

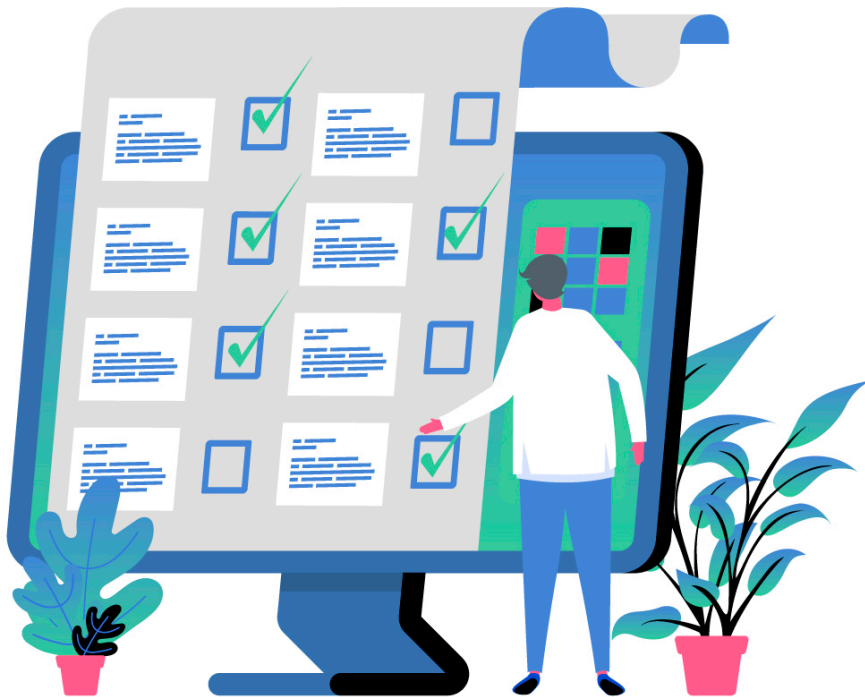


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DEL4ALL SURVEY REPORT COVID-19 EFFECTS ON HIGHER EDUCATION INSTITUTIONS

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EXECUTIVE SUMMARY

A survey conducted among digital education experts to understand how the COVID-19 pandemic affects digital learning in the context of higher education institutions reveals that the digitalisation of offline education, technology adoption, and the staff's skills gap represent main challenges for education during COVID-19. Main opportunities the pandemic brings for education are related to the transformation of our education system, a general improvement of education infrastructure as well as more tailored education. Key actions the European Commission should take to support education technology in a higher education context are related to budgetary support, more regulation and elaborated concepts for education infrastructure. Emerging technologies, such as Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), blockchain, gaming and data analytics are regarded as potentially beneficial tools for empowering students and enhancing the learning experience. Especially data analytics, VR, AR and gaming are considered to be most promising. Post-COVID-19, digital education experts expect a permanent shift to more digital enhanced and personalised learning as well as an increased use of Open Educational Resources.

INTRODUCTION

The COVID-19 crisis has led to a massive uptake in ICT solutions for digital education and interaction as schools, colleges, universities and other education institutions had to quickly shift their offline workflows into the online world. As the Coordination and Support Action of the European Commission, which aims to transform current European research and innovation initiatives in the area of digital enhanced learning into an increasingly cohesive, dynamic, participatory and sustainable ecosystem, DEL4ALL conducted a survey among digital education experts in an effort to understand, which challenges and opportunities the current COVID-19 emergency brings about for digital learning in the context of higher education institutions.

METHOD AND SAMPLE

DEL4ALL designed and distributed an exploratory online survey during the final stages of the COVID-19 lockdown in Europe (2 June 2020 – 17 June 2020). The survey was sent to a group of 50 digital education experts associated with the DEL4ALL project and distributed via various DEL4ALL channels. A total of 13 respondents (63% male; $M_{age} = 46.61$) based in 10 different EU countries completed the questionnaire. Most of the respondents are working as researchers (28%), education consultants (21%), and tertiary education lecturers (21%). The survey consisted of six open questions as well as four demographical questions. Respondents' answers were coded and analysed using the qualitative data analysis software NVivo.





RESULTS

Challenges for higher education institutions

Respondents identified the following three main challenges the COVID-19 pandemic presents to higher education institutions:

Challenge 1: Digitalisation of offline education. A majority of respondents indicated that reshaping pedagogy for online or blended learning scenarios, converting educational materials into online material and ensuring high quality online education was especially challenging during the COVID-19 outbreak.

Challenge 2: Technology adoption. A second main challenge identified by respondents is related to the lack of tools and measures to enable remote education and the difficulties in setting up the necessary technologies, as they did not exist before.

Challenge 3: Lack of skills. The lack of skills and experience of education staff with respect to the use of online platforms and flipped classroom models was considered to be the third main challenge COVID-19 presented to higher education institutions.

Other challenges. In addition, survey respondents identified the following challenges for higher education institutions: IT security issues, the predominance of “old” education structures (i.e., single lecturer design, face-to-face centric teaching, inflexible business processes and infrastructures), formative assessment, extra work load, difficult student interaction, health maintenance in face-to-face settings, frustration, and more competition between education institutions to acquire new students and retain current ones.

Opportunities for higher education institutions

Besides these challenges, participants reported the following opportunities the COVID-19 pandemic brings about for higher education institutions:

Opportunity 1: Transformation of education. The majority of participants sees the transformation of our educational system as the main opportunity the COVID-19 emergency brings about. They expect a transformation of core business processes, see the opportunity to re-imagine education in terms of purpose, relevance and methodology and expect more hybrid approaches and experimentation with new teaching and learning techniques, which incorporate technology.

Opportunity 2: Improvement infrastructure. In addition, survey respondents think the COVID-19 emergency offers an important chance to identify lacks in existing infrastructures and to invest in emerging technologies that support the current reality and the future vision for learning.

Opportunity 3: Tailored education. Respondents believe the COVID-19 emergency has reminded us of the social context of learning, but also the individual needs of students. This is seen as an opportunity to personalise learning in an adaptive way and to tailor education to students’ personal needs.

Other opportunities. Respondents also identified the following other opportunities: The COVID-19 pandemic is speeding up policy changes within institutions, people start re-thinking travelling guidelines, increasing staff skills and competences, matters around diversity, equity, access and Universal Design for Learning can be creatively addressed now, and wider audiences can be reached.





Key actions European Commission

Next to questions on the challenges and opportunities the COVID-19 pandemic presents to higher education institutions, survey respondents were also asked, which key actions the European Commission (EC) should take to support education technology in a higher education context.

Key action 1: Budgetary support. Most of the respondents mentioned a need for increased budgetary support investing in education and educational technology research as well as in consulting and mentoring.

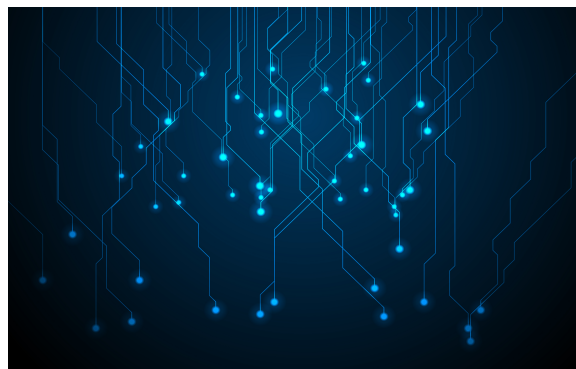
Key action 2: Regulations. Moreover, respondents expressed a need for regulation and legal frameworks to protect staff from being “replaced” by technology and for enabling rapid contracting of services.

Key action 3: Concepts for education infrastructure. Furthermore, experts would like to see support in the development of concepts for Internet of Things in education and for integrating education technologies to facilitate stronger learning.

Other key actions. Besides these main key actions, respondents would like the EC to promote the identification and sharing of best practices, to provide an evidence base that other institutions can confidently learn from as well as to help fostering networks and communities. Further, they would like the EC to help with capacity building and skills development of educators, to stimulate more research on scalable and resilient educational infrastructures and to encourage a continuous debate based on rigorous evidence.

The role of emerging technologies in supporting higher education institutions

Emerging technologies can play an important role in education. Therefore, the survey encouraged experts to elaborate on how emerging technologies, such as Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), blockchain, gaming and data analytics could support digital learning and which concrete examples of emerging technologies could improve the quality of lifelong learning.



In general, a majority of participants stressed the **empowering role emerging technologies** can play in education. In their view, education technology can significantly enhance the learning experience, increase student engagement and participation and foster digital literacy – the latter is identified as a must for successfully competing on the labour market.

More specifically, a majority of respondents identified **data analytics as promising education technology**, as it can be beneficial for better assessment and telepresence, structure learning modules, help identifying at-risk students and increase retention and graduate levels. Moreover, respondents see a great potential for the immersive technologies **AR and VR** to enhance the learning experience: These tools are considered to be beneficial for STEM related learning activities, simulations and lab work, augmented human learning and decision making, and to illustrate how complex subject matters can be taught in an experiential way. Some respondents also see **gaming** as a potentially beneficial tool for the educational context, as it offers innovative scenarios for individual and group meaningful learning and can attract to learning activities adults, who retain bad memories from previous formal education and are reluctant to engage in new learning efforts. In addition to these, respondents also mentioned the following emerging technologies to be used in a higher education context: blockchain for





secure learning certificates, content and learning management systems, virtual assistants & chatbots for supporting academic learning, social media, and conference tools.

Expected permanent post-pandemic changes to education

With millions of students and educators learning and teaching from home, the COVID-19 pandemic presents challenges to our education systems the world has never seen before. We wanted to know from our digital education experts, which permanent post-pandemic changes they see to education. The analysis yielded the following results:

Post-pandemic change 1: Digital enhanced learning. A majority of respondents expects that the COVID-19 pandemic will permanently change our educational landscape in the sense that learning and teaching will be continuously enhanced by technology. They expect a larger adoption of online communication, collaboration and coordination as well as more digital forms of learning and assessment. Moreover, they predict more blended-learning scenarios replacing face-to-face sessions and a shift to collaborative and community-based learning methodologies.

Post pandemic change 2: Personalised learning. The second main change identified is related to the way how students will learn in the future. Survey respondents expect more autonomous, decentralised studying, learning and working environments as well as a focus on personalised, student-centred learning pathways. It is expected that post-COVID-19, a new generation will emerge that will learn how to be a self-learner.

Post pandemic change 3: Open educational resources. The third main change experts see is related to a greater emphasis on and shift to Open Educational Resources (OER) at all levels. Post-COVID-19, respondents expect an unapologetic emphasis on human rights and access in educational provision for all.

Other post-pandemic changes. Additionally, respondents mentioned the following post-pandemic changes to education: more decentralised, remote learning and working, more multidisciplinary endeavours in course provision, the replacement of old infrastructures, stronger capacity building programmes for educators, and more trust in online learning.

CONCLUSION

Results of this survey show that the COVID-19 pandemic exposed structural weaknesses in our current higher education systems. The digital education experts surveyed in this study reported that the “old” systems had difficulties to quickly adapt to the new circumstances due to incompatible teaching materials, non-existent infrastructure and a lack of skills. However, experts do see a silver lining as they expect fundamental post-pandemic changes to education, focusing more on digital enhanced and personalised learning as well as Open Educational Resources. Hence, despite the disastrous effects COVID-19 evidently has on our lives, economy, and society, it can also be seen as a big chance and accelerator for digital education.

