's contractual relationship with the institution (e.g. permanent versus temporary contract) conditions the set of digital tools they are provided to perform their duties.

Participants from several institutions recognised they have some specialised support to use digital tools for teaching and learning. Yet, across the three roundtables, the support available was reported to be of varying quality and quantity.

In addition, many participants highlighted how resistance to the adoption of digital tools is still prevalent among some staff and students, and most digital practices have been championed by a limited number of highly dedicated people. Some stakeholders regretted that interaction between academic and professional staff is still limited, and feedback on infrastructure is rarely sought, or, if collected, often takes place as a one-off exercise.

Choosing, procuring and scaling-up remain key challenges in dealing with infrastructure

There is a significant variety of institutional models for digital infrastructure management. Some institutions have centralised, institution-wide offices; others have established dedicated centres at the department level; and a few have created different teams depending on whether support was intended to address hardware or software, technical or learning-oriented questions. One institution formed a working group on digital education to advise institutional leaders on digital transformation (including infrastructure), while another one set up communities of practice to promote intra-institutional collaboration. Another institution invited digitally competent professors to (voluntarily) join a committee on digital infrastructure to provide support to their peers, without being rewarded for the additional workload it represented.

Most participants underscored the ineffectiveness of the procurement process – particularly the delays, limited range of suppliers and the bureaucratic burden of the process – as well as the funding limitations to purchase the necessary infrastructure, which they fear may heighten after the pandemic is under control.

The balance between customisation and standardisation, as well as what and how many tools to make available at an institution – whether for distinct or similar purposes – have been approached differently across the Hungarian higher education system. Some institutions believe in the importance of letting teaching staff choose the tools they prefer and think that, with adequate co-ordination and an informed assessment of usefulness (conducted by local staff), a wide range of tools can be helpful. Others prefer to choose one limited set of tools and push for adoption across the whole institution, in order to lighten the burden of having to work across multiple tools. Notwithstanding, even institutions favouring a limited number of tools view the imposition of government-led restrictions (e.g. mandating the adoption of specific tools, limiting the set of tools available in the government-mediated procurement process) negatively.

Most participants reported that, at the outset of the pandemic, institutions struggled with the scale of their digital tools, largely insufficient to store data (e.g. from online assessments) and sustain peak demand for services (e.g. streaming lectures, accessing a video conferencing platform). Cloud services became the preferred option by many, but it took several months for some institutions to meet their needs. Institutions that had been focusing on digitalisation for some time, namely funding infrastructure, building up capacity and piloting new methodologies (for distance learning, for example), had a smoother transition.

Digitally enhanced teaching, research, and engagement

Participants took stock of their recent experiences with digital teaching and identified what they deemed to be the most and least effective practices in this regard. They noted that weaknesses in digital teaching were often the result of insufficient pedagogical and professional development of teaching staff, and disproportionate workload without adequate (financial and non-financial) compensation.

Experiences with digital teaching are mixed

Institutions whose representatives participated in the roundtables have distinct experiences with digital teaching. A few have been working on digitalisation for several years, while others still struggle in accessing and using digital tools. Some participants felt teaching quality has deteriorated with digital tools, in part due to the lack of interaction between students and staff. Other participants noted that staff had managed to adapt reasonably well, increasing the number and diversity of teaching materials. Those with positive experiences valued the greater flexibility of digital teaching and learning, such as saving travel time and the opportunity to review recorded classes at one's own pace.

Many participants spoke in favour of further blended/hybrid instruction in the future as an alternative to fully in-person or fully remote instruction. While the development of hybrid programmes did not seem to be particularly bureaucratic according to participants, academics and leaders feared, respectively, their pay may reduce, and their institutional budgets shrink, if blended programmes keep being approved without a change in the legal rules that tie budgets to the number of in-person contact hours between staff and students.

Both pedagogical and legislative changes are needed, in tandem, to boost digitalisation

Hungarian higher education relies heavily on frontal teaching, as many highlighted during roundtables. The majority of stakeholders called for a shift towards active learning, which, among other things, will require new criteria, instead of contact hours, for staff pay and student credit, to take into account the additional workload involved by the greater individualisation of teaching practices. The majority of participants agreed that financial (e.g. rewarding content creation) and non-financial incentives (e.g. recognition of staff professional development for promotion) may be effective in increasing teaching quality and engagement in digital teaching. However, some academic representatives noted that incentives might be insufficient due to the low intrinsic motivation of some teaching staff to engage in improving the quality of teaching and the use of digital technologies in teaching, suggesting mandatory requirements may in some cases be necessary to change behaviours.

Many participants highlighted student assessment as the most challenging component of teaching and learning to manage in an online setting, given the high expectations to uphold learning outcomes but a generalised absence of clear guidelines on how to preserve academic integrity. Several participants indicated a preference for keeping assessments in person. More broadly, the majority of stakeholders were sceptical that digital tools could fully replace in-person teaching, especially in applied fields of study, with the exception of cases where digital technologies were already relatively integrated (e.g. in the field of design).

The digital transformation of Hungarian higher education can only be successful with strong capacity building and stakeholder buy-in

Participating stakeholders reported that the resistance to digitalisation is likely to increase, as new pedagogical approaches will be necessary to deliver quality digital teaching and learning, and higher education pedagogical practices have undergone little change in Hungary, remaining largely focused on frontal teaching and learning in particular. Even if new and more digital resources and tools were to become available, many participants emphasised that capacity building is key to ensure the adoption of new resources.

Most representatives reported significant heterogeneity in the digital proficiency of staff. They noted that specialised support is available but cannot be provided in most institutions at the scale and with the sophistication needed. Access to digital content and databases also remains limited (as it used to be before the pandemic, during which many experienced a limited period of open access made available as a crisis-response measure by publishers).

Despite the promise of greater efficiency, several instructors and students reported that they take longer to fulfil their duties when using digital tools, leading some institutions to report greater stress and mental health issues in their communities.

Taken together, these elements negatively impact the ability of teachers to plan teaching activities (e.g. schedules, syllabuses, content) and engage in high-quality digital teaching.

Learning processes and outputs

The roundtable discussions shed light on how digital learning requires new attitudes and competencies, such as time management and self-discipline, but has also not been successful to date in delivering on highly appreciated dimensions of the traditional in-person learning experience, such as in-class engagement, collaboration and social life.

Digitalisation offers new opportunities but has not fulfilled its promise to provide a more complete and effective digital learning experience to students

Most participating stakeholders agreed on the most and least effective dimensions of digital learning. Several participants appreciated the increased access, number and diversity of skill development opportunities and resources available to institutions through digital channels, as well as the flexibility which adult learners who juggle family, professional and academic duties may have in a digital environment. Highly praised aspects included asynchronous access to recorded classes, the expansion of learning opportunities (e.g. massive open online courses, MOOCs) and the increase of schedule flexibility.

However, low peer-to-peer collaboration and in-class student engagement, decreasing motivation to finish (or even start) their degree, additional workload from a proliferation of assignments, and the mixed quality of digital teaching practices were described as still prevalent in Hungarian higher education.

The majority of institutions recognised weaknesses in responding to these novel challenges. Time management, self-motivation and online etiquette are skills that most institutions do not yet provide support on, often because they lack the expertise to do so. According to participants, students were asked to take on new responsibilities they were not ready for (e.g. study independently) or to manage time-zone differences, leading many to disengage or only complete minimum requirements, and some to find the support available insufficient and their learning experience unsatisfactory. Mental health services were reported to be limited, of small scale, rarely used and low priority for decision makers.

In addition, many participants expressed concerns about the effectiveness of digital tools to teach practical fields of study and facilitate on-the-job training, for which institutions and companies cannot find a digital equivalent of sufficiently high quality to replace in-person learning.

The impact of digitalisation on the quality of learning outcomes is viewed as uncertain

While aware of the potential of digital tools for learning, some academics noted that students struggle to use data collected in LMS and feedback provided on line to improve their learning. On the other hand, some students reported they are wrongfully perceived as digital natives, which generates unrealistic expectations, and are viewed as not motivated when the lack of motivation is usually a result of the format of digital learning. Concerns were expressed about the sense of a loss of privacy by students, due to monitoring mechanisms, especially during examinations.

Given the extent to which a student's personality and his/her access to reliable digital infrastructure determines his/her engagement in digital learning, several participating leaders and staff members recognised that they have an important role to play in ensuring students are provided with equal opportunities. Yet, although many recognised that one-to-one interactions and small group classes would be more effective for some students than larger-scale formats, participants noted that such individualised support and pedagogy is limited as the workload associated is disproportionate and not rewarded.

A few institutions have, nonetheless, found creative ways to improve the learning experience and support to students. Some have used digital tools, such as text messages to nudge students about deadlines and MOOCs to teach online study methodologies, while at others, staff have asked a student in each class to be their point of contact and report on challenges being faced by the student body.

Group-specific views

With their peers, participants had an opportunity to reflect on the plenary discussions, highlight areas of agreement and disagreement, and identify dimensions that, albeit not discussed until that point, would be of relevance to the project and the digital transformation of Hungarian higher education.

Leaders feel their institutions are not sufficiently well equipped to deal with the emerging challenges of digitalisation

Several representatives advocated for greater financial resources. Some leaders of private institutions feel their resource pool is extremely limited, with no access to state funds and difficulties in obtaining EU funds. Others felt they do not have enough resources to invest in specialised support services or to reward teachers proportionately to their workload. At least one institution in a priority field of study (as identified in the country's mid-term policy strategy) expressed concerns about how their enrolment is disproportionately high compared to the resources they are given to manage programmes in "priority fields of study".

For some leaders, changes in the maintainer of a higher education institution may increase the institution's ability to attract financing, as currently considered in the "model change" process, but it is their view that competitiveness can only be attained if the policy framework changes more broadly. Pedagogy and digitalisation, for example, would be, in the view of some leaders, important areas to consider in conjunction with the change of maintainer, but so far, they have been put aside as second-order issues. Several representatives cautioned against broad strategies with extensive lists of actions that are most often centralised. Many also referred to the need for better incentive systems that reward teaching quality as much as research outputs.

Some leaders emphasised the role of digitalisation in bolstering skill development, including digital literacy that should be developed at educational institutions, but also within society at large. A few individuals reiterated, however, that they felt ill-equipped to assess what skills have greater or lesser labour market relevance in Hungary. A few leaders highlighted the importance of learning analytics as a promising tool to evaluate students' progress but raised concerns about the associated data protection challenges, which they do not feel capable of tackling given the absence of guidance in the existing legal framework. Notwithstanding, there was no consensus on whether binding (regulation) or non-binding solutions (a recommendation) would be best suited to manage this issue.

Teachers call for pedagogical training and better working conditions to ensure a successful digital transformation

All academic participants recognised the decreasing appeal of a teaching career. Among the key challenges noted were:

1. low pay, especially compared to the private sector, and given increasing workloads
2. a promotion system based on seniority and research outputs that does not evaluate or consider the quality of teaching or the development of teaching content
3. the inability to dismiss in the event of poor teaching performance
4. the lack of incentives to engage with digital tools
5. difficulties in balancing teaching and research responsibilities.

Many individuals called for a better balance between top-down and bottom-up initiatives. In particular, most participating academics regretted the insufficiency of efforts to ensure the buy-in of staff. They referenced, for example, limited initiatives to seek their views, explain the goals of a given initiative, or provide more time for the implementation of new reforms. Some academics indicated that they viewed institutional leaders as the most important actor in generating change, at both institutional and national levels (e.g. to revise curricula, prioritise digitalisation, strengthen staff evaluation). Some representatives suggested that

government efforts could focus more on creating a supportive environment for HEIs rather than imposing mandatory initiatives, which should help ensure that ongoing reforms can be sustainable.

With regard to their teaching experience, many academics recognised that, albeit not currently required, pedagogical skills should be developed and rewarded, as is the case in other educational cycles where continuous professional development (based on a specific credit system) became the norm. Feedback collected by academics on their teaching practices has been mixed at best, according to some faculty, and online assessment remains an area where many academics think work needs to be done. A few teachers also underscored how, when learning outcomes (*Képzési és kimeneti követelmények*, or KKK) have not yet been defined for a given field of study, the launch of a new academic programme may take two to four years, which is deemed as lengthy and ill-suited for the system to adjust to fast-changing needs.

Existing regulatory barriers and limited installed capacity push professional staff to focus on scoping the tools and methods to be used on line

For some professional staff, the COVID-19 pandemic represented the opportunity to bring about changes they had tried to advocate for in the past, but which were not supported by sufficient funding or political will to make happen. Some participants described their preference for tools that are open access or that the institution already subscribed to (e.g. Microsoft Teams). Many of them helped institutional leaders select a narrow (yet diverse and useful) set of tools, recognising their own limitations as support staff to assist at a time of increased demand. Based on their own experience and recent institutional surveys, some representatives reported that support is most often sought to conceptualise new teaching methodologies, assessments, and ways to collaborate.

In line with the plenary discussions, many professional staff members stressed their negative assessment of the current procurement process. For some participants, the fact that a staff member has no visibility on the process as soon as the request is submitted generates many inefficiencies. Others believe free or in-house developed tools can be as fit for purpose as commercially procured ones. A few participants underscored the vast resources spent by institutions to expand their legal departments to deal with procurement and the preference of some teachers to use their own resources rather than wait weeks or months for a centrally procured tool they need.

Internationalisation was another issue that received particular attention, especially at one roundtable. A few participants highlighted the need to adapt the criteria governing financial support for student and staff participation in mobility to a virtual mobility scenario (still incipient in Hungary). Some noted the significant value for institutional competitiveness of an expanded educational offering where international students can choose where to study, staying abroad (despite being in different time zones) or moving to Hungary, depending on their preferences.

Students are worried about the lower quality of their online learning experiences and outcomes

Among student participants, there was a general concern about the deterioration of the quality of learning outcomes in a digital environment. For some students, this comes as a result of, among other things, low teacher motivation, as they struggled to achieve their teaching goals on line and viewed the current state related to the pandemic as transitory. Others felt teachers and leaders trust students less on line than they did in person, as evidenced by a disproportionate focus on preserving academic integrity or the belief that students become passive as they do not engage in class. Some felt that their challenges in having to adapt to new requirements and the burden caused by a proliferation of digital tools were not adequately taken into account. Many admitted the increased number of potential distractions, the struggle to teach the practical aspects of certain fields of study effectively, and the inability to interact with peers and teachers as important drawbacks of digital learning, which generate frustration and a decrease in the perceived quality of higher education.

However, participants had mixed views on what mode of learning was most effective and stressed how these views might vary between undergraduate and graduate students. On the one hand, hybrid teaching

was reported to allow for more social interaction, but during the pandemic, students were required to return home right after their in-person class, creating schedule issues, forcing students to choose between missing the in-person or the online class scheduled immediately after. On the other hand, some participants noted that fully remote instruction allows them to better manage family and work responsibilities, but is ineffective in ensuring learning outcomes are achieved for practical fields of study.

Student discussions also identified several areas for further work. In particular, some students highlighted teacher training as an important priority due to what they perceived as significant heterogeneity in the digital skills of teaching staff and the quality of learning materials being provided. A few participants pointed out the increased difficulties of students with learning disabilities on line; others noted the need to account for different learning styles when designing pedagogical approaches; and some highlighted the large potential (that they viewed as vastly untapped in Hungary) of digital tools for targeted skill development.

International expert meeting – 7 July 2021

As part of the project's work on monitoring the digitalisation of higher education, the OECD organised an international expert meeting focused on indicators, data and methods to measure digitalisation in higher education. The expert meeting, held on 7 July 2021, was designed to support interactive discussions between national and international experts. It was attended by 55 participants, including Hungarian higher education experts and stakeholders, international experts, and policy makers from other countries invited as observers (see Table A.1).

The sections that follow present key insights from the meeting presentations and discussions.

Measuring and supporting digital readiness

Recent surveys of Hungarian HEIs provide valuable insights on enablers and barriers to digitalisation and on access to digital infrastructure in Hungarian higher education

In September 2020, the MIT commissioned a survey of HEIs as part of the Digital Success Programme, which the Digital Higher Education Competence Centre carried out. The survey was intended to assist with the design of a national indicator system of digital maturity. Of the 63 state-recognised HEIs, 54 completed the survey. Data collection focused on factors determining the level of digitalisation of HEIs and on the institutional use of digitalisation-related policies. The results revealed that almost all HEIs reported that the COVID-19 pandemic strongly accelerated the development of digital curricula, and changes to pedagogical methods, with many HEIs reporting the provision of digital skills development programmes for students, digitalised study materials for students and the development of digital institutional management processes. However, very few HEIs indicated that they invested in the modernisation of digital infrastructure.

In November 2020, the MIT commissioned a second survey of HEIs as part of the Digital Success Programme, which the Digital Higher Education Competence Centre again carried out. The second survey aimed to assess the state of digital infrastructure within Hungarian HEIs. Of the 63 state-recognised HEIs, 55 completed the survey. The survey revealed the strengths and weaknesses of HEI digital infrastructure. While high-speed Internet access was generally reported to be good and there were increases in the number of LMS users as a result of the pandemic, many HEIs reported insufficient quantity and quality of digital equipment supporting digital teaching and learning (e.g. digital devices, rooms suited for mediating education and interactive tools). The survey also pointed to high levels of disparity with respect to digital infrastructure and digital readiness between large HEIs in the capital region and/or private HEIs on the one hand, and smaller, rural HEIs, on the other.

The two surveys served as a basis for the Hungarian government to define domains and priorities to improve the digital maturity of HEIs. Drawing on a model of digital maturity developed in Croatia, the following domains were identified as requiring action, in order of priority: 1) leadership planning and

management; 2) learning and teaching; 3) ICT culture; 4) ICT resources and infrastructure; and 5) the use of data for learning analytics.

Inter-HEI collaboration helps monitor and support the digital readiness of HEIs

In the Netherlands, SURF is an ICT co-operative whose members are education and research institutions. It gathers more than 100 Dutch HEIs in its members' council. It operates on an annual budget of approximately EUR 200 million from membership fees and national and EU subsidies that support innovative projects and infrastructure development.

SURF plays a key role in guaranteeing high-quality digital infrastructure and promoting flexible educational opportunities. SURF monitors digital infrastructure practices and readiness of HEIs on a two-year cycle, highlighting, for instance, the types of technologies institutions use. A survey conducted by SURF revealed that HEIs relied on, on average, 14.3 software applications in 2020, with Microsoft 365, Osiris, Microsoft Teams, FeedbackFruits and Blackboard being the most widely used. In addition, SURF negotiates commercial contracts with leading technology companies, allowing its members to benefit from reduced costs. Moreover, SURF provides collaborative services to its members, facilitating the take-up of lifelong learning through a system of recognition of learning called EduBadges and supports the development of open educational resources through a system called EduSources.

Several barriers prevent the effectiveness of Hungarian digital higher education

Stakeholder participating in the meeting noted that several barriers hinder the digitalisation of higher education in Hungary. They noted that Hungarian students pursue very different types of study programmes, without common groupings of courses such as majors or minors, for instance, which may lead to highly distinct study experiences, and experiences with or attitudes to digital technologies.

Moreover, academic staff in Hungary are not required to undergo regular, compulsory training in their workplace, and therefore largely depend on occasional training and personal experience to acquire or update skills, including those needed for digitally enhance teaching and learning. The pandemic revealed that students, while proficient at consuming digital content, found it difficult to learn and collaborate in a digital environment, and some of them lack the digital equipment needed for effective online learning and participation.

Many Hungarian HEIs also appear sceptical about the benefits of collaboration between HEIs. For instance, many HEIs responding to a survey conducted by the Digital Success Programme generally agreed on the need for each HEI to have its own laboratory to determine the content of its courses, signalling that Hungarian HEIs are not yet ready for collaboration in that area. Moreover, some institutional stakeholders pointed to the over-reliance of European HEIs on non-European market leaders for their digital infrastructure as another challenge, advocating for the development of stronger European technology companies.

There is an opportunity for governments to incentivise teachers to share their educational content as part of a broader open educational resources strategy

The Netherlands has pursued several approaches to promote the sharing of digital educational resources. Digital materials are often shared among active teacher communities, who are often easily convinced to share their materials on the EduSources platform maintained by SURF. At the same time, there is also a need to encourage the use of such resources. To this end, SURF developed a policy to increase the use of shared materials addressed to the Rectors' Conference and the Ministry of Education, Culture and Science in order to encourage educational institutions and teachers to use the EduSources platform. While rewards for quality research remain more developed than for quality teaching, SURF aims to reward the making and sharing of educational content as an incentive for teachers. Although the Netherlands has high-quality technology supporting the creation and use of open educational resources, cultural barriers remain among the teaching community to further develop and use these resources.

Compulsory training for teachers can support the digitalisation of higher education

Although the Hungarian government does not require compulsory training for teachers, leading HEIs have tried to incentivise teachers to engage in training through other means. Private HEIs have notably been implementing compulsory training, including technical and pedagogical support, for some years.

The Netherlands requires higher education teachers to complete a short compulsory training programme entitled the University Teaching Qualification, developed by the Dutch Association of Universities (VSNU). Areas of competence improvement are identified collaboratively and have notably included supports to develop personalised learning, improve teachers' skills and shift toward a more blended learning curriculum. In addition, the Netherlands generally benefits from good levels of knowledge sharing between teachers to improve the digital learning and teaching experience.

Measuring and supporting digital practices and digital performance

The increased use of ICT and artificial intelligence (AI) can support the data-driven transformation of HEIs

A presentation from a senior leader from the Budapest University of Technology and Economics highlighted how expanding the use of advanced digital technologies could expand the value HEIs create for the Hungarian economy and society, stressing the importance for institutions to adopt an entrepreneurial mindset to make use of these technologies. To assess the digital transformation of HEIs, indicators would be important to develop to assess the use of technology in teaching, research, development and innovation (RDI), the development of "smart", technology-enabled campuses, and the strategic utilisation of data generated by digital technologies to support all missions of HEIs.

Regarding teaching and learning, for instance, AI-based learning analytics can provide unique insights into the relationship between different sets of data, such as student entrance scores, socio-economic background, exam grades and dropout rates, enabling HEIs to predict the completion rates of students. These analyses allow HEIs to implement measures fostering student success, such as student "warning systems" and tutoring for those more likely to drop out. In addition, sentiment analysis provides insights into students' opinions about courses, which can be used to improve the curriculum.

HEIs can also develop their innovation ecosystem by supporting student innovation through venture capital funds and start-up incubation programmes. Campus digitalisation can be achieved by deploying 5G, with fully programmable devices allowing for system-wide and device-level data collection and measurement.

Digitalisation can improve the competitiveness of HEIs through improved learning and teaching quality, the internationalisation of PhD students and of academic teachers, and the development of entrepreneurial courses. There is also an opportunity to leverage digitalisation to further develop multidisciplinary and inter-HEI collaboration to better address global challenges such as sustainable development.

Online learning can improve student learning conditions by providing flexibility

Hungarian HEIs that had prior experience with online teaching and learning transitioned to fully online teaching relatively smoothly during the COVID-19 pandemic. In the case of Kodolányi János University, the use of Moodle for learning management and course materials, and Microsoft Teams for online streaming of classes, allowed for the effective monitoring of online teaching and learning as both applications provided data on teachers' and students' presence and activity. Surveys were conducted to assess the quality of students' equipment and of the technical help received. Students who responded expressed largely positive views about online learning, many of them valuing the flexibility it provides to students who have jobs or pursue artistic or sports activities. In one survey, a minority of students (15%) preferred in-person teaching and learning, and 45% preferred hybrid education.

A national, comprehensive survey of digital higher education provides valuable insights into student and staff perceptions and expectations

The Irish National Digital Experience (INDEx) survey, developed by the National Forum for the Enhancement of Teaching and Learning, a sector-led organisation, was conducted across all Irish HEIs from October to December 2019. The survey covered both institutional and individual digital capabilities, providing valuable insights into the digital practices of higher education students and staff before the pandemic.

Teaching staff – 70% of whom had never taught on line before the pandemic – welcomed interactive and collaborative digital tools to support their teaching. Students reported using a wide range of digital tools to support their learning, many of them appreciating the flexibility offered by online learning to fit learning into their lives, while many also reported digital learning as enjoyable. Students identified the access to a reliable Wi-Fi connection, the consistent use of the virtual learning environment and the availability of lecture recordings (the latter of which they found currently underdeveloped) – as the three priority areas for their HEI to focus on. Although students generally agreed on the importance of digital skills for their chosen careers, less than half agreed that their courses prepared them for the digital workspace.

Data privacy appeared to be a concern for students – who did not know how their data was used and protected by their HEI, and for staff – who lacked training in secure data management. Similarly, students and staff generally felt left out of HEIs' decisions regarding digital services.

Conducting a survey at the national level and involving all parties – HEI leaders, students and staff – fostered inclusion, non-partisanship and dialogue among all HEI stakeholders. The main drivers of success for this project included, in particular: 1) the timing of the survey; 2) offering opportunities for HEIs to provide input at all stages of the survey, which generated HEI leadership buy-in; 3) a focus on institutional needs, notably by allowing each HEI to ask five additional HEI-specific questions; 4) access to institutional data in real-time, providing instant feedback for HEIs; and 5) student-staff partnerships.

Learning analytics can support HEIs in measuring and improving teaching and learning performance

Learning analytics have significant potential to help HEIs understand learning practices and improve outcomes. They provide summative, real-time and predictive data that can inform learning design, teaching and learning, as well as HEI governance and organisation. HEIs in the United States, the United Kingdom and Australia, in particular, are early adopters of learning analytics.

Studies have demonstrated the relevance of learning analytics in supporting study success by predicting students' grades, behaviour and performance, based on their socio-economic background, learning profiles and study programme. Evidence shows that learning analytics benefits learning and teaching in a variety of contexts by supporting teachers as well as HEIs in making informed decisions. This includes identifying students who would benefit from tutoring, supporting curriculum redesign and providing students with useful and meaningful data about their performance.

Each HEI has the responsibility to decide what data to use to obtain valid and relevant indicators. Although privacy concerns should be carefully considered, learning analytics provide a valuable opportunity for HEIs to support quality teaching and learning.

Despite their potential benefits, there are difficulties in enhancing the use of learning analytics. Hungarian stakeholders participating in the meeting highlighted the shortage of ICT professionals and engineers to support the development of learning analytics as one main challenge, as well as institutional and system-wide barriers, such as the lack of funding to develop such systems. Moreover, participants felt that Hungarian HEIs lacked a strong labour market orientation and collaboration with employers, which they thought could both improve the labour market relevance of their programmes while being an incentive for students to perform better, and in turn, increase interest in learning analytics.

Student associations and government can help improve student trust in HEIs with respect to data protection

In Ireland, many HEIs were surprised by the results of the INDEx survey with respect to data protection concerns among students. They interpreted it as a result of insufficient communication, considering that students were supportive of data use to support their learning. Some changes HEIs considered included allowing students to choose whether or not they wanted to share their data for each class rather than for all classes at once, thereby giving them greater control over their data.

The National Forum for the Enhancement of Teaching and Learning relied on partnerships with most student unions in Irish HEIs and on the creation of a National Student Assembly representative of all HEIs reflecting the institutional diversity to provide insights on students' sentiments and experiences to support the survey design and implementation. The National Student Assembly met once every four weeks throughout the academic year, supported by regular HEI Staff Assemblies. Members of the National Student Assembly were paid for 25 hours of work per semester. The model proved to be very successful, as it allowed for a diversity of perspectives, given that the members of the student assembly differed from the institutional union representatives.

Meeting participants supported increased stakeholder involvement with respect to transparency in the use of data, notably suggesting that students should be given the opportunity to opt-in separately for each course and should be reminded that the data collected would be used to support learning. Student representatives highlighted the important role that student representatives should take to monitor student sentiment towards digital technologies and foster communication between HEIs, teachers and students.

One key lesson from the Irish experience lies in the need for a shared vision between higher education stakeholders – leaders, students and staff – and government in moving forward with initiatives to monitor and expand the digitalisation of higher education.

Table A.1. Participating organisations

Stakeholder interviews – September/October 2020
Association of Hungarian PhD and DLA Candidates
Budapest University of Technology and Economics
Corvinus University of Budapest
Digital Higher Education Competence Centre
Digital Success Nonprofit Ltd.
Educational Authority
Government Information Technology Development Agency
Hungarian Accreditation Committee
Hungarian Rectors' Conference
Károli Gáspár University of the Reformed Church in Hungary
Mediaworks
Ministerial Commission for Creative Industries
Ministerial Commission for Model Change in Higher Education
National Doctoral Council
National Research, Development and Innovation Office
National Union of Students
State Secretariat for Higher Education
Széchenyi István University
Tempus Public Foundation
University of Pécs
Institutional roundtables – January 2021
Budapest Metropolitan University

Budapest University of Technology and Economics
Kodolányi János University
Moholy Nagy University of Art and Design Budapest
Pázmány Péter Catholic University
Semmelweis University
Széchenyi István University
University of Pécs
University of Szeged
International expert meeting – 7 July 2021
Adventist Theological College Pécel
Andrássy University Budapest
Association of Hungarian PhD and DLA Candidates
Budapest Metropolitan University
Budapest University of Technology and Economics
Debrecen Reformed Theological University
Digital Success Nonprofit Ltd.
Eötvös Loránd University
Eszterházy Károly University
Hungarian Rectors' Conference
Károli Gáspár University of the Reformed Church in Hungary
Kodolányi János University
Ministry of Education, Culture, Sports and Youth of Cyprus
Ministry of Science and Education of Croatia
Moholy-Nagy University of Art and Design
National Forum for the Enhancement of Teaching and Learning
Óbuda University
Semmelweis University
SURF
University of Debrecen
University of Dunaújváros
University of Dunaújváros
University of Mannheim
University of Miskolc
University of Nyíregyháza
University of Pannonia
University of Pécs
University of Szeged
University of Veterinary Medicine Budapest

Note by Turkey
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.