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Prof. Dr. Thomas Dreier, M. C. J. (NYU)
KIT - Karlsruher Institut für Technologie, Zentrum für Angewandte Rechtswissenschaft (ZAR), Vincenz-Prießnitz-Str. 3, 76131 Karlsruhe Germany

Prof. Dr. Axel Metzger, LL. M. (Harvard)
Humboldt-Universität zu Berlin, Unter den Linden 6, 10099 Berlin

Prof. Dr. Gerald Spindler
Dipl.-Ökonom, Georg-August-Universität Göttingen, Platz der Göttinger Sieben 6, 37073 Göttingen

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Editorial

by **Rossana Ducato and Giulia Priora** *

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1 Most of us—scholars and researchers across the world—found ourselves in uncharted territories when, in 2020, teaching activities were forced to move online due to the outbreak of the COVID-19 Pandemic. Information technologies allowed the continuity of learning while our physical infrastructures were shut down. Nevertheless, for many among us, this transition represented a challenge, making us experience the complex nature of the digital classroom. Amid the uncertainties and problems that schools, universities, teachers, and students had to face lie legal questions, from fundamental rights queries to governance of educational infrastructures and contractual implications, both at national and supranational levels.

2 Remote education is not a new phenomenon. In some institutions, online and blended activities long preceded the pandemic emergency. The legal scholarship already inquired into aspects of providing education at distance. Attention had mostly been paid to questions of intellectual property of learning materials and tools,[1] lecture recording policies,[2] students' authentication aids,[3] security,[4] surveillance,[5] comparative issues in the use

* Rossana Ducato is Senior Lecturer in IT Law and Regulation, School of Law, University of Aberdeen, UK (rossana.ducato@abdn.ac.uk). Giulia Priora is Assistant Professor at NOVA School of Law Lisbon (Faculdade de Direito da Universidade Nova de Lisboa), Director at NOVA IPSI Knowledge Centre on Intellectual Property and Sustainable Innovation, Researcher at CEDIS (Centre of Research and Development in Law and Society) (giulia.priora@novalaw.unl.pt).

1 Ann L Monotti, 'University Copyright in the Digital Age: Balancing and Exploiting Rights in Computer Programs, Web-Based Materials, Databases and Multimedia in Australian Universities' (2002) 24 European Intellectual Property Review 251; Gabriela Kennedy, 'Intellectual Property Issues in E-Learning' (2002) 18 Computer Law & Security Review 91; Louise Longdin, 'Copyright Dowries in Academia: Contesting Authorship and Ownership of Online Teaching Materials in Common Law Jurisdictions.' (2004) 35 IIC 22; Louise Longdin, 'Collaborative Authorship of Distance Learning Materials: Cross-Border Copyright and Moral Rights Problems' (2005) 27 European Intellectual Property Review 4; Hong Xue, 'Copyright Exceptions for Online Distance Education' (2008) 2 Intellectual Property Quarterly 213; Philippa Davies, 'Access v Contract: Competing Freedoms in the Context of Copyright Limitations and Exceptions for Libraries' (2013) 35 European Intellectual Property Review 402; Christophe Geiger, Giancarlo F Frosio and Oleksandr Bulayenko, 'The EU Commission's Proposal to Reform Copyright Limitations: A Good but Far Too Timid Step in the Right Direction' (2018) 40 European Intellectual Property Review 4.

2 BILETA, Lecture recording policy (2008) < https://www.bileta.org.uk/news/lecture-recording-policy/>, accessed 1 December 2022.

3 Marion Rosenberg, 'And You Are...? Will the New Regulation on Electronic Identification Help Universities When Registering Overseas Students? Part 1' (2015) 21 Computer and Telecommunications Law Review 31; Marion Rosenberg, 'And You Are...? Will the New Regulation on Electronic Identification Help Universities When Registering Overseas Students? Part 2' (2015) 21 Computer and Telecommunications Law Review 59.

4 Asim Majeed, Said Baadel, Anwar Ul Haq, 'Global Triumph or Exploitation of Security and Privacy Concerns in E-Learning Systems', *International Conference on Global Security, Safety, and Sustainability* (Springer 2017).

5 Barbara Fedders, 'The Constant and Expanding Classroom:

of computer-assisted tools in legal education,[6] and labour law implications of online teaching.[7]

3 However, the volume, variety, and velocity of the digital transition in education imposed by the COVID-19 Pandemic exacerbated these issues and raised a spectrum of new legal problems.[8] The jurisprudence specializing in digital education demonstrate this momentum: new light has recently been shed on, among others, the digital divide in accessing education,[9] the lawful use of learning materials online,[10] the dispossession of educators' work in favour of their employers and platforms,[11] privacy and human rights issues raised by EdTech monitoring tools.[12]

4 What we observe is an educational sector that is becoming increasingly aware of the potential of digital technologies but that was only recently forced to grapple with the full spectrum of the legal questions arising from them. The latter included, in particular, the impact caused by the reliance on third-party service providers—traditionally external to the "educational circle"—and their infrastructural power.

5 Due to the pandemic-induced emergency, educational institutions mostly relied on platforms, social media, and videoconferencing tools to ensure the continuity of learning. The initial few legal warnings stemming from the scholarship turned into a real risk for schools' and universities' autonomy and the fundamental rights of teachers and students. In preliminary studies we conducted over the nest of terms and conditions of platforms used during the pandemic, the problematic aspects arising from opaque operations carried out on content and data exceeded our informed expectations as legal researchers in the field.[13]

6 We, therefore, felt the need for a more comprehensive effort to study the phenomenon of digital education from a legal perspective, dissecting its potential and risks for individuals and groups. Our research endeavour started while we witnessed education gradually returning to presential mode. This change did not mitigate the utility of our research questions, as most of the digital tools introduced during the pandemic remain, and with them, the legal issues they raise. The premise of our legal inquiries lies in the awareness that schools and universities can rely on a growing range of technologies to innovate their pedagogical strategies. However, this evolution cannot occur at the expense of fundamental rights within the educational ecosystems.

7 This *JIPITEC Special Issue on "The Law and the Digital Classroom"* is our choral contribution to the research on old legal problems and newly emerging issues threatening the transition into the post-pandemic digital classroom. We think that building such an environment requires a close analysis of the fundamental right to access online education, the protection of students' data, the promotion of teachers' creativity and the safeguards of their work conditions, the rise of dominant economic actors, and the new infrastructural shapes of the 'platformised' learning environment. Our aim is twofold: to cultivate legal awareness and policy

Surveillance in K-12 Public Schools' (2019) 97 North Carolina Law Review 1673; Priya C Kumar and others, 'The Platformization of the Classroom: Teachers as Surveillant Consumers' (2019) 17 Surveillance & Society 145.

6 Burkhard Schafer, 'Form and Substance in Online Legal Education—a Look over the Border' (2002) 36 The Law Teacher 333; John Mayer, 'Codec: Lowering the Barriers to Inter-Institutional Distance Legal Education' (2005) 39 The Law Teacher 82; Antoinette Muntjewerff, 'ICT in Legal Education' (2009) 10 German Law Journal 669.

7 Andrea Wobick, 'What Is the Value of Teaching in a Virtual Classroom?' (2012) 22 Education & Law Journal 117.

8 Chiara Angiolini and others, 'Remote Teaching During the Emergency and Beyond' (2020) 1 Four Open Privacy and Data Protection Issues of 'Platformised' Education 45.

9 Sofia Ranchordas, "Connected but Still Excluded? Digital Exclusion beyond Internet Access" in Marcello Ienca and others (eds), The Cambridge Handbook of Life Sciences, Informative Technology and Human Rights (Cambridge University Press 2021) 244.

10 Carys Craig and Bob Tarantino, 'A Hundred Stories in Ten Days: Covid-19 Lessons for Culture, Learning, and Copyright Law' (2021) Osgoode Hall Law Journal 57(3) 567-604; Emily Hudson and Paul Wragg, 'Proposals for Copyright Law and Education During the Covid-19 Pandemic' (2020) Northern Ireland Law Quarterly 71(4) 571-594.

11 Guido Noto La Diega and others, 'Capturing the Uncapturable: The Relationship between Universities and Copyright through the Lens of the Audio-Visual Lecture Capture Policies' in Cristiana Sappa and Enrico Bonadio, *The Subjects of Literary and Artistic Copyright* (Edward Elgar 2022) 206-232; Yasmin Ibrahim, Anita Howarth and Ian Stone, 'Lecture Capture Policies: A Survey of British Universities' (2021) 3 Postdigital Science and Education 144.

12 Teresa Scassa, 'The Surveillant University: Remote Proctoring, AI, and Human Rights' (2022) 8 271; Liane Colonna, 'Legal Implications of Using AI as an Exam Invigilator' in Liane Colonna and Stanley Greenstein (eds), *2020-2021 Nordic Yearbook: Law in the Era of Artificial Intelligence* (The Swedish Law and Informatics Research Institute 2022); Center for Democracy and Technology, 'Report – Hidden Harms: The Misleading Promise of Monitoring Students Online' (2022) <https://cdt.org/insights/report-hidden-harms-the-misleading-promise-of-monitoring-students-online/> accessed 1 December 2022.

13 Chiara Angiolini and others (n 8); Léo Pascault and others, 'Copyright and Remote Teaching in the Time of COVID-19: A Study of Contractual Terms and Conditions of Selected Online Services' (2020) 42 European Intellectual Property Review 548.

literacy across society and, in p^articular, within educational environments, and help weave the full legal picture of the digital classroom connecting the dots between different legal expertise and critically engaging in 'legal protection by design' solutions.

8 *Part I* focuses mostly on the student's perspective, addressing the question of the protection of fundamental rights in the post-pandemic environment of digital education.

9 Celeste and De Gregorio open the discussion with a critical reflection on the existence of the right to digital education. Although not expressly recognized as such, the authors argue that it can be retrieved from the constitutional obligation to provide access to education. Their paper *"Towards a right to digital education? Constitutional challenges of Edtech"* is a lucid investigation of how such a right shall be implemented in practice, taking into account the datafication and privatization of education brought by the use of digital tools provided and managed by commercial actors.

10 Wong, Racine, Henderson, and Ball explore another type of power imbalance: the one experienced by students before their universities in relation to the collection and use of the personal data generated in the digital classroom. Their paper investigates the question of conceiving *"Online learning as a commons: Supporting students' data protection preferences through a collaborative digital environment"*. The results of their empirical research suggest that the commons model, centred on subjects' data protection preferences, can increase students' agency over their data, such as those contained in tutorial recordings.

11 Giannopoulou, Ducato, Angiolini, and Schneider conclude this Part by focusing on the data protection challenges raised by one specific tool increasingly used during the pandemic: e-proctoring. Forced to organize exams at distance, a few universities decided to ensure the validity and integrity of exams via monitoring tools for online invigilation. The use of such software, however, give rise to several concerns in terms of accuracy, proportionality, discrimination, and intrusiveness. Their paper *"From data subjects to data suspects: challenging e-proctoring systems as a university practice"* thoroughly discusses how courts and data protection authorities have responded to such issues in the past two years, highlighting both the opportunities and pitfalls of the data protection regime in this area.

12 *Part II* turns to a perspective closer to the teachers, shedding light on the legal implications of the selection and use of copyrighted materials in the digital classroom and on recent developments in teaching practices and open digital infrastructures.

13 Trapova kicks off this focus by illustrating the EU copyright legal framework applicable to the access and use of third parties' materials for educational purposes. In her article "*The exceptional mismatch of copyright teaching exceptions in the post-pandemic university: Insights from Germany, Bulgaria, and Ireland*", the author explains the exegesis of a new digital teaching exception in the EU, highlighting its pursued objective of modernizing the law and demonstrating its failed attempt to enhance the harmonization and legal certainty regarding who, what, and how much can we benefit from a copyright teaching exception in Europe.

14 Priora and Carloni provide another European perspective, this time looking at the specific phenomenon of the wide spreading of Open Educational Resources (OERs). The topic, extensively analyzed in the North American legal scholarship, invites a timely European focus due to the evolving EU copyright legal regulation and the emerging policy goal to promote innovative digital teaching practices. Their article, entitled *"Open Educational Resources through the European lens: Pedagogical opportunities and copyright constraints"*, is an interdisciplinary attempt to dissect both the pedagogical potential and enduring copyright constraints vis-à-vis OERs.

15 Concluding the Special Issue, we have two case studies. Mezei, in his "*Digital higher education and copyright law in the age of pandemic: The Hungarian experience*", presents an empirical study of the Hungarian higher education scenario during the outbreak of the COVID-19 Pandemic between 2020 and 2022. This study aims to fill the gap of adequate observation of the ongoing teaching and learning practices and the impact of the pandemic experience on the awareness, perception, and coping mechanisms with regard to national copyright rules.

16 Caso and Pievatolo, in "*A liberal infrastructure in a neoliberal world: The Italian case of GARR*", look at the development of *ad hoc* digital infrastructures serving the purpose of an open and flourishing educational sector. Critically investigating the long arm of the intellectual property legal culture, the authors present the Consortium 'GARR' (*Gestione Ampliamento Rete Ricerca*, Research Network Expansion Management) as an example of alternative public infrastructure that, *de facto*, facilitates the sharing and exchange of knowledge across Italian universities. This bottom-up experience serves as a meaningful insight into the diverse and pluralistic nature that the post-pandemic digital classroom will need to build and preserve.

Towards a Right to Digital Education? Constitutional Challenges of Edtech

by **Edoardo Celeste and Giovanni De Gregorio***

Abstract: Education is increasingly going digital. The COVID-19 pandemic has compelled students to attend school and college online through the use of often private digital platforms. For many this change has been regarded negatively, yet for some, especially students with disabilities or from remote geographical areas, this opportunity has been essential to access or continue their studies, thus making the right to education, as enshrined in many national and supranational constitutional texts, even more effective. Despite the advantages of introducing a right to access education remotely, this paper examines the constitutional drawbacks of this proposal. The first part of the article argues that a right to digital education should be recognised as a component of the right to quality education in the digital age in terms of possibility for the individual to access educational materials online, as well as a right to acquire sufficient digital skills to fully participate in democratic society. However on the path towards a full implementation of this right lies a structural obstacle: education is not only increasingly digital but also private. The second part of the paper examines the constitutional challenges generated by private actors dominating the edtech sector. While education has usually been conceived of as a public service, increasingly this area of welfare is left in the hands of private actors that have the power to shape the technical and social infrastructures to exercise constitutional rights. The paper concludes with an assessment of existing regulatory frameworks to ensure that private organisations contribute to fostering the right to digital education.

Keywords: digital education; edtech; online platforms; regulation; fundamental rights

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A. Introduction

1 The launch of ChatGPT at the end of November 2022 has been welcomed with mixed sentiments of joy and terror in academic settings. On the one hand, the use of a free AI system capable of generating text when prompted to do so by simple questions has led students from all over the world to think that the era of putting elbow grease into their essay has finished. On the other hand, universities have started reacting to the widespread availability of these types of intelligent chatbots in various ways, from banning their use to understanding how better to teach their students the potential and limitations of this technology.[1] In any case, the theme of the use

* Edoardo Celeste is Assistant Professor of Law, Technology and Innovation and Programme Chair of the European Master in Law, Data and AI (EMILDAI), School of Law and Government, Dublin City University, Ireland. I would like to thank Cerys Lee from the DCU Law and Tech Research Cluster for her research assistance on this paper; Giovanni De Gregorio has a PLMJ Chair in Law and Technology, Universidade Católica Global School of Law, Lisbon, Portugal.

1 See Kalley Huang, 'Alarmed by A.I. Chatbots, Universities Start Revamping How They Teach' *The New York Times* (16 January 2023) <https://www.nytimes.com/2023/01/16/technology/chatgpt-artificial-intelligence-universities.html>; Jeff Sparrow, '"Full-on Robot Writing": The Artificial

of digital technologies for education has made the headlines again after emerging as a topic of intense discussion during the hardest phases of the COVID-19 pandemic.

2 The COVID-19 pandemic hit our societies from every angle. In order to limit the spread of the virus, governments introduced unprecedented restrictions affecting all sorts of individual rights and both public and private services. This situation led national, local authorities, and single institutions to shut down their premises either intermittently, following the ebb and flow of daily COVID cases, or even for entire academic or school years. Even if the educational sector was considered essential in many countries, its services were among those seen as potentially being equal when delivered online, through the employment of digital tools. Educators from primary schools to universities were forced to transition to remote teaching, relying on platforms offered by external service providers, with little or no preparation in most cases.

3 This shift has led to an acceleration in the implementation of digital tools that have ensured the possibility for students to pursue their studies and for educators to work.[2] Moreover, the global pandemic has amplified a process that was already ongoing towards not only a privatisation and commercialisation,[3] but also a platformisation of education.[4] Platforms such as Zoom or Microsoft Teams are only some examples of the instruments that have allowed the educational sector to deal with the challenges of the COVID-19 pandemic,[5] thus playing a critical role in ensuring the right to education. At the same time, the reliance on these technological instruments has not only highlighted inequalities in terms of access to the Internet and to digital skills, but also the power exercised by platforms in the educational sector and the related dependency of public actors on the edtech provided by these actors.

4 Our paper aims to examine the constitutional challenges for education in the digital age, particularly by analysing the transition fostered by the pandemic. This paper starts with an overview of the existing scholarship on the challenges and benefits of remote teaching and learning (B). The following section examines the constitutional recognition of the right to digital education (C). Even if many national constitutions enshrine a right to education, in light of the recent pandemic, more stress has been put on the need to recognise some necessary prerequisites to the right to education to make this principle effective in the digital age, namely: the right to Internet access and the right to digital literacy. Rather than leading to a recognition of a constitutional right to remote learning, this development denotes the emergence of access to online learning and digital skills as quintessential components of the right to education in the digital age.

5 The second part of the paper focuses on the challenges that this advancement poses, especially in light of the fact that private online platforms providing digital tools such as video-conferencing are often the only instruments used to provide students with remote education. We argue that the constitutional challenges of the right to education are primarily connected to the commercialisation and privatisation of education as a public service. Platforms have already expanded their business in the edtech sector as a new profitable area to collect data and provide new digital services. This trend raises questions about the consumerisation of education and the collaboration between public and private actors (D). The paper finally concludes by observing the constitutional strategies to address edtech, particularly through assessing the role of existing legal instruments such as the General Data Protection Regulation ("GDPR") and forthcoming regulations such as the Artificial Intelligence ("AI") Act, the Digital Services Act ("DSA") and the Digital Markets Act ("DMA"), to define a more coherent regulatory framework for digital education in the future at a European Union ("EU") level (E).

Intelligence Challenge Facing Universities' *The Guardian* (18 November 2022) <https://www.theguardian.com/australia-news/2022/nov/19/full-on-robot-writing-the-artificial-intelligence-challenge-facing-universities>

2 Ben Williamson and Anna Hogan, 'Commercialisation and Privatisation in/of Education in the Context of COVID-19' (2020) Education International Research <https://issuu.com/educationinternational/docs/2020_eiresearch_gr_commercialisation_privatisation>; Neil Selwyn, 'Digital Education in the Aftermath of COVID-19: Critical Concerns & Hopes' (2020) 1(1) Techlash 6.

3 Neil Selwyn, *Is Technology Good for Education?* (Polity Press 2016).

4 See Chiara Angiolini and others, 'Remote Teaching During the Emergency and Beyond: Four Open Privacy and Data Protection Issues of "Platformised" Education' (2020) 1 Opinio Juris in Comparatione; Bernd Justin Jütte and others, 'Zooming in on Education: An Empirical Study on Digital Platforms and Copyright in the United Kingdom, Italy, and the Netherlands' (2022) 13 European Journal of Law and Technology. See also Jose Van Dijck and others, *The Platform Society. Public Values in an Online World* (Oxford University Press 2018).

5 Niels Kerssens and José van Dijck, 'The Platformization of Primary Education in the Netherlands' (2021) 46(3) Learning, Media and Technology 250.

B. Goodbye campus: challenges and benefits of online teaching and learning

6 According to a UNESCO study, during the first peak of the COVID-19 pandemic in April 2020, 191 countries had introduced nationwide school closures, which affected an estimate of 1.5 billion children on a global scale.[6] An investigation conducted by the OECD shows that third level education has had a similar destiny worldwide, with almost all European countries shutting down in-person lectures from March to the summer of 2020, and in some cases until the end of 2020 and beyond.[7]

7 However, such closures did not mark a stop of school and university activities. In contrast to other essential educational services where the in-person component is essential—one may think of driving lessons—in most cases, school and university classes could be replaced using digital technologies, and in particular, video-conferencing tools. Hybrid teaching was implemented in some cases, especially during the second 'lockdown' period in the autumn of 2020 and in circumstances where a physical component represented an integral part of the teaching experience (such as in music or photography laboratories, for example).[8]

8 Members of teaching staff were asked in most cases to embrace the new methods of online delivery with little to no preparation and in a state of emergency.[9] This often resulted in a 'forced' migration to edtech tools, also showing a more structural lack of investment and preparation of educational systems in this sector.[10] In this context, there have been differences between private and public institutions,[11] as well as between countries. For example, in Sweden hybrid learning was already a reality before the advent of the COVID-19 pandemic. Swedish teachers were already trained to deliver remote teaching for students from rural parts of the country or students with physical impairments.[12] In Austria, the Federal Ministry of Education Science and Research had created an online teaching and learning toolkit, including e-learning and content creation platforms for students and teachers.[13]

9 Despite these few exceptions, the transition from in-person to fully hybrid or remote teaching was, for most of the teachers around Europe, a laborious task. Most state or regional education authorities hurried to adopt guidelines on distance teaching and learning at the outset of the first general lockdown in Europe from March 2020.[14] The main challenge for teachers was to attempt to replicate the traditional in person student experience in the online learning environment.[15] This resulted in the use of a combination of synchronous and asynchronous online learning tools.[16] Synchronous learning systems are based on platforms that allow for real-time interaction between teachers and learners, usually through a combination of video-conferencing and chat tools (e.g., Zoom or Microsoft Teams); asynchronous learning models rely on online platforms which are capable of hosting content that is made available to the students but that do not require immediate interaction or real-time responses (e.g., Moodle or Blackboard).[17]

6 UNESCO and McKinsey & Company, 'COVID -19 Response – Remote Learning Strategy' (2020).

7 OECD, *The State of Higher Education: One Year into the COVID-19 Pandemic* (Organisation for Economic Co-operation and Development 2021) <https://www.oecd-ilibrary.org/education/the-state-of-higher-education_83c41957-en>. Cf. the data collected in relation to school closures by UNICEF: https://data.unicef.org/resources/one-year-of-covid-19-and-school-closures/.

8 OECD (n 6).

9 See Darren Turnbull, Ritesh Chugh and Jo Luck, 'Transitioning to E-Learning during the COVID-19 Pandemic: How Have Higher Education Institutions Responded to the Challenge?' (2021) 26 Education and Information Technologies 6401.

10 Angiolini and others (n 4).

11 Victoria Coleman, 'Digital Divide in UK Education during COVID-19 Pandemic: Literature Review' (Cambridge 2021) Cambridge Assessment Research Report.

12 See Nina Bergdahl and Jalal Nouri, 'COVID-19 and Crisis-Prompted Distance Education in Sweden' (2021) 26 Technology, Knowledge and Learning 443.

13 Ghita Ennadif, 'A Closer Look at Austria's Digital Response to COVID-19' (*Joinup*) <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/document/closer-look-austrias-digital-response-covid-19>.

14 See the examples of Portugal: General Directorate of Education Roteiro—8 Princípios Orientadores Para a Implementação Do Ensino a Distância (E@D) Nas Escolas. Available online: https://www.dge.mec.pt/noticias/roteiro-8-principios-orientadores-para-implementacao-do-ensinodistancia-ed-nas-escolas; Peru: Alberto Muñoz-Najar and others, 'Remote Learning During COVID-19: Lessons from Today, Principles for Tomorrow' (World Bank Group 2021).[to add other examples]

15 Turnbull, Chugh and Luck (n 8). See also Arasaratnam-Smith, L. A., & Northcote, M. (2017). Community in online higher education: Challenges and opportunities. Electronic Journal of e-Learning, 15(2), 188–198.

16 See Larasati, P., & Santoso, H. (2017). Interaction Design Evaluation and Improvements of Cozora - A Synchronous and Asynchronous Online Learning Application. 2017 7Th World Engineering Education Forum (WEEF). 536–541. https://doi.org/10.1109/weef.2017.8467168; McDaniels, M., Pfund, C., & Barnicle, K. (2016). Creating dynamic learning communities in synchronous online courses: One approach from the Center for the Integration of Research, Teaching and Learning (CIRTL). Online Learning, 20(1), 110–129.

17 See Kohnke, L., & Moorhouse, B. L. (2020). Facilitating

Especially in the early phases of the pandemic, the adoption of this hybrid approach combining synchronous and asynchronous online teaching tools was delayed by the lack of familiarity with these platforms and the incertitude generated by the originally unclear nature of the COVID-19 pandemic. In these circumstances, researchers have observed a phenomenon dubbed 'zoomism', denoting the resort to online video-conferencing platforms as a way to replicate as much as possible the comfort zone of the 'traditional' in-person teaching experience.[18]

10 Turnbull et al. provided a list of the platforms most commonly mentioned in academic papers on online teaching in the times of the COVID-19 pandemic.[19] The top five include, in order: Zoom, YouTube, Moodle, Facebook and Blackboard. It is interesting to observe that besides traditional online learning platforms, such as Moodle and Blackboard, popular social media platforms such as YouTube and Facebook were re-purposed for online teaching or used as a first port of call to organise distance learning activities in the early phases of the pandemic.[20] Video-conferencing platforms such as Zoom saw their users dramatically increase, transitioning from a tool intended for professionals, to one of the most widespread video-conferencing software worldwide.

11 This distinction between 'old' and 'new' actors is important because, as underlined in the second part of this paper, these platforms are managed by private companies whose objective is to generate profit: a mission that may well enter into conflict with the public, and often not-for-profit, objective of educating individuals. Platforms that were not originally thought of as online learning environments exposed users to additional risks and compelled teachers to think about introducing minimum safeguards that were not automatically embedded in those platforms.[21] Despite being a more attractive and dynamic environment than traditional asynchronous learning management systems, such as Moodle, studies observed how social media exposed students to higher level of distraction as well as more significant privacy risks, when, for instance, students interacted with their peers and teachers using their personal accounts, published content with a potential detrimental effect on their social or academic reputation, or were subject to intrusive e-proctoring systems while doing exams at home.[22]

12 Scholars have also observed how teachers often took—de facto and without their full awareness—the role and consequently the responsibilities of controllers from a data protection perspective, starting to determine the purpose and means of the processing activities involving students' data on platforms delivered by external providers.[23] A scarce awareness of copyright-related issues related to content shared on these private platforms has also been highlighted by recent empirical research.[24] Moreover, security on these platforms also became a concern: given the amount of people using it, they indeed became the target of hackers bugging meetings and 'zoombombers'.[25]

13 Most of the existing scholarship assessing the reception of remote teaching and learning focuses on student perceptions, while only little research analyses the perspective of staff. Available studies are usually based on surveys targeting general or specific categories of college students. Despite the different categories analysed, these studies identify common drawbacks related to online teaching and learning. The most concerning issue appears to be higher stress level, social isolation and negativity generated by remote learning among students.[26]

synchronous online language learning through Zoom. RELC Journal. https://doi.org/10.1177/0033688220937235; Larasati and Santoso (n 7).

18 Dias-Trindade, S.; Correia, J.D.; Henriques, S. Ensino Remoto Emergencial Na Educação Básica Brasileira e Portuguesa: A Perspectiva Dos Docentes. Rev. Tempos Espaços Educ. 2020, 13, 1–23; Barbour, M.K.; Hodges, C.B.; Trust, T.; LaBonte, R.; Moore, S.; Bond, A.; Kelly, K.; Lockee, B.; Hill, P. Understanding Pandemic Pedagogy: Differences between Emergency Remote, Remote, and Online Teaching; A Special Report of the State of the Nation: K-12 E-Learning in Canada Project; Canadian eLearning Network: Halfmoon Bay, BC, Canada, 2020; Pacheco, J.A.; Morgado, J.C.; Sousa, J.; Maia, I.B. Educação Básica e Pandemia. Um Estudo Sobre as Perceções Dos Professores Na Realidade Portuguesa. Rev. Iberoam. Educ. 2021, 86.

19 Turnbull, Chugh and Luck (n 8). Cf. the empirical data collected in the UK, Italy and the Netherlands by Jütte and others (n 4).

20 Turnbull, Chugh and Luck (n 8).

21 See Ritesh Chugh and Umar Ruhi, 'Social Media for Tertiary Education' in Arthur Tatnall (ed), *Encyclopedia of Education and Information Technologies* (Springer International Publishing 2019) <http://link.springer.com/10.1007/978-3-319-60013-0_202-1>

22 Chugh and Ruhi (n 19); Angiolini and others (n 4).

23 Angiolini and others (n 4).

24 Jütte and others (n 4).

25 Angiolini and others (n 4).

26 Avi Besser, Gordon L Flett and Virgil Zeigler-Hill, 'Adaptability to a Sudden Transition to Online Learning during the COVID-19 Pandemic: Understanding the Challenges for Students.' (2022) 8 Scholarship of Teaching and Learning in Psychology 85; Pitambar Paudel, 'Online Education: Benefits, Challenges and Strategies During and After COVID-19 in Higher Education' (2020) 3 International Journal on Studies in Education 70; Ann Murphy, Derek Malenczak and Mina Ghajar, 'Identifying Challenges and Benefits of Online Education for Students with a Psychiatric Disability' (2019) 32 Journal of Postsecondary Education and

Generally, distance learning was characterised by a lower level of concentration, less motivation, and consequently more scarce performance.[27] A part of this is generated by the use of online tools that allow students to be easily distracted. A phenomenon that is even amplified in the case of use of social media platforms, which are habitually used by students as a means of social interaction rather than as a study tool.[28]

14 The capability of students to communicate to their lecturers and teachers as well as amongst themselves also played an important role.[29] Students who struggled to get clear or swift communication had a more negative experience of online learning.[30] Moreover students lamented that in some cases the feedback they received was limited and delayed, and that they did not have the possibility to resort to the traditional in-person communication channels with their teachers, such as office hours.[31] Online communication tools used by students to connect with their lecturers and peers are not considered to have the capability to fully replace physical exchanges and interactions.[32] Group work activities were often introduced by lecturers to reduce the risk of social isolation, however student communication over digital tools often generated a feeling of embarrassment and a barrier to having a proper social interaction.[33]

15 Time-management was another issue highlighted by recent studies. If the positive side of online teaching and learning is flexibility and consequently the acquisition of independent study skills by students, on the other hand, this might result in more difficulties for some in managing their time and respective deadlines.[34] Procrastination is reported as a common problem.[35] The transition to online teaching also had effects on the quality of the assignments and exam supervision. Examiners have reported higher levels of plagiarism and breaches of academic integrity, due to the adoption of fully online methods of assessment that students could complete at home.[36] In response to this, universities have introduced e-proctoring systems for live remote exams that are not only generally intrusive of the family and personal sphere of students, as highlighted earlier, but can also pose risks in terms of arbitrariness and potential discrimination when for instance they have the ability, without any human oversight, to disqualify an exam in light of a suspicious behaviour from the student in question.[37]

16 More recently, the diffusion of a beta version of ChatGPT by the US company OpenAI has opened an intense discussion on academic integrity, focusing on the ethical implications of the use of AI generative systems in the context of academic assignments. ChatGPT is able to produce human-like texts on the basis of questions. It can easily draft a basic essay or a literature review in so far as the question can be answered by sources included in the dataset with which ChatGPT has been trained.[38] Answers from schools and higher education institutions have varied from banning its use[39] to encouraging lecturers to adopt forms of examinations where academic integrity is less prone to be affected by the use of generative AI systems as oral exams or in-class presentations.[40] Interestingly, both solutions do not entail the use of any intelligent systems that would aim at their turn to unmask academic cheating.

17 These challenges of online learning, despite being concerning from a social and pedagogical point of view, do not have major legal implications. An aspect that instead has not to be underestimated from a constitutional perspective is the amplification of socio-economic and geographical inequalities deriving from the transition to online teaching, as it contradicts the core objectives of the right to education, which conversely aim to foster social

Disability 395.

27 Besser, Flett and Zeigler-Hill (n 21); Murphy, Malenczak and Ghajar (n 21).

28 Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao, 'Expected Advantages and Disadvantages of Online Learning: Perceptions from College Students who Have not Taken Online Courses' (2012) Issues In Information Systems <https://iacis.org/iis/2012/114_iis_2012_193-200.pdf>

29 See T Muthuprasad and others, 'Students' Perception and Preference for Online Education in India during COVID -19 Pandemic' (2021) 3 Social Sciences & Humanities Open 100101.

30 Vikki S Katz, Amy B Jordan and Katherine Ognyanova, 'Digital Inequality, Faculty Communication, and Remote Learning Experiences during the COVID-19 Pandemic: A Survey of U.S. Undergraduates' (2021) 16 PLOS ONE e0246641; Murphy, Malenczak and Ghajar (n 21).

31 Pitambar Paudel (n 21).

32 Murphy, Malenczak and Ghajar (n 21).

33 Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23).

34 Pitambar Paudel (n 21).

35 Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23).

36 Pitambar Paudel (n 21); Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23).

37 Angiolini and others (n 4).

38 ChatGPT is not connected to the Internet; therefore, the information at its disposal are limited from a temporal perspective.

39 See Sparrow (n 1).

40 See Carl O'Brien, 'Trinity Advises Academics to Adjust Assignments in Light of ChatGPT Cheating Threat' The Irish Times (27 January 2023) <https://www.irishtimes.com/ireland/education/2023/01/27/trinity-advises-academics-to-adjust-assignments-in-light-of-chatgpt-cheating-threat/.

inclusion and democratic participation.[41] The socio-economic conditions of the students were highly relevant in the transition to online learning as it directly impacted the possibility of students to access digital education, and were amplified by other side effects, such as the loss of part-time student jobs.[42] For example, studies show how students who relied on university spaces and devices were disadvantaged.[43]

18 A more common challenge was connectivity. Katz and others rightly highlight that in relation to online teaching and learning, the issue was not the traditional dichotomy between access or lack thereof to the Internet that has characterised the debate on the digital divide.[44] Digital inequality here manifests itself in gradual forms of 'under-connectedness' (students, especially from low income families, who have Internet access but only through mobile or shared devices) and an absence of the digital skills that have an impact on their remote learning proficiency, i.e., capability to learn and succeed in online studies.[45] The scholarship also pointed out that issues related to connectivity had the potential to generate high levels of stress and anxiety, in particular for fear of missing lectures and exams or lagging behind peers.[46]

19 Lastly, with the forced advent of online learning during the pandemic, university drop-outs increased, especially for students with disabilities who could not access the university services usually designated to assist them.[47] This consequence too has major legal implications as it stresses the inequalities in terms of access to digital education. Indeed, students with disabilities were also affected in terms of navigation of the educational content in cases where lecturers and teachers resorted to platforms, such as social media, which are not usually employed for teaching purposes and do not dispose of the necessary tools to guarantee access from individuals with disabilities.[48]

20 While some of the drawbacks of online teaching are not natural with this type of content delivery, others were more linked to fast and emergency-driven ways in which the transition to online teaching occurred in the first phase of the COVID-19 pandemic.[49] Besides the issues just highlighted, the existing scholarship has also identified multifarious benefits of digital education, including some with direct constitutional relevance.

21 First of all, studies demonstrate how remote teaching has the potential to make the student learning experience more interactive.[50] Digital education increases the level of student independence and self-discipline: students acquire a higher sense of 'ownership' of their learning process.[51] Online learning is definitively more flexible, especially when lectures are recorded.[52] This circumstance offers students, and especially those with disabilities, more time to 'digest' the teaching content.[53] For some students, online learning is also less stressful, as everyone can go at a different pace and class group work is rarely required. Paradoxically, from this point of view, online learning resulting in fewer social interactions than its in-person equivalent is considered a benefit.[54]

22 Murphy et al. conducted a study focusing on students with psychiatric disabilities.[55] Remote teaching brings significant benefits to students with anxiety disorders as they have the possibility to follow their lectures within their comfort zone without having to attend crowded lecture theatres that could magnify their sense of unease.[56] Students who take medications regularly can have more flexible access to their learning resources without having to modify their schedule and in this way, allowing them to work during their time of maximum efficiency.[57]

41 See Alessandra Viviani, 'The Right to Education and Human Rights Education as a Tool towards Social Inclusion' in Alessandra Viviani (ed), *Global Citizenship Education, Multiculturalism and Social Inclusion in Europe: The findings of the Project I Have Rights* (IUS Gentium Conimbrigae, Centro de Direitos Humanos 2018).

42 Besser, Flett and Zeigler-Hill (n 21); Katz, Jordan and Ognyanova (n 25).

43 Katz, Jordan and Ognyanova (n 25); Murphy, Malenczak and Ghajar (n 21).

44 Katz, Jordan and Ognyanova (n 25).

45 Katz, Jordan and Ognyanova (n 25); AP Christy Epsi, M Linita Christ and T Perinbanathan, 'Online Education during the Pandemic - A Hassle for Right to Education' II Indian Journal of Integrated Research in Law 1.

46 See Epsi, Christ and Perinbanathan (n 45).

47 Murphy, Malenczak and Ghajar (n 21).

48 See Murphy, Malenczak and Ghajar (n 21).

49 See Victoria Coleman (n 9). Hodges, C., Moore, S., Lockee., Trust., T & Bonds, A. (2020). The difference between emergency remote teaching and online learning. EDUCAUSE review, 26, 1-12, p.7. https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teachingand-online-learning

50 Pitambar Paudel (n 21); Muthuprasad and others (n 24)

51 D'Nita Andrews Graham, 'Benefits of Online Teaching for Face-to-Face Teaching at Historically Black Colleges and Universities' (2019) 23 Online Learning 144.

52 Pitambar Paudel (n 21); Muthuprasad and others (n 24).

53 Murphy, Malenczak and Ghajar (n 21). See Banerjee, M., & Brinckerhoff, L. C. (2002). Assessing student performance in distance education courses: Implications for testing accommodations for students with learning disabilities. Assessment for Effective Intervention, 27(3), 25-35.

54 Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23).

55 Murphy, Malenczak and Ghajar (n 21).

56 Murphy, Malenczak and Ghajar (n 21).

57 Murphy, Malenczak and Ghajar (n 21).

23 Especially after the COVID-19 pandemic, online versus in-person education has not been viewed as mutually exclusive. Conversely, recent studies have confirmed that a hybrid format can enhance the quality of the overall education offer. Indeed, a hybrid mode of delivery provides students with more flexibility and the adoption of digital technologies in presential classes fosters the level of interactivity of the lectures, and encourages students to engage in discussions, also through the use of chats.[58] Yet, fully online courses are on the rise, also in terms of the number of students enrolled compared with in-person courses.[59] This phenomenon is not to be explained uniquely as a consequence of the pandemic and therefore as a means to maintain continuity of learning activities.[60] Online courses are indeed also a means of neutralising the rising prices of in-person, third-level education, notably in terms of the cost of accommodation and commuting.[61]

24 This consideration is particularly interesting from a constitutional law perspective. Online education indeed has the capability to remove traditional barriers to access to higher education, especially for non-traditional or non-local students.[62] When referring to non-local students, we indicate not only students from remote parts of the same country but also students from other countries, if not continents, who do not have access to a specific course where they reside. Non-traditional students also include those who are already working full time and are willing to up-skill without losing their job,[63] as well as students with family or caring responsibilities.[64] Thanks to online education, more people can access higher education,[65] and this also increases the diversity and internationalisation of student cohorts with broader benefits in terms of the overall learning experience.[66] To conclude, remote teaching and learning may play an important role from a constitutional point of view in terms of fostering the equality of access to education, facilitating the development of one's personality, and increasing social inclusion and democratic participation. However, despite these evident advantages, the next section will explain why a recognition of a right to access education remotely also presents a series of constitutional drawbacks.

C. Towards a right to digital education?

25 A right to education is explicitly recognised in many national constitutions.[67] In most countries this right extends to non-citizens, generally referring to all persons or children.[68] In some states, in order to preserve the right to freedom of conscience and belief, national charters specify the freedom of parents to choose an educational system provided in accordance with specific religious or philosophical convictions.[69] The Irish Constitution also includes the freedom of parents to choose to impart an education in their home and recognises the primary role of the family as educator of the child.[70] In the Preamble to the Constitution of Indonesia the right to education is mentioned as one of the key goals of the establishment of the State.[71]

26 In relation to primary education, many constitutions refer to its compulsory character and establish that it must be provided by the state for free, also in line with international instruments, such as Article 26 of the Universal Declaration of Human Rights.[72] Many national charters also include provisions regarding equality of access to education.[73] This is generally articulated in terms of non-discrimination, but some constitutional instruments also refer to financial barriers to education. In addition to the provisions

58 Andrews Graham (n 42).

59 From a US point of view, see Andrews Graham (n 42); Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23).

60 Pitambar Paudel (n 21).

61 Pitambar Paudel (n 21); Murphy, Malenczak and Ghajar (n 21); Manijeh Sadeghi, 'A Shift from Classroom to Distance Learning: Advantages and Limitations' (2019) 4 ijree 80. See also [Tucker 2007].

62 Pitambar Paudel (n 21); Murphy, Malenczak and Ghajar (n 21).

63 Sadeghi (n 52).

64 Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23). See also Blakey, L. (2010). The proliferation, pitfalls, and power of online education. Cases on Distance Delivery and Learning Outcomes: Emerging Trends and Programs. Ed. Deb Gearhart. Hershey, PA: Information Science Reference, 167-189.

65 Murphy, Malenczak and Ghajar (n 21).

66 Sadeghi (n 52); Melody W. Alexander, Allen D. Truell, and Jensen J. Zhao (n 23).

67 See, e.g., Article 26 of the Constitution of Japan (1947); Article 34 of the Constitution of the Italian Republic; Article 18 of Sveriges Riksdag, The Constitution of Sweden (1974); Chapter III, Article 73(1) of the Constitution of the Portuguese Republic; Article 32(1) of the Constitution of Romania.

68 See, e.g., the Swedish and Italian constitutions.

69 See Article 2, Protocol 1of the Human Rights Act 1998 (UK); Article 42 of the Irish Constitution; Article 14(3) of the Charter of Fundamental Rights of the EU.

70 Article 42 of the Irish Constitution.

71 CSA Teddy Lesmana, Eva Elis and Siti Hamimah, 'Legal Protection of The Fulfillment of The Right To Education During COVID-19 Pandemic' (2022) 1 Libertas Law Journal 1.

72 See, e.g., Article 53(1)(b) of the Constitution of Kenya; Article 14 of the 1987 Constitution of the Republic of the Philippines.

73 See, e.g., Chapter 2, Section 18(1) of the Constitution of the Federal Republic of Nigeria.

related to the free character of primary education, some constitutions explicitly affirm the obligation of the State to provide grants to allow everyone to access education, with particular attention to disadvantaged categories.[74] Usually there is no reference to which level of education should be equally accessible, even if it is often implied that national charters refer to compulsory primary education. The Italian and Maltese constitutions enshrine a specific right to attain the highest levels of education, mandating the State to make this right effective through the provision of scholarships that should be allocated through competitive examination.[75] In line with Article 26 of the Universal Declaration of Human Rights, which refers to the equality of access to higher education on the basis of merit, the Italian constitution too explicitly refers to 'capable and deserving pupils'.[76]

27 Similarly to the US, in Germany a right to education is not explicitly enshrined in the text of the Grundgesetz. While the US Supreme Court in its 1973 *San Antonio v. Rodriguez* judgement failed to recognise a constitutional right to education,[77] the Bundesverfassungsgericht interestingly recognised for the first time a constitutional right to education for the first time in a series of cases related to school closures during the COVID-19 pandemic.[78] The Fourth Act to Protect the Public in the Event of an Epidemic Situation of National Significance of 23 April 2021 allowed the federal government, after approval of the Bundestag and the Bundesrat, to adopt measures to restrict the spread of COVID-19.[79] Through this act the German government introduced the so-called 'emergency brake' at federal level, which allowed for the adoption of restrictions and progressive closures of social activities and public services according to the gravity of the epidemiological level among the population. This mechanism led to the closure of schools in the country, a decision which led to a series of legal complaints arguing that a similar solution would infringe children's constitutional rights. In this context, the German federal constitutional court recognised a constitutional right to education, deriving it from a joint reading of Article 2, paragraph 2 of the German constitution, which establishes the right to the free development of one's personality, and Article 7, paragraph 1, which dictates that the German school system should be under the supervision of the State.[80] The Court held that the prohibition of in-person classes represented an impairment of this right, but was a justified and proportional restriction in light of the pandemic as the right to education had to be balanced with the right to life and health of other individuals.[81]

28 On 26 January 2022, the EU Commission published the proposal for a European Declaration on Digital Rights and Principles for the Digital Decade to be solemnly adopted together with the European Parliament and the Council by the end of summer 2022.[82] This document aims to act as a political manifesto illustrating the European way of articulating digital rights and encompasses principles deriving from the Charter of Fundamental Rights of the EU and developed over the years by the case-law of the Court of Justice of the EU.

29 The Declaration includes a provision on 'Digital education and skills':

> *Everyone has the right to education, training and lifelong learning and should be able to acquire all basic and advanced digital skills.*
>
> *We commit to:*
>
> *– promoting and supporting efforts to equip all education and training institutions with digital connectivity, infrastructure and tools,*
>
> *– supporting efforts that allow learners and teachers to acquire and share all necessary digital skills and competences to take an active part in the economy, society, and in democratic processes.*
>
> *– giving everyone the possibility to adjust to changes*

74 See, e.g., Article 34 of the Constitution of the Italian Republic; Article 14 of the Constitution of the Republic of the Philippines.

75 Article 34 of the Constitution of the Italian Republic; Article 11 of the Constitution of Malta.

76 Article 34 of the Constitution of the Italian Republic; our translation.

77 See Nicholas Tampio, 'The Misguided Quest for a Constitutional Right to Education' (2021) 102 Phi Delta Kappa 50.

78 See Jenny Gesley, 'Germany: Constitutional Court Rejects Challenge to Pandemic Prohibition of In-Person Classes; Finds Constitutional Right to Education' (*Library of Congress, Washington, D.C. 20540 USA*, 1 June 2022) <https://www.loc.gov/item/global-legal-monitor/2021-12-14/germany-constitutional-court-rejects-challenge-to-pandemic-prohibition-of-in-person-classes-finds-constitutional-right-to-education/>

79 Jenny Gesley, 'Germany: Uniform Federal COVID-19 "Emergency Brake" Introduced' (*Library of Congress, Washington, D.C. 20540 USA*, 2021) <https://www.loc.gov/item/global-legal-monitor/2021-04-27/germany-uniform-federal-covid-19-emergency-brake-introduced/>.

80 Also Article 26, para. 2 of the Universal Declaration of Human Rights links the right to education to the right to free development of one's personality.

81 Jenny Gesley (n 67).

82 European Commission, 'European Declaration on Digital Rights and Principles for the Digital Decade' (2022) COM(2022) 28 final.

brought by the digitalisation of work through up-skilling and re-skilling.

30 The Declaration does not enshrine a right to digital education in the sense of education delivered through digital means but stresses the importance of acquiring digital skills as a way to achieve a good level of education. More generally digital education and skills are seen as a necessary tool to foster inclusion and democratic participation in contemporary societies. In 2021, in its communication outlining the European strategy for the so-called 'digital decade', the EU Commission identified as its first cardinal point of a metaphoric digital compass a 'digitally skilled population and professionals'. According to this vision "If Europe is to 'master' its own destiny it must rely upon 'digitally empowered and capable citizens' and a skilled workforce".[83] In the report on the consultation that preceded the publication of the Declaration, it is apparent how the respondents highlighted the quintessential role of digital education and skills as a means to foster social inclusiveness in contemporary society.[84] In a 2022 document entitled *Digital rights and principles* published by the European Commission and Directorate General for Communications Networks, Content, and Technology, it is stressed that people should be put first in the conversation around digital technologies, and that protecting rights, supporting democracy and ensuring EU values is paramount. Significantly, the document also states that technology should unite not divide, and everyone "should have access to the internet, to digital skills".[85]

31 A German initiative was instead more explicit in terms of recognition of the importance of digital education as the right to access education through online means. Bitkom, the largest digital association in Germany regrouping over 2000 digital companies and 500 innovative tech start-ups, advocated alongside the German Pupils' Conference and the Federal Parents' Council for an enforceable right to attend school lessons and other State funded educational activities remotely.[86] Article 5(3) of the German Basic Law guarantees academic freedom, which also includes the choice of the teacher to choose the online medium of delivery.[87] However, the aim of this initiative would be to foster and guarantee equality among the German population in terms of access to education. The promoters argue that the overwhelming majority of German people are in favour, and that this measure will reduce disparities of access generated by the fact that, ending the pandemic, universities and individual lecturers retain the freedom to maintain online modes of delivery or not.[88] In this way, access to education will become less dependent on location, physical abilities, or socio-economic status. According to Bitkom, this right should encompass all levels of education, from primary to third-level and beyond, including adult and lifelong learning.[89]

32 From a constitutional point of view, the promoters argue that enshrining a new right to digital education in the Grundgesetz would not be necessary.[90] The proposed solution would be to add in the German Basic Law a specific reference to the 'digitalisation of the education system' to the areas where cooperation between German federal government and single Länder is envisaged. In this way, the federal government could establish uniform quality standards for the provision of the right to digital education, while states could be free to implement this right, also modifying their own constitutional and legislative provisions on the educational systems and offerings.

83 European Commission, 'Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions - 2030 Digital Compass: The European Way For The Digital Decade' 4.

84 European Commission, 'Commission Staff Working Document: Report On The Stakeholder Consultation And Engagement Activities - Accompanying The Document - Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions: Establishing A European Declaration On Digital Rights And Principles For The Digital Decade' SWD(2022) 14 final, 6.

85 European Commission and Directorate General for Communications Networks, Content and Technology, *Digital Rights and Principles* (Publications Office 2022) 1 <https://data.europa.eu/doi/10.2759/992165>.

86 Elisabeth Allmendinger and Daniel Breitinger, *Right to Digital Education* (Bitkom 2021) <https://www.bitkom.org/sites/main/files/2021-11/20211118-positionspapier-recht-auf-digitale-bildung.pdf>; Lisa Burgstedt and Elisabeth Allmendinger, 'Bitkom Demands Right to Digital Education' (15 November 2021) <https://www.bitkom.org/EN/List-and-detailpages/Press/Bitkom-demands-right-to-digital-education>.

87 See Michael Kerres, 'Against All Odds: Education in Germany Coping with COVID-19' (2020) 2 Postdigital Science and Education 690.

88 Lisa Burgstedt and Elisabeth Allmendinger, 'Bitkom Demands Right to Digital Education' (15 November 2021) <https://www.bitkom.org/EN/List-and-detailpages/Press/Bitkom-demands-right-to-digital-education>.

89 Elisabeth Allmendinger and Daniel Breitinger, *Right to Digital Education* (Bitkom 2021) <https://www.bitkom.org/sites/main/files/2021-11/20211118-positionspapier-recht-auf-digitale-bildung.pdf>.

90 Elisabeth Allmendinger and Daniel Breitinger, *Right to Digital Education* (Bitkom 2021) <https://www.bitkom.org/sites/main/files/2021-11/20211118-positionspapier-recht-auf-digitale-bildung.pdf>.

33 The pandemic has therefore not led to the recognition of a right to access education online. Legally compelling teachers and institutions to offer their courses at least in a hybrid way is a constitutionally debatable obligation as it would be hardly balanced against competing rights and interests. Firstly, from a right to privacy and data protection perspective, one should preserve the personal choice of teachers and students not to be recorded and prevent potential risks of surveillance and data commercialisation.[91] Secondly, from a socio-economic point of view, a similar right should be balanced against the risk of further increasing social inequalities that the access to digital technology by both students and institutions might pose.

34 In this regard, the pandemic has been instrumental in raising greater awareness of two prerequisites for the full enjoyment of the right to education in the digital society: the right to Internet access and to digital literacy. Indeed, a right to education, be it physical or online, cannot preclude from the solution of the issues related to Internet access inequalities, intended both as disparities in Internet connectivity and uneven possession of digital skills.[92] According to a UNICEF report, one third of children worldwide were unable to access online learning during the COVID-19 pandemic due to the lack of sufficient Internet connectivity.[93] The Report of the UN Special Rapporteur on the Right to Education, on the Right to Education in the Digital Age published in 2016, stated that in 2015, 34% of households in developing countries and only 7% of households in the least developed countries had internet access compared to more than 80% of households in developed countries, totalling a global average of only 43%.[94] The Rapporteur also highlighted that one of the major challenges is not only making the capability to access digital education more equal between the global North and South, but also making the capacity to supply or obtain such education more equal. However, one need not think of third world countries in relation to the digital divide; even in EU, bespoke TV shows were introduced to fill the gap in case of a lack of appropriate Internet connections in countries such as Portugal and Ireland.[95] As argued in the previous section, the digital divide today does not uniquely manifest itself in the form of a lack of an Internet connection, but especially in the context of digital education, it can derive from the use of mobile or shared devices or from the lack of appropriate digital skills.

35 This point was also addressed in the 2022 report of the UN Special Rapporteur on the right to education, Koumbou Boly Barry.[96] The COVID-19 pandemic has further highlighted existing inequalities in the context of access to digital education.[97] It is not only an issue of connectivity, but also a question of access to appropriate devices and possession of adequate digital skills, both from the point of view of students and from the perspective of teachers and institutions. Indeed, in its current state, digital education itself might paradoxically lead to more inequalities, due to the cost of accessing it.[98] McGuire, for example,

91 On this point, in relation to risks related to data processing in the context of online examinations, see Giorgia Bincoletto, 'E-Proctoring during Students' Exams: Emergency Remote Teaching at Stake Reports: Italy' (2021) 7 European Data Protection Law Review (EDPL) 586. In Germany, videoconferencing tools such as Zoom, whose companies are based in and transfer data to the US, were considered not to be GDPR-compliant, due to lack of adequate data protection safeguards in the country of destination as recognised by the recent case-law of the Court of Justice of the EU in the *Schrems I* and *II* cases; on this point see e.g. 'Hamburg DPA Warns Regional Senate to Discontinue Video Service Use over Data Transfers' <https://iapp.org/news/a/hamburg-dpa-warns-regional-senate-to-discontinue-zoom-use-over-data-transfers/>

92 See Jan van Dijk, *The Digital Divide* (Polity 2020). In September 2019, the Kerala High Court in India held that the right to Internet access was part of the fundamental right of both education and privacy under Article 21 of the Indian Constitution: see Mahir Haneef, Jaideep Shenoy and Kevin Mendonsa, 'Access to Internet Is Part of Right to Education and Privacy: Kerala HC' *The Times of India* (20 September 2019) <https://timesofindia.indiatimes.com/home/education/news/access-to-internet-is-part-of-right-to-education-and-privacy-kerala-hc/articleshow/71217746.cms>.

93 Georgina Diallo, 'COVID-19: At Least a Third of the World's Schoolchildren Unable to Access Remote Learning during School Closures, New Report Says' (*UNICEF*) <https://www.unicef.org/press-releases/covid-19-least-third-worlds-schoolchildren-unable-access-remote-learning-during>.

94 United Nations, 'Report of the Special Rapporteur on the Right to Education in the Digital Age' (2016) A/HRC/32/37.

95 See Dias-Trindade, S.; Correia, J.D.; Henriques, S. Ensino Remoto Emergencial Na Educação Básica Brasileira e Portuguesa: A Perspectiva Dos Docentes. Rev. Tempos Espaços Educ. 2020, 13, 1–23. For an example of a non-EU country, see Teddy Lesmana et al. (n 70).

96 Koumbou Boly Barry, 'A/HRC/50/32: Impact of the Digitalization of Education on the Right to Education - Report of the Special Rapporteur on the Right to Education' (United Nations 2022).

97 See also Peter McGuire, 'Digital Divide: How COVID-19 Is Deepening Inequality in Education' *The Irish Times* (19 January 2021) <https://www.irishtimes.com/news/education/digital-divide-how-covid-19-is-deepening-inequality-in-education-1.4450418>; Mengmeng Sun and others, 'Digital Divide in Online Education During the COVID-19 Pandemic: A Cosmetic Course From the View of the Regional Socioeconomic Distribution' (2022) 9 Frontiers in Public Health 796210.

98 Cf. United Nations, 'Report of the Special Rapporteur on the Right to Education in the Digital Age' (2016) A/HRC/32/37,

mentions the case of the Institute of Education, a private school in Dublin, Ireland, which launched a full-time virtual school costing €7,950 a year, on top of which one must add the cost of a digital device and a good broadband connection.[99] In contrast, public schools or institutions operating in disadvantaged settings might have less possibilities to access the appropriate equipment to offer high quality digital education, and, similarly, their students might lack adequate digital devices and an appropriate connectivity level.[100] For this reason, for example, the government of Singapore has pledged to provide all needy students with a laptop and Internet access support by the end of 2021.[101]

36 To conclude the first part of our analysis, one can affirm that the right to education in the digital society has become a broader right.[102] Together with these newly associated prerequisites—the right to Internet access and to digital literacy—the mission of the right to education to ensure social inclusion and democratic participation is magnified. The Brazilian Marco Civil da Internet, adopted in 2015, was a forerunner in this sense. Article 26 of the Statute reads:

The constitutional duty of the State in providing education for all includes learning for the safe, conscious and responsible use of the Internet as a tool for the exercise of citizenship, the promotion of culture and technological development.[103]

37 However, the business model characterising the contemporary technological society generates a series of problematic aspects related to the actors that should implement the right to education in the digital environment. Indeed, in line with recent trends of privatisation and commercialisation, the field of digital education too is mainly relinquished by public actors into the hands of private companies managing online platforms.

D. Online platforms and digital education

38 The space of digital education is increasingly privatised. From the first e-learning applications, digital education is now populated by private actors, primarily online platforms, that provide advanced instruments and tools,[104] or edtech, so that, consequently, this trend has been defined as the 'googlisation' of public education.[105]

39 This tendency is part of a broader picture typified by the rise of the Global Education Industry.[106] This space has led to the development of markets and services providing edtech such as learning resources, courses and digital tools.[107] Particularly, it is possible to observe Massive Open Online Courses ("MOOCs"), such as those from online learning platforms like Coursera, Edx and online course platforms such as Teachable and Podia, as well as platforms providing digital tools such as Google and Class Twist.

40 These services are not provided by local administrations, or generally public actors but they are designed and marketed primarily by global actors,[108] in particular, transnational private organisations that contribute to fulfilling the outsourcing demands of public administration.[109] The rush for digital education is also pushing towards competition among private actors. As observed by Van Dijk, platforms are competing with each other in education.[110] Big tech companies such as Google are also facing competition coming from other established education companies such as Pearson,[111] thus recalling a similar dynamic between platforms and media outlets.

where the Rapporteur affirms that the use of digital technologies in education runs the risk of eroding human values and education quality, particularly when it comes to fraudulently delivered degrees and diplomas.

99 Peter McGuire (n 86).

100 Peter McGuire (n 86).

101 See Teddy Lesmana et al. (n 70).

102 See Nina Ranieri and Stephane Hilda Barbosa Lima, 'Digital Literacy Rights and Online Risks: Which Has the Upper Hand?' (2018) 14 International Journal for Education Law and Policy (IJELP) 27.

103 'Marco Civil Da Internet, Lei No. 12.965, de 23 de Abril de 2014.' s 26 <http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2014/lei/l12965.htm>

104 Tara Brabazon, *The University of Google. Education in the (Post) Information Age* (Routledge 2007).

105 Natasha Singer, 'How Google Took Over the Classroom' The New York Times (13 May 2017) <https://www.nytimes.com/2017/05/13/technology/google-education-chromebooks-schools.html>.

106 Antoni Verger and others, 'The Emergence and Structuring of the Global Education Industry: Towards an Analytical Framework' in Antoni Verger and others, *World Yearbook of Education 2016* (Routledge 2016).

107 Patricia Burch, *Hidden Markets: The New Education Privatization* (Routledge 2009).

108 Antoni Verger and others, *The Privatization of Education: A Political Economy of Global Education Reform* (Teachers College Press 2016).

109 Stephen J. Bell, *Global Education Inc. New Policy Networks and the Neoliberal Imaginary* (Routledge 2012).

110 Jose Van Dijck, 'Education', in Jose Van Dijck and others, *The Platform Society* (Oxford University Press 2018).

111 Ben Williamson, 'Digital Education Governance: Data Visualization, Predictive Analytics, and 'Real-Time' Policy Instruments' (2016) 31(2) Journal of Education Policy 123.

41 Educational institutions are increasingly relying on online platforms for cloud services and courses, thus raising questions about the values that these actors convey through their technologies. Together with the platformisation of education through online courses, digital tools are increasingly provided by the private sector, thus leading education institutions to outsource decisions about how to structure this service and raising questions about the alignment of private interests with the public interest in digital education.[112]

42 Predominantly with regard to the big tech platforms providing digital tools, the pandemic has confirmed that these actors are critical pieces of the puzzle of daily lives, and their role in providing digital services is likely to extend considering their economic and political power. Platforms such as Zoom or Microsoft Teams have allowed millions of students to study and regularly attend classes and seminars.[113] These platforms have not only supported students but also educators that have worked and conducted educational activities at a distance. Even if online platforms have been observed as playing a critical role in ensuring the stability and continuity of public services in the digital age, these actors have been increasingly called to make decisions that may be not aligned with public interests. Platforms conduct their business by primarily focusing their activities on maximising profits, and, as private actors, they are not required to pursue the public interest in the absence of any regulation.

43 Platforms are incentivised not only to sell software and subscription models but also to collect data, leading to a process of datafication,[114] as demonstrated by the corporate narratives that aim to naturalise datafication in education.[115] On the one hand, this information is relevant for improving digital tools and providing tailored educational services including predictive analysis,[116] as underlined by the case of AltSchool.[117] On the other hand, the increasing reliance on digital tools also raises questions about the use of this information[118] and by platforms which can access large amounts of information that was primarily under the control of public actors, even if not fully processed or analysed for public purposes. The massive collection and extraction of data from edtech such as ClassDojo could foster innovation in education but also expand the role of data,[119] thus exposing issues related to consent, especially of minors, in addition to the ownership of data by public or private actors.

44 This environment contributes to defining a pedagogy of digital education in the age of online platforms.[120] The data collected by edtech can be used to classify students and provide clusters that assess their skills.[121] In this case, education is not mediated by teachers and educators but by machines, while educators play the role of surveillant consumers.[122] For instance, in the case of primary education, the use of a certain technological architecture can lead to the creation of dependency and habituation to certain software and technologies, thus turning students into potential customers.

45 Moreover, the expansion of digital education also leads to a shift in the availability of more online courses and distance education that, in some areas, could provide a justification for governments to reduce their budget in education. This is particularly problematic for smaller academic institutions which could suffer not only from public budget cuts, but also from the increasing competition of other educational institutions that aim to attract new students by offering new digital services in education coming from online platforms. This situation strengthens trends in education towards the consumerisation of knowledge and academic capitalism.[123]

46 Digital education requires public actors to invest

112 See Angiolini and others (n 4).

113 Trevor Norris, 'Educational Futures after COVID-19: Big Tech and Pandemic Profiteering versus Education for Democracy' (2022) Policy Futures in Education.

114 Juliane Jarke and Andreas Breiter (eds), *The Datafication of Education* (Routledge 2019).

115 Jun Yu and Nick Couldry, 'Education as a Domain of Natural Data Extraction: Analysing Corporate Discourse about Educational Tracking' (2022) 25(1) Information, Communication & Society 127.

116 Rose Luckin and others, 'Intelligence Unleashed: An argument for AI in Education' UCL Knowledge Lab (2016) <https://discovery.ucl.ac.uk/id/eprint/1475756/>.

117 Rebecca Mead, 'Learn Different. Silicon Valley Disrupts Education' The New Yorker (7 March 2016) <https://www.newyorker.com/magazine/2016/03/07/altschools-disrupted-education>

118 Sam Sellar and Anna Hogan, 'Pearson 2025: Transforming Teaching and Privatising Education Data' Education International Research (April 2019) <https://issuu.com/educationinternational/ docs/2019_ei_gr_essay_pearson2025_eng_24>.

119 Ben Williamson, 'Learning in the 'Platform Society': Disassembling an Educational Data Assemblage' (2017) 98(1) Research in Education 59; see also Angiolini and others (n 4).

120 Carlo Perrotta and others, 'Automation, APIs and the Distributed Labour of Platform Pedagogies in Google Classroom' (2021) 62(1) Critical Studies in Education 97.

121 Ben Williamson, 'Governing Software: Networks, Databases and Algorithmic Power in the Digital Governance of Public Education' (2015) 40(1) Learning, Media & Technology 83.

122 Priya C. Kumar and others, 'The Platformization of the Classroom: Teachers as Surveillant Consumers' (2019) 17(1/2) Surveillance & Society 145.

123 Bob Jessop, 'On Academic Capitalism' (2018) 12(1) Critical Policy Studies 104.

resources, and this need is another justification to rely on the private sector as an engine to innovate education in the digital age. As observed by the special Rapporteur on the right to education, "the technological infrastructure, along with the software, the technical support, educator training, and maintenance, requires significant financial support from the State. Digital devices are not always affordable in the developing world, neither to students nor to public educational establishments".[124] Despite the relevance of edtech, the predominance of platforms in digital education creates a form of reliance on the private sector in terms of public services.

47 The pandemic has underlined how public actors have failed to offer alternatives, but rather, they have decided to provide public services through the private sector. This situation is not new, but it is the result of a larger path of delegating to online platforms the role of enforcers of public policies online.[125] Particularly, crises such as a global pandemic are the perfect engine of disaster capitalism.[126] In these cases, the private sector finds it profitable to provide almost free market solutions to solve public challenges. The pandemic has also provided other examples of this situation such as in the case of contact tracing.[127] In that circumstance, public actors have not only failed to provide a new technological infrastructure to track the virus but also encountered citizens' resistance against threats of public surveillance. This case also explains why states can find more comfortable to rely on the private sector rather than directly engage with activities triggering their accountability.

48 Within this framework, public actors are no longer the only governors of education. The design and structure of tools for education is increasingly left to platforms that provide rules and standards of digital education. Platforms rely on terms of services that define contractual standards that *de facto* delineate the rules of digital education. Platforms rely on terms of service that are primarily boilerplate agreements based on standard contractual terms that are usually included in other agreements.[128] As underlined by the pandemic, not only users but also public administrations have limited negotiating power in this area. As adhering parties, the public sector cannot do much more than decide whether to accept conditions pre-established by online platforms.

49 As Jaffe underlined in the first half of the last century, contract law could be considered as a delegation of law-making powers to private parties.[129] Terms of services thus compete with the traditional way in which individuals conceive legal norms and protection as an expression of public power. In other words, within the constraints imposed by external forces (such as law, business interests, user expectations, etc.) platforms use these contractual instruments to unilaterally govern digital spaces.[130] This power is often exercised with a lack of transparency and accountability, especially with regards to the applicable legal standards.[131] This situation is problematic since terms of service as contracts tend to compete with public safeguards.[132]

50 Furthermore, platforms can enforce contractual clauses directly without the need to rely on a public mechanism, such as a judicial order or the intervention of law enforcement authorities. If certain conduct is present on these platforms that is considered not aligned with the terms of service, platforms can autonomously decide to block or limit access to a digital classroom or to a meeting. This technological asymmetry is the grounding difference from traditional offline boilerplate contracts. The enforcement of the latter is dependent on the role of the public authority in ensuring the respect of the rights and obligations which the parties have

124 Report of the Special Rapporteur on the right to education (6 April 2016) <https://www.right-to-education.org/sites/right-to-education.org/files/resource-attachments/Report_UNSRRTE_HRC_the_Right _to_Education_in_the_Digital_Age_2016_En.pdf>.

125 Giovanni De Gregorio, 'From Constitutional Freedoms to the Power of Online Platforms: Protecting Fundamental Rights Online in the Algorithmic Society' 11(2) European Journal of Legal Studies 65.

126 Naomi Klein, *The Shock Doctrine. The Rise of Disaster Capitalism* (Penguin 2008).

127 Oreste Pollicino, 'Contact Tracing and COVID-19: Commission and Member States Agree on Specifications' EU Law Live (16 June 2020) <https://eulawlive.com/contact-tracing-and-covid-19-commission-and-member-states-agree-on-specifications/>.

128 Peter Zumbansen, 'The Law of Society: Governance Through Contract' (2007) 14(1) Indiana Journal of Global Legal Studies 191; Lee A Bygrave, Internet Governance by Contract (Oxford University Press 2015); Woodrow Hartzog, 'Website Design as Contract' (2011) 60(6) American University Law Review 1635

129 Louis Jaffe, 'Law Making by Private Groups' (1937) 51 Harvard Law Review 201.

130 Cf. Edoardo Celeste, 'Terms of Service and Bills of Rights: New Mechanisms of Constitutionalisation in the Social Media Environment?' (2019) 33 International Review of Law, Computers & Technology 122.

131 Paul S Berman, 'Cyberspace and the State Action Debate: The Cultural Value of Applying Constitutional Norms to "Private" Regulation' (2000) 71 University of Colorado Law Review 1263; see also Angiolini and others (n 4).

132 Ellen Wauters, Eva Lievens and Peggy Valcke, 'Towards a Better Protection of Social Media Users: A Legal Perspective on the Terms of Use of Social Networking Sites' (2014) 22 International Journal of Law & Information Technology 254.

agreed upon. Here, the code—or the platform's internal systems—assumes the function of the law,[133] and the network architecture becomes a modality of regulation.[134]

51 Within this framework, the role of public actors is ensuring the right to education in the digital age. The trends towards the privatisation of digital education leads one to wonder how public actors can ensure the right to education as a fundamental right in the digital age.

E. Towards an EU regulatory framework for digital education?

52 The consolidation of the digital age has amplified the challenges to ensure education as a public service. Education has long been considered one of the critical areas for constitutional democracies. In recent decades, governments have invested significant resources in building schools and universities, providing materials and ensuring that teachers can autonomously define the scope of their activities.

53 In the digital age, education is primarily connected to the possibility to access the Internet. As underlined in the first part of this work, technology can indeed provide new opportunities to students and educators but also raises questions about resources and access, i.e., equality. Digital education can only be ensured if it is possible to access the Internet, and this cannot always be the case even in countries with consolidated systems of public education. This situation also enlarges the gap between public and private schools, considering that private schools could afford better technologies for digital education. The pandemic has confirmed the need for higher digital capacity but also underlined the inequality in digital education, particularly regarding training and access to tools and resources. This gap also underlines that the right to education is primarily connected to equality and the role of the State in providing tools and resources to ensure equal access to education that is not only formal but also substantive by considering different contexts such as disadvantaged geographical areas.

54 The main question is not only about whether Internet access can be considered a human or fundamental right as recognised by constitutional charters and whether, once this connotation is recognised, access to the Internet is an autonomous or functional right to exercise other rights such as freedom of expression or economic initiative.[135] The point is also about the effective protection of this right as a matter of equality. Regardless of the qualification of Internet access, it would be even more important to define upstream the role of the public actor in guaranteeing citizens access to a network to participate in the information society . This effort would also require providing access to a high-quality connection to the Internet. Granting Internet access with a low degree of connection could not be enough to ensure a meaningful participation in the digital age, thus frustrating the exercise of fundamental rights, including education.

55 In addition, the challenges for public actors are also related to the actors providing digital services in education. The European Court of Human Rights stressed the connection of education with other human rights,[136] primarily the right to respect for private and family life,[137] freedom of thought, conscience and religion, and freedom of expression.[138] In the European Union, education can be considered an important part of the European constitutional project. The European Council has stressed that "the human right to quality and inclusive education, training and lifelong learning, as set out in the European Pillar of Social Rights and protected by the Charter of Fundamental Rights of the European Union, must be guaranteed at all times".[139] These values are linked to the constitutional values of the European Treaties,[140] and the right to education is enshrined in the Charter of Fundamental Rights of the European Union.[141]

56 Nonetheless, the provision of digital tools by public

133 Reminiscent of the core argument in Lawrence Lessig, Code and Other Laws of the Cyberspace: Version 2.0 (Basic Books 2006).

134 Joel Reidenberg, 'Lex Informatica: The Formulation of Information Policy Rules through Technology' (1997-1998) 76 Texas Law Review 553; cf. Edoardo Celeste, *Digital Constitutionalism: The Role of Internet Bills of Rights* (Routledge 2022) ch 4.

135 Oreste Pollicino, 'The Right to Internet Access: Quid Iuris?' (2020) in A. Von Arnauld, K. Von der Decken, & M. Susi (eds), *The Cambridge Handbook of New Human Rights: Recognition, Novelty, Rhetoric* (Cambridge University Press 2020); Stephen Tully, 'A Human Right to Access the Internet? Problems and Prospects' (2014) 14(2) Human Rights Law Review 175; Panel De Hert and Darius Kloza, 'Internet (access) as a new fundamental right. Inflating the current rights framework?' (2012) 3(3) European Journal of Law and Technology; Nicola Lucchi, 'Freedom of Expression and the Right to Internet Access', in Monroe E. Price and others (eds), *Routledge Handbook of Media Law* (Routledge 2013).

136 Folgerø and Others v. Norway (2007).

137 Catan and Others v. the Republic of Moldova and Russia (2012); Enver Sahin v. Turkey (2018).

138 Kjeldsen, Busk Madsen and Pedersen v. Denmark (1976)

139 Council conclusions on digital education in Europe's knowledge societies (2020).

140 Treaty of the European Union, Art 2.

141 Charter, Art 14.

actors could interfere with fundamental rights, particularly the right to privacy, and the protection of minors. Already in 2011, the ECtHR has underlined how surveillance technologies implemented in a school interferes with the right to privacy and family life. This situation leads to striking a balance between the protection of legitimate interests such as security and individual human rights.[142] This approach is even more relevant in the age of edtech and, more generally, algorithmic technologies implemented for surveillance purposes.

57 However, these cases provide only some examples of the challenges that public actors face to ensure the right to digital education. The privatisation of digital education questions the role of public actors in ensuring the protection of public values in education and limiting the dependency of public services from private actors. The privatisation of this sector clashes with the idea of education as a public service that states have an obligation to ensure and support, not only under human rights law but also from a constitutional law perspective. As underlined by the ECtHR, the right to education is not absolute, and that "it by its very nature calls for regulation by the State".[143] This European approach leads one to wonder about the role of positive obligation of the State to protect human rights,[144] or the horizontal effect of fundamental right[145] in promoting a regulatory approach to ensure that the increasing privatisation of digital education does not affect fundamental rights in the digital age.

58 At the moment, there is no comprehensive legal framework addressing edtech or platforms delivering digital education services, even if the European Union has introduced a political agenda to address this area. The Digital Education Action Plan (2021–2027) launched by the European Union aims to adapt education in the EU to the digital age,[146] and it is part of the Commission's priority to create "A Europe fit for the Digital Age" and achieve the objectives of the "Next Generation EU" programme.[147] Broadly, this is also a pillar contributing to the European Skills Agenda,[148] the European Social Pillar Action Plan,[149] and the 2030 Digital Compass: the European way for the Digital Decade.[150] Still, this political framework represents only a preliminary step to solving the challenges raised by the increasing dependency of the public sector on private online platforms in digital education.

59 In the EU, a series of legal instruments applies to digital education. The framework of European data protection law, particularly the GDPR,[151] provides rules that limit the possibility for online platforms to process personal data collected through edtech. Even if not conceived to address the challenges of digital education, the general principles of the GDPR or the limits to implement automated decision-making technologies are only two examples of how data protection law applies to the framework of digital education.[152] Likewise, the launch of the AI Act will restrict the possibility to develop artificial intelligence technologies that can distort human behaviour, through physical or psychological harms.[153] The first version of the AI Act already prohibited the deployment of subliminal componens, individuals cannot perceive or exploit vulnerabilities of children and people due to their age, physical or mental incapacities.[154] Furthermore, providers are required to consider in their risk

142 Antović and Mirković v. Montenegro (2011).

143 The Belgian linguistic case (1968); Golder v. the United Kingdom (1975); Fayed v. the United Kingdom (1994).

144 Vladislava Stoyanova, 'Fault, knowledge and risk within the framework of positive obligations under the European Convention on Human Rights' (2020) 33(3) Leiden Journal of International Law 601.

145 Eleni Frantziou, *The Horizontal Effect of Fundamental Rights in the European Union. A Constitutional Analysis* (Oxford University Press 2019).

146 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Digital Education Action Plan 2021-2027 COM(2020) 624 final.

147 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Shaping Europe's digital future COM(2020) 67 final.

148 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Europe's moment: Repair and Prepare for the Next Generation COM(2020) 456 final.

149 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Pillar of Social Rights Action Plan COM(2021) 102 final.

150 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, European Skills Agenda for sustainable competitiveness, social fairness and resilience COM(2020) 274 final.

151 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC.

152 Ibid, Art 6, 22. See also Edoardo Celeste and Giovanni De Gregorio, 'Digital Humanism: The Constitutional Message of the GDPR' (2022) 3 Global Privacy Law Review 4.

153 Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts.

154 Ibid, Art 5.

assessment whether the high-risk AI system is likely to be accessed by or have an impact on children.[155]

60 The DSA is another critical instrument to increase the accountability of online platforms.[156] It aims to modernize the rules governing online intermediaries while remaining rooted in their previous regime based on safe harbour provisions limiting the liability of these actors. The DSA promises to maintain the regulatory framework envisaged by the e-Commerce Directive,[157] while introducing a new set of procedures aiming to increase the level of accountability in content moderation. For instance, the DSA introduces due diligence and transparency requirements while providing redress mechanisms for users. In other words, without regulating content, it requires that online platforms comply with procedural safeguards. For instance, it stipulates procedures for the notice of take down and removal of content,[158] while also requiring platforms to provide a reason when removing content.[159] In addition, the DMA aims to limit the gatekeeping role of online platforms.[160] The DMA aims to mitigate the power to impose unfair conditions (e.g., pre-installed applications) that could limit access to digital services.

61 Moreover, the Union is also developing a European public cloud project, GAIA-X, launched in June 2020. This project has been a direct reaction to the power of tech giants based in the US and China to reduce the dependency of the Union.[161] This project aims to provide a common platform based on European standards that can also help public administration to emancipate itself from the use of services that are primarily driven by the private sector. The introduction of a European public cloud would play a critical role in providing a public infrastructure that increases control on public services in the digital age.

62 This fragmented framework raises questions about whether a more coherent regulatory instrument would be necessary to address the challenges of digital education. The European Union seems to provide a preliminary legal framework to deal with the power of online platforms and the use of artificial intelligence technologies in education. Still, a new regulatory framework defining the responsibilities of online platforms in digital education could contribute to ensuring that the right to education in the digital age is not only based on market logic but also on constitutional values.

F. Conclusion

63 The COVID-19 pandemic prompted a forced acceleration in the delivery of education online. Remote teaching and learning offer both significant advantages and disadvantages from a socio-economic and pedagogical perspective. The current transition to the new post-COVID 'normality' offers the opportunity to reflect on whether a right to access education online is emerging.

64 A right to education is currently enshrined in many international law instruments and national constitutions. However, existing constitutional instruments, most of which were drafted in an analogue world, are silent on whether there should be an obligation to offer education in the most accessible way possible, including through digital means. Conversely, as illustrated in section C, some texts provide for the duty of the state to guarantee equality of access for all students by offering financial aid. In other words, there is a constitutional obligation to put students in suitable conditions to access education, regardless of their socio-economic background, and not, conversely, a duty to guarantee that education should reach as many students as possible.

65 Notwithstanding the appeal that enshrining a new right to access education online could generate at first sight, given the evident advantages of making educational offers closer to many categories of students, the recognition of a similar right presents a series of constitutional drawbacks. First of all, due to the existence of competing fundamental rights, such as the right to privacy and data protection of both students and teachers, which might be put at risk of increased commercialisation of

155 bid, Art 9.

156 Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act) .

157 Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market.

158 Digital Services Act, Art 14.

159 Ibid, Art 15.

160 Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act) .

161 Andrea Renda, 'Making the digital economy "fit for Europe"' (2020) 26(5-6) European Law Journal 345; Edoardo Celeste and Federico Fabbrini, 'Competing Jurisdictions: Data Privacy Across the Borders' in Grace Fox, Theo Lynn and Lisa van der Werff (eds), *Data Privacy and Trust in Cloud Computing* (Palgrave 2020); Edoardo Celeste, 'Digital Sovereignty in the EU: Challenges and Future Perspectives' in Federico Fabbrini, Edoardo Celeste and John Quinn (eds), *Data Protection Beyond Borders: Transatlantic Perspectives on Extraterritoriality and Sovereignty* (Hart 2021).

student data and potential surveillance of teachers. Secondly, because a similar right would amplify existing social inequalities whose elimination represents a fundamental objective of the right to education in general. Access to digital education indeed presupposes significant investments in infrastructures and training by education institutions, which risks enlarging the gap between well- and underfunded establishments. Similarly, online education could disadvantage students with a lower level of digital skills and those lacking the necessary conditions to access good quality broadband and digital devices.

66 There is now greater awareness of these issues, which have emerged clearly during the pandemic, due to the forced transition to online teaching and learning. Indeed, it is possible to affirm that the global emergency that we all lived through has made even more visible the necessity to recognise the broadening of the perimeters of the right to education in the digital age. One cannot achieve full social inclusion and foster democratic participation, which are two of the quintessential objectives of the right to education in general, if individuals do not dispose of sufficient digital skills and an adequate connection to the Internet. In this sense, it is possible to argue that a right to digital education should now be recognised as a component of the right to quality education in the digital age. This right should be conceived in terms of possibility for the individual to access educational—or more generally, educative—materials online as well as a right to acquire sufficient digital skills to do so and to fully enjoy e-government and e-democracy tools of civic participation.

67 On the path towards a full implementation of this enlarged right to education in the digital society lies a structural obstacle that characterises the digital economy at large: digital education has been left in the hands of private actors whose main objective is the pursuit of economic gains. Especially with the advent of the pandemic, edtech has been seen as a profitable business by many tech companies, as it allows them to generate subscription revenues as well as to collect and exploit huge amounts of data for machine learning and advertising purposes. Commercial exploitation of edtech is part of a broader trend of datafication, consumerisation, and platformisation of our daily lives.

68 The conundrum related to this phenomenon in the specific sector of education derives from the apparent conflict between public objectives of digital education and private interests of online platforms. Regrettably, this paper shows how a coherent regulatory framework for digital education is lacking. At an EU level, existing data protection rules are certainly helpful to limit the risk of data misuse by online platforms, and a growing body of regulations recently adopted will hopefully further delimit the power imbalance between tech companies and users. Yet, in the meantime, platforms' terms of service shape the rules of digital education. Also in this regard, one of the most effective forms of protection against potential risks of fundamental rights infringements online, lies in the capability of individuals to understand current threats and how to exercise their constitutional entitlements. As Nelson Mandela said, "education is the most powerful weapon you can use to change the world".[162]

162 Nelson Madela, speech, Madison Park High School, Boston, 23 June 1990, in Susan Ratcliffe (ed), *Oxford Essential Quotations* (2018) <https://doi.org/10.1093/acref/9780191866692.001.0001> accessed 23 September 2020.

Online Learning as a Commons:

Supporting students' data protection preferences through a collaborative digital environment

by **Janis Wong, Lea Racine, Tristan Henderson, and Kirstie Ball ***

Abstract: The COVID-19 pandemic has accelerated the adoption of technology in education, where higher education institutions had to implement online teaching models overnight, without time for due consideration of appropriate data protection practices or impact assessments. The General Data Protection Regulation (GDPR) attempts to limit the negative effects caused by the digitisation of education such as lecture capture, tutorial recording, and education surveillance. The GDPR, however, may be insufficient in removing the power imbalance between students and their institutions, where students as data subjects have no choice but to accept their institutions' terms or be locked out of academia. To increase protection of students' autonomy, we propose an online learning data protection-focused data commons to support their agency with regards to protecting their personal data. We explain how a commons could apply to online learning, then develop and test an application to put the commons into practice. From our results, we find that although over 50% of students trust universities and staff with their online learning personal data, more transparency on institutional policies and data protection rights can support higher online learning participation rates, help mitigate potential data protection harms, and give students agency over their personal data beyond consent. We conclude that further research is required to move away from consent as the lawful basis for tutorial recordings, support inclusive online learning pedagogies, and balance the implementation of educational technologies with the need to deliver online learning to benefit students' academic experience.

Keywords: online learning, commons, data commons, data protection and education

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A. Introduction

1 Education has long been influenced by technology with students, staff, and institutions adopting new tools to enhance the academic experience, and more innovative and collaborative ways of learning. Due to the COVID-19 pandemic, the adoption of online learning technologies became mandatory as university campuses closed and education shifted from physical classrooms to digital ones. While tools such as lecture recordings and examination monitoring can help make education more accessible and equitable by enabling online teaching exams, they may also hamper students' learning experiences, particularly where they are not able to opt out of such practices. Further, there are questions as to whether these technologies are effective in enabling equitable access and desirable education outcomes. By adopting these technologies, more student personal data are being collected, stored, analysed, and shared. To ensure that these data are best protected, higher education institutions

("HEIs") have to follow data protection regulations such as the General Data Protection Regulation ("GDPR"),[1] and have data protection officers, fair use policies, and conduct a data protection impact assessment where appropriate. However, the power imbalance between students as data subjects and their institutions could weaken the data protection options available, particularly where not agreeing to the use of certain technologies can lead to being locked out of academic and career opportunities. As data collection of the teaching process in HEIs increases, it is important to provide data subjects with the option to improve their understanding of who, what, and how their personal data are being used and ways in which they can opt out. This includes helping them to understand their data protection rights and support them in exercising those rights without negatively affecting their ability to participate in online learning.

2 In this paper, we propose a socio-technical data protection-focused data commons for online learning to support students' agency in protecting their personal data. The commons aims to provide data subjects with the resources to improve their understanding of how their institution manages their data and what data protection rights they have. It also enables data subjects to have conversations with other students or experts about any questions or concerns. Ultimately, it limits the chilling effects of online learning monitoring through enhancing the exercising of data protection rights. The paper proceeds as follows: First, we outline the existing research on online learning and the application of technologies in education, focusing on learning analytics and privacy both pre- and during the COVID-19 pandemic (Section B). Next, in Section C, we examine how a commons could help support data subjects in protecting their personal data, exploring how a data protection-focused data commons could apply to online learning and how our study will assess this (Section D). In Section E, we develop an application that puts the commons into practice and conduct a study to explore the application's usefulness for supporting students' agency. We share our findings in Section F. Finally, we discuss areas of future work in Section G and explore how a data protection-focused data commons can be adapted further.

B. Background

I. Education data and online learning

3 Technology and education have long been integrated. From e-mails to using laptops in the classroom, technology has allowed for more flexible and inclusive ways of learning while introducing new methods for collaboration and information sharing.[2] However, technological developments have also increased the responsibilities that institutions have over student data, expanding and blurring the lines of what education data entails. Borgman describes education data as "grey data", where teaching, learning, and administration activities have fallen within the remit of data collected by institutions.[3] As a result, Borgman argues that it has become more difficult to assess the risks and responsibilities associated with data collection, where the privacy frontier for institutions spans open access practices, uses and misuses of data, and curating data for privacy protection.

4 The digitalisation of education has resulted in greater data collection, storage, and analysis through learning analytics. While learning analytics can help institutions understand student engagement, improve teaching, and the overall student experience,[4] they have similar characteristics to big data and so have similar data protection concerns, particularly regarding relationships between universities and students.[5] As a result, in considering a data

* Janis Wong works at the School of Computer Science, University of St Andrews and the The Alan Turing Institute, United Kingdom; Lea Racine and Tristan Henderson work at the School of Computer Science, University of St Andrews and Kirstie Ball works at the School of Management, University of St Andrews.

1 European Union, 'Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)' (2016) L119 Official Journal of the European Union 1 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2016:119:TOC.

2 Neil Gordon, 'Flexible Pedagogies: technology-enhanced learning' (2014) 01 Advance Higher Education 1.

3 Christine L Borgman, 'Open Data, Grey Data, and Stewardship: Universities at the Privacy Frontier'(2018) 33(2) Berkeley Technology Law Journal 365.

4 JISC, 'Learning analytics' (15 June 2021) https://www.jisc.ac.uk/learning-analytics accessed 19 June 2022.

5 Andrew Cormack, 'A Data Protection Framework for

protection framework for governing learning analytics, Cormack argues that there should be two key stages for protecting student data.[6] Firstly, there should be greater ethical care on the discovery of significant patterns and must include safeguards for individuals' interests and rights. Secondly, applying those patterns to meet the needs of individuals requires their informed consent or a contractual agreement. Prinsloo and Slade further create a framework to support learner agency,[7] recognising that it is impossible for individuals to comprehend the scope of data that might be collected, analysed, and used and its implications when it comes to learning analytics.[8] This framework includes contextual integrity of privacy and data, student agency and privacy self-management, rethinking consent, and employing nudges. Similarly, Sclater develops a learning analytics code of practice, with a methodology for setting up appropriate governance structures, developing a taxonomy of the issues, drafting the code, consulting stakeholders, and embedding it within institutions.[9] Models that incorporate privacy-by-design have also been considered essential to learning analytics systems development, where the learning analytics design space can address issues of privacy, identify means to control data, and support trust between education stakeholders.[10]

5 As education technology becomes more commonplace, HEIs have to identify and manage the challenges around the increase of data collection, analysis, and management. Given that the authors are based in the UK, we contextualise our assessment of the online learning landscape in the country. For example, organisations such as the Joint Information Systems Committee ("JISC") and the Office for Students ("OfS") have provided guidance and supported the creation of education digital infrastructure, services, and learning providers. These include reports on learning analytics,[11] lecture recordings,[12] and supporting students with disabilities.[13] HEIs also employ data protection officers and research archivists to meet regulatory requirements.

1. COVID-19 and the impact on education

6 During the COVID-19 pandemic, the digitalisation of higher education increased significantly, with many institutions moving all of their teaching, research, and administration services online. This required students, staff, and academic institutions to rely on technologies and platforms to deliver classes and record sessions. Although some in-person sessions have resumed, blended or hybrid forms of learning remain.[14] While HEIs have done their best to ensure that online learning is conducted in a safe and secure manner, the digitisation of higher education has resulted in more data-related harms. From 'Zoom-bombing' (where a person joins a Zoom meeting uninvited and aims to disrupt the session)[15] to monitoring,[16] students have been negatively impacted by these new

Learning Analytics' (2016) 3 Journal of Learning Analytics 91.

6 Ibid.

7 Paul Prinsloo and Sharon Slade, 'Student vulnerability, agency, and learning analytics: An exploration' (2016) 3 Journal of Learning Analytics 159.

8 Paul Prinsloo and Sharon Slade, 'Student Consent in Learning Analytics: The Devil in the Details?'in Jaime Lester and others (eds), Learning Analytics in Higher Education: Current Innovations, Future Potential, and Practical Applications (Routledge July 2018) http://oro.open.ac.uk/55361/.

9 Niall Sclater, 'Developing a Code of Practice for Learning Analytics' (2016) 3 Journal of Learning Analytics 16.

10 Tore Hoel and Weiqin Chen, 'Privacy-Driven Design of Learning Analytics Applications: Exploring the Design Space of Solutions for Data Sharing and Interoperability' (2016) 3 Journal of Learning Analytics 139.

11 Niall Sclater and Paul Bailey, 'Code of practice for learning analytics' (15 August 2018) https://www.jisc.ac.uk/guides/code-of-practice-for-learning-analytics accessed 19 June 2022.

12 JISC, 'Recording lectures: legal considerations' (29 July 2020) https://www.jisc.ac.uk/guides/recording-lectures-legal-considerations accessed 19 June 2022.

13 Office for Students, 'Beyond the bare minimum: Are universities and colleges doing enough for disabled students?' (18 October 2019) https://www.officeforstudents.org.uk/publications/beyond-the-bare-minimum-are-universities-and-colleges-doing-enough-for-disabled-students/ accessed 19 June 2022.

14 Arthi Nachiappan and Constance Kampfner, 'Just three top universities offer full in-person teaching this term' (20 September 2021) https://www.thetimes.co.uk/article/three-top-universities-offer-full- in- person- teaching-this- term-sheffield-sussex-southampton-covid-wwskqpcxj accessed 19 June 2022.

15 BBC, ''Zoombombing' targeted with new version of app' (23 April 2020) https://www.bbc.co.uk/news/business-52392084 accessed 19 June 2022.

16 Chris Stokel-Walker, 'Universities are using surveillance software to spy on students' (15 October 2020) https://www.wired.co.uk/article/university-covid-learning-student-monitoring accessed 19 June 2022.

technologies, resulting in potential harms that impact their lives beyond academia.

2. Data protection concerns in context of online learning

7 Education and online learning fall under the remit of the data protection regulations such as the GDPR and the UK's Data Protection Act 2018,[17] where HEIs must comply with data protection laws when it comes to collecting and processing students' and staff's personal data. While there are slight differences between the two regulations, those that pertain to education and online learning remain the same. In this section, we identify the relevant parts of the GDPR that enable us to consider how data protection regulation is applied in practice in an education context for our study beyond a legal and conceptual basis. The GDPR enshrines data protection as a fundamental right and provides data subjects with rights to exercise against data controllers but does not explicitly provide instructions on how to do so. These data subject rights include the right of access by the data subject (Article 15, the right to obtain confirmation and access to several categories of information from data controllers about whether the processing of their personal data occurred), the right to be forgotten (Article 17, the right to obtain from the controller the erasure of personal data), the right to data portability (Article 20), and the right not to be subject to a decision based solely on automated processing (Article 22). While the GDPR was implemented in recognition of rapid technological developments, the Regulation aims to be technologically neutral and not depend on the techniques for the protection of natural persons (Recital 15). Instead, the GDPR has introduced qualified duties to principles such as Data Protection by Design ("DPbD"), transparency, accountability, and fairness to ensure that data protection is considered when it comes to the use, development, and deployment of technologies for data collection, processing, and sharing. In addition to data subject rights, the GDPR also requires data controllers to clearly state the lawful basis on which personal data is being processed (Article 6). These lawful bases include consent, contract, legal obligation, vital interests, public interests, and legitimate interests.

8 During online learning in the pandemic, schools across Europe have breached the GDPR. In Norway, two schools were fined as they failed to carry out a data protection impact assessment and implement adequate security when teachers asked students to download the exercise app Strava for physical education classes.[18] In Sweden, a school trialled facial recognition technologies to monitor student attendance and was fined because the data protection authority argued that consent cannot apply as students and their guardians could not freely decide if the children wanted to have their biometric data monitored.[19] In the Czech Republic, a public university was inspected as it required personal data from student applicants without a sufficient legal basis following GDPR Article 6(1) and Article 13.[20] An ongoing case in Germany also touches upon whether teachers need to give consent for live-streamed lessons in context of GDPR Article 6.[21] These cases all raise the question as to how schools and students can be supported when it comes to data protection regulatory compliance.

9 In addition to challenges related to compliance, individuals may not be able to fully realise the rights they have as data subjects. The establishment of data protection regulation that limit potential harms in an attempt to rebalance power between citizens and the companies that collect their data is a

17 United Kingdom, 'Data Protection Act' (2018) 1 Act of Parliament 1 https://www.legislation.gov.uk/ukpga/2018/12/enacted/data.pdf.

18 Datatilsynet, 'Ålesund Municipality v Norwegian Supervisory Authority (Datatilsynet)' (2021)20/02147-6 KBK/- Norwegian Supervisory Authority https://www.datatilsynet.no/en/news/2021/alesund-municipality-fined-for-use-of-strava/

19 Datainspektionen, 'Supervision pursuant to the General Data Protection Regulation (EU) 2016/679– facial recognition used to monitor the attendance of students' (2019) DI-2019-2221 Swedish Data Protection Authority https://www.imy.se/globalassets/dokument/beslut/facial-recognition-used- to-monitor-the-attendance-of-students.pdf.

20 Úˇrad pro ochranu osobních údaju˚ , 'Kontrola zpracování osobních údaju˚ v rámci pˇrijímacího ˇrízení na vysokou školu' [2020] Czech Data Protection Authority https://www.uoou.cz/kontrola-zpracovani-osobnich-udaju-v-ramci-prijimaciho-rizeni-na-vysokou-skolu/ds-6252/archiv=0&p1=5649.

21 CJEU, 'Case C-34/21 Hauptpersonalrat der Lehrerinnen und Lehrer beim Hessischen Kultusministerium, Opinion of Advocate General Campos Sánchez-Bordona' (2022) 1 CJEU Preliminary Ruling 1 https://curia.europa.eu/juris/document/document.jsf?text=&docid=266121&pageIndex=0& doclang=en&mode=lst&dir=&occ=first&part=1.

step in the right direction. However, it results in the responsibilisation of data protection from data controllers to data subjects,[22] where individuals have the burden of protecting their own personal data by exercising their rights as opposed to data controllers themselves.[23] Further, the focus on individual protections and safeguards disregards the power imbalance that lies between users as data subjects and the large corporations as data controllers.[24] Individual data subjects have to exercise their rights against data controllers who are protected by institutional adoption of data protection law and any protest against the data controller's actions requires filling complaints towards the relevant Data Protection Officer. Given that individuals and groups of individuals are impacted by data-related harms,[25] it is important to examine whether data protection in practice can empower individual and collective groups of students to engage in and collaborate on data protection solutions in educational settings.[26]

10 As existing research on data protection and online learning already addresses the GDPR's application in legal terms, we focus our paper and study on the legal terms in application and practice with regards to online learning. Specifically, we examine tutorial recording given its ubiquity as part of the online learning process, which we discuss in the subsequent sections of our literature review in context of the wider online learning ecosystem.

II. Online learning technologies, privacy, and surveillance

11 Institutions such as the Open University have long run courses with a strong online component[27]demonstrating how implementing online learning technologies can improve the educational experience with clear communication of how student data are used.[28] The rapid integration of new technologies for remote learning raises the possibility of data protection harms, introducing new concerns related to online learning and privacy. For example the data protection risks emerging from the use of online platforms, such as Zoom or Microsoft Teams, include the allocation of roles and responsibilities of stakeholders, transparency of data processing and possibility to effectively exercise data subjects' rights, extra-EU data transfers, and the challenges of e-proctoring systems.[29] Universities' adoption of cloud computing also has implications beyond individuals' privacy, with questions of academic independence and integrity.[30]The data protection challenges that arise in the specific areas of lecture and tutorial recordings, e-proctoring, and platform ecosystems are discussed below.

1. Lecture and tutorial recordings

12 The usefulness of lecture and tutorial recordings has been questioned, despite their common use in online learning.[31] For students, recording viewings show no significant relationship with attainment whilst factoring in attendance, and viewings

22 Rene Mahieu, Hadi Asghari, and Michel van Eeten, 'Collectively Exercising the Right of Access: Individual Effort, Societal Effect' (GigaNet (Global Internet Governance Academic Network) Annual Symposium 2017, December 2017).

23 Jef Ausloos and Pierre Dewitte, 'Shattering one-way mirrors — data subject access rights in practice' (2018) 8(1) International Data Privacy Law 4.

24 Lilian Edwards, 'Data Protection: Enter the General Data Protection Regulation' in Lilian Edwards (ed), Law, Policy and the Internet (Hart Publishing 2018).

25 Anuj Puri, 'A theory of group privacy' (2021) 30(3) Cornell Journal of Law and Public Policy 477 https://community.lawschool.cornell.edu/jlpp/jlpp-issue-archives/volume-30-number-3/.

26 Janis Wong, Tristan Henderson, and Kirstie Ball, 'Data protection for the common good: Developing a framework for a data protection-focused data commons' (2022) 4 Data & Policy 1.

27 Department of Education, 'Realising the potential of technology in education' (3 April 2019) https://www.gov.uk/government/publications/realising-the-potential-of-technology-in-education accessed 19 June 2022; Thomas Perry, 'The pandemic has made educators move to remote learning at an unprecedented scale – research concludes that might not be a bad thing' (3 April 2019) https://www.birmingham.ac.uk/news/latest/2020/09/the-pandemic-has-made-educators-move-to-remote-learning-at-an-unprecedented-scale.aspx accessed 19 June 2022.

28 The Open University, 'Student Policies and Regulations' (1 July 2020) https: //help.open.ac.uk/documents/policies/privacy-notice accessed 19 June 2022.

29 Chiara Angiolini and others, 'Remote Teaching During the Emergency and Beyond: Four Open Privacy and Data Protection Issues of 'Platformised' Education' (2020) 1(1) Opinio Juris in Comparatione Studies in Comparative and National Law.

30 Tobias Fiebig and others, 'Heads in the Clouds: Measuring the Implications of Universities Migrating to Public Clouds' (2021) abs/2104.09462 CoRR https://arxiv.org/abs/2104.09462.

31 Tutorials are a period of study with a tutor involving one student or a small group.

may not compensate for the impact that low attendance has on attainment.[32] Additionally, the reuse of recordings may not be clarified to students. A student at a US university only found out that the professor delivering their online class had died two years earlier when the student tried to email them during the pandemic.[33] This may raise copyright issues related to the reuse of teaching materials. Taken to the extreme, recordings may also potentially cause political harm for individuals if the risks of online learning data and recordings are not properly managed, with institutions choosing not to record tutorials discussing sensitive political topics.[34] In context of data protection, when we reviewed the data protection policy that pertains to online learning at the HEIs, we found that consent was the lawful basis for tutorial recording. Given the power imbalances between students and HEIs, there may also be limitations of meaningful and informed consent both within[35] and outwith[36] educational contexts. In particular, the impact of such data processing is important to consider from a students' perspective given that tutorial recording may be presented by HEIs as a choice that students have as to whether they want to consent to be recorded, raising ethical issues when consent is relied upon as the lawful basis for data collection.

2. E-proctoring

13 E-proctoring, or the use of virtual proctoring software to monitor students through webcams, microphones, and other tracking tools with the aim of preventing cheating, has also become more commonplace. The use of e-proctoring technologies could harm agency and trust,[37] as the surveillance environment created is counter-productive to learning.[38] Other concerns include the added stress of being monitored,[39] the software being incompatible with devices,[40] and the time taken to implement it.[41] It is also unclear whether proctoring can achieve its purpose in preventing cheating.[42] In one example, a student exercised their GDPR Article 15 right of access to see what data the proctoring software was gathering about them. They found that many incidents flagged as "audio level in the room was above threshold" and "the test taker looked away from the exam page" were full of false positives, especially when staff turned up the sensitivity settings.[43] Algorithmic test proctoring

32 Martin R Edwards and Michael E Clinton, 'A study exploring the impact of lecture capture availability and lecture capture usage on student attendance and attainment' (2019) 77 Higher Education.

33 Aaron Ansuini, Tweet from January 2021 < https://twitter.com/AaronLinguini/status/1352009211501289472> accessed 20 September 2022.

34 Hong Kong Free Press, 'UK university tells lecturers not to record classes about Hong Kong and China, citing security law risks' (10 May 2021) https://hongkongfp.com/2021/05/10/uk-university-tells-lecturers-not-to-record-classes-about-hong-kong-and-china-citing-security-law-risks/ accessed 19 June 2022.

35 Prinsloo and Slade, 'Student Consent in Learning Analytics: The Devil in the Details?' (n 8); Ekaterina Muravyeva and others, 'Exploring solutions to the privacy paradox in the context of e- assessment: informed consent revisited' [2020] Ethics and Information Technology <https://link.springer.com/article/10.1007%2Fs10676-020-09531-5>; Batya Friedman, Peyina Lin, and Jessica Miller, 'Informed consent by design' [2005] Security and Usability 495.

36 Schraefel mc and others, 'The Internet of Things: Interaction Challenges to Meaningful Consent at Scale' (2017) 24(6) Interactions 26 <https://doi.org/10.1145/3149025>; Christine Utz and others, '(Un)informed Consent' [2019] Proceedings of the 2019 ACM SIGSAC Conference on Computer and Communications Security <http://dx.doi.org/10.1145/3319535.3354212>; Lee A Bygrave and Dag Wiese Schartum, 'Consent, Proportionality and Collective Power' (Serge Gutwirth and others eds, Springer Netherlands 2009).

37 Todd Feathers, 'Colleges Say They Don't Need Exam Surveillance Tools to Stop Cheating' (16 November 2020) https://www.vice.com/en/article/88ag8z/colleges-say-they-dont-need-exam-surveillance-tools-to-stop-cheating accessed 19 June 2022.

38 Zeynep Tufecki, 'The Pandemic Is No Excuse to Surveil Students' (4 September 2020) https://www.theatlantic.com /technology/archive/2020/09/pandemic-no-excuse-colleges-surveil-students/616015/ accessed 19 June 2022.

39 Colleen Flaherty, 'Big Proctor' (11 May 2020) https://www.insidehighered.com/news/2020/05/11/online-proctoring-surging-during-covid-19 accessed 19 June 2022.

40 Rebecca Heilweil, 'Paranoia about cheating is making online education terrible for everyone' (4 May 2020) https: //www.vox.com/recode/2020/5/4/21241062/schools-cheating-proctorio-artificial-intelligence accessed 19 June 2022.

41 Jane C Hu, 'Paranoia about cheating is making online education terrible for everyone' (6 October 2020) https://slate.com/technology/2020/10/online-proctoring-proctoru-proctorio-cheating-research.html accessed 19 June 2022.

42 Lindsey Barrett, 'Rejecting Test Surveillance in Higher Education' (2021) 1(1) Michigan State Law Review (forthcoming).

43 Gabriel Geiger, 'Students Are Easily Cheating 'State-of-the-Art' Test Proctoring Tech' (3 May 2021) >https://www.vice.com/en/article/3an98j/students-are-easily-heating-state-of-the-art-test-proctoring-tech< accessed 19 June 2022.

may also discriminate based on gender and race.[44] The use of proctoring services was condemned by UK Bar professional training course students, where students were monitored using webcams throughout the examination without any breaks and moving away from the webcam would result in automatic termination.[45] No change to the online exams were made despite one third of exams being affected by technical difficulties.[46]

3. Platform ecosystems

14 The data protection considerations of tools and the usefulness of lecture and tutorial recordings have also been questioned. Many tools used by HEIs to deliver online learning (such as Zoom and Microsoft Teams) were not created for education. As a result, these third-party companies may be less sensitive to stakeholders' motivations, where students are treated as consumers, without regard to their participation in education.[47] For example, the Microsoft Office Productivity Score included in Microsoft Teams tracks the time and activity of its users, producing data on the extent to which individuals are working on its platform. Initially, this data could be accessed by institutions and linked to specific usernames. Even if HEIs do not access this data, it could still be collected by digital platforms and may be shared and sold to third parties. Only after privacy concerns were raised did Microsoft remove usernames and change how the data gathered are presented.[48] Particularly where universities are public institutions, these data processing practices should be made transparent to those who use these technologies.

III. Solutions

15 In response to some of the digital and data-related challenges that have arisen from COVID-19, many organisations have looked at the impact of the pandemic on education. The OfS engaged stakeholders to produce guidance establishing the essential components of successful digital teaching and learning, recommending core practices HEIs can use to improve online learning for students.[49] JISC have written a report to understand the COVID-19 response and explore the future of digital learning and teaching.[50] Policy solutions were also devised for identifying the future role of emerging technologies in education and training.[51] The Open Data Institute has also suggested public engagement to support data governance considerations when working with online learning data.[52]

16 More broadly, the UK Information Commissioner's Office established a code to help employers comply with the GDPR and to encourage them to adopt good practices, including monitoring at work.[53] The UK Department for Education created a COVID-19 addendum to acknowledge issues of privacy

44 Shea Swauger, 'Our Bodies Encoded: Algorithmic Test Proctoring in Higher Education' [2020] Hybrid Pedagogy https://hybridpedagogy.org/our-bodies-encoded-algorithmic-test-proctoring-in-higher-education/ accessed 19 June 2022.

45 Neil Rose, 'Bar students urge online exams rethink' (2 June 2020) https://www.legalfutures.co.uk/latest-news/bar-students-urge-online-exams-rethink accessed 19 June 2022.

46 Bar Standards Board, BSB announces new opportunities to sit Bar Professional Training Course (BPTC) exams (11 September 2020) https://www.barstandardsboard.org.uk/resources/press-releases/bsb-announces-new-opportunities-to-sit-bar-professional-training-course-bptc-exams.html accessed 19 June 2022.

47 Joseph Duball, 'Shift to online learning ignites student privacy concerns' (28 April 2020) https://iapp.org/news/a/shift-to-online-learning-ignites-student-privacy-concerns/ accessed 19 June 2022.

48 Jared Spataro, 'Our commitment to privacy in Microsoft Productivity Score' (1 December 2020) https://www.microsoft.com/en-us/microsoft-365/blog/2020/12/01/our-commitment-to-privacy-in-microsoft-productivity-score/ accessed 19 June 2022.

49 Office for Students, 'Gravity assist: propelling higher education towards a brighter future' (1 March 2021) https://www.officeforstudents.org.uk/publications/gravity-assist-propelling-higher-education-towards-a-brighter-future/executive-summary/accessed 19 June 2022.

50 JISC, 'Learning and teaching reimagined: a new dawn for higher education?' (4 November 2020) https: //www.jisc.ac.uk/reports/learning-and-teaching-reimagined-a-new-dawn-for-higher-education accessed 19 June 2022.

51 Riina Vuorikari, Yves Punie, and Marcelino Cabrera Giraldez, 'Emerging technologies and theteaching profession' [2020] J RC Science for Policy https://publications.jrc.ec.europa.eu/repository/ handle/JRC120183.

52 Open Data Institute, ODI Fellow Report: Data governance for online learning (7 September 2021) https://theodi.org/article/data-governance-online-learning/ accessed 19 June 2022.

53 Information Commission's Office, 'The employment practices code' (1 November 2011) https://ico.org.uk/media/for-organisations/documents/1064/the_employment_practices_code.pdf accessed 19 June 2022.

in schools.[54] The European Commission also identified the need to create a trusted digital education ecosystem with high-quality content, user-friendly tools, value-adding services and secure platforms that maintain privacy and uphold ethical standards as part of its new Digital Education Action Plan.[55]

1. Collaborative solutions in theory and in practice

17 In supporting more inclusive and equitable online learning practices, researchers and practitioners have shared their experiences of online learning during the pandemic.[56] The shift to online learning introduces new questions around the ethics of care related to online and remote work.[57] The Centre for Research in Digital Education created the Manifesto for Online Learning to illustrate how surveillance culture can be resisted.[58] Silverman et al. share their lessons on helping staff transition to authentic assessments without e-proctoring.[59]

18 Collaboration with students can also support increased agency and trust both in the data protection process as well as with their institutions. Plunkett et al. find that to ensure that student privacy frameworks align with students' digital practices and privacy expectations, adult stakeholders should incorporate robust ways for youth to participate in discussions about tackling student data privacy challenges.[60] Teachers have mentioned the importance of students voicing concerns about the use of novel technologies in education.[61] Addressing how this can be done, JISC suggests that universities prioritise blended learning approaches where possible, and that students co-design curricula.[62] Williamson and Hogan recommend that higher education stakeholders should work collegially to define alternative imaginaries that can guide post-pandemic recovery of HEIs, moving away from using academia as an engine for producing measurable learning performance and associated workforce productivity gains.[63] Co-created solutions as a response to the pandemic to navigate privacy and security during online learning were also crowd-sourced such as the Coronavirus Tech Handbook[64] and A Comprehensive Guide To Tech Ethics and Zoom Class.[65]

C. Co-creating solutions for protecting students' data

19 Given the importance of co-created and collaborative solutions, our study investigates whether creating a socio-technical data protection-focused data commons for online learning can protect students' personal data by providing them with more agency to

54 Department of Education, 'Safeguarding and remote education during coronavirus (COVID-19) (10 March 2021) https://www.gov.uk/guidance/safeguarding-and-remote-education-during-coronavirus-covid-19#virtual-lessons-and-live-streaming accessed 19 June 2022.

55 European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Digital Education Action Plan 2021-2027 Resetting education and training for the digital age' (30 September 2020) https://eur- lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0624#document1 accessed 19 June 2022.

56 Ben Williamson, Rebecca Eynon, and John Potter, 'Pandemic politics, pedagogies and practices: digital technologies and distance education during the coronavirus emergency' (2020) 45(2) Learning, Media and Technology 107 https://doi.org/10.1080/17439884.2020.1761641.

57 Marianna Fotaki, Gaz Islam, and Anne Antoni, Business Ethics and Care in Organizations (Routledge 2019).

58 Siân Bayne and others, The Manifesto for Teaching Online (MIT Press 2020).

59 Sarah Silverman and others, 'What Happens When You Close the Door on Remote Proctoring? Moving Toward Authentic Assessments with a People-Centered Approach' (2021) 39(3) Educational Development in the Time of Crises.

60 Leah Plunkett, Urs Gasser, and Sandra Cortesi, 'Student Privacy and the Law in the Internet Age' [2021] The Oxford Handbook of U.S. Education Law https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780190697402.001.0001/oxfordhb-9780190697402-e-30.

61 Monica Chin, 'An ed-tech specialist spoke out about remote testing software — and now he's being sued' (22 October 2020) https://www.theverge.com/2020/10/22/21526792/proctorio-online-test-proctoring-lawsuit-universities-students-coronavirus accessed 19 June 2022.

62 Paul Feldman, 'Education and research improves lives, and technology improves education and research' (1 November 2020) https://www.foundation.org.uk/getattachment/8803ab67-86b4-4657-9dae-733a253e4741/paul-feldman-slides-pdf.pdf accessed 19 June 2022.

63 Williamson, Eynon, and Potter (n 61).

64 Newspeak House, 'Coronavirus Tech Handbook' (20 March 2020) https://coronavirustechhandbook.com/ accessed 19 June 2022.

65 70Mehitabel Glenhaber, 'A comprehensive guide to tech ethics and Zoom' (18 November 2020) https://sourceful.us/doc/652/a-comprehensive-guide-to-tech-ethics-and-zoom accessed 19 June 2022.

exercise their data protection rights.

20 Developed by Elinor Ostrom, the commons considers collective action, trust, and cooperation through design principles.[66] The commons guards a common-pool resource ("CPR"), a resource system that is sufficiently large as to make it costly to exclude potential beneficiaries from obtaining benefits from its use and may be over-exploited. The CPR enables "transparency, accountability, citizen participation, and management effectiveness" where "each stakeholder has an equal interest".[67] Central to governing the commons is recognising polycentricity, a complex form of governance with multiple centres of decision-making, each operating with some degree of autonomy.[68] The norms created by the commons are bottom-up, focusing on the needs and wants of the community and collectively discussing the best way to address any issues.[69]

I. Education as a commons

21 Adapting the commons to individuals' collective digital data, Hess and Ostrom developed the knowledge commons, where knowledge is the CPR.[70] As new technologies enable information capture, the knowledge commons recognises that information is no longer a free and open public good and now needs to be managed and protected for archival sustainability and accessibility. Crucially, the commons addresses data-related governance challenges that arise due to spillovers created by the reuse of data, thereby increasing its value over time.[71]

22 An example of a knowledge commons is a university research repository.[72] Developing a university repository requires multiple layers of collective action, coordination, and shared information and expertise. Academics and researchers can contribute to the repository as the more it is used, the more efficient it is to the university. Others outside that community can browse, read, and download the repository, further enhancing the quality of its resources. By breaking down large, complex, collective action problems into action spaces through the Institutional Analysis and Development ("IAD") framework,[73] collective action problems can be assessed so that institutions can more accurately meet the needs of the community, including how information, knowledge, and data can be used to serve the common good.[74]

23 The commons has been further adapted to the university environment. Madison illustrates that as universities continue to evolve, the nature of the university may change from a knowledge to a data-oriented institution, resulting in the conflation of data as knowledge.[75] As a result, the way institutions may be governed could also change. In order for HEIs to manage their resources for maximum benefit and minimal social and private harm, HEIs could consider the knowledge commons to examine data governance beyond intellectual property rights and be open to multi- stakeholder engagement when creating university policies and meeting third-party obligations for education data. Although the risks of data collection, sharing, and security are not explored, Madison offers insights into how university data could be managed as a commons via strategies of openness, sharing,

66 Elinor Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action (Cambridge University Press 1990).

67 Charlotte Hess, 'Research on the Commons, Common-Pool Resources, and Common Property' [2006] Indiana University Digital Library of the Commons http://dlc.dlib.indiana.edu/dlc/contentguidelines.

68 Vincent Ostrom, Charles M Tiebout, and Robert Warren, 'The organization of government in metropolitan areas: a theoretical inquiry' (1961) 55 American Political Science Review 831.

69 Elinor Ostrom, The Future of the Commons: Beyond Market Failure & Government Regulations (Institute of Economic Affairs 2012).

70 Charlotte Hess and Elinor Ostrom, Understanding Knowledge as a Commons: From theory to practice (MIT Press 2007).

71 Diane Coyle, 'Common governance of data: appropriate models for collective and individual rights' (30 October 2020) https://www.adalovelaceinstitute.org/blog/common-governance-of-data/ accessed 19 June 2022.

72 Hess and Ostrom (n 75).

73 Elinor Ostrom, Understanding Institutional Diversity (1st edn, Princeton University Press 2005).

74 Michael D McGinnis, 'The IAD Framework in Action: Understanding the Source of the Design Principles in Elinor Ostrom's Governing the Commons' in Daniel Coleand and Michael D McGinnis (eds), Elinor Ostrom and the Bloomington School of Political Economy, Volume 3: A Framework for Policy Analysis (Lexington 2018) https://polisci.indiana.edu/documents/profiles/mcginnis1.pdf.

75 Michael J Madison, 'Data governance and the emerging university' in Research Handbook on Intellectual Property and Technology Transfer (Edward Elgar Publishing 2020) https://www.elgaronline.com/view/edcoll/9781788116626/9781788116626.00027.xml.

and polycentricity, but with contextually-appropriate elements of proprietary management and exclusivity with regards to intellectual property.

24 As a result, in order to increase student agency in protecting their personal data, a commons could be created to support collaborative means for them to meet their data protection preferences with the knowledge of their institutions' data protection practices and of their individual data protection rights.

II. A commons for online learning

25 A data protection-focused data commons allows data subjects to collectively curate, inform, and protect each other and the collective exercise of data protection rights. A commons that focuses on data protection can provide students with agency over their personal data and redress the power imbalance between them and HEIs. For students, participating in the commons allows them to improve their understanding of their institution's policy and external organisations' guidance when it comes to collecting, processing, and sharing their online learning personal data. The commons also allows them to ask questions to experts, raise any questions about data protection to other students, review their consent decisions on tutorial recordings, and exercise their data protection rights. It simplifies the data protection rights procedures by including information, instructions, and templates on how rights should be collectively exercised, giving data subjects an opportunity to engage with and shape the data protection practices that govern how their personal data are protected.

26 Creating a data protection-focused data commons could help identify how much understanding and control data subjects have over their personal data, supporting them in choosing their data protection preferences. A commons for data protection does not require the creation of a new legal framework, but rather, operates within the current data infrastructures used by data subjects and acknowledges the limitations of existing laws, technologies, and policies that steward data. Thus, the focus on data protection as part of the data commons shifts data protection responsibilities away from the individual alone to their community, where knowledge, expertise, and experiences can be pooled together to identify working solutions. Although personal data are still kept personal and private, the collaborative nature of sharing, discussion, and advising on data protection problems opens up potential options for everyone to support informed decision-making and achieving data protection preferences through a data commons.

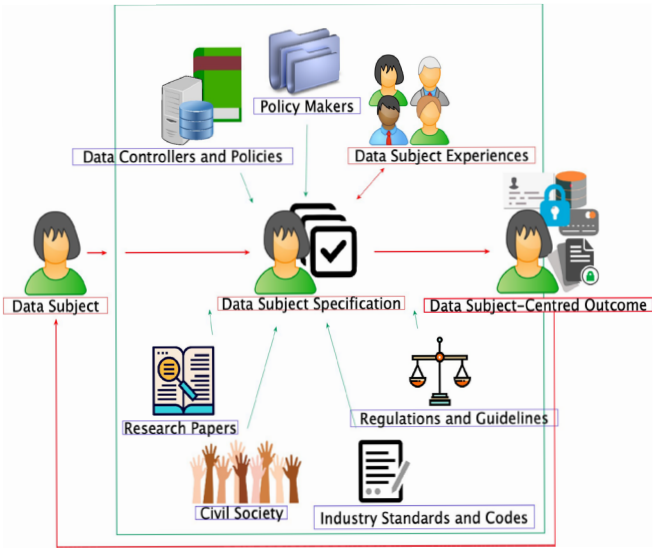

Figure 1: In a data protection-focused data commons (green), the data subject specifies to what extent they would like their data to be protected based on existing challenges pre-identified within the data commons for the use case (red). No prior knowledge of existing law, norms, or policies are required. Along with stakeholder information (blue), the data subject specification is then used to inform their data protection outcome as generated from the system. As the outcome is data subject-centred, decisions ensuring the protection of the data subject's personal data may override existing preferences, policies, or standards set by other stakeholders. Data subjects can return to and review their outcomes, add their data subject experiences to the data commons, and participate in the co-creation process at any time.

27 In our previous work,[76] we interviewed commons experts to assess if and how a commons framework can be applied to data protection to support the protection of data subjects' personal data. From those

76 Wong, Henderson, and Ball (n 26).

interviews, we found that collaboration across stakeholders and disciplines could overcome excluding data subjects and doubts about the effectiveness of the commons. The purpose of the commons needs to be clear because the use of the commons model is a choice, and that clarity allows for new iterations of the commons to best suit data subject needs. The commons must include the vision of communities and people about what is at stake, what it is about, how it works, and how data have been managed. Ultimately, commoning was identified as a verb, where the community has to actively participate in the development process and its application and is necessary for successful co-creation and participation. Based on these findings, we adapted an IAD framework and policy scaffolding for the creation of a data protection-focused data commons (included in Appendix A), which we now apply to create an appropriate commons for online learning.

D. Research questions

28 Our aim is to create a commons tool, an interactive resource hub that applies the commons principles, that can be used by students to support them in choosing their own online learning data protection preferences. By voicing their concerns, students risk not being able to access university teaching if they object to certain policies and practices. The use of the tool by students aims to help them understand the reasons behind tutorial recordings and help make more informed decisions about whether they choose to consent to being recorded. The tool also attempts to provide more agency, not only in how their personal data are used by the university, but also their ability to freely participate in classes. It is hoped that participation in the data protection-focused data commons will encourage the redistribution of power between students as data subjects, universities as data controllers, online learning platforms, and staff.

29 We established three research questions to examine whether an online learning data protection-focused data commons can help students regain their agency over their personal data:

- **RQ1:** Does the ability to interact with commons resources help inform students about the purposes of online learning and tutorial recordings?
- **RQ2:** How effective is the commons model for supporting user preferences for protecting their personal data?
- **RQ3:** Does the commons model encourage more transparency around data protection between data subjects, data controllers, and other involved stakeholders?

E. Methodology

30 In developing the study to address our research questions, we applied Ostrom's design principles (Section B) and the requirements illustrated by the IAD commons framework (Appendix A) to put commons theory into practice. We also incorporated Prinsloo and Slade's learner agency framework to support student agency and empowerment in the process of protecting their education data.[77]

31 To adapt the commons tool to online learning, we developed the application for Microsoft Teams, the software used by the authors' university for conducting online learning. A new Team was created for each tutorial online learning classroom environment to represent each student testing group. The tool was then uploaded as a custom application to Microsoft Teams and each tutorial Team had a working copy of the application (Figure 2).

77 Prinsloo and Slade, 'Student vulnerability, agency, and learning analytics: An exploration' (n 7).

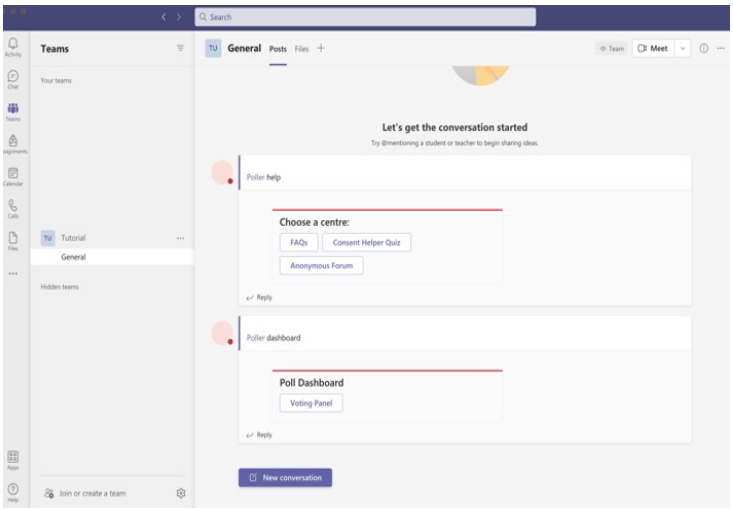

Figure 2: The commons tool, showing the help center and the consent voting panel, as it appears on Microsoft Teams.

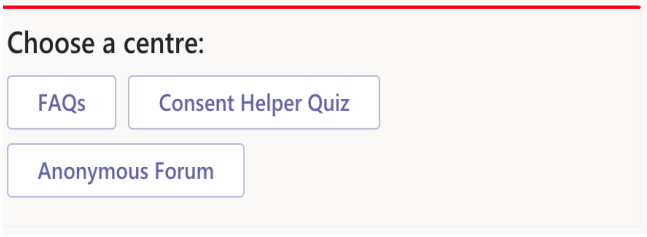

Figure 3: The commons tool help centre has three sections to help the student develop a more comprehensive understanding of the policies, laws, and guidance that governs tutorial recordings and supports them in making a decision as to whether or not they should consent to tutorial recording.

32 The commons tool was separated into two main parts. The first part, the commons help hub (Figure 3), has three sections:

- Frequently Asked Questions (FAQs) (Figure 4) provides answers to questions about polling, rights, policies, and contacts, mapping to the commons CPR principle for increased transparency and accountability as well as recognising the different levels of online learning governance (polycentricity).
- Consent Helper Quiz is a short quiz to help participants figure out whether the session should be recorded, mapping to the commons CPR principle for effective management.
- Anonymous Forum is an area for participants to share their thoughts or concerns anonymously, mapping to the commons CPR principle for citizen participation and supporting each student's equal interest. Along with the FAQs, the Forum can also support conflict resolution and reporting mechanisms following Ostrom's design principles.

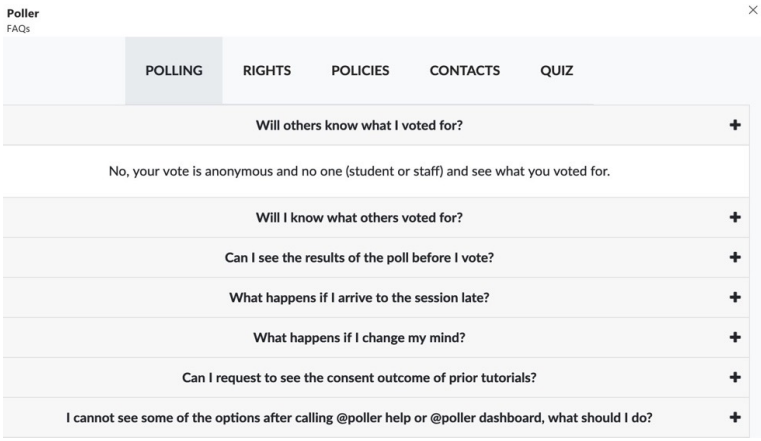

Figure 4: The FAQs contains text-based resources such as information about why tutorial recordings are happening, university data policies, external tutorial recording policies, and information on how to exercise data protection rights.

33 Within the FAQs, participants can find information about online learning, university policies, and data protection as listed below:

- Information about the tutorial recording consent Voting Panel (described in detail later in this section).
- Data protection and information regulations, e.g., the GDPR.
- Data protection rights centre.
- Information about what rights data subjects (students) have.

- Ability for students to request an anonymous record of consent poll results.
- E-mail templates for exercising data subject rights.
- How to contact a data protection expert and the DPO.
- Information about the data collected from the Consent Helper Quiz.

34 The Consent Help Quiz aims to help participants decide whether they should or should not consent to recording tutorials based on their personal preferences. All questions for the quiz have "yes" or "no" answers. Depending on the participant's answers, at the end of the quiz, the final result will display "You may not need to opt-out", "You may want to consider opting out", or "You may want to strongly consider opting out". Questions on the quiz include:

- Are you potentially revealing any sensitive personal information (racial or ethnic origin, political opinions, religious belief, genetic data, and biometric data etc.) during the session?
- Will you avoid discussing certain topics if the session is recorded?
- Will you avoid asking questions or points of clarification if the session is recorded?
- Will the session being recorded affect your likelihood of participating?
- Do you think recording the session will improve your academic study?
- Are you planning to re-watch the tutorial once it is done?
- Do you trust that the university will keep the recording safe?
- Do you trust that the platform which the session recording is taking place on will keep the recording safe?

35 The final part of the commons help hub is the Anonymous Forum (Figure 5), which allows students to share information, questions, or concerns they have about tutorial recordings.

36 The second part of the commons tool is the Voting Panel which conducts the consent poll (Figure 6).

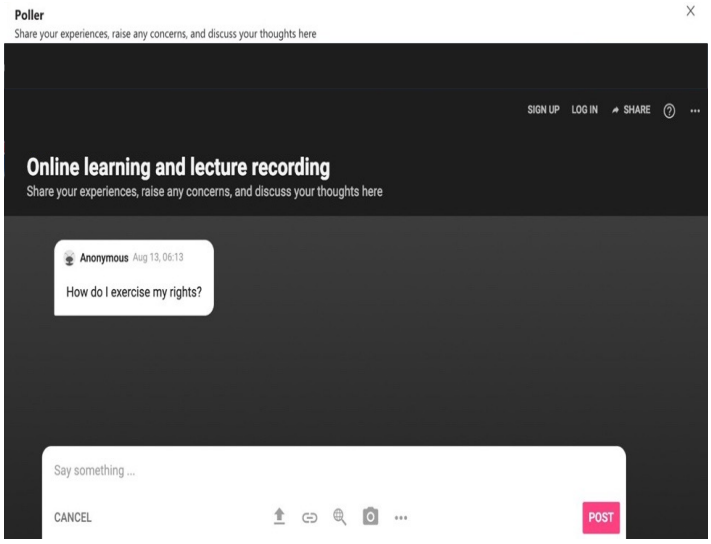

Figure 5: The Anonymous Forum is a space where students can participate anonymously in an open dialogue with other students in their tutorial about any questions that they have about tutorial recordings.

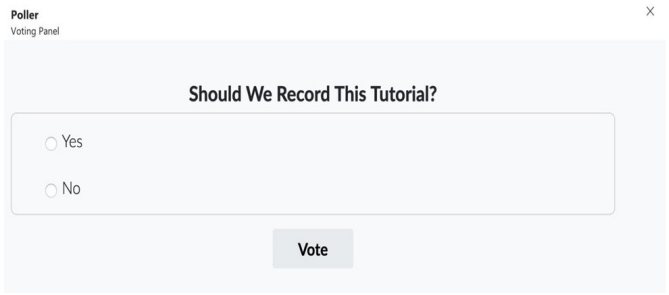

Figure 6: The Voting Panel is the consent poll where students can consent to or not consent to tutorial recording based on their own personal preferences. The poll is anonymous and the full results of the vote from the class will be displayed after voting. If everyone consents, the tutorial recorded.

I. Testing the application

37 To test the commons tool, we split the study into three parts: an entry questionnaire, an interactive task to test of the commons or control application, and an exit questionnaire. Figure 7 illustrates the different stages of the study.

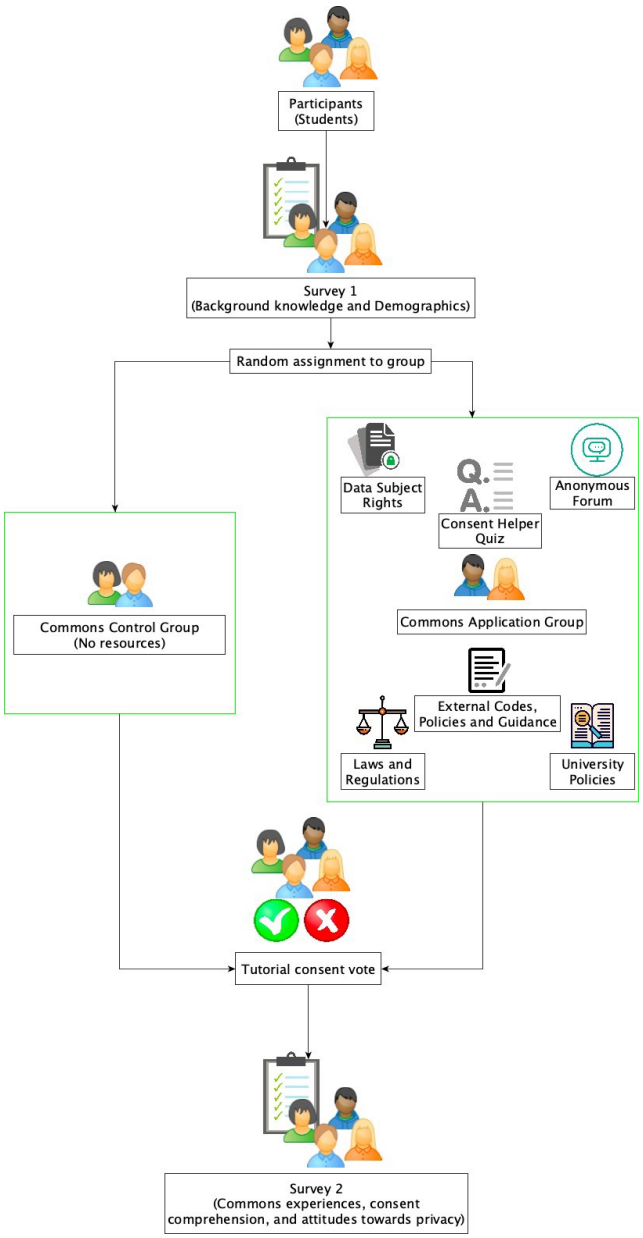

Figure 7: Study walk-through summary

38 The study was conducted online between April 2021 and October 2021. As the authors are based in the UK, all participants were undergraduate and postgraduate taught students studying at UK-based universities over 18 years of age. The study was approved by the relevant University Ethics Committee. We outline the initial survey, application testing, and final survey components below.

1. Initial survey

39 For the first part of the study, an initial survey was completed by potential participants to gather some participant information and to determine their eligibility. This assessed the level of users' knowledge of tutorial recordings, data protection, online learning, and university policies. The questionnaire also identified how participants felt about users' ability to exercise their agency with regards to tutorial recordings and online learning.

2. Testing the application

40 After the first survey was completed, we e-mailed potential participants to schedule a time for the rest of the study and include a separate document with the mock-tutorial information (Appendix B). Although 175 participants completed the initial survey, only 34 responded to our email to schedule a time to test the application. Participants were then randomly assigned to be in the control testing group or the commons application testing group on Microsoft Teams. Those in the control group were given two minutes to consent or not consent to tutorial recording. Those in the commons group were given 10 minutes to explore the resources in the application and vote. The control group only had access to the voting panel and the commons application group had access to all the resources outlined in the previous section.

3. Final survey

41 The final part of the study, the exit survey, allowed participants to reflect on their experience of the tool, identify what resources they used if they were part of the commons application testing group, attitudes towards privacy, data protection and online learning, and examine to what extent they now know about their consent and data protection options as part of online learning. The survey included Internet Users' Internet Privacy Concerns ("IUIPC")[78] questions adapted for online learning to benchmark their privacy concern levels that relate to privacy and data awareness, control, and collection

78 Naresh K Malhotra, Sung S Kim, and James Agarwal, 'Internet Users' Information Privacy Concerns (IUIPC): The Construct, the Scale, and a Causal Model' (2004) 15 Information Systems Research 336.

(Appendix C).

F. Analysis

I. Participant demographics and privacy awareness

42 34 students participated in our study. The participants studied Computer Science (6), Management (3), Finance (2), Philosophy (2), Psychology (2), and 19 other subjects that were only studied by one participant. 23 participants were undergraduates and 11 were postgraduates. Our participants predominantly identified as female (26) with seven males, and one not disclosed. From our results, we did not find any correlation between the discipline of study, level or year of study, or gender.

43 Regarding tutorial recordings, 19 participants thought that they had control over whether a tutorial was recorded, with 10 disagreeing and five were uncertain. When asked about the university's tutorial recording policy, 17 were aware that there was one, 12 were not aware, and five were unsure. Only eight had read the policy. More broadly, most students (14) were not aware of how the university processes their personal data, 10 were unsure, and 10 were aware. Most students (22) were not aware of how Microsoft Teams processed their data.

44 When asked about their online learning and tutorial recording experiences, most students (20) said that some of their tutorials were recorded. In our study, we found that 18 students said that they were asked to consent to recordings for all of their online tutorials, five said only some asked for consent, seven were not asked, and four were not sure. In considering personal experiences of online learning, 11 said that online learning made a positive impact on their educational experience, two had no impact, 12 were impacted negatively, and nine were unsure. Focusing on tutorial recordings, 13 felt that tutorial recordings were a net positive, 17 did not feel that it impacted their educational experience, two were negatively impacted, and two were unsure.

Figure 8 shows the overall level of privacy concern of our participants, based on their responses to online learning IUIPC questions (Appendix C). The higher the score, the more privacy-concerned a participant is, where 55 is the maximum score and 11 is the minimum. Existing work shows that internet use reduces IUIPC.[79] A positive relationship was found between privacy concerns and government involvement in privacy regulation,[80] suggesting higher IUIPC scores for participants governed by the GDPR. The median score for our participants is 46. While our participants were based in the UK which falls under the GDPR's remit students as young people are considered to have high levels of internet use, suggesting a relatively high level of privacy concern for their demographic. In assessing the significance of specific IUIPC questions for influencing a participant's privacy concerns, from our exploratory factor analysis (TLI of factoring reliability = 1, RMSEA index = 0, and a confidence level of 95%), we found that for data collection, participants who thought about whether they should provide personal information to universities demonstrated higher levels of privacy concern, with a correlation of 0.8. Examining the IUIPC data awareness factor, the more important participants thought it was to be aware and knowledgeable about how their personal information will be used, the higher their IUIPC score, with a correlation of 0.9.

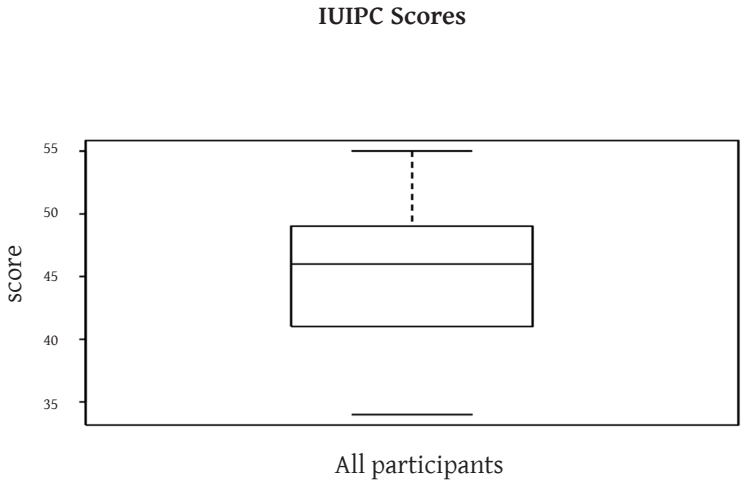

Figure 8: The IUIPC scores of study participants. The median score for our participants is 46, demonstrating a moderately high level of privacy concern, where 55 is the maximum score and 11 is the minimum.

79 Steven Bellman and others, 'International Differences in Information Privacy Concerns: A Global Survey of Consumers' (2004) 20 Inf. Soc. 313.

80 Sandra J Milberg and others, 'Values, Personal Information Privacy, and Regulatory Approaches' (1995) 38(12) Commun. ACM 65 https://doi.org/10.1145/219663.219683.

From our analysis, consent as a form of privacy control was not significant enough to be considered as a factor for assessing the level of privacy concern.

II. Consent levels for online learning

45 Figure 9 shows that most (28) participants consented to tutorial recording. We also asked participants to state whether they decided to change how they voted as a result of doing the exit survey. One participant from the commons group and two participants from the control group would change the way they voted based on the exit survey. All three changed from not consenting to giving consent. Most students (18) stated that they did not think twice before handing over their data to the university. This suggests that students may feel obliged to provide such data in order to access education and indicates a certain level of trust that students have of HEIs to use that data for academic purposes.

Several participants across both groups stated that disability and accessibility were important reasons as to why they consented to the tutorial recording. In context of the COVID-19 pandemic when the study took place, this is particularly important given the challenges students face during online learning. As a result, it is necessary to consider accessibility needs when considering whether and how tutorial recording should be conducted to support students.

Participant response to the question 'Should we record this tutorial?'

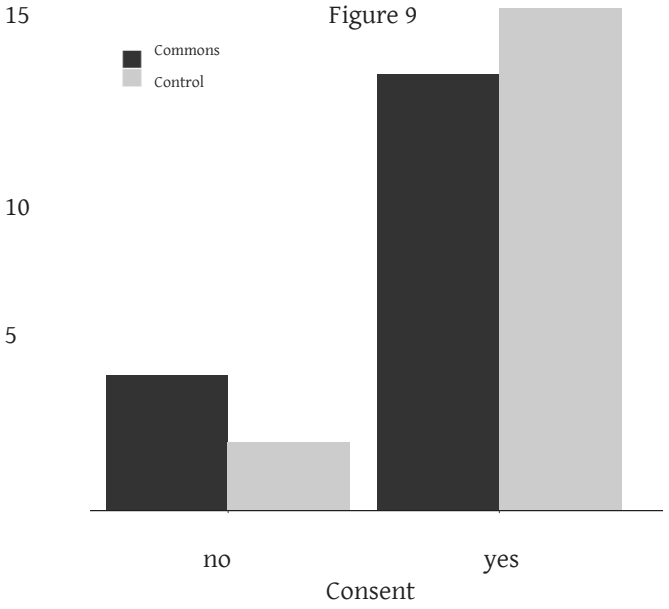

Figure 9: Consent preferences from participants answering the question "Should we record this tutorial?". The majority of participants in both commons and control groups consented to tutorial recording.

III. Commons tool: information, usefulness, and agency

46 Table 1 shows that resources related to data protection rights and policies were the most useful to our study participants. This suggests that participants are keen to increase their understanding of what protections are in place for their data and what recourse they have if anything goes wrong.

47 Interestingly, the actual consent voting poll where participants had to consent or not consent to the tutorial recording was the second least useful. This is consistent with existing literature on the limitations of meaningful and informed consent within and outside education that we outlined in Section B. This demonstrates the importance for students to feel that they are making informed choices (where the outcome is less important) in an online learning environment, where they do not necessarily question the university's motivations for recording tutorials. Additionally, given that the resources that give students more transparency were found to be marginally more useful that those that increased agency such as exercising rights and the quiz, more research could be done to examine how students believe their agency over their personal data could be increased.

Commons Resource	Count
Information on the University tutorial recording	13
The FAQs	13
Data protection law	12
Information on exercising your rights	12
The consent quiz	10
The consent voting poll	9
The anonymous forum	8

Table 1: The resources in the commons that commons group participants found useful for helping them decide whether or not they should consent to tutorial recording. All participants found at least one commons resource to be useful.

48 When elaborating on why participants found certain features of the commons useful, one student said that "I hadn't really known anything about tutorial recording policy or the laws and my rights related to these recordings before so I though (*sic*) it was interesting to learn more about my rights and more about what tutorial recordings would be used for and when they should be used". Another student thought that "the information about the University policy was very valuable to make might (*sic*) decision, and having access to it easily is helpful. The FAQs was (*sic*) definitely the most helpful element, as it answered a lot of my questions simply". A student who found the forum useful explained that: "I think I was most swayed by the anonymous student posts. Personally, I didn't want the session recorded, but I knew it would be helpful for others to review later or who had missed the session/not been mentally present due to chronic illness, etc.". Overall, nine participants in the commons group agreed that they would use the commons to improve the protection of their personal data. Five somewhat agreed, two neither agreed or disagreed, and one somewhat disagreed.

1. Control group comparison

49 When the control group, where participants did not have access to the commons resources, were asked what would have be useful for them to help them decide whether or not to consent to tutorial recordings, nine participants wanted more information. These included: "Who would be able to view and access the tutorial after it had been recorded and if it would be used for anything else other than for study use for the module.", "More information on where the recording would be stored and who it would be accessible to would be helpful.", and "Whether the lecturer could see individual responses: this would influence whether I answer yes or no as I don't want to come across as a spanner in the works". From those responses, the additional information participants would have liked fell into two categories: information about the consent voting tool and information about the tutorial recording itself. Both of these are covered under the Information on the University tutorial recording section and the FAQs section of the commons. Two participants wanted to know if turning on their webcam was required as they would not consent if it was. Eight participants did not feel that they needed more information to consent either because they did not care about being recorded, would have agreed to being recorded if they knew someone in class would need the recording, or felt that they were fully aware of the tutorial recording process.

IV. Topic, content, and attitudes towards tutorial recordings

50 When conducting the study, we asked participants to imagine that they were taking part in a mock-tutorial on conducting research on social media and provided them with the lesson plan. During their post-study survey, we asked participants whether the topic of the mock-tutorial impacted their consent levels to tutorial recording (Figure 10).

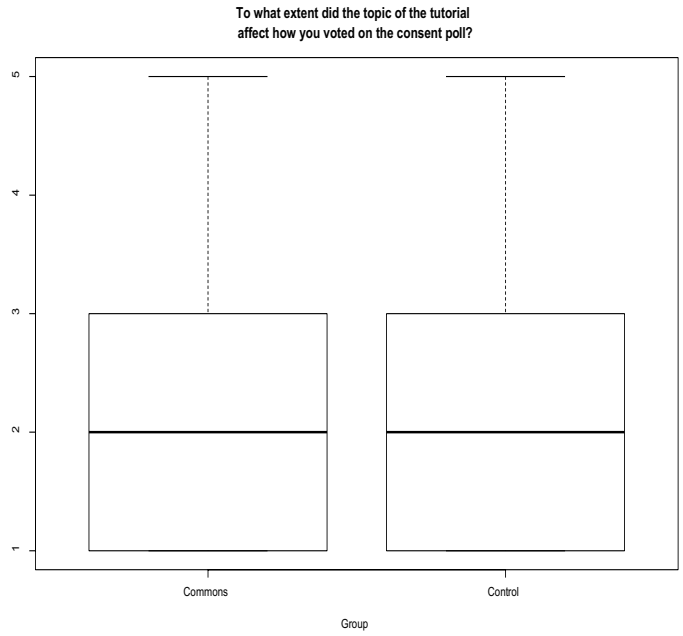

Figure 10: Impact of the tutorial topic on consenting to tutorial recording. The topic of the tutorial is not a strong factor for informing whether a student decides to consent or not consent to the tutorial recording in both commons and control groups. The median for both the commons and control group is two.

51 From the survey responses, participants suggest that they would not refuse consent based on the tutorial topic alone as it would depend on other factors such as if they felt they needed to re-watch a tutorial recording and whether the topic involves providing personal information that the participants themselves did not want to share.

52 We wanted to increase our understanding of how students participate in recorded digital classrooms and how that may impact personal information sharing. To examine this, we asked participants whether they would avoid any topics during online learning, specifically those listed as special category personal data under GDPR Article 9. From Figures 11 and 12, the high number of avoided topics during tutorial recordings suggest that even if participants consented to tutorial recordings, teaching subjects that result in the discussion of these sensitive personal data may limit student participation in online learning. Two of the highest ranked topics 'data concerning a person' (22) and 'political opinions' (20) represent a broad range of information often shared in discussions. Six commons and three control group participants did not avoid any topic. Importantly, commons participants avoided fewer topics across all categories. This suggests that because commons participants have a more comprehensive understanding of how their data are stored, they are more comfortable having discussions about matters related to the special category personal data recorded. More generally, in examining the impact of the tutorial topic and the content participants are willing to share, they explained that they would rather not participate than not consent to the tutorial recording because they had control over what they said. As a result, it is important for staff to consider how to engage with teaching sensitive topics online to maximise participation and generate the most value from online learning.

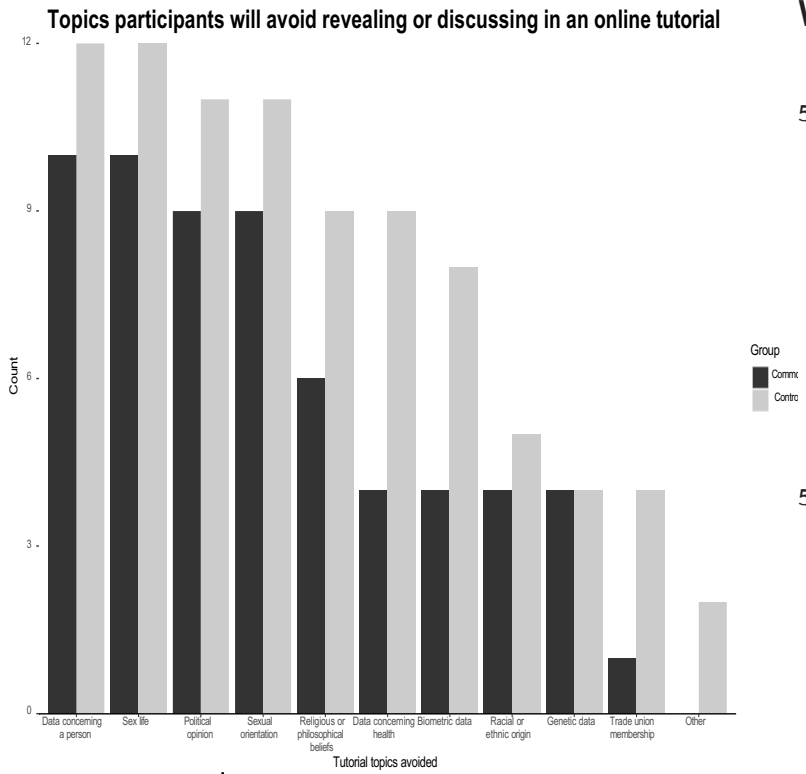

Figure 11: Topics participants avoided in a recorded online learning environment from participants answering the question "Are there topics you will avoid discussing or revealing about yourself if the tutorial is recorded compared to physical classes?". The two "other" responses include information that one participant considered to be "triggering" such as "mental health, other personal information, and financial information" as well as what another participant considered "anything that could be misconstrued or used out of context if the recording was inadvertently (or deliberately) released". Overall, the commons participants are less likely to avoid discussing certain topics.

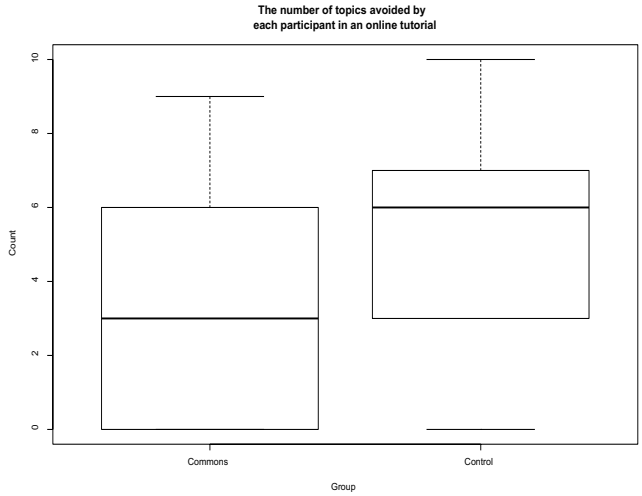

Figure 12: The number of topics avoided by each participant. Commons participants are less likely to avoid discussing certain topics during online learning, where the median for topics avoided is three compared to six from the control group.

V. Summary

53 In response to our research questions, we find that interacting with commons resources helps inform students about the purpose of online learning and tutorial recordings. From our findings across both groups, students found the commons useful in supporting their data protection preferences. Some students in the control group would also have liked more information about how their data were being collected and used when being recorded.

54 The commons model is useful for supporting user preferences for protecting their personal data because it helps students develop a more detailed understanding of how their data are collected, used, and stored. Almost all participants consented to tutorial recording, indicating that students find value, both for

themselves and for the class overall, when it comes to being able to access a recording if needed. Most students also indicated factors such as accessibility and helping other students as reasons for consenting to recordings. While recording the level of consent can be useful in understanding whether participants feel comfortable with the collection of data for tutorial recordings, it only provides a limited picture as to the extent to which the ability to interact with the commons helps inform them about the purposes of online learning and tutorial recording. Therefore, it is important to consider other factors and means for understanding student agency when it comes to supporting their data protection preferences. Our approach in creating a commons for data protection also addresses the limits of the individualistic approach in the GDPR as we move away from using consent from understanding how tutorial recording and online learning impact students' education experiences.

55 More transparency around data protection between students, staff, university management, and other involved stakeholders is encouraged through a commons as the model supports the identification of stakeholder tensions and breaks them down through identifying a common aim: accessing a dynamic, participatory learning environment. The high levels of consent to tutorial recording could imply that students, to some extent, trust universities with their online learning data. However, given that more information on data protection was found to be preferable, students may want more details on how and what data are collected and used. This is particularly true in preventing potential harm should there be any data breaches, given the higher preference for understanding data protection and data subject rights. The commons model encourages more transparency around data protection between students and other stakeholders because it not only informs students of the data governance and risk management polices related to online learning data, but also supports recourse through data protection rights if any harms are realised.

56 More broadly, the commons model can be useful for reconsidering online learning pedagogies to support more inclusive and safe digital classrooms. Our results indicate that when asked about students' participation in recorded online tutorials compared to in-person sessions, most participants indicated that there would be topics that they would avoid discussing. This suggests that while students are happy to consent to tutorial recordings, they may decrease their level of participation in online classes. This could impact the quality of tutorial participation in online teaching. As a result, staff should be mindful of asking students questions related to their personal experience that may reveal these forms of data. Commons participants are also more willing to reveal their personal data, suggesting that an improved understanding of what and how data are collected and processed can encourage participation. Overall, staff and academic institutions should consider how the online learning environment could be fostered to maintain the privacy and security offered by the physical classroom.

G. Discussion

57 Our study found that a commons for online learning can support student agency as well as provide greater transparency on data protection regulations and the means to exercise their data protection rights.

58 As online learning continues, it is important that HEIs consider how students can be best informed about how their data are used. Given that students change their behaviour in online learning, only asking students to consent to being recorded without providing further information on their data is insufficient for ensuring student agency. Higher education data governance should be re-examined to reflect our changing digital learning environment, improving transparency and trust with the academic community.

I. Limitations

59 Our study has a number of limitations. Those who opted to participate are likely to be more privacy aware. Several participants mentioned that because data protection and tutorial recordings were mentioned in the study description, the thought was already on their mind beforehand. For unknown reasons, more students who identified as female participated in our study. Although we did not find any patterns or correlation to gender in response to our surveys, greater gender balance may be preferred to mitigate any potential biases.

60 Additionally, it was initially hoped that the study could have been done in groups to more accurately mimic the tutorial environment. However, challenges in recruiting participants, time zone difference, and asking them to spend more time on Microsoft Teams outside of classes meant that it was difficult to schedule participants to the same session. As a result, 28 students participated in the study individually and three pairs participated together. There was no identifiable difference between their responses.

61 Finally, we acknowledge that online learning during the pandemic is different to what it might have been if technologies were implemented more organically. Students, staff, and universities have had to instantly adapt to shifting the physical classroom into a digital one. The aim of our study is not to criticise HEIs for deploying technological solutions, but rather to encourage continued discussions on data protection considerations in education and suggest new socio-technical solutions that can help employ inclusive and innovative learning pedagogies to support the academic community.

II. Legal implications

62 According to the UK Higher Education Statistics Agency, there were 2.5 million students in higher education in the 2019/20 academic year,[81] where the vast majority of those students would have been online learning data subjects due to the pandemic. Despite the significant number, there is little attention given to improve support for how data in this sector should be used and protected.

63 While online learning safeguards are in place, as identified in Section B, many legal instruments and policies that can be applied to education are either general data protection principles or refer only to children's data. Although these are useful and should be followed by HEIs, they do not adequately deal with the complexities of online learning data that can impact students beyond education. In the UK, this was exemplified with the UK Office of Qualifications and Examinations Regulation (Ofqual) A-Levels grading algorithm scandal, where the regulatory body used an equation to calculate secondary school students' A-Levels results and therefore determined whether students were able to meet their university offers.[82] As the calculation heavily relied on the school's historical predicted grades and grade distribution, many pupils felt that their algorithmic result did not reflect their examination abilities, with long-term consequences that not only affected their higher education but subsequent careers. Students in higher education have also begun to fight back. Students from the University of Amsterdam,[83] University of

64 Maastricht,[84] City University of New York,[85] and University of Texas,[86] amongst many others, have organised petitions to push back against e-proctoring technologies not only because of privacy violations but also the technology's discriminatory nature and for fostering a surveillance-based academic environment. From our study, it is notable that students do care about what happens with their data, even if they trust institutions with it. As a result, in addition to the responsibility of providing education, HEIs should also have ethical responsibility to ensure that the use of student data by institutions themselves and third parties are actively communicated. This cannot be done through data protection alone and must include broader considerations of digital infrastructures and data governance strategies within higher education.

65 More broadly, wider conversations between data protection stakeholders could

81 Higher Education Statistics Authority, 'Who's studying in HE?' (9 February 2021) https://www.hesa.ac.uk/data-and-analysis/students/whos-in-he accessed 19 June 2022.

82 Alex Hern, 'Ofqual's A-level algorithm: why did it fail to make the grade?' (20 August 2020) https://www.theguardian.com/education/2020/aug/21/ofqual-exams-algorithm-why-did-it-fail-make-grade-a-levels accessed 19 June 2022.

83 Naomi Appelman, Jill Toh, and Hans de Zwart, 'Opinie: 'UvA, verhul racisme van proctoring niet met mooie woorden" (6 July 2021) https://www.parool.nl/columns-opinie/opinie-uva-verhul-racisme-van-proctoring-niet-met-mooie-woorden~baa188f7/ accessed 19 June 2022.

84 Wendy Degens, 'Petition against online proctoring at the UM' (20 May 2020) https://www.observantonline.nl/english/Home/Articles/id/43194 accessed 19 June 2022.

85 Ian Ezinga, 'Student Petition Wins in Testing Software Fight' (28 October 2020) https://vanguard.blog.brooklyn.edu/2020/10/28/student-petition-wins-in-testing-software-fight/ accessed 19 June 2022.

86 Jason Kelley, 'Students Are Pushing Back Against Proctoring Surveillance Apps' (25 September 2020) https://www.eff.org/deeplinks/2020/09/students-are-pushing-back-against-proctoring-surveillance-apps accessed 19 June 2022.

be facilitated to raise awareness on how personal data is being treated in our data-driven society within a data-protection focused data commons from legal, socio-technological, and ethical perspectives. This includes discussing the impact of data-related regulations and policies on data subjects. For example, within data protection regulations, access to the fundamental right to data protection through the exercise of data rights can be further strengthened.[87] Laws such as the European Data Governance Act[88] and Data Act[89] aims to increase trust in data intermediaries and strengthen data-sharing mechanisms across the EU, could support broader data protection practices for the benefit of data subjects outside of data protection. In the UK, from a group privacy perspective, *Lloyd v. Google*[90] raises interesting questions on collective action for privacy violation claims, which may lower the bar for collective redress actions.[91] Research and guidance from organisations and advisory bodies such as the Centre for Data Ethics and Innovation in the UK can play an important role connecting different stakeholders and addressing data issues to specific domains, including the data infrastructures needed to support a commons.[92] As a result, legal developments fostering the use of collaborative and co-created data-related practices can support greater fairness, accountability, and transparency on how data can be used for the benefit of individuals and groups. As students are becoming more aware of how online learning technologies use their personal data in and outside of classrooms, they have increasingly put pressure on HEIs to look beyond data protection considerations when deciding to adopt such technologies, focusing on the ethical, health, and wellbeing aspects of using educational data. Reiterating the limitations of consent from our study findings in Section F, it is important that matters beyond lawful basis of data processing are considered when it comes to how students can have agency over their online learning data and experience. This requires university management, data protection authorities, regulators, and policy makers to consider new ways in which online learning data should be regulated and governed to protect student data while also generating value for education.

III. Future work

66 Given that our online learning commons was only tested on students, further research could be done with staff to examine whether the commons could be useful for protecting their agency for protecting personal data. This is particularly important due to concerns of HEIs using educational technologies to monitor staff[93]and break union strikes,[94] where intellectual property rights do not always belong to the individual who produced the work.[95] With the rise of children's data collection in the classroom, the commons could also be tested on younger learners to examine its usefulness for students, teachers, and parents.

87 Jef Ausloos, Réne Mahieu, and Michael Veale, 'Getting Data Subject Rights Right A submission to the European Data Protection Board from international data rights academics, to inform regulatory guidance' (2020) 10(3) JIPITEC 283 https://nbn-resolving.de/urn:nbn:de:0009-29-50315.

88 European Union, 'Proposal for a Regulation of the European Parliament and of the Council onEuropean data governance (Data Governance Act)' (2021) 14606/21 Council of the European Union 1 https://data.consilium.europa.eu/doc/document/ST-14606-2021-INIT/en/pdf.

89 94 European Union, 'Proposal for a Regulation on harmonised rules on fair access to and use of data (Data Act)' (2022) COM/2022/68 Council of the European Union 1 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022PC0068&from=EN.

90 UK Supreme Court, 'Lloyd v. Google' (2021) 50 UKSC 2019/0213 https://www.supremecourt.uk/cases/uksc-2019-0213.html.

91 Anuj Puri, 'The Group Right to Privacy' [2021] PhD Thesis 1 https://doi.org/10.17630/sta/161.

92 Centre for Data Ethics and Innovation, About Us (1 January 2018) https://www.gov.uk/government/organisations/centre-for-data-ethics-and-innovation/about accessed 19 June 2022.

93 Evronia Azer, 'Remote working has led to managers spying more on staff – here are three ways to curb it' (6 May 2021) https://theconversation.com/remote-working-has-led-to-managers-spying-more-on-staff-here-are-three-ways-to-curb-it-159604 accessed 19 June 2022.

94 The Scotsman, 'Edinburgh University lecture recordings used against strikes' (7 March 2018) https://www.scotsman.com/education/edinburgh- university- lecture- recordings-used-against-strikes-332569 accessed 19 June 2022.

95 James Vincent, 'University staff are worried their recorded lectures will be used against them (20 August 2020) https://www.theverge.com/21373669/recorded-lecture-capture-copyright-universities-coronavirus-fears accessed 19 June 2022; 100 James Vincent, 'University staff are worried their recorded lectures will be used against them' (20 August 2020) https://www.theverge.com/21373669/recorded-lectur-capture-copyright-universities-coronavirus-fears accessed 19 June 2022.

67 As the commons aims to provide a socio-technical framework for increased protection and for expressing data protection preferences, it can be applied to other use cases both within online learning as well as other domains. For example, a data protection-focused data commons could be adopted for social media data archiving, where individuals may have preferences as to what, how, to whom, and for how long their posts are shared. Those who are part of the commons can also find out if there have been any recent scandals or data breaches related to different platforms. As the data protection-focused commons can be useful for demystifying the data protection regulations, policies, and processes for data subjects, future work can help identify new use cases for the benefit of communities across different sectors. Crucially, the application of the commons is not exclusive to countries that fall within the GDPR but can be tested in other jurisdictions to support a socio-technical means for greater student agency and data protection.

68 Beyond the commons, teaching pedagogies should be re-examined to ensure that students and staff are able to make the most of online learning technologies without losing some of the privacy and security offered by the in-person learning. More research could be done to examine whether student attitudes towards online learning has changed as they return to the in-person classroom. As students no longer have to fully rely on technology for academic study and are able to compare the online environment to in-person teaching, it can be expected that they are able to more accurately identify the benefits and downfalls of both.

69 More generally, given the rapid deployment of technologies to enable online learning delivery during the pandemic, there was understandably little time to explore how digital tools could be used to enhance learning within online education spaces. As a result, this period of digitisation may be characterised as a missed opportunity for co-creating teaching methods, forms, and pedagogies to support creative educational practices that extend and supplement physical classroom activities. To limit only replicating in-person educational norms using digital tools, as the impact of the pandemic eases, inclusive efforts to re-imagine the purpose of education and the role of technology through socio-technical lenses and education-related policies may help develop collaborative educational practices to support digital learning.

70 Considering the future development of the commons, to deploy a data commons in the long-term, considerations need to be made with regards to the platform used to host the commons and how the commons is to be sustained financially. While our study used Microsoft Teams, it does not represent the ideal platform for the commons. When deciding where and how the commons should be hosted, commons stakeholders should be involved in the decision-making process. Further work in this area could include developments on technical infrastructure and system considerations related to personal data, particularly whether the commons could be created within an existing digital ecosystem or built independently. Development decisions should be made in consultation with data subjects based on their accessibility, data, and data protection requirements, as well as expert advice to ensure that adequate checks and balances are in place to protect data that is processed within the commons. Given the difference in stakeholder interests, how and by whom the commons is maintained can impact the trust between users as data subjects and others participating in the commons' development.

H. Conclusion

71 In this paper, we set out to explore how and if a commons for online learning could support students' data protection preferences in a collaborative digital environment. As a result of the COVID-19 pandemic, universities and HEIs have rapidly deployed online learning technologies and tutorial recording, introducing new data-related harms. Although existing research and policy support more inclusive data governance practices within higher education institutions to reflect the increasingly digital academic landscape, the continuation of hybrid learning has prompted the need to create new solutions that help students maintain their agency over their personal data. Adopting existing commons and following good online learning practices, we suggest that a data protection-focused data commons can improve protecting students' personal data through co-creation and collaboration, placing their data protection preferences at the centre of the decision-making process. Our study builds, deploys, and tests a commons to assess whether its

collaborative resources help inform students about online learning purposes and if it can support their preferences for data protection. We found that although most students were not knowledgeable in university policies or data protection regulations, they consented to tutorial recordings. Beyond data protection, community and accessibility needs were noted reasons for consent. However, while the topic of the tutorial was found to have minimal impact on consent, if a tutorial is recorded, students may alter their behaviour and participation. Most students who tested the commons found that the resources were useful, particularly those related to data protection regulations and rights. This suggests that the commons can increase support for student preferences in protecting their personal data both *ex ante* and *ex post*, where greater transparency between students, university management, and use of data by online learning platforms can help students feel more assured about how their data are used and what recourse may be available should they have any data protection concerns. We suggest that consent as a means for informing students about tutorial recording is insufficient, where more research should examine student attitudes towards online learning as hybrid learning and the deployment of such technologies continue. The protection and governance of online learning data should go beyond data protection, as there are wider ethical and wellbeing considerations on how education technologies should be deployed. By applying a data protection-focused data commons for online learning, support for student agency over their personal data can be improved in a collaborative digital environment, helping them understand how their data are used by institutions and third-party organisations.

Appendix A: Adapting and applying the data protection IAD commons framework

72 To create a data protection-focused data commons for online learning, we applied the data protection IAD framework[96] for the use case of support students as data subjects in deciding and expressing their data protection preferences for online learning. The questions that were identified as part of the data protection IAD framework are answered as follows:

Background

73 The background context of the data protection-focused data commons for online learning involves the environment in which online learning is being undertaken and the requirement for tutorial recordings of that class. This was heightened by the COVID-19 pandemic that shifted all learning online.

- As online learning progressed, more awareness came to light about the monitoring of students through technologies. Pre-pandemic, there were also considerations about the impact of new technologies, tutorial and lecture recordings, and the digitisation of education more generally.

- Despite positive progress in containing the pandemic, institutions are continuing to adopt some of these technological practices even as in- person teaching is able to resume. As a result, it is important to ensure that students are able to understand how their data are used and have the ability to control that data.

74 As part of existing regulations such as the GDPR, universities and higher education institutions have the responsibility to clarify and explain how they use personal data. Currently, universities have privacy policies on online learning and tutorial recordings as well as wider data protection impact assessments and policies. Universities also have data protection officers as required by organisations of a certain size to respond to any data protection requests and answer and data protection related issues.

- Data protection-specific and sector-wide organisations include the ICO, JISC, and the Office for Students that outline what and how data should and should not be used in relation to the work environment and specifically for higher education. Some of this work pre-dates the COVID-19 pandemic and some research was published during the pandemic in producing solutions that support the protection of personal data for the future of education.

96 Michael D McGinnis, 'The IAD Framework in Action: Understanding the Source of the Design Principles in Elinor Ostrom's Governing the Commons' in Daniel Coleand and Michael D McGinnis (eds), Elinor Ostrom and the Bloomington School of Political Economy, Volume 3: A Framework for Policy Analysis (Lexington 2018) https://polisci.indiana.edu/documents/profiles/mcginnis1.pdf.

- Students' personal data are separate from other forms of data that universities manage. For example, students' administrative data, examination and assessments data, and data from tutorials are all managed differently by different departments within the university. However, there may be some overlap, highlighting the importance of students being able to control and understand how their personal data from tutorials are being process. Universities generally follow FAIR data principles with regards to research data.

- Students may not be aware of how their institution managed their data and may not feel like they can challenge their institution given that doing so could negatively impact both their academic experience as well as their grades.

- Trust issues between students and their institutions, as well as staff and their institutions, may have arisen based on incidences of technology adoption as well as sharing of recordings without explicit consent.

Data Attributes

75 The data and personal data that are part of the commons.

- Student's personal data as part of Microsoft Teams such as student ID, the content they reveal in the tutorial, chat data, screen sharing, and their voice.

- If they disclose any disabilities, racial information, religious information, political identities, or union membership, this could be classified as sensitive data.

- The data is collected and processed following universities' policies, through Microsoft Teams, and possibly internationally if the student is not based within the UK.

- University and third party software collect, store, and process the data.

- The data is stored privately although tutorial recordings may be shared with other students. Currently, students have limited control as to whether they want to be recorded.

- University tutors, IT teams, and systems teams are responsible for how the data is stored, shared, and retained, with different administrative privileges.

- The university uses third party software such as Microsoft Teams as well as Panopto to record and store recordings.

- Students have limited control and authority in the process. They only have information of the university policies.

- Some of the risks include extensive data gathering unrelated to education, potential discrimination from e-proctoring software, and creating a surveillance academic environment.

Commons Community Members

76 The commons aims to support students and will also include staff, IT admin, and potential experts or those who are able to provide external advice outside of the university.

77 The commons is only relevant for those within the university community given that the data only applies to online learning.

78 The technology companies that provide the tools for online learning as well as higher education organisations such as JISC or the OfS may be relevant for the commons.

79 Students have a power imbalance between themselves, staff, and the university management given that if they refuse certain personal data to be collected or provided, they may not be able to access education, with negative impact on their academic prospects.

Goals and Objectives

80 The objective of the commons is to support students' online learning personal data preferences and help them understand what data protection rights and recourse they have should they not want their personal data to be used in certain ways.

Managing and Governing the Commons

81 The commons will sit in top of the online learning platform, in this case Microsoft Teams, to allow seamless and integrated access to the tool while not compromising their privacy with respect to others in the tutorial.

- The commons will allow students to choose whether they want to consent to tutorial recording both before and after the tutorial, with respect to the collection and processing of their personal data in that way.

- Online learning data that is collected is

shared within the tutorial and possibly to other students as well, where the recording may be re-purposed for teaching beyond the session in which the student participated in.

- No data protection mechanisms currently exist for this use case and only university policies are applied.
- The relevant data subject rights include the right of access, the right to data portability, and the right to object to automated decision-making.
- Purpose limitation may have been considered but is inconclusive.

82 Determine the governance mechanisms of the commons.

- The commons community consists of those who are affiliated with the university.
- There is no requirement for those who participate to share their personal data or their experience, but in order for the commons to function to meet its aims, students need to vote as to whether they consent to tutorial recording.
- If appropriate, the tutor can mitigate any issues. If not, then an external, neutral expert can help as well as addressing the data protection officer.
- Existing platforms that are used to conduct online learning may be updated with more privacy support or offer tools that can improve the protection of users' personal data.

83 Identifying decision makers and experts.

- External experts can be identified to support the commons, such as academic from other institutions, privacy professionals, and independent or international higher education bodies.

84 Decision-making on the commons is determined in part by the tutor, the department, and university management, with the latter making the most impact.

- The commons would be digital and take place on the same platform as where the online learning is taking place.
- Some of the infrastructure is internal, for example where the recording may be embedded and uploaded. Some of the infrastructure is external and provided by third party companies.

85 Establishing formal or informal norms that govern the commons.

- The commons follows the same guidelines as the terms of service of the online learning provider as well as university policies.
- Students and the commons community can provide feedback on their online learning experience through standard university procedures.
- Some institutions, such as the Open University, have greater experience with delivering online learning.

Outcomes

86 Benefits of the commons.

- Students are able to increase their understanding and control of how their personal data are being used as well as what avenues there are to object against some sues of personal data.
- The commons community should expect advice and guidance on what is allowed, as well as the ability to anonymously share their experience with others.

87 Costs and risks of the commons.

- The commons has minimum risk given that no extra personal data are being collected. There are mechanisms in place to ensure that their consent vote is anonymous and cannot be traced back to them or the tutor. There are no risks of further data breaches or privacy problems.
- As the tool is developed on Microsoft Teams and hosted by internal university servers, there are no additional risks from the data infrastructure.
- The rights available under the GDPR apply to the commons where applicable to personal data

Appendix B: Mock-Tutorial Instructions

88 As part of the Online Learning as a Commons study, we would like you to imagine that you are participating in a Teams-based tutorial. If you have not yet received a Teams meeting

invitation, please e-mail the researchers.

89 Please read the tutorial scenario below. Note that no further preparation will be needed before the Teams meeting.

Tutorial: An Introduction to Conducting Research on Social Media

90 In our digitally connected society, social media such as Facebook, Twitter, LinkedIn, and Instagram are used not only for sharing parts of our lives with others, but also used by businesses, event organisers, recruiters, and data brokers to understand how individuals and groups interact.

91 In this introduction, we will explore the types of data that are collected through social media, different techniques for conducting social media research, and review some examples and case studies.

92 This tutorial is aimed at a general audience and is suitable for all disciplines.

93 **1.** What is social media research? Social media research is where quantitative or qualitative data is being gathered from social networking sites (SNS). This research can be done in many forms. Examples of social media research include:

- Downloading tweets from the Twitter Archive and looking at specific hashtags.
- Looking at the user engagement (such as views, clicks, and location) of an advertisement put out by a business on Facebook.
- Creating polls on Instagram and asking users specific questions.

94 Social media research can be conducted by individuals and businesses to understand specific demographics of users to serve them specific content or find out more about their behaviours.

95 Questions:

- Can you think of other examples of social media research?
- Have you participated in social media research?
- What are other purposes of conducting social media research?

96 **2.** How can we conduct social media research ethically? Given the pervasiveness of social media and data on SNS, it has become much easier to conduct research on social media. However, this means that there may be less checks and balances when it comes to conducting research ethically. Traditional means of ensuring that research is ethical may not be applicable to the digital environment. For this part of the tutorial, we will discuss the challenges of conducting research on social media more generally.

97 Questions:

- To what extent do you think conducting ethical research from social media may be different to ethical research more generally?
- Given that formal ethics applications and consent procedures may not work for social media research, what do you think are possible solutions for conducting such research?
- Do you think conducting ethical research can help ensure that social network data are gathered in more ethical ways?

98 **3.** Guidance for conducting social media research For the final part of the tutorial, we will look at guidance for conducting social media research. We will read excerpts from the University's social media research ethical guidance as well as external policies that support ethical research.

99 Questions:

- What do you think about the guidance and policies that we read? Are they useful for researchers or for participants?
- What other things do you think should be included in social media research ethical guidance and policies?
- Do you think guidance and policies are enough to ensure that social media research is conducted ethically?

100 If you are interested in the content of the tutorial, please find a few resources below:

- "Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach" Carole Cadwalladr and Emma Graham-Harrison, The Guardian.
- "Internet Research Ethics for the Social Age: New Challenges, Cases, and Contexts" edited by Michael

Zimmer and Katharina Kinder-Kurlanda.

- University social media research ethical guidance

Appendix C: Adapted IUIPC questions

101 The following statements are IUIPC questions adapted for online learning included in the final survey of the study. The statements were presented in Likert matrices with five responses available, ranging from strongly disagree to strongly agree.

102 The following statements relate to privacy practices:

- Online learning platforms should disclose the way my personal data are collected, processed, and used.
- Universities should disclose the way my personal data are collected, processed, and used.
- It is very important to me that I am aware and knowledgeable about how my personal information will be used.

103 The following statements relate to control over your personal data:

- Users' online privacy is really a matter of users' right to exercise control over how their information is collected, used, and shared.
- I believe that online privacy is violated when control over how users' information is collected, used, and shared is lost.

104 The following statements relate to data collection:

- It bothers me when online learning platforms ask me for personal information.
- It bothers me when universities ask me for personal information.
- When online learning platforms ask me for personal information, I sometimes think twice before providing it.
- When universities ask me for personal information, I sometimes think twice before providing it.
- It bothers me to give personal information to so many online companies.

From data subjects to data suspects: challenging e-proctoring systems as a university practice

by **Alexandra Giannopoulou, Rossana Ducato, Chiara Angiolini, and Giulia Schneider ***

Abstract: E-proctoring is a set of software and tools to monitor students' behaviour during online examinations. Many universities have implemented this type of invigilation in response to the lockdowns during the pandemic to guarantee the validity and the integrity of exams. However, the intrusiveness of such technology into the students' personal environment along with major accuracy problems (e.g., in authenticating black students) has attracted the scrutiny of various European data protection authorities and, more recently, equality bodies.

In this paper, we critically approach the European normative framework available in countering the risks and situations of harms generated by e-proctoring through the lenses of data protection and anti-discrimination law. This work, in particular, is one of the first to systematise and analyse the corpus of online proctoring-related decisions that have emerged in the EU over the past three years.

After an overview of the technical aspects of such technology and an outline of the legal issues debated in the literature, the paper will reconstruct and discuss the convergences and divergences in how courts and independent authorities have assessed the lawfulness of online invigilation tools. In our analysis, we observe that such instruments were evaluated differently depending on the concrete features implemented. However, with some notable exceptions, the General Data Protection Regulation and the anti-discrimination framework have largely proven helpful to combat the most intrusive forms of e-proctoring deployment or to mitigate their risks. Nevertheless, to ensure a safer and fairer educational environment, we conclude that a few crucial issues—including the effectiveness of the collective enforcement of rights, discriminatory effects for people not covered by a protected ground, and the governance of edTech within the university—should be further taken into account.

Keywords: e-proctoring, data protection, GDPR, anti-discrimination, pandemic

Recommended citation: Alexandra Giannopoulou, Rossana Ducato, Chiara Angiolini, and Giulia Schneider, From data subjects to data suspects: challenging e-proctoring systems as a university practice, 14 (2023) JIPITEC 278 para 1.

A. Introduction

1 Lately, teaching has had to adapt to fundamental and urgent shifts. After more than two years into a global pandemic and several COVID-19 variants, life is progressively returning to normal. The majority of governments have lifted several, if not all, restrictions. This trend is valid for academic life as well. With Higher Education Institutions (HEIs) shut down for a large part of 2020 and 2021 and engaged with dual delivery and gradual return to in-person teaching in 2022, the academic year 2022/2023 is seeing a general resumption of on-campus activities. However, it is unlikely that things will return to exactly as they were before the COVID-19 pandemic. Firstly, as public health experts warn, COVID-19 is still "a global health threat".[1] Hence, we might

* Alexandra Giannopoulou: Postdoctoral researcher, Institute for Information Law (IViR), University of Amsterdam (a.giannopoulou@uva.nl). Rossana Ducato: Senior Lecturer in IT Law and Regulation, School of Law, University of Aberdeen; Lecturer at UCLouvain (rossana.ducato@abdn.ac.uk). Chiara Angiolini: Research Fellow, Law Department, University of Siena (chiara.angiolini@unisi.it). Giulia Schneider: Research Fellow, Department of Banking Sciences, Catholic University of Milan (giulia.

need to remain flexible and be prepared to face future emergencies.[2] Secondly, education has seen a paradigmatic digital shift over the past three years. Several investments have been made, new service providers have entered the market and offered additional services, staff have been trained on these services, further teaching methodologies have been developed, and several have proven pedagogically helpful or simply more efficient in addressing some issues (e.g., the lack of teaching spaces). Hence, some tools introduced during the pandemic are likely to remain.

2 This might be the case with e-proctoring systems. These are technologies designed to monitor student behaviour during online exams. Their function is to replicate in-person invigilation and guarantee the integrity of exams.[3] However, the extensive intrusion into the private sphere of students and numerous publicised cases of discriminatory outcomes[4] have raised several questions about these tools.

3 Used for many years now in some parts of the world, online proctoring software entered European HEIs during the first COVID-19-related lockdowns. Faced with urgent rules, HEIs were forcedto reflect on how to guarantee the integrity of online exams, opting in some cases for e-proctoring solutions. This brought the conversation on the credibility, necessity, and reliability of e-proctored assessment methods to the forefront of academic discourse.

4 The growing use of e-proctoring tools in European HEIs during the pandemic is confirmed in an explorative study the authors conducted between April and July of 2021.[5] The research targeted 38 HEIs in the United Kingdom, Italy, and the Netherlands, collecting 194 responses to a 32-question survey. It resulted that 13.10% of educators have been using e-proctoring systems during the pandemic, and 8.70% were offered the possibility to opt-out and choose a non-e-proctored alternative.[6] These results cannot be generalised, but they signal the emergence of e-proctoring usage among traditionally non-distant education providers. At the same time, they show that e-proctoring was not the only means to guarantee the integrity and validity of exams, as a large part of the respondents organised online exams without remote invigilation.

5 By now, most universities are back to on-site exams. However, the possibility of yet another upsurge of the coronavirus has led a few HEIs to ensure that formal rules for reinstalling online proctoring processes are in place for when the circumstances might make it necessary. These rules, incorporated, for example, as Examination Board rules and responsibilities, describe the framework for organising distance (written) exams with online fraud prevention measures. While almost lifted everywhere, pandemic-related restrictions have left long-standing traces in the functioning of HEIs and the performance of educational activities. This

schneider@unicatt.it). This paper and the related research are the results of a joint and collaborative work. However, Sections D.I, E, and F can be attributed to Alexandra Giannopoulou; Sections B, D.II.1, D.II.2, D.III, and G to Rossana Ducato; Sections A, C, and D.II.3 to Chiara Angiolini; Section D.IV to Giulia Schneider.

1 On the 5th of May 2023, the WHO Director-General declared that "It is therefore with great hope that I declare COVID-19 over as a global health emergency. However, that does not mean COVID-19 is over as a global health threat." (WHO Director-General's opening remarks at the media briefing, 5 May 2023, <https://www.who.int/news-room/speeches/item/who-director-general-s-opening-remarks-at-the-media-briefing---5-may-2023> accessed 6 May 2023.

2 Such emergencies, unfortunately, are not limited to public health matters. After the Russian invasion, many Ukrainian students were forced to return to remote teaching. Alexandra S Levine, 'Online Learning Resumes In Ukraine, But With New Wartime Challenges' (*Forbes*, 31 March 2022) <https://www.forbes.com/sites/alexandralevine/2022/03/31/ukraine-schools-use-tech-to-bring-classes-to-students-wherever-they-may-be/> accessed 1 November 2022.

3 For an overview of these tools see Section B.

4 More recently, see Naomi Appelman, 'Racist Technology in Action: Proctoring Software Disadvantaging Students of Colour in the Netherlands' (*Racism and Technology Center,* 10 July 2021) <https://racismandtechnology.center/2021/07/10/racist-technology-in-action-proctoring-software-disadvantaging-students-of-colour-in-the-netherlands/> accessed 1 November 2022.

5 This result stems from research conducted within the project 'Zooming in on Privacy and Copyright Issues in Remote Teaching' (https://www.stir.ac.uk/research/hub/contract/1660502). The project investigated the data protection and copyright implications of platforms' adoption in the field of education. The full description of the empirical study and results, including the analysis of the copyright issues, are published in Bernd J Jütte, Guido Noto La Diega, Giulia Priora, Guido Salza, 'Zooming in on education: An empirical study on digital platforms and copyright in the United Kingdom, Italy, and the Netherlands', (2022) 13(2) European Journal of Law and Technology. The present paper explores the data protection implications of those results.

6 At the same time, concerns about these systems were particularly deep, as the use of data by platforms and the deployment of e-proctoring technologies featured prominently among the most pressing issues posed by distance education: "how data are used by the platform", was stressed by 22% of the respondents, followed by "privatisation of educational means" (20.2%), "lack of choice about the platform to use" (16.8%), "e-proctoring technologies" (12.7%), "lack of digital materials at my University library" (9.2%), "uncertainty about online uses of materials" (6.9%).

legacy makes the critical evaluation of e-proctoring systems a necessary exercise for the determination of academic education imaginaries in a hybrid future.

6 The paper aims to map the legal landscape of e-proctoring in the EU. To this end, this contribution provides a brief overview of the technical aspects of e-proctoring systems (Section B) and existing literature (Section C) to map the state of the art of the debate. Section D critically discusses the case law consolidated over the past two years around e-proctoring systems, identifying points of convergence and divergence between the decisions. Section E reflects on the role of collective actions to enforce data protection rights and on the limited role it played in the e-proctoring controversies. After the submission of this contribution for review, a preliminary decision in the field of anti-discrimination law was issued for the first time in the Netherlands. Section F includes this relevant update and focuses on the legal means beyond data protection law for countering the discriminatory effects caused by the adoption of some e-proctoring tools. Section G sums up the results of the research.

B. E-proctoring systems: a brief technical overview

7 E-proctoring systems include a set of methods, software, and devices to monitor students at distance during an online test or exam. Online proctoring systems were already developed and used before the pandemic.[7] This was not only the case for massive open online courses ("MOOCs") and online HEIs but, in some circumstances, also traditionally non-distant learning institutions were relying on them (e.g., to organise computer-based tests at universities for a large cohort of examinees or to introduce more flexibility for some categories of students, such as athletes).[8] However, during the pandemic, their use has become much more widespread as, in some cases, it was considered the only available solution to perform exams and ensure their integrity.

8 Nowadays, various third-party commercial options are specifically designed to manage online exams and remote student invigilation. In principle, such tools enable HEIs and staff members to verify the student's identity at the beginning of the exam, monitor their activity, set up technical restrictions on their computer (e.g., block browsing during the exam or disable copy-paste shortcuts), remotely control and manage the exam and generate a report out of the monitoring activity.[9]

9 With reference to the invigilation modalities, Hussein *et al* classify e-proctoring tools into three main categories: live proctoring, recorded proctoring, and automated proctoring.[10]

10 The first solution, live proctoring, essentially replicates the physical surveillance but via webcams and microphones. Here, a physical proctor remotely verifies the student's identity at the beginning of the exam and monitors their video and audio during the whole duration of the session. In some cases, the invigilator can require a video scan of the workspace to verify that the student does not have any forbidden material at hand.

11 The second category, recorded monitoring, involves capturing and storing students' video, audio, computer desktop, and activity log for a subsequent human check.

12 Finally, automated proctoring relies on artificial intelligence systems to verify, for example, students' identities via a biometric recognition system and/or to automatically detect suspicious behaviours. In this latter case, the algorithm processes students' data (e.g., eye or facial movements, voice, keystroke loggings) and environmental data (such as background noise and the presence of other people in the room) to spot signs of cheating.[11]

7 Chris Rose, 'Virtual Proctoring In Distance Education: An Open-Source Solution' (2009) 2 American Journal of Business Education 81; Brian Bergstein, 'Online Exams: Big Brother Is Watching You: How Can You Tell If an Online Student Has Done the Work? That's Where Webcam Proctoring Comes In' (2012) 116 MIT Technology Review 68; Kenrie Hylton, Yair Levy and Laurie P Dringus, 'Utilising Webcam-Based Proctoring to Deter Misconduct in Online Exams' (2016) 92–93 Computers and Education 53; Kelwyn A D'Souza and Denise V Siegfeldt, 'A Conceptual Framework for Detecting Cheating in Online and Take-Home Exams' (2017) 15 Decision Sciences Journal of Innovative Education 370; Gianni Fenu, Mirko Marras, and Ludovico Boratto, 'A Multi-Biometric System for Continuous Student Authentication in e-Learning Platforms' (2018) 113 Pattern Recognition Letters 83; Silvester Draaijer, Amanda Jefferies, and Gwendoline Somers, 'Online Proctoring for Remote Examination: A State of Play in Higher Education in the EU', *Technology Enhanced Assessment* (Springer International Publishing 2018); Rohit Kumar, Viral Prakash Shah, and Nawaz Mohammed Shaikh, 'Methods and Systems for Monitoring Exams' (2013) <https://worldwide.espacenet.com/publicationDetails/biblio?FT=D&date=20190109&DB=EPODOC&CC=EP&NR=2750063B1> accessed 6 July 2022.

8 D'Souza and Siegfeldt (n 7) 374.

9 Mohammed Juned Hussein and others, 'An Evaluation of Online Proctoring Tools' (2020) 12 Open Praxis 509.

10 ibid.

11 See Liane Colonna, 'Legal Implications of Using AI as an Exam Invigilator' in Liane Colonna and Stanley Greenstein (eds), *2020-2021 Nordic Yearbook: Law in the Era of Artificial Intelligence* (The Swedish Law and Informatics Research

In case of anomalies, the system flags the issue for human review—usually the professor or the trained proctor—or can automatically terminate the assessment.

13 Many e-proctoring services usually offer a combination of the features mentioned above. As this brief overview suggests, there are various levels of intrusiveness in the students' personal sphere depending on the proctoring modalities or the adopted settings. In any case, they all process personal data (relating to the examinees, the examiners, and potentially third parties entering the room), thus triggering the application of data protection law. In the next Section, we will outline the risks and legal issues raised by e-proctoring as emerging from the literature.

C. Legal issues of e-proctoring

14 The increased use of e-proctoring systems has raised several concerns, including from a legal perspective. In the literature, many authors have stressed the potential clash between the use of such tools and fundamental rights and freedoms, particularly regarding the right to privacy, data protection, and non-discrimination.

15 For instance, it has been emphasised that the use of e-proctoring tools is likely to create or foster inequalities, e.g., for disabled people (who can be penalised by the anti-fraud system because they need to use screen readers or dictation software),[12] people with caring responsibilities (whose exam can be disrupted if the person they care for requires their immediate attention), or low income students who might not be able to afford suitable technical equipment, a reliable internet connection, or a room of their own.[13]

16 Moreover, the risk for ethnic minority groups is particularly high when using facial recognition technologies. Several studies have shown that such software is often trained on biased datasets and is systematically better at recognising white people, and particularly white men.[14] Hence, negative consequences for certain groups may occur due to the error rates of such tools or their deployment in a particular context.

17 Concerning privacy, the tracking of students' activity increases the risks of surveillance.[15] In this respect, scholars have warned against the chilling effect that pervasive monitoring can have on "students' intellectual freedom"[16] and their educational privacy.[17]

Institute 2022).

12 Lydia XZ Brown, 'How Automated Test Proctoring Software Discriminates Against Disabled Students' (*Center for Democracy and Technology*, 16 November 2020) <https://cdt.org/insights/how-automated-test-proctoring-software-discriminates-against-disabled-students/> accessed 6 July 2022; Lydia XZ Brown, Ridhi Shetty, Matt Scherer, Andrew Crawford, 'Ableism And Disability Discrimination In New Surveillance Technologies: How new surveillance technologies in education, policing, health care, and the workplace disproportionately harm disabled people', (*Center for Democracy and Technology*, 24 May 2022, <https://cdt.org/wp-content/uploads/2022/05/2022-05-23-CDT-Ableism-and-Disability-Discrimination-in-New-Surveillance-Technologies-report-plain-language-final.pdf> accessed 31 October 2022.

13 Teresa Scassa, 'The Surveillant University: Remote Proctoring, AI, and Human Rights' (2022) 8 The Canadian Journal of Comparative and Contemporary Law 271; Lindsey Barrett, 'Rejecting Test Surveillance in Higher Education' (2021) Available at SSRN 3871423.

14 Joy Buolamwini and Timnit Gebru, 'Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification' in Sorelle A Friedler and Christo Wilson (eds), *Proceedings of the 1st Conference on Fairness, Accountability and Transparency, PMLR* (2018); Jacob Snow, 'Amazon's Face Recognition Falsely Matched 28 Members of Congress With Mugshots', (*American Civil Liberties Union*, 26 July 2018) <https://www.aclu.org/news/privacy-technology/amazons-face-recognition-falsely-matched-28> accessed 31 October 2022.

15 Scassa (n 13); Barrett (n 13); Colonna (n 11). On surveillance in education institutions, see: Torin Monahan and Rodolfo D Torres, *Schools under Surveillance Cultures of Control in Public Education* (Rutgers University Press 2010); Barbara Fedders, 'The constant and expanding classroom: surveillance in K-12 public schools' (2019) 97 North Carolina Law Review 1673; Jason Pridmore and others, 'Intelligent Personal Assistants and the Intercultural Negotiations of Dataveillance in Platformed Households' (2019) 17 Surveillance & Society 125; Maya Weinstein, 'School of Surveillance: The Students' Rights Implications of Artificial Intelligence as K-12 Public School Security' (2020) 98 North Carolina Law Review 438; Sara Collins and others, 'The Privacy and Equity Implications of Using Self-Harm Monitoring Technologies: Recommendations for Schools' (*Future of Privacy Forum*, September 2021) <https://studentprivacycompass.org/resource/self-harm-monitoring/>, accessed 31 October 2022.

16 Barrett (n 13); Neil M Richards, 'The Dangers of Surveillance' (2013) 126 Harvard Law Review 1934.

17 Education privacy has been defined as a specific right "that safeguards the ability for a student to safely explore ideas and knowledge, to develop their intellectual selves and their personal selves, as well as the ability for educators and researchers to facilitate and participate in intellectual endeavours in the education context". Tiffany C Li, 'Privacy in Pandemic: Law, Technology, and Public Health in the COVID-19 Crisis' (2021) 52 Loyola University of Chicago Law Journal 767. The author affirmed that "this educational privacy right should be linked to the essential purpose for

18 Scholars have also expressed serious concerns about e-proctoring from a data protection perspective. The automated decision-making process performed by such software can impact examinees in a significant way (i.e., the suspected behaviour can be reported wrongly, or the exam can be automatically terminated), and it remains unclear to what extent the ex-post human review is an appropriate guarantee in practice.[18]

19 Moreover, unlike its analogic counterpart, e-proctoring technologies inevitably generate new data and favour their collection and storage. The retention of such amounts of data increases, as a consequence, the risks of the re-purposing and sharing of information without the data subject's awareness.[19] Such risks might range from situations where the HEI has an obligation to disclose such information to the commercial uses performed by the e-proctoring tools or to data breaches.[20]

20 Data security is, indeed, another critical point highlighted in the literature. Security concerns are even more worrisome considering the intimate nature of the data processed via e-proctoring (e.g., exam results, biometric data).[21]

21 Furthermore, the potential threat to fundamental rights caused by e-proctoring is directly recognised in the AI Act proposal,[22] where AI systems intended to assess students or determine their access to educational programs are classified as high-risk (hence, subject to stricter rules for their authorisation).[23]

22 Lastly, the choices that dictate the use of e-proctoring systems contribute to shaping our modern educational infrastructures, with a potential effect on education itself. This means that the existing risks for privacy, data protection as well as the discriminatory effects of these systems all become particularly salient beyond the individual, on a broader societal level.

23 Some of the legal issues just outlined in this paragraph have been challenged before European courts and supervisory authorities over the past few years, mainly from a data protection perspective. Very recently, the discriminatory effect posed by these systems has been raised in the Netherlands.

24 In the following Sections, the decisions concerning e-proctoring will be critically analysed to understand the state of play of this evaluation of practice within the EU legal framework. Section D will focus on data protection, assessing the main arguments used in the decision to see to what extent the GDPR can protect against the risks raised by monitored online exams. Section F will discuss the anti-discrimination case and the possible remedies available under the equality framework.

D. E-proctoring cases and data protection: a critical analysis

25 The data protection implications of e-proctoring tools have been assessed in a few European legal systems so far and with different outcomes. We counted one pre-pandemic decision[24] and eight decisions from 2020 onwards.[25] In terms of Data

education to provide social space for students to learn and grow through learning, for educators to impart knowledge and foster intellectual growth, and for researchers to produce and disseminate knowledge", ibid 791. The notion of "education privacy" recalls the one of "intellectual privacy", defined by Richards as the "ability, whether protected by law or social circumstances, to develop ideas and beliefs away from the unwanted gaze or interference of others"; Neil M Richards, 'Intellectual Privacy' (2008) 87 Texas Law Review 387.

18 Scassa (n 13) 306. See also Colonna (n 11), referring to Christopher O'Neill and others, 'Online Exam Monitoring Is Now Common in Australian Universities — but Is It Here to Stay?' (*The Conversation*, 18 April 2021) <http://theconversation.com/online-exam-monitoring-is-now-common-in-australian-universities-but-is-it-here-to-stay-159074> accessed 21 September 2022. The author reported that, in some cases, the human revision is outsourced to people outside the HEIs context, who are often poorly paid.

19 Barrett (n 13). On the possible negative effects of massive data collection on educational practices, see Pridmore and others (n 15).

20 Colonna (n 11).

21 Barrett (n 13); Colonna (n 11).

22 Commission, 'Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts', COM (2021) 206 final. On the 6th of December 2022, the Council of the European Union approved its version of the proposal as a general approach. On the 11th of May 2023, the European Parliament's Internal Market Committee and the Civil Liberties Committee agreed on the compromise text of the AI Act, which is expected to be voted by the plenary in June 2023.

23 See, Annex III of the Commission Proposal for an AI Act. In the literature, see Liane Colonna, 'The AI Regulation and Higher Education: Preliminary Observations and Critical Perspectives' in Katja de Vries and Mattias Dahlberg (eds), *Law, AI and Digitalisation* (Iustus, 2022).

24 Datatilsynet (DK) - 2018-432-0015.

25 Datatilsynet (DK) - 2020-432-0034; Persónuvernd - 2020112830; OVG Nordrhein-Westfalen, Beschluss vom 04.03.2021 - 14 B 278/21.NE; Garante privacy - Ordinanza 9703988 - 16 Sep 2021 (for a commentary in English, see

Protection Authorities ("DPA") guidance, the French *Commission Nationale Informatique & Libertés* ("CNIL") has issued a note with recommendations on surveillance and online exams in 2020.[26]

26 The e-proctoring systems examined in the court decisions varied, ranging from recorded to automated proctoring.[27] Such systems were partly customisable, and the HEIs adopted different features and retention policies. None of these cases reported the use of a facial recognition system to authenticate the examinees, nor the adoption of a fully automated decision-making process (i.e., there is no automated termination of the exam, but the recorded video/audio and the score for the deviant behaviour are reviewed ex-post and the final decision is made by the examiner or the examination board).[28]

27 The table on the right (Table 1) includes the list of decisions summarising their main outcome.

28 In terms of general outcomes, the DPA decisions (with the only exception of Denmark 2) found at least one, but usually numerous, GDPR violations in the application of e-proctoring systems, notably with regard to transparency rules (Denmark 1, Iceland, Italy) or the safeguards on extra-EU transfer (Italy, Portugal). On the contrary, Dutch courts reached an opposing conclusion.

29 Hence, in order to have a clearer understanding of the state of the art of the case law concerning e-proctoring tools and data protection, it becomes relevant to comprehend the different points raised in the decisions, the arguments used, and the friction within the legal framework.

30 In the following subsections, we will focus on the four main points that emerge from the cross-analysis of the decisions on e-proctoring, notably: 1) the actors involved in processing for e-proctoring purposes and the allocation of responsibility between them; 2) the lawfulness of the processing; 3) the respect of the right to information towards the data subject when deploying the e-proctoring system; 4) the challenges of cross-border data transfer.

Table 1. List of the e-proctoring cases with data protection claims and summary of the main outcome of the decisions

Abbreviations	Decision	Type of invigilation	Outcome of the decision	Notes
Denmark 1	Datatilsynet - 2018-432-0015	Automated e-proctoring system	Violation of Arts. 5(1)(c), 9, and 13 GDPR	Pre-pandemic case Use of e-proctoring in a high school
Denmark 2	Datatilsynet - 2020-432-0034	Recorded e-proctoring	Processing in line with data protection rules	Pandemic case Use of the software at a HEI
Germany	OVG Nordrhein-Westfalen, Beschluss vom 04.03.2021 - 14 B 278/21.NE	Recorded e-proctoring	Claim dismissed for procedural reasons	Pandemic case Use of the software at a HEI
Iceland	Persónuvernd - 2020112830	Recorded e-proctoring	Violation of Arts. 5(1)(a) and 13 GDPR	Pandemic case Use of the software at a HEI
Italy	Garante privacy - Ordinanza 9703988 - 16 Sep 2021	Automated e-proctoring system with flagging feature to spot cheating behaviours	Violation of Arts 5(1)(a), (c), (e). 6, 9, 13, 25, 35, 44 and 46 GDPR Violation of Art. 2-sexies of the Italian Data Protection Code (concerning the processing of special category data necessary for the performance of a task carried out in the public interest)	Pandemic case Use of the software at a HEI
The Netherlands 1	Rb. Amsterdam - C/13/684665 / KG ZA 20-481	Automated e-proctoring system with flagging feature to spot cheating behaviours	Claim dismissed	Pandemic case Use of the software at a HEI Judge for the preliminary injunction
The Netherlands 2	Gerechtshof Amsterdam - 200.280.852/01	Same as in *The Netherlands 1*	Decision confirms the outcome of *The Netherlands 1*	Pandemic case Use of the software at a HEI Appeal of *The Netherlands 1* decision
Portugal	CNPD - Deliberação/2021/622	Automated e-proctoring system with flagging feature to spot cheating behaviours	Violation of Art. 5(1)(a), (b), (c) GDPR	Pandemic case Use of the software at a HEI

I. Accountable actors

31 The responsibility of universities has seen an undoubtedly horizontal consensus across all decisions from either courts or national DPAs. HEIs that have used e-proctoring systems for exam invigilation are all considered data controllers, with the e-proctoring system providers qualified as data processors. Such conclusions align with what has already been noticed regarding the relationship between the education provider and the third-party platform used for e-learning purposes.[29]

Giorgia Bincoletto, 'Italy - E-Proctoring During Students' Exams: Emergency Remote Teaching at Stake' (2021) 7(4) European Data Protection Law Review 586); Rb. Amsterdam - C/13/684665 / KG ZA 20-481; Gerechtshof Amsterdam - 200.280.852/01; CNPD - Deliberação/2021/622.

26 CNIL, *Surveillance des examens en ligne : les rappels et conseils de la CNIL,* (20 May 2020), <https://www.cnil.fr/en/node/119918>, accessed 1 June 2022.

27 Following the categorisation made by Hussein and others (n 9).

28 This overview only concerns cases with data protection claims. As will be shown later on, the Netherlands Institute for Human Rights examined a discrimination claim concerning an e-proctoring system with facial recognition implemented for authenticating students.

29 As outlined, for example, by the Italian Data Protection Authority, Act of 26th March 2020, n. 9300784 – "Didattica a distanza: prime indicazioni" (26 March 2020), <https://www.garanteprivacy.it/home/docweb/-/docweb-display/

32 Remarkably, the Portuguese DPA articulated in greater detail the role, responsibility, and liability of the HEI and those of the e-proctoring provider, highlighting that the latter shall be seen as a data controller for the data they process for their own purposes (e.g., for the improvement of the service or for research).[30]

33 All the examined decisions look at the relationship between two actors: the HEI, on the one hand, and the e-proctoring platform, on the other. Even if not dealing with an e-proctoring case specifically, it is worth mentioning a Greek DPA's decision that goes a step further in analysing the responsible and liable actors in providing distance learning in schools.[31] The decision remarked that commercial e-learning service providers usually process data for purposes other than those set out by the HEI. This personal data collection and processing for their own distinct purposes qualifies these providers as data controllers for this function. Following this rationale, the Ministry of Education is the institution enabling and creating the conditions for this additional collection of personal data. Hence, in light of CJEU case law,[32] the Greek Ministry shall be considered a joint controller for the processing of personal data by the service provider.[33] While the reasoning is relatively succinct, and in reality, inconsequential for the Ministry itself as no further conclusions are put forward following this qualification, the recognition of the Ministry as a joint data controller for the data processing operations performed at the initiative of the private service provider, reveals the elevated responsibility of the State when favouring the implementation of distance learning tools.

34 Finally, all reviewed decisions and relevant opinions share the recognition of the responsibility of institutions in the decisions related to e-proctoring and remote teaching more generally. The recognition of a joint controllership between (private) service providers and (public) educational institutions, stressed by the Portuguese and Greek DPA, highlights the dependencies created between these two actors during the decision-making processes that lead to putting in place online education or e-proctoring systems. This "responsibilisation" of educational institutions shows the strong role of HEIs in enabling processing, making it possible for service providers to reuse educational data for autonomous purposes.[34] Moreover, it acknowledges the power dynamics at play throughout the establishment of big data-driven infrastructures.[35]

II. The lawfulness of the processing

35 The principle of lawfulness is a fundamental data protection pillar that protects data subjects, by requiring the processing to be compliant with the law, and necessary and proportionate to pursue a legitimate aim.[36] While there is a general agreement in all the analysed decisions towards the existence of a ground that can potentially legitimise the processing of personal data for e-proctoring purposes, the outcomes of the processing of sensitive data and the assessment of the necessity and proportionality of the means for ensuring the integrity of the exam diverge substantially.

1. Lawful ground(s) of e-proctoring processing

36 The first legal requirement that each HEI, as data controller for e-proctoring purposes, shall respect is the reliance on a lawful basis.[37] The majority of

docweb/9300784>, accessed 11 November 2020.

30 CNPD - Deliberação/2021/622, paras 56-57. In that case, the processing for the improvement of the service or research performed by the e-proctoring provider was deemed invalid for the lack of a lawful basis (specifically, the company was relying on the consent of students who were forced to accept all the terms, which included the conditions for data processing, when they had to take the exam online).

31 Greek DPA, 50/2021, 16th November 2021. A summary of the decision is contained in Annex I of this paper.

32 Case 40/17 *Fashion ID GmbH & Co. KG v Verbraucherzentrale NRW eV* [2019] ECLI:EU:C:2019:629.

33 According to the DPA's decision, "although the Ministry has no influence on the way Cisco uses this data, it is aware that by choosing to use the Webex Meetings application, it allows the transfer of users' personal data to Cisco for corporate purposes. Therefore, this activity should at least be considered a joint controllership with Cisco". Greek DPA, 50/2021.

34 See Chiara Angiolini and others, 'Remote Teaching During the Pandemic and Beyond: Four Open Privacy and Data Protection Issues of "Platformised" Education' (2020) Opinio Juris in Comparatione 45.

35 On this aspect, see Roberto Caso and Maria Chiara Pievatolo, A liberal infrastructure in a neoliberal world: the Italian case of GARR, 14 (2023) JIPITEC 349 para 1.

36 Cécile de Terwangne, 'Article 5 Principles Relating to Processing of Personal Data' in Christopher Kuner and others (eds), The EU General Data Protection Regulation (GDPR): A Commentary (Oxford University Press 2020).

37 Art. 6 GDPR establishes the grounds on which each processing must be based to ensure its lawfulness. These are alternatively: the consent of individuals (Art. 6(1)(a) GDPR), the necessity of the processing for performing or entering into a contract (Art. (6)(1)(b) GDPR), compliance with a legal obligation (Art. 6(1)(c) GDPR), protection of the vital interests of the data subject or of any third party (Art. 6(1)(d) GDPR), performance of a task carried out in the

the cases found that the e-proctoring processing (whether live, recorded or automated) can fall within the umbrella of Article 6(1)(e) GDPR which qualifies data processing as lawful when "necessary for the performance of a task carried out in the public interest".[38] Whether the HEI is a public or a private entity, according to DPAs and judicial decisions, putting in place monitored online exams can be qualified as "necessary to fulfil a task in the public interest", i.e., to provide education, organise exams, and issue valid academic qualifications.[39]

37 The Italian DPA and the Dutch judge focused on the aspects of the processing that the law must regulate when Article 6(1)(e) GDPR is used.[40] In this respect, according to the Dutch judge of the first instance, it is not necessary "that the public task or data processing is exhaustively regulated in a law in a formal sense, it is sufficient that the main features are known in the law".[41] Hence, the use of the automated e-proctoring tool was considered compatible with the Dutch legal framework. A more restrictive stance is taken by the Italian DPA, which stresses that the flagging system monitoring students' behaviour during the exam entails profiling. This processing creates specific risks for students (e.g., the exam can be invalidated) in violation of the principle of non-discrimination.[42] According to the DPA, when the relies on the lawful basis provided for by art. 6(1)(e) GDPR, such risks shall be properly assessed in a specific legislative provision.[43] The latter, however, was found missing in the Italian system, leading the DPA to invalidate the processing.

38 Contrary to the other decisions, the Icelandic DPA found the lawfulness of the processing in the legitimate interest of the HEI to ensure the integrity of exams and the quality of studies.[44] In the opinion of the DPA, such interests were not overridden by the students' fundamental rights and freedoms, *a fortiori* because the students who did not have facilities at home were offered to take the online exam in the HEI buildings. However, the decision did not thoroughly discuss the feasibility of such an alternative. For instance, it emerges from the complaint that the student could not accept this option due to the health conditions of his spouse (who was a suspected COVID-19 contact). Such a situation then leaves more than a doubt concerning the actual chance of the person accessing the exam without the use of the e-proctoring system proposed by the university.

39 Finally, the Italian DPA also contemplates the possibility that e-proctoring might be grounded in Article 6(1)(c) GDPR, i.e., the necessity of the HEI to comply with a legal obligation.[45] However, this point is not further elaborated by the Authority.

40 A substantial agreement instead can be found in the express refusal of consent as a basis that can legitimise the processing of personal data when deployed by a HEI for e-proctoring purposes. This result is not surprising as it applies a consolidated interpretation of the consent requirements. In particular, the manifestation of will shall be "freely given", i.e. the data subject shall have a real choice whether to accept the processing for e-proctoring purposes, and, in this context, such a choice might be impaired by the imbalance of power between the students and the HEI, the lack of equivalent alternative modalities for the exam, or the inability to take the exam without agreeing to the further processing performed by the platform. For example, the Icelandic DPA stated that consent may not be a lawful legal basis for processing due to the nature of the relationship between the university and the students. For the Portuguese Authority, the consent was de facto imposed if students wanted to do the exam (hence, it was not freely given).

public interest or in the exercise of official authority (Art. 6.1.e GDPR) or, the pursuit of a legitimate interest of the controller or any third party (Art. 6(1)(f) GDPR).

38 Confirmed also in CNIL (n 26).

39 On the application of Art. 6(1)(e) GDPR to private Universities, see Garante privacy - Ordinanza 9703988 - 16th September 2021 and CNPD - Deliberação/2021/622.

40 According to Art. 6(3) GDPR, the legal basis referred to in (e) of paragraph 1 must be laid down by Union law or Member State law to which the controller is subject. The processing purpose must be i) determined on that legal basis or ii) necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller. The legislation, at EU or national level, must meet an objective of public interest and be proportionate to the legitimate aim pursued. Art. 6(3) GDPR states also that the legal basis provided for by law may contain specific provisions to adapt the application of the GDPR (*e.g.*, the general conditions governing the lawfulness of processing by the controller; the category of data that can be processed; the data subjects concerned; the purpose limitation; and storage periods).

41 Rb. Amsterdam - C/13/684665 / KG ZA 20-481, para 4.9.

42 Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.5.

43 Such a conclusion echoes the considerations made by the former Article 29 Working Party, which, in relation to the forthcoming Art. 6(1)(e) GDPR, stated that: "when the processing implies an invasion of privacy or if this is otherwise required under national law to ensure the protection of the individuals concerned, the legal basis should be specific and precise enough in framing the kind of data processing that may be allowed". WP29, *Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC*, adopted on 9th April 2014, 22.

44 Persónuvernd - 2020112830, para 2.2. On the contrary, the reliance on the legitimate interest was expressly excluded by Rb. Amsterdam - C/13/684665 / KG ZA 20-481 (para 4.9) and CNPD - Deliberação/2021/622 (paras 47-50).

45 Garante privacy - Ordinanza 9703988 - 16 Sep 2021.

2. Processing of sensitive data

41 During the invigilation activity, the video recording can capture images or sounds revealing the ethnic or racial origin of the examinee, and the flagging system relies on the elaboration of the student's movements to identify suspicious behaviours. Whether such activities qualify as the processing of sensitive data, including biometric information, is a question that was answered quite differently in the analysed decisions.[46]

42 The first divergence concerns the classification of the information collected for detecting signs of cheating as biometric data. As known, biometric data are defined as those "personal data resulting from specific technical processing relating to the physical, physiological or behavioural characteristics of a natural person, which allow or confirm the unique identification of that natural person, such as facial images or dactyloscopic data".[47] The definition reflects that biometric data are generated through the use of specific technologies that elaborate individuals' features to identify (1:n biometric identification) or confirm (1:1 biometric verification) the data subject's identity.[48]

43 In *Denmark 2*, the lawfulness of the processing of biometric data was raised but dismissed because it was proven that the system was not adopting any facial recognition technologies. Student IDs were checked randomly by the staff instead. In the Dutch cases, the judge of the injunction affirmed that the e-proctoring system was used for authentication purposes,[49] but it seems to emerge from the decision that the staff manually verified students' identity at the end of the exam. With regard to the use of the flagging system to analyse students' behaviour, the same decision quickly concluded that it did not entail any processing of biometric data.[50]

44 Different from the Dutch court, the Portuguese and Italian DPAs affirmed that the automated analysis of the students' behaviour was processing of a "particularly sensitive nature".[51] Both decisions stressed that such data were not used to identify or confirm the student's identity.[52] Nevertheless, they were used to profile students.[53] Without entering into the assessment of the legal nature of such data, the Portuguese authority stated that the processing was disproportionate.[54] On the contrary, the Italian decision specifically recognised that the e-proctoring system was generating, through automated means, a biometric template, i.e., a digital representation of the biometric characteristics of the students extracted from the video recording, and, as a consequence, the university was processing biometric data to verify the presence of the student during the exam and to spot anomalies in their behaviours.[55] Given the classification of the students' facial images as biometric data, the Italian Authority applied the stricter regime established for special categories of data.[56] It concluded that, since there

46 Sensitive data or special categories of data are listed in Art. 9(1) GDPR and include "data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation". The processing of such data is prohibited by default unless the controller respects one of the conditions set in Art. 9(2) GDPR.

47 Art. 4(14) GDPR.

48 Lee A Bygrave and Luca Tosoni, 'Article 4(14). Biometric Data' in Christopher Kuner and others (eds), *The EU General Data Protection Regulation (GDPR): A Commentary* (Oxford University Press 2020) 213.

49 Rb. Amsterdam - C/13/684665 / KG ZA 20-481, para 4.16

50 ibid.

51 CNPD - Deliberação/2021/622, para 54.

52 See, Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.4 and CNPD - Deliberação/2021/622, para 52.

53 See, in particular, Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.5 and CNPD - Deliberação/2021/622, para 52.

54 See infra Section D.II.3.

55 Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.4. On the notion of biometric data under the GDPR and the distinction between identification and verification, see Els J Kindt, *Privacy and Data Protection Issues of Biometric Applications: A Comparative Legal Analysis* (Springer 2013); Catherine Jasserand, 'Legal Nature of Biometric Data: From Generic Personal Data to Sensitive Data' (2016) 2 Eur Data Prot L Rev 297; Catherine A Jasserand, 'Avoiding Terminological Confusion between the Notions of "biometrics" and "Biometric Data": An Investigation into the Meanings of the Terms from a European Data Protection and a Scientific Perspective' (2016) 6 International Data Privacy Law 63; Rossana Ducato, 'I dati biometrici' in Vincenzo Ricciuto, Vincenzo Cuffaro, Roberto D'Orazio (eds), *I dati personali nel diritto europeo* (Giappichelli 2019).

56 Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.4. There has been some debate concerning the classification of biometric data as sensitive data. It has been noticed in the literature that the list of special categories of data at Art. 9 GDPR does not include all biometric data, but only those meant to "uniquely identifying a natural person". This narrow reading might exclude from the more stringent discipline of sensitive data biometric information used, for example, for verification purposes (Jasserand, 'Avoiding Terminological Confusion between the Notions of "biometrics" and "Biometric Data": An Investigation into the Meanings of the Terms from a European Data Protection and a Scientific Perspective' (n 55)). However, this difference is not specifically marked in the Italian legal system. The national law regulates biometric data *tout court* as a special category of data together with genetic and health-related

was no national provision to date that authorised the processing of such sensitive data for ensuring the integrity of exams, the processing was unlawful.

45 The second point of divergence in the decisions analysed concerns the classification of the information contained in the video recording, able to reveal the ethnic or racial origin, as sensitive data.

46 The Court of Appeal of Amsterdam (*Netherland 2*) is again very restrictive in its interpretation, excluding that the facial images—e.g., those contained in the student ID card—can trigger the protection reserved in the GDPR for special categories of data.[57] First, because the processing is not meant to process the sensitive characteristics;[58] and, second, because it is unlikely that the lecturers will discriminate against students based on those attributes.[59]

47 Similarly, the Danish DPA (*Denmark 2*) affirms that although "it cannot be ruled out that personal data covered by Art. 9 GDPR may be processed in connection with the monitoring of examinees' computers"[60], the processing of such information is, in principle, unintentional. Hence, it dismisses the point of the university, which was declaring to rely on Article 9(2)(g) GDPR (i.e., the necessity of the processing for reasons of substantial public interest). Instead, the Authority recommended the controller to encourage students to avoid the sharing of sensitive data during the examination.[61] In a 2018 decision (*Denmark 1*), the DPA excluded as well the applicability of Article 9(2)(g) GDPR, considering its narrow scope (i.e., "which is namely assumed to be used, e.g., for processing of personal data for the purpose of health security, monitoring and alerting, prevention or control of communicable diseases and other serious threats to health"[62]). However, on that occasion it clearly stated that the controller should have identified another suitable lawful basis for the processing of sensitive data that can be accidentally recorded during an online exam.

48 The legal status of pictures and videos is not unproblematic.[63] There are only two direct references in the GDPR (Recital 51 and Article 4(14)) to them, and they are both related to biometric data. However, this is not the only special category of data that can be inferred from a picture. In its 'Advice Paper on special categories of data'[64], the Article 29 Working Party admitted the possibility that images of persons, like those captured by surveillance cameras, can reveal information about the ethnic origin or the health status of an individual and, as a consequence, can be classified as sensitive data. This initial interpretation, however, was not confirmed in the following Guidelines 3/2019 where the European Data Protection Board affirmed that video footage could be covered by Article 9 only if the processing is aimed at inferring special categories of data.[65] This ambivalence reflects the two main approaches that have emerged in the literature so far: a first approach (context-based) considers information in terms of special category of data and whether it is possible to derive the sensitive attribute from the circumstances of the processing; a second approach (purpose-based) retains that information can be considered under the umbrella of Article 9 when the controller aims to infer and use the sensitive characteristic.[66] The *Netherlands* and *Denmark 2* cases seem to align with this latter approach.

49 However, the recent CJEU decision in *OT* offers some elements to reconsider the above mentioned assessment.[67] In this case, the EU Court went for a context-based interpretation, affirming that the publication of the spouse's name on the controller's website can indirectly reveal the sexual orientation of the data subject and shall be classified as a processing of sensitive data.[68] The Court, in particular, stated that the notion of special category of data shall be interpreted broadly to guarantee a high level of protection of fundamental rights, especially in cases where the data's sensitivity can seriously interfere with privacy and data protection.[69]

50 If the rationale is to ensure an enhanced level of protection for those data that can reveal sensitive information through an intellectual operation of deduction or comparison, we might assume that the e-proctoring activity consisting of the recording of a video that is automatically elaborated for

data, establishing enhanced safeguards for it (see Section 2-f, Personal Data Protection Code).

57 *Contra,* Hoge Raad [Netherlands Supreme Court], [23rd March 2010] LJN BK6331. As reported in Kindt (n 55) 135-136.

58 Gerechtshof Amsterdam - 200.280.852/01, para 3.3.10.

59 ibid.

60 Datatilsynet - 2020-432-0034, para 3.1.3.

61 ibid. See, also ibid. para. 3.2.

62 Datatilsynet - 2018-432-0015, para 3.3.

63 Sandra Wachter and Brent Mittelstadt, 'A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI' (2019) Colum Bus L Rev 494; Paul Quinn and Gianclaudio Malgieri, 'The Difficulty of Defining Sensitive Data—The Concept of Sensitive Data in the EU Data Protection Framework' (2021) 22 German Law Journal 1583.

64 WP29, *Advice paper on special categories of data*, 20th April 2011, para 3.2.1

65 EDPB, *Guidelines 3/2019 on processing of personal data through video devices*, 29th January 2020.

66 Quinn and Malgieri (n 63).

67 Case 184/20 *Vyriausioji tarnybinės etikos komisija* [2022] ECLI:EU:C:2022:601.

68 ibid para 128.

69 ibid paras 125-127.

spotting signs of fraud and that can be assessed by the lecturer, should be considered as a processing of sensitive data. Especially in this case, the intention to rely on the sensitive characteristics should be considered irrelevant: both humans and machines can be affected by biases and give rise to disadvantageous treatment in practice.[70] That is why, for example, written assignments are usually marked anonymously.[71] On the contrary, recommendations on the measures to avoid the unintentional sharing of sensitive data, as suggested in *Denmark 2*, might eventually be considered a minimisation strategy, which presupposes a processing of sensitive data and the need to be covered by one of the conditions under Article 9(2) GDPR. Indeed, even if some elements are easy to hide from a camera (and we should question whether such a request is legitimate in terms of freedom of expression), others are impossible to (e.g., physical characteristics revealing our ethnic origin).

51 Finally, it shall be mentioned that the Icelandic claimant was trying to introduce a point about the recording of another subject's sensitive data, potentially captured during the videocall. In that case, while the student was taking the exam, his spouse was having a remote medical consultation, and the claimant was worried that the conversation could have been recorded. The issue was dismissed for procedural reasons (although the DPA noticed that, considering the circumstances of the exam, the recording of the data subject's wife would have been unlikely).[72] It is, however, another sign that shows how the deployment of an e-proctoring process can be intrusive, breaking the boundaries between the public and private spheres, revealing students' private life and personal circumstances.

3. The necessity and proportionality of the e-proctoring processing

52 Overall, with the clarifications mentioned in Section D.II.1, the examined decisions recognise that Universities can use e-proctoring systems to pursue the legitimate aim of ensuring the organisation and integrity of exams during the pandemic. However, for the processing to be legitimate, its operations shall be necessary and proportionate in relation to its purpose.

53 With regard to this issue, the French DPA adopted some general guidelines in the document "*Surveillance des examens en ligne : les rappels et conseils de la CNIL*"[73], outlining a few case scenarios and examples. The DPA considered that real-time video surveillance or snapshots of audio/video during examinations do not appear *prima facie* disproportionate. On the contrary, tools that allow the remote control of students' computers or the use of facial recognition systems might not be proportionate to the purpose of online examination.

54 All the decisions acknowledged that the pandemic forced universities to consider alternative assessment methods to traditional ones due to the impossibility of organising exams in person.[74]

55 The Icelandic DPA recognised that the e-proctoring processing was necessary to prevent exam fraud and ensure the reliability of evaluations and, thus, the quality of studies during the pandemic.[75] A similar conclusion was reached in *Denmark 2*. The Danish Authority acknowledged the assessment of the need for examination supervision performed by the HEI in relation to its courses, finding that the university adopted the e-proctoring tool only for one exam where it was crucial to ensure that students did not receive any external help (since there was only one correct identical answer and students did not have to explain how they reached that solution),[76] chose the least intrusive e-proctoring program, and had a proportionate storage period (21 days).[77]

56 The Dutch judge considered the potential interference of the use of e-proctoring tools with the right to data protection as necessary in a democratic society according to Article 8(2) ECHR because of the restrictions adopted during the COVID-19 period and the need to ensure the provision of education (which was considered in its economic relevance as well).[78] Moreover, the Court affirmed that the interference with Article 8 ECHR was proportionate due to the absence of alternative e-proctoring tools which were equally efficient at preventing fraud as the one adopted by the university in its case.

57 The rest of the decisions came to an opposite outcome.[79] The Italian and Portuguese Authorities recognised that the necessity and proportionality

70 See more on this point in Section E.

71 John M Malouff and others, 'Preventing halo bias in grading the work of university students' (2014) 1 Cogent Psychology 988937.

72 Persónuvernd – 2020112830, II.1.

73 CNIL (n 26).

74 This consideration does not apply to *Denmark 1*, as it occurred before 2020. On the use of alternative means, see Barrett (n 13).

75 Persónuvernd – 2020112830, para 2.2.

76 Datatilsynet - 2020-432-0034, para 3.1.1.

77 ibid para 3.1.2.

78 Gerechtshof Amsterdam - 200.280.852/01, paras 3.3.2 and 3.4.2.

79 In *Denmark 1* (pre-covid), the DPA found that the education institution failed to demonstrate how their processing met the necessity and proportionality test.

of the means were not properly considered in the HEIs' Data Protection Impact Assessment ("DPIA").

58 The Italian DPA, in particular, noticed the excessiveness of: 1) the data collection (the system did not simply inhibit some functions on the student's computer, but it also generated information based on their behaviour which was not considered strictly necessary for ensuring the validity of the exam), and 2) the retention policy (initially five years, reduced to one during the proceeding).[80] These elements led the Authority to declare the violation of the principles of minimisation, storage limitation, and data protection by design and default.

59 Reaching a similar conclusion, the Portuguese DPA started from the consideration that the processing involved a massive collection of data for the purposes of profiling and monitoring students. However, there was no assessment of the appropriateness, necessity, and proportionality of such a processing in relation to the general objective of ensuring the integrity of the exams. Furthermore, the scoring system assessing deviant behaviours was considered fairly opaque, making it impossible to evaluate the necessity and proportionality of the collection. Thus, the DPA concluded that the data minimisation principle was not respected.[81]

60 All in all, the examined decisions investigated the necessity and proportionality of the processing's means, with different outcomes. This is not surprising, considering that this assessment should entail a case-by-case evaluation.

61 While the break of the pandemic was, in principle, considered a reason for the necessity of the interference with the right to privacy and data protection, the concrete implementation modalities of the e-proctoring tools led DPAs to sanction the most intrusive e-proctoring processing, i.e., those entailing students' profiling or the calculation of the "cheating score". The only exception is the Dutch case, where the automated e-proctoring was indeed admitted. Here, however, the decision seems to derive from a procedural reason rather than a substantive one, i.e., the lack of adequate evidence provided by the claimants. The Dutch judges considered, in fact, that the students did not furnish suitable and less intrusive alternatives, able to overturn the university's assessment.

62 On a more general level, the DPIA proved to be a crucial document that was extensively used by the majority of DPAs to evaluate the legitimacy of the controllers' choices critically and, in particular, the necessity and proportionality of the measures adopted. For instance, even if the case was not focusing on e-proctoring but on distance education more generally, the Hellenic DPA consistently highlighted that the provision of proof in support of the necessity and proportionality of the COVID-related measures taken by the Ministry of Education should be evaluated on a case-by-case basis, especially due to the diverse ways in which these measures have the potential to impact different educational tiers. The evaluation on this case-by-case basis is expected to be performed (and subsequently proven) in the DPIA document. The engagement with this document is less evident in the Icelandic and Dutch decisions, where the Authority and the judges checked the performance of the DPIA but without an extensive engagement with the merit of the assessment.

III. The transparency of the processing

63 One critical factor that led to the invalidation of the majority of e-proctoring processing was the implementation of the principle of transparency. Such a principle, enshrined at Article 5 GDPR, requires the data controller to inform the data subject about the key aspects of the processing—including its risks—in a clear and timely manner (not only at the beginning of the processing operations but also after a data subject's request or in the case of data breach affecting data subjects rights).[82] The analysis of the cases reveals that universities largely failed in their duty to inform students about the processing occurring during e-proctoring.

64 The Danish (in *Denmark 1*), Italian, and Icelandic DPAs highlighted serious deficiencies in the content of the privacy policies provided to students. In particular, such cases pointed out the lack of adequate information about crucial aspects of the processing, such as the modalities of the monitoring,[83] data subjects' rights,[84] and profiling.[85]

65 The Portuguese and Icelandic DPA also emphasised the lack of clear instructions for teachers on the conditions and features of the respective e-proctoring tool. The Icelandic Authority considered that the training and education about the system was a complementary aspect of the duty to inform the student under Article 13 GDPR.[86]

80 ibid para 3.6.

81 CNPD - Deliberação/2021/622, paras 53-54.

82 See Arts. 5(1)(a), 12-14, and recitals 39, 58-61, and 71 GDPR.

83 Persónuvernd – 2020112830, para 2.4.

84 ibid.

85 Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.3.

86 Art. 13 GDPR requires the data controller to provide the data subject with a series of information (e.g. identity of the controller, purpose of the processing, the recipients of the

Meanwhile, the Portuguese Authority stated that the lack of instructions to lecturers introduced an excessive margin of discretion on staff, denoting a scarce delimitation of the purpose of the processing and a lack of data minimisation by the controller.[87]

66 The Italian DPA noted further violations of the principle of transparency, following the guidelines of the WP29.[88] First, noticing that the privacy policy used general formulas in relation to data storage, the DPA admonished the need to detail the specific storage period for the different categories of data processed. Second, in relation to the lack of relevant information concerning the transfer of data extra EU, the DPA affirmed the need to inform the data subjects about the country where the data were exported, the lawful ground for such a processing, and the specific safeguards for them.[89] Third, even though the DPA recognised that the e-proctoring system was not fully automated (hence, excluding the application of Article 22 GDPR)[90], it recalled the importance of informing data subjects about the risks of the processing in a meaningful way, avoiding situations where they are taken by surprise. In practice, this means that the controller shall make the individual aware of the logic of the e-proctoring algorithm and its consequences.[91]

67 Interestingly, the Portuguese case takes a different stance on the application of Article 22. The Lusitanian Authority, examining an e-proctoring tool similar to the Italian one, doubted that the intervention of a member of the staff, in case of a notification of anomalies in the student's conduct, could be considered a genuine human intervention. Given the lack of instructions to teachers and the lack of transparent information about the parameters used by the algorithm to signal deviant behaviours, the staff would have little elements to draw their own conclusions.[92] It did not elaborate further on Article 22 GDPR (for instance, about the existence of the conditions under Article 22(2) GDPR), but it alluded to the lack of remedies for the students to contest the decision.[93]

68 While both the Italian and Portuguese Authorities confirmed the need to inform data subjects about the logic and parameters of the e-proctoring algorithm, the Court of Appeal of Amsterdam quickly dismissed the possibility that the university should provide full insights into how the suspected behaviour is detected. In the opinion of the Court, such information could actually conflict with effective fraud prevention.[94]

69 Finally, with reference to the form of communication, the Italian DPA provided additional indications. It condemned the adoption of vague formulas (e.g., 'by way of example but not exhaustive') in the text of the privacy policy, the use of hyperlinks that do not lead to the relevant page, and the use of layered notices not accompanied by the full privacy policy. Moreover, the DPA had the occasion to specify that the mandatory disclosures required under Article 13 GDPR cannot be fulfilled by providing information to the students' representatives. Each and every data subject should be targeted instead.

70 In *Denmark 2* the information provided by the university to the students was overall positively evaluated. According to the DPA, the specific target was reached with a letter describing the e-proctoring processing in a "concise, transparent, easy to understand, easily accessible form, and in a clear and simple language"[95], and the letter was in addition to the general information notice that individuals receive at the beginning of their studies (which remains accessible on the university communication platform).[96] However, the Danish DPA pointed out that the university should have specified that the system records the browsing activity during the exam and that it is able to capture sensitive information, encouraging the HEI to fix such issues.

IV. Extra-EU data transfer

71 Many European DPAs have expressed their concerns

data, etc.) when the data are collected directly from them.

87 CNPD - Deliberação/2021/622, 43-44.

88 WP29, *Guidelines on Transparency under Regulation 2016/679*, adopted on 29th November 2017 as last revised and adopted on 11th April 2018 (wp260rev.01).

89 On this point, see *infra* Section D.IV.

90 Art. 22 GDPR prohibits automated decision making systems that can produce legal effects on data subjects or similarly significantly affect them. The provision, however, works when the processing is solely automated, i.e. if there is no meaningful human oversight. See WP29, *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679*, adopted on 3rd October 2017 As last Revised and Adopted on 6th February 2018 (wp251rev.01).

91 As recently stated by the Italian Supreme Court in a case concerning the creation of "reputational ratings" for the accreditation of physical and legal persons by a not-for-profit association, the controller shall disclose the "executive scheme of the algorithm and the elements of which it is composed". See, Cass civ (1) 25 May 2021, 14381.

92 CNPD - Deliberação/2021/622, 54. According to WP29, a "fabricated human intervention" falls within the scope of the "solely automated" decision under Art. 22 GDPR. WP29 (n 90).

93 CNPD - Deliberação/2021/622, 55.

94 Gerechtshof Amsterdam - 200.280.852/01, para 3.3.7.

95 Datatilsynet - 2020-432-0034, para 3.2.

96 ibid.

and issued decisions regarding the legitimacy of occurred data transfers outside of the EU in the context of e-proctoring.

72 The Italian DPA has underlined that many transfers to the US of data collected during remote teaching activities lacked an adequate lawful basis.[97] This trend was confirmed in the e-proctoring decision at stake. The DPA ascertained that the transfer was based on standard contractual clauses ("SCCs"). However, the technical and organisational measures were not sufficiently described in the contract by the importer and, as a consequence, were not in line with the requirements established by the same SCCs, as data subjects may not rely on such measures.[98] Similarly, the Portuguese DPA underlined the lack of an appropriate transfer mechanism with respect to two e-proctoring applications used by the university. According to the national supervisor, the university did not adopt the additional safeguarding measures to protect data in line with the *Schrems II* principles.[99]

73 Remarkably, the Dutch courts in *Netherlands 2* rejected the claim made by the plaintiffs with regard to the extra-EU data transfer and highlighted that they did not plausibly demonstrate that anyone not authorised by the university to view the video and audio, such as the service provider itself or US intelligence agencies, could gain access.[100] This appears to be quite a peculiar perspective, since the GDPR requires—in first stance—proof of the establishment of adequate safeguards for the protection of transferred personal data. The GDPR's approach is that of minimising the risk of access, by preventing access episodes through enacted safeguards. Along these lines, the Dutch Court appears to postpone the focus of the analysis to a secondary and pathological moment that the GDPR intends to approach through anticipatory protection tools. Hence, in line with the GDPR's objectives, the Court should have rather focused on the proof of safeguards instead on the proof of access. This is the approach taken in the Italian decision instead.

74 The cases mentioned above illustrate the concrete challenges for transferring data outside of the EU after the invalidation of the Privacy Shield. The DPA decisions are not isolated cases but follow a series of other important interventions in the sector of edTech. The Austrian DPA, for example, found that Google analytics services used for educational monitoring purposes were violating Article 44 GDPR, for they did not ground outside EU data transfer in one of the legal bases envisaged by the GDPR.[101] Similarly, the CNIL deemed the SCCs relied on by Google to be ineffective in so far as these did not "prevent access possibilities of US intelligence services or render these accesses ineffective"[102]. The transfers enacted by Google were thus considered to undermine "the level of personal data protection of data subjects as guaranteed in Art. 44 of the GDPR".[103] The Danish government has announced a ban on Google Workspace and Chromebooks in Danish schools, noting that data processed from online education activities could be accessed by non-EU authorities in manners inconsistent with EU data protection law.[104] More recently, a data governance study in UK schools showed that little has changed since the invalidation of the EU-US Privacy Shield, and many companies continue to transfer education data to the US.[105]

75 It is yet to be seen how the new draft US-EU adequacy decision "Data Privacy Framework", under discussion within the EU institutions, will address the concerns that have emerged so far.[106] In this respect, the EDPB raised several concerns in its Opinion 5/2023, restating the presence in the draft of existing issues related to "the rights of data subjects (e.g. some exceptions to the right of access and the timing and modalities for the right to object), the absence of key definitions, the lack of clarity in

97 Garante per la protezione dei dati personali, Memoria del Presidente del Garante per la protezione dei dati personali, Pasquale Stanzione - Affare assegnato n. 621 (impatto della didattica digitale integrata (DDI) sui processi di apprendimento e sul benessere psicofisico degli studenti), <https://www.garanteprivacy.it/home/docweb/-/docweb-display/docweb/9581498>, 27 April 2021 (Italian only).

98 Garante privacy - Ordinanza 9703988 - 16 Sep 2021, para 3.7.

99 CNPD - Deliberação/2021/622, paras 60-62.

100 Gerechtshof Amsterdam - 200.280.852/01, para 3.3.8.

101 Datenschutz behorde - 2021-0.586.257 (D155.027)).

102 CNIL, 'Google Analytics et Transferts de Données : Comment Mettre Son Outil de Mesure d'audience En Conformité Avec Le RGPD ?' (7 June 2022) <https://www.cnil.fr/fr/cookies-et-autres-traceurs/regles/google-analytics-et-transferts-de-donnees-comment-mettre-son-outil-de-mesure-daudience-en-conformite> accessed 1 November 2022.

103 ibid.

104 Paul Sawers, 'Denmark Bans Chromebooks and Google Workspace in Schools over Data Transfer Risks' (*TechCrunch*, 18 July 2022) <https://techcrunch.com/2022/07/18/denmark-bans-chromebooks-and-google-workspace-in-schools-over-gdpr/> accessed 1 November 2022.

105 Louise Hooper, Sonia Livingstone, Kruakae Pothong, *Problems with data governance in UK schools: the cases of Google Classroom and ClassDojo* (Digital Futures Commission and 5Rights Foundation, 2022).

106 Commission, 'Joint Statement on Trans-Atlantic Data Privacy Framework' <https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2087> accessed 1 November 2022. On the 13th of December 2022, the Commission has presented the draft of the adequacy decision for the EU-US data transfer, available at: <https://commission.europa.eu/system/files/2022-12/Draft%20adequacy%20decision%20on%20EU-US%20Data%20Privacy%20Framework_0.pdf> accessed 21 February 2023.

relation to the application of the DPF Principles to processors, and the broad exemption for publicly available information".[107] Similar concerns were expressed by the Committee on Civil Liberties, Justice and Home Affairs ("LIBE") in a draft motion for a resolution on the proposed adequacy decision, pointing out that, despite the changes introduced in the US legal order, the US system does not still grant an equivalent level of data protection.[108] Hence, the LIBE called on the Commission to continue the negotiations and urged not to adopt the draft of the adequacy decision presented on the 13th of December 2022. The European Parliament confirmed this view in its Resolution on the adequacy of the protection afforded by the EU-US Data Privacy Framework, urging the Commission "not to adopt the adequacy finding until all the recommendations made in this resolution and the EDPB opinion are fully implemented".[109]

76 This situation concerning the EU draft transfer inevitably highlights the technological dependence of HEIs on third-party providers subject to foreign law and the risks associated with such a choice.[110] Therefore, it is crucial to reflect on the possibility that edTech tools could be developed by European public players, who shall take into account—by design—the needs of the institutions and the EU values embedded in the Charter of fundamental rights and CJEU case law.

107 EDPB, *Opinion 5/2023 on the European Commission Draft Implementing Decision on the adequate protection of personal data under the EU-US Data Privacy Framework,* adopted on 28 February 2023.

108 See LIBE 'Draft motion for a Resolution to wind up the debate on the statement by the Commission pursuant to Rule 132(2) of the Rules of Procedure on the adequacy of the protection afforded by the EU-US Data Privacy Framework (2023/2501(RSP))', <https://www.europarl.europa.eu/doceo/document/LIBE-RD-740749_EN.html> accessed 21 February 2023.

109 European Parliament, *Resolution of 11 May 2023 on the adequacy of the protection afforded by the EU-US Data Privacy Framework*, P9_TA(2023)0204, para 20.

110 In the case of public authorities using cloud computing services, see the recent EDPB, *2022 Coordinated Enforcement Action 'Use of cloud-based services by the public sector',* Adopted on 17 January 2023, <https://edpb.europa.eu/system/files/2023-01/edpb_20230118_cef_cloud-basedservices_publicsector_en.pdf> accessed 21 February 2023 (see, in particular, paras 3.5 and 3.6).

Table 2. Summary of the key points emerging from the analysis of data protection cases discussed in Section D.
All decisions concern data processing carried out using-e-proctoring tools, except the Greek decision which examines e-learning tools (*).
All decisions describe cases which occurred during the pandemic, except *Denmark 1*(**).

	Accountable actors	Lawful ground(s) of processing	Processing of sensitive data	The necessity and proportionality of data processing means		Transparency of the processing	Extra-EU data transfer	Type of action
Denmark 2	Data protection roles: HEIs: data controllers e-proctoring system provider: data processor In addition:	Art. 6(1)(e) GDPR (necessity to perform a task in the public interest)	The processing of sensitive data is in principle unintentional	The decisions acknowledged that the pandemic forced universities to adopt alternative assessment methods to traditional ones due to the impossibility of organising exams in person	Necessity of e-proctoring to prevent exam fraud and ensure the reliability of evaluations during the pandemic	Overall, the information provided was concise, timely, and transparent. Additional information should have been given regarding certain aspects of processing (e.g., recording of the browsing history during the exam and how to avoid the sharing of sensitive data)	-	DPA investigation after a phone inquiry
Iceland		Art. 6(1)(f) GDPR (legitimate interest)	The claim concerning the potential processing of sensitive data of third-party during the recording (health data of the data subject's wife) was dismissed for procedural reasons		The education institution failed to demonstrate how their processing met the necessity and proportionality test	Serious deficiencies in the privacy policies provided to students. Lack of clear instructions to teachers on the e-proctoring tool	-	DPA investigation following a student's complaint
Italy		In principle, Art. 6(1)(e) GDPR. However: i) according to the Italian DPA the performance of a task in the public interest shall be regulated in the law or a regulation (lacking in the Italian system with reference to the necessity of the specific e-proctoring tool); ii) in *Netherlands 1* the Court stated that it is not	The processing involves biometric data. No existing provision in Italian law authorises the processing of such data for e-proctoring purposes		The necessity and proportionality of the means were not properly assessed in the DPIA	Serious deficiencies in the privacy policies provided to students	Block of the transfer towards the US Lack of proof that the transfer of personal data to the US (including biometric data) complied with the GDPR	DPA investigation following a student complaint
Netherlands 1			No processing of biometric or sensitive data found by the judge		The alternatives (e.g., essays) to e-proctoring were considered not suitable by the judge	-	The plaintiff did not prove that the transfer occurred in violation of the	Lawsuit initiated by the representative body of students

Netherlands 2		necessary that the public task or data processing is exhaustively regulated - According to the Italian DPA Art. 6(1)(c) GDPR (compliance with a legal obligation) could be another potential lawful basis - The Portuguese DPA questioned whether processing could be based on Art. 6(1)(f) GDPR (legitimate interest)	The processing of students' facial images was not regarded as sensitive data		The need for the delivery of educational services made the interference with the right to data protection necessary in a democratic society under Art. 8 ECHR	-	GDPR principles.	against their university
Portugal	- the Portuguese DPA stated that the e-proctoring system provider is a data controller for the data they process for their own purposes		-		The necessity and proportionality of the means were not properly assessed in the DPIA	Lack of clear instructions to teachers on the e-proctoring tool	Block of the transfer towards the US. Lack of additional measures preventing access to the transferred personal data by the US authorities	DPA investigation, following a complaint
Greece*	- According to the Greek DPA the Greek Ministry is a joint controller for any personal data processed by the e-learning platform		-		The provision of distance education is necessary for the educational process to be effective in periods when live education is impossible	Serious deficiencies in the information provided. The role of information is also to ensure proper understanding of the risks. It must be ensured that the information addressed to different data subjects is concise, transparent, understandable, and easily accessible, with simple wording especially with regard to children	The Greek Ministry of Education breached the obligations of Art. 46 GDPR, as no evaluation of the extra-EU data transfer had been carried out for the legality of the found data transfers	DPA investigation after a teachers' union complaint
Denmark 1**			Sensitive data might be captured during the recording, and the controller did not provide a suitable lawful basis for it	The education institution failed to demonstrate how their processing met the necessity and proportionality test		Lack of specific information about the e-proctoring processing	-	DPA investigation

E. Countering e-proctoring systems with GDPR collective action

77 GDPR enforcement processes—either through the exercise of data rights before the data controller, or through recourse to a DPA or courts—are key in understanding how e-proctoring systems can be inspected, challenged, and lawfully restrained. Whether at a university or an e-proctoring service provider level, personal data processing left unchecked risks, principally, harming students' fundamental rights. It is thus important to inspect the degree to which students and other (collective) entities are empowered to challenge e-proctoring systems bringing claims in front of the relevant authorities to contest the exclusionary and intrusive effects of online invigilation.

78 As our above analysis shows, e-proctoring systems can and have been challenged in both national courts and data protection authorities with relative success. It is interesting to note that on many occasions, universities were ordered to stop using specific e-proctoring software due to the GDPR violations observed by the DPAs. To this day, national courts have not delivered similar decisions.

79 Student complaints vis-a-vis the national DPAs is what instigated the decisions against the use of e-proctoring systems in Italy, Portugal, and Iceland. As we briefly presented above and as summarised in the Annex, students were able to raise arguments ranging from GDPR violations (unlawful consent to the processing of personal data, etc.) to violations of fundamental rights such as privacy and data protection.[111] These cases stayed well within the realm of individual direct action that aims to counter harms experienced by students in the deployment of e-proctoring systems.

80 Personal data protection normative frameworks tend to centre around the individual. This perspective is an important dimension of the way in which data protection law ensures (levels of) control over personal data. Yet, there are different ways in which data protection law—and the GDPR in particular—enables collective empowerment beyond the individual. While understudied in scholarship and underused by policymakers, judges, and authorities, it is vital to explore GDPR collective action as a tool to challenge e-proctoring systems, especially as it has become widely accepted that data-driven technologies often provoke harm beyond the

111 This was particularly discussed in the Dutch cases.

individual level.

81 The GDPR creates the procedural framework within which individuals can claim redress of individualharms incurred to each data subject respectively, but through acting collectively.[112] The recent *Ola/Uber* cases[113] show how these types of processes can empower groups of individuals when they exercise their rights in a coordinated manner. The *Oracle/Salesforce* case[114] is another stellar example of this understanding of collective action because its reasoning goes well beyond the limited number of individual claimants. This procedural framework requires a representative organisation or simply the coordination of numerous individuals, who bring one single procedure forward. Collective action can also refer to a single action on behalf of a group of individual data subjects operating to obtain a collective gain.

82 In the case of e-proctoring, we believe that GDPR collective action can be viewed as one available tool to tackle and counter harms suffered by specific groups of students or even by the student body as a whole. However, their (limited) exercise has not been particularly successful.

83 Collective student action has been a key instrument for ensuring the broader impact of the desired outcome. In Germany, for example, a complaint contesting the use of e-proctoring software was filed jointly by a university student and a digital rights non-profit organisation (*the Gesellschaft für Freiheitsrechte* ("GFF")).[115] The complaint regarded the storage and processing of video and screen-recorded data by the e-proctoring software that the university chose for conducting student exams during the lockdown. The requested injunction failed to produce the desired outcome of restricting the storing of exam video recordings, as the motion was denied by the Court on the basis of procedural elements, preventing the examination of substantive aspects.[116] In particular, the Court stated that it could not address the lawfulness of the processing in the emergency proceeding. An overview of the injunction reveals that the urgent procedure which was chosen due to the student circumstances was not the appropriate juridical forum, especially when the objective was to produce an impactful decision that would contribute to counter surveillance and e-proctoring system normalisation in HEIs. This case is a representative example of litigation efforts to ensure a strategic outcome against the use of e-proctoring software.

84 When thinking about the effects upon individuals of powerful systems mediated through data-driven technologies, strength in numbers is critical. For this reason, GFF is decidedly attempting to create the necessary conditions for introducing collective action representing multiple students. Namely, the

112 The GDPR gives data subjects the ability to have specific types of organisations represent them to obtain remedies for GDPR violations if such representation is recognised in Member State law. In *Meta Platforms Ireland Limited*, the CJEU recently clarified that Art. 80(2) GDPR does not preclude national legislation that allows a consumer protection association to bring legal proceedings in the absence of a mandate conferred on it for that purpose (and independently of the infringement of specific rights of a data subject), by alleging infringement of the prohibition of unfair commercial practices, consumer protection legislation or the prohibition of the use of invalid general terms and conditions (Case C-319/20 *Meta Platforms Ireland Limited v Bundesverband der Verbraucherzentralen und Verbraucherverbände - Verbraucherzentrale Bundesverband eV.* [2022] ECLI:EU:C:2022:322). Art. 80 GDPR designates a particular type of third party that can be mandated by data subjects to exercise a number of remedial rights. It enables pre-specified entities to exercise a subset of procedural rights attached to the data subjects (i.e. Arts. 77-79). Similarly, Art. 82 GDPR shows promise in empowering (groups of) individuals who have suffered damage by data processing infrastructures to seek compensation. So far, however, the exact scope and extent of this provision in practice is murky.

113 Rb. Amsterdam - C/13/692003/HA RK 20-302. The Court of Amsterdam ruled in a case brought by the UK drivers that were using Ola Driver App to provide services. The case concerned the right to access personal data and the right to data portability. While the Court rejected the request to order Ola to provide all personal data that falls within the scope of Art. 20 GDPR as insufficiently determined, it ruled that a driver collective action to seek access to their data did not amount to an abuse of data protection rights. It also confirmed the right of third parties to establish a gig workers data trust.

114 Rechtbank Amsterdam, C/13/688682 / HA ZA 20-863. The Privacy Collective (TPC) started a class action on behalf of ten million individuals against Oracle and Salesforce. It claimed that Oracle and Salesforce unlawfully processed personal data, and played a crucial role in the Real Time Bidding (RTB) process. The Court rejected the claim on grounds of representativeness of the TPC, but not before providing valuable insight in the concept of collective action. According to the decision, simply clicking on the support button does not mean that a statement of support has been obtained as intended within the representativeness requirement. The Court elaborated that the following information would have been necessary: information about the nature and deployment of the procedure; parties the action is directed at; and a description of the victims for whom TPC stands up for.

115 Gesellschaft für Freiheitsrechte e.V. - GFF, 'Monitoring of Online Examinations' <https://freiheitsrechte.org/en/themen/digitale-grundrechte/proctoring> accessed 1 November 2022.

116 OVG Nordrhein-Westfalen, Beschluss vom 04.03.2021 - 14 B 278/21.NE.

NGO has launched a public call looking for affected students. According to the call, GFF "want(s) to win fundamental decisions against excessive surveillance through online proctoring - and the best way to do that is with several cases that illustrate the problem".[117]

85 Similarly, in *Netherlands 1 and 2*, rather than individually instigated student complaints, it was the representative body of students who launched a lawsuit against their university challenging the decision and the conditions of use of e-proctoring systems for online invigilation. The representative student council body contested the unlawfulness of the personal data processing, the discriminatory effects of the software, and the lack of student participation in the decision-making process regarding the use of e-proctoring systems for exam invigilation. This case is among the few that were brought forward by students on the basis of multiple GDPR violation claims.

86 Interestingly, among all the cases examined, the student council was the only one challenging the institutional decision-making processes that led to the introduction of the e-proctoring systems. These processes did not involve the input and feedback from the student council, characterised by the university as "unsolicited advice" on the use of online proctoring.[118] The Amsterdam Court in *Netherlands 2* rejected the student council's claims invoking the internal regulations that permit such 'emergency' decisions to be taken unilaterally by the administrative body of the university without having to necessarily consider the input of student representative bodies. Remarkably, but not surprisingly since this was a civil litigation, the Court put the responsibility to determine, describe, and explain all available alternatives to all types of invigilation processes that are occurring in the context of student exams on the claimants, i.e., student council.[119] In sum, this means that the Court conceded that the student council's input was not necessary in the decision-making process regarding e-proctoring systems; at the same time, the Court decided to put the burden of explanation (and proof) on the advantages of alternative solutions to that same student council.

87 Finally, the Dutch Court in *Netherlands 2* recognised the admissibility of the student council as a claimant in this case. However, it did not justify the decision based on the GDPR procedural standing rules nor clarified whether the claimants represented the university's students in their collective interests vis-a-vis the GDPR violations in question. This lack of clarity is but one example illustrating the need for legal and procedural certainty in collective action cases with GDPR-based claims.

88 Similarly, in Greece, following a complaint filed by the association of teachers and even though the decision addresses remote teaching in general and not e-proctoring specifically, the DPA delivered its opinion highlighting the constitutional duty of the state to ensure the provision of education.[120] This duty, according to the DPA, provides the necessary precondition to any decision that is geared towards fulfilling that obligation. As mentioned in Section D.I, the complaint was filed with the Greek DPA by the private schools' teachers' union. It is noteworthy that the DPA found the union to not have the standing to file such a complaint because it did not operate under a specific mandate.[121] The lack of clarity

117 Oberverwaltungsgericht Für Das Land Nordrhein-Westfalen, 'Eilantrag Gegen Videoüberwachte Prüfung Der Fernuniversität Hagen Erfolglos' (*Justiz-online*, 4 March 2021) <https://www.ovg.nrw.de/behoerde/presse/pressemitteilungen/01_archiv/2021/17_210304/index.php> accessed 1 November 2022.

118 Gerechtshof Amsterdam - 200.280.852/01, para 2.8.

119 According to the Court, the student council did not make "it concrete in this way that there is a workable and sufficiently fraud-resistant alternative for every type of examination, which would make the use of Proctorio completely unnecessary. Nor have CSR et al. given concrete examples of exams where an alternative is available and the UvA has nevertheless opted for the application of Proctorio". Gerechtshof Amsterdam - 200.280.852/01, para 3.3.6.

120 See Greek DPA 50/2021, para 11: "During the school year 2020-2021, the Covid-19 coronavirus pandemic continued, while for long periods of time the schools did not function for life, either due to a decision of their universal non-operation for reasons of public health protection, or individual schools or sections, in accordance with the health protocols. In such cases, it is clear that the provision of education, which is an obligation of the state, must be continued at a distance through modern or asynchronous education procedures. The methods of providing distance education can, in general, be distinguished into methods of asynchronous distance education and modern synchronous distance education. As documented by the memorandum of the Ministry of Education and Science and the studies attached to it, **the provision of modern distance education is considered a necessary tool to be effective in the educational process, especially for long periods of non-functioning of lifelong learning for reasons of public health protection**, as the purpose of providing education can not be fulfilled effectively by providing only asynchronous distance learning. As modern distance education can only be done by electronic means which ensure two-way communication between teacher and trainee, which in fact presupposes processing of personal data of the participants in the educational process, such processing is necessary". (Our translation and our emphasis).

121 Art. 80(2) GDPR provides that Member States can allow

about the need for representation mandates with regard to the defence of individual and collective interests and the inconsistencies in collective representation at national levels are creating the space for inefficiencies of GDPR enforcement.[122]

89 Overall, we contend that collective action cases instigated by students and/or represented by student bodies and other similar organisations help (re)shape the public interest objectives of HEIs to a participatory model that includes student voices in determining student interests as a whole. In this context, the GDPR can constitute a solid legal basis for these actions because of its potential to uncover harms and inequalities. This has certainly proven to be true in the *Ola/Uber* cases and can follow similar paths in contesting e-proctoring systems. However, existing disparities in national collective action legal frameworks could limit the full potential of these mechanisms.

90 Beyond the data protection framework, equality law can be distinctly mobilised for the same purposes, as shown in a recent case in the Netherlands. In the next Section, the paper will present the first case contesting the discriminatory effects of the identity recognition feature of an online invigilation software, discussing the remedies available to challenge e-proctoring practices under the EU anti-discrimination legal framework.

F. The right to non-discrimination and e-proctoring

91 The above analysis reflects on the effectiveness of data protection tools as forms of accountability and assessment for e-proctoring systems used by public educational institutions. Despite the potential of the GDPR as a frame of reference and enforcement tool to protect human rights, the above-mentioned decisions did not go beyond data protection concerns. For instance, the discriminatory risks brought by e-proctoring were rarely put forward and discussed. However, such risks have become more and more pressing over the past few years.

92 As mentioned in Section C, many concerns have been raised about the error rates of the e-proctoring's facial recognition systems used for authenticating students leading to discriminatory effects against, such as black examinees.[123] Those students, for instance, have reported trouble logging into the virtual environment or were only able to do so when shining additional light on their faces.[124]

93 An e-proctoring software was used by the California bar for the admission exams organised remotely during the COVID-19 lockdown. Three students with disabilities sued the California bar because it refused to modify its remote proctoring protocols, which were making it impossible for disabled test-takers to efficiently sit the remote exams.[125] In *Gordon v. State Bar of California*,[126] the Court rejected the preliminary injunction because it did not recognise a concrete

collective organisations to lodge a complaint before a DPA or exercise data rights even without the mandate of the data subjects. However, this is not the case for Greece, where the law 4624/2019 requires the presence of an express written mandate for the representation of data subjects in Art. 41(2).

122 For GDPR data rights mandates, see Alexandra Giannopoulou and others, 'Intermediating data rights exercises: the role of legal mandates' (2022) 12(4) International Data Privacy Law 316. In general, and starting from 25 June 2023, the new Collective Redress Directive will be put in place, aiming to ensure that consumers are able to protect their collective interests in the EU via representative actions, the legal actions brought by representative entities. See Directive (EU) 2020/1828 of the European Parliament and of the Council of 25 November 2020 on representative actions for the protection of the collective interests of consumers and repealing Directive 2009/22/EC [2020] OJ L409/1.

123 Mitchell Clark, 'Students of Color Are Getting Flagged to Their Teachers Because Testing Software Can't See Them' (*The Verge*, 9 April 2021) <https://www.theverge.com/2021/4/8/22374386/proctorio-racial-bias-issues-opencv-facial-detection-schools-tests-remote-learning> accessed 1 November 2022; Nora Caplan-Briker, 'Is Online Test-Monitoring Here to Stay?' (*The New Yorker*, 27 May 2021) <https://www.newyorker.com/tech/annals-of-technology/is-online-test-monitoring-here-to-stay> accessed 1 November 2022; NL Times, 'Webcam Exam Software "Discriminatory," Doesn't Recognise Darker Skin Tones, Says Student' (*NL Times,* 15 July 2022) <https://nltimes.nl/2022/07/15/webcam-exam-software-discriminatory-doesnt-recognize-darker-skin-tones-says-student> accessed 1 November 2022.

124 Proctor Ninja, 'Proctorio's Facial Recognition Is Racist' (*Proctor Ninja*, 18 March 2021) <https://proctor.ninja/proctorios-facial-recognition-is-racist> accessed 1 November 2022.

125 Specifically, the e-proctoring system would not accommodate test takers who: were unable to stay in front of the web camera for the entirety of each test section, such as one disabled plaintiff who needed to take unscheduled bathroom breaks; needed a paper version of the exam, such as one disabled plaintiff who cannot use a computer screen for long periods of time; needed scratch paper, such as plaintiffs with ADHD; needed different amounts of extra time per test section; or used screen readers or dictation software. See *Gordon v. State Bar of California* N D Cal (30 Sep 2020). Brown (n 12).

126 *Gordon v. State Bar of California* N D Cal (30 Sep 2020). See Olivia Meadows, 'Gordon v. State Bar of California: Test Takers with Disabilities Sue State Bar of California for Forcing Them to Test In-Person During the COVID-19 Pandemic' (2021) 47(1) American Journal of Law & Medicine 138.

harm in the proctoring processes especially vis-a-vis the broader COVID-19 crisis. These are but some examples of reported exclusion.[127]

94 It is important to note that the discriminatory effects of e-proctoring systems are often linked to the facial recognition software and the room scan features of e-proctoring. Bias in these types of algorithms is not new, leading some academic institutions to reject or cease the use of e-proctoring systems citing accessibility and equality concerns.[128] However, as evidenced by our case law analysis, contesting e-proctoring systems has shown its limitations because the examination of data protection and privacy compliance did not always consider potential harmful, discriminatory effects.[129] For instance, while the plaintiffs did mention discrimination concerns in their litigation in the *Netherlands 2* decision, barely any reference to this was provided. In particular, the students argued the potential for discrimination based on the protected characteristics of students recorded for the purposes of identification and online invigilation that might be revealed such as race or religion. However, the Court remarked that it does not appear to be possible that the material recorded will be used for discriminatory purposes but does not provide further arguments for such reasoning.

95 So, the question remains: what are the tools available to counter the discriminatory effects of e-proctoring systems? In examining this, we should also stress that while anti-discrimination law could constitute a suitable tool for software affecting a protected category, other groups (e.g., people with limited internet access) are not directly covered by this legal instrument.

96 The discriminatory effects caused by the facial recognition system were not specifically discussed in the decisions analysed in the previous Sections (see Table 1) because it was ascertained that students' identities were manually checked by the examiners.

97 However, if a facial recognition system was adopted, the GDPR might have offered some (limited) grip to combat algorithmic discrimination. Article 22 GDPR might apply, but on the condition that the processing was solely automated with no meaningful human oversight. Moreover, the DPIA would offer the chance to assess and address discriminatory effects.[130] However, these sections of the DPIA often remain not sufficiently investigated.

98 Beyond the GDPR, anti-discrimination law is another relevant framework whose impact against e-proctoring systems is soon to be tested for the first time in the Netherlands.[131] During the submission of this paper, the first European case of an anti-discrimination complaint against the facial recognition system of an e-proctoring tool was filed by a student within the *College voor de Rechten van de Mens* (the "Netherlands Institute for Human Rights", hereinafter "NIHR").[132] According to the submitted complaint,[133] the student had difficulties logging into the e-proctoring system because the facial recognition software could only detect her face with the light pointing straight at her. The student claimed that this software's inability to detect black people, especially when a public HEI mandates the use of this software, was discriminatory. The university's initial response to the student was to attempt to decouple the student's skin colour from the factors considered by the facial recognition proctoring algorithm mainly due to the lack of proof of the existence of such a link. The response to the internal complaint was that "they cannot establish an objective link between the student's skin colour and whether or not the digital surveillance system

127 Brown and others (n 12).

128 See the public announcement from the University of Illinois, stating they will not renew their licence to the Proctorio software due to discrimination concerns at <https://emails.illinois.edu/newsletter/1970177238.html> accessed 15 September 2022.

129 Indirectly, the Portuguese and Italian DPA offered some shielding against discrimination when considering the processing of sensitive data.

130 As stressed in Frederik Zuiderveen Borgesius, 'Strengthening legal protection against discrimination by algorithms and artificial intelligence' (2020) 24(10) The International Journal of Human Rights 1572 and the bibliography therein cited at fn 70. More recently, see also Margot E Kaminski and Gianclaudio Malgieri, 'Algorithmic impact assessments under the GDPR: producing multi-layered explanations' (2021) 11(2) International Data Privacy Law 125 and their suggestions for improving the current mechanism into a more effective Algorithmic Impact Assessment.

131 See Hans de Zwart, 'Dutch Student Files Complaint with the Netherlands Institute for Human Rights about the Use of Racist Software by Her University' (*Racism and Technology Center*, 28 July 2022) <https://racismandtechnology.center/2022/07/28/dutch-student-files-complaint-with-the-netherlands-institute-for-human-rights-about-the-use-of-racist-software-by-her-university/> accessed 1 November 2022.

132 The NIHR is the national human rights institution established according to the United Nations General Assembly Resolution A/RES/48/134 of 20 December 1993 on National institutions for the promotion and protection of human rights and Recommendation R (97) 14 of the Committee of Ministers to member states on the establishment of independent national institutions for the promotion and protection of human rights.

133 See the complaint here (in Dutch only): <https://racismandtechnology.center/wp-content/uploads/20220715-klacht-over-proctoring-bij-college-voor-de-rechten-van-de-mens.pdf > accessed 22 February 2023.

is functioning properly".[134] Against the backdrop of this case, it is useful to evaluate anti-discrimination laws as defensive tools against harms caused by e-proctoring algorithmic systems.

99 As explained by the complaint filed by the student, the Dutch anti-discrimination law qualifies indirect discrimination as whenever any apparently neutral provision, standard or practice related to people of a particular religion, belief, political opinion, race, gender, nationality, heterosexual or homosexual orientation or marital status is particularly harmful when compared to its effect on other people.[135]

100 The NIHR published an interim judgement on the 7th of December 2022.[136] It found that the facts presented by the student were sufficient for a presumption of indirect discrimination based on race, because: a) she was disadvantaged by the anti-spying software; and b) there is academic research showing that facial detection software generally performs worse on people with darker skin colours.[137] The NIHR applied existing legislation according to which, when there is a presumption of discrimination (so-called *prima facie discrimination*), the burden of proof shifts to the defendant, who must justify the use of the software.[138] In this respect, the NIHR concluded that the university had not provided sufficient evidence to do so. Hence, it gave ten weeks to the university to further substantiate its defence and reserved its final decision. As some authors have stressed, if the algorithm is a black box, it might be quite challenging to provide evidence of the lack of discrimination.[139]

101 Universities have a duty under anti-discrimination law to ensure that the practices—including e-proctoring features—are not unduly disadvantageous to any students before implementing them. To this end, they should choose a provider who will ensure this condition is satisfied.

102 In GDPR terms, this duty of care can be reflected in the application of the fundamental principles, such as accountability, fairness, and integrity. The principles of proportionality and necessity may play a significant role in assessing the lawfulness of the processing through e-proctoring software, also in relation to the assessment of discrimination risks. Moreover, it would be interesting to see national courts or DPAs assessing the existence of discrimination through the DPIA and the lens of the fairness of processing, a principle affirmed by Article 8 CFREU and Article 5 GDPR. This assessment could take place, for instance, when contesting a biased e-proctoring system that involves biometric authentication to sign in.

G. Final remarks

103 Over the past three years, many concerns have been raised in relation to the risks and situations of harm of e-proctoring implementation at universities during the pandemic.[140] Such concerns have been voiced and examined across Europe in a series of cases that were collected and critically analysed in this paper. In this final Section we summarise the legal takeaways of the analysis and pinpoint the more systemic issues that need to be addressed in relation to e-proctoring, and edTech more broadly.

104 Even if e-proctoring will not generally be needed by traditionally non-distant HEIs anymore (unless new emergencies arise), it might still be considered by those universities which are offering online programs, or which want to keep online assessments as an option. Hence, it is relevant to understand

134 Statement naar aanleiding berichtgeving Volkskrant, 15 July 2022 (in Dutch only): <https://vu.nl/nl/nieuws/2022/statement-naar-aanleiding-berichtgeving-volkskrant> accessed 22 February 2023.

135 Wet van 2 maart 1994, Artikel 1(c) indirect onderscheid: indien een ogenschijnlijk neutrale bepaling, maatstaf of handelwijze personen met een bepaalde godsdienst, levensovertuiging, politieke gezindheid, ras, geslacht, nationaliteit, hetero- of homoseksuele gerichtheid of burgerlijke staat in vergelijking met andere personen bijzonder treft.

136 College voor de Rechten van de Mens (Dutch Human Rights Institute), Decision 2022-146, available online at: <https://oordelen.mensenrechten.nl/oordeel/2022-146>.

137 On this issue, see Buolamwini and Gebru (n 14); Hanna F Menezes and others, 'Bias and Fairness in Face Detection' (2021 34th SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)) 247.

138 To prove algorithm *prima facie* discrimination is not often an easy task: the way some systems operate makes it difficult for an individual to realise whether, and how, they have been discriminated against. Moreover, without knowledge of the logic of the algorithm it will also prove challenging to see how other people might have been treated and, as a consequence, define a legitimate comparator group (people in a similar situation of the victim who were not disadvantaged by the alleged discriminatory practice). See, Sandra Wachter, Brent Mittelstadt, and Chris Russell, 'Why fairness cannot be automated: Bridging the gap between EU non-discrimination law and AI' (2021) 41 Computer Law & Security Review 105567.

139 See, Jeremias Adams-Prassl, Reuben Binns, and Aislinn Kelly-Lyth, 'Directly discriminatory algorithms' (2023) 86(1) The Modern Law Review 144, referring to the Joint Opinion of Robin Allen QC and Dee Masters in the Matter of Automated Data Processing in Government Decision Making (7 September 2019) <https://perma.cc/M2GU-D8HS> accessed 9 February 2023.

140 See Section C of this paper.

to what extent e-proctoring tools shall be used or implemented by universities in the post pandemic world.

105 The case analysis shows that Courts and Authorities i) took the emergency situation into account in their decisions, ii) identified key problematic issues in the use of e-proctoring tools from a data protection point of view; and iii) non-discrimination issues emerged later, and the litigation is, at the moment, less developed when compared to data protection.

106 With reference to the first aspect, the situations of urgency and emergency faced by HEIs due to the COVID-19 lockdowns entered the balancing exercise to assess the legitimacy of alternative exam measures and, in some circumstances, led to the justification of the adoption of remote proctoring. However, now that COVID-19 is over as a global health emergency it is important that universities review the measures implemented during the past three years and abandon those that are no longer necessary or proportionate.

107 Secondly, data protection authorities found several points of friction between the deployment of remote invigilation and the GDPR, leading, in the majority of cases, to the block of the processing. For instance, the most invasive features, including the profiling of students for flagging suspicious behaviours, were banned by DPAs on a number of grounds, such as the lack of proportionality or lawful basis for the processing of sensitive data or for the extra-EU data transfer.

108 Different lines of reasoning were followed by civil courts. Dutch judges, in *Netherlands 1 and 2*, generally admitted the legality of the use of automated e-proctoring during the pandemic, confirming the assessment performed by the university.

109 When the processing did not involve the controversial flagging feature, all DPAs stressed some issues in the implementation of the transparency measures adopted by the universities to inform students.

110 Indeed, the lack of information provided to students and staff was a critical deficiency highlighted by the supervisory authorities. This situation might be a consequence of the general opaqueness of the system (noticed, for instance, by the Portuguese DPA). The lack of information on the "cheating score" and the way it should be reviewed by examiners raises several questions as to the effective presence of the "human in the loop" in this kind of situation. Hence, where there is no authentic human oversight, Article 22 GDPR should find application and this will cast more than a doubt about the possibility to justify an automated decision, based on profiling, against the students on any grounds of Articles 22(2) or (4) GDPR.

111 DPAs and Courts developed divergent reasonings on two further important issues that can put into question the use of e-proctoring tools: 1) the scope of Article 6(1)(e) GDPR and to what extent the processing performed in the exercise of a public task should be sufficiently specified in a law or regulation; and 2) the assessment of the legal status of pictures and biometric templates collected or generated during e-proctoring operations.

112 With reference to the first point, the Italian DPA convincingly points out that the profiling feature and the flagging system raise new risks for the protection of fundamental rights that should be adequately considered in a specific law or regulation. The necessity to guarantee the integrity of exams and degrees is indeed a task carried out in the public interest by HEI, but the legal framework in place reflects a situation where the exams were supposed to be organised in a more traditional fashion. Hence, unless this specific processing is adequately regulated in a law, detailing the limits and safeguards of it, the feature to monitor the behaviour of students during the online exam might not be grounded on a lawful basis (at least in Italy, the flagging system was declared to be in violation of Article 6 GDPR).

113 On the contrary, the Dutch judges seem to have adopted a lighter interpretation of the requirements needed under Articles 6(1)(e) and (3) GDPR or, at least, they did not consider the e-proctoring data processing particularly intrusive as to justify a more tailored regulation. Hence, given these different interpretations, this point might be contested in a future litigation or investigation before a data protection authority.

114 With regard to the second aspect—the assessment of the legal nature of pictures and videos collected during the exam, the decisions raise some further issues concerning the notion of biometric and special categories of data.

115 All the cases examining the flagging systems excluded that the processing of pictures to assess the students' behaviours was used to identify or verify the identity of individuals. The definition of biometric data and its classification as a special category of data in the GDPR is quite narrow and it might not include situations like the one here, namely biometric categorisation.[141] Nevertheless, as pointed out by the Italian Authority, when the system generates a biometric template, it is performing a processing that is preparatory to the identification and verification of the identity, even if

141 See bibliography mentioned in (n 55).

the data is not used for this purpose in the end.[142] In other words, following the DPA's logic, the attitude of the template to "allow or confirm the unique identification of that natural person" (Article 4(14) GDPR) can meet the definition of biometric data.

116 A different question is whether the processing of biometric data that is not used to uniquely identify an individual will attract the regime designed for the special category of data. As pointed out in Section D.II.2, the reference to biometric data is quite narrowly crafted in Article 9, and the GDPR seems to have drawn a distinction between identification and verification based on the level of risk that these activities pose to individuals.[143] Nevertheless, many scholars have been quite vocal about the pitfalls of this classification, considering that —for whatever purpose a biometric data is used—the characteristics that can be extracted from it still retain a considerable potential to enable the identification of individuals or negatively affect them.[144] Moreover, and as we have already highlighted, biometric data is one of the areas where Member States can intervene to specify further conditions for the processing. Hence, biometric classification performed with some e-proctoring tools could entail the processing of special categories of data (as affirmed, for example, in the Italian case).

117 As for the pictures not transformed into biometric data, but collected and stored during the invigilation procedure, we have seen that these have the potential to reveal sensitive attributes related to ethnic origin, religious beliefs or political opinions. The legal nature of such data has been debated, but the CJEU has recently confirmed a broad understanding of the notion of sensitive data: if it is possible to infer the sensitive characteristics from the context of the processing, data should be treated as a special category and protected accordingly. This interpretation would be able to address most of the discriminatory concerns as data controllers will have to properly assess the disparate impact for students in the DPIA and, if the system is adopted, appropriately justify their choices and safeguards in place (for instance, how to train the examiner who reviews the flagged videos or how to explain how the "cheating score" is calculated).

118 In any case, if an e-proctoring system processes sensitive data, it might be very challenging to ground it on any of the conditions under Article 9(2) GDPR. Indeed, we might consider the goal of ensuring the integrity of exams as being of substantial public interest (Article 9(2)(g) GDPR). However, such interest should be clearly spelled out in the law, which has to be proportionate to the aim pursued, respect the essence of the right to data protection, and provide for appropriate safeguards. As mentioned in *Denmark 1* and *2*, such a threshold is quite high. Alternatively, the data subject could explicitly consent to the processing (Article 9(2)(a) GDPR). However, the imbalance of power between students and the university casts serious doubts about the use of such a ground. Finally, one could argue that sensitive data might be processed because the data subjects made those data manifestly public (Article 9(2)(e) GDPR). This lawful basis is generally interpreted in a restrictive way by DPAs.[145] In particular, it is necessary to verify that the data subject is proactively deciding to share this information and be aware of the consequences.[146] This would imply that the data subject shall have an effective power to choose whether to disclose or hide the sensitive characteristic (which might not always be the case in an e-proctoring processing). Moreover, the "making public" is generally understood as finding application where the individual makes the information available to the public at large, e.g., on a social network or through

142 See also, Els J Kindt, 'Having yes, using no? About the new legal regime for biometric data' (2018) 34(3) Computer Law & Security Review 523, 531.

143 In this sense, the ongoing negotiations on the Draft AI Act should be used to coordinate the definitions of biometric data under data protection and the new framework and to ensure a higher level of protection – beyond the GDPR - when systems, like biometric categorisation or tools intended to assess students, are designed. See, Lydia Belkadi 'The Proposed Artificial Intelligence Act and Biometric Systems: A Peek Into the Conceptual Maze (Part II)' (*KULeuven - Citip Blog*, 3 November 2021) <https://www.law.kuleuven.be/citip/blog/the-proposed-artificial-intelligence-act-and-biometric-systems-part-ii/> accessed 1 February 2023. Both biometric and AI-based systems to assess students are categorised as high-risk AI systems in the Draft AI Act.

144 As stressed, for example, by the European Union Agency for Fundamental Rights, *Facial recognition technology: fundamental rights considerations in the context of law enforcement* (FRA 2020), 8. See also, Kindt (n 142).

145 See, Edward S Dove and Jiahong Chen, 'What does it mean for a data subject to make their personal data 'manifestly public'? An analysis of GDPR Article 9(2)(e)' (2021) 11(2) International Data Privacy Law 107. For instance, with reference to the specific case of video surveillance, the EDPB clarified that: "the mere fact of entering into the range of the camera does not imply that the data subject intends to make public special categories of data related to him or her". EDPB (n 65) para 69.

146 Interestingly, the General Advocate Rantos has noticed that Art. 9(2)(e) GDPR requires an "explicit act" of making personal data public and that such condition "is very similar to that of the data subject's consent". Case C-255/21 *Meta Platforms Inc., formerly Facebook Inc., Meta Platforms Ireland Limited, formerly Facebook Ireland Ltd., Facebook Deutschland GmbH v Bundeskartellam* [2022] ECLI:EU:C:2022:704, Opinion of AG Rantos, fn 50.

mass media.[147] On the contrary, the data acquired by an e-proctoring tool are meant to be processed within a closed environment and usually visualised only by a restricted number of authorised persons.[148] Hence, this lawful basis might not be fitting for the context at stake.

119 Moreover, even if not fully tested in the decisions examined, the principle of fairness (Article 5(1)(a) GDPR) and the tool of the DPIA could be used to address the potential discriminatory effects caused by e-proctoring and not only when the discrimination is based on an existing protected ground under data protection or anti-discrimination law (e.g. race, religion, etc.). For instance, situations of socio-economic discrimination do not fall within the existing boundaries of protection (unless it can be linked with, e.g., a certain ethnic group) but should nevertheless be taken into account by a HEI before deciding to deploy remote invigilation for an exam.

120 In parallel, we have seen that anti-discrimination law could address other serious pitfalls of e-proctoring systems, for instance, the failure of facial recognition tools for authenticating students. Based on the evidence collected and the studies emerging in this field, it was possible to build a case of *prima facie* discrimination before the Equality body in the Netherlands. The claimant showed that the tool used by her university did not let her join the exam unless she shone some powerful light directly at her face. It is yet to be seen how the university will discharge its burden of proof.

121 All in all, the adoption of an e-proctoring system requires the universities to perform a careful assessment of the characteristics of the software, the concrete modalities of deployment in the specific context, and the guarantees offered by the provider. As controllers, they should also evaluate the processing they are enabling when using a commercial third-party platform. The latter often perform further purposes with the data collected that are not necessarily in line with the institutional goals of HEIs. Many of these platforms are also based in the US, and the transfer towards this country is still highly problematic.

122 As we have pointed out in our analysis, some features, or some concrete implementations of such software in the educational environment have been sanctioned by DPAs and challenged by the NIHR, making the adoption of such tool much harder in practice, especially now that the pandemic is over.

123 To a large extent, the current legal framework has proven responsive to counter the unlawful use of e-proctoring tools by universities. The main notable exception is represented by the Dutch saga, where the judges adopted a debatable restrictive interpretation of some GDPR provisions, and the burden of proof carried by the claimants has practically disadvantaged the students.

124 Notably, and from a procedural point of view, we have argued that GDPR collective actions can become a useful tool in contesting e-proctoring systems. We have noted that GDPR has the potential to tackle and counter harms suffered by specific groups of students or even by the student body as a whole. However, as shown in the German and Netherlands cases, while different entities brought forward (admissible) GDPR claims against the HEI's decisions to introduce e-proctoring systems, the cases were ultimately dismissed. The examined case law has also revealed disparities in both collective action processes and rules between different Member States. National procedural rules are coupled with GDPR and implementation laws, which all create a complex matrix of rules to navigate. These disparities are far from creating the necessary clarity needed for representative bodies to ensure the success of their claims.

125 Now that the emergency is over, the questions that remain open are what lessons have been learned and how should universities approach the decision-making process about edTech tools more generally?

126 The comparative analysis of the DPA's decisions and the case law allowed to identify the controversial issues emerging in the different cases. This critical overview is functional to reflect on the reasons why e-proctoring has been contested, and to imagine how to develop edTech tools which are not only lawful but also able to guarantee the full exercise of the right to education and adequately reflect the *ethos* of the university.

127 We contend that while edTech tools may offer a series of advantages in terms of efficiency and productivity, they are rarely neutral instruments: they interact with the environment, people, and institutions. This mutual interplay in turn affects

147 Ludmila Georgieva and Christopher Kuner, 'Article 9 Processing of special categories of personal data' in Christopher Kuner and others (eds), *The EU General Data Protection Regulation (GDPR): A Commentary* (Oxford University Press 2020), 378.

148 However, it has to be noted that in a case from 2002, the CJEU touched upon this issue although with reference to Regulation 45/2001 (which establishes data protection rules when the processing is performed by European institutions and bodies), implicitly including a closed group like an organisation in the notion of "public" (see, Case T-320/02 *Monika Esch-Leonhardt and Others v European Central Bank* [2004] ECLI:EU:T:2004:45, commented in Dove and Chan (n 143)).

how these elements interact with each other and, ultimately, how education is provided. Hence, their adoption should involve the consultation of all the affected parties. How to ensure this democratic participation in the governance of institutions in a meaningful way (not just a ticking box exercise) and make sure that minority voices are heard is a crucial aspect that universities should fully embrace.

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Annex I - Summary of all the e-proctoring-related decisions mentioned in the paper

Denmark, Datatilsynet (DPA) - 2018-432-0015 ("Denmark 1")

The DPA launched an investigation after learning from the media that various high schools were using an automated e-proctoring system.

The DPA recognised that a high school can, in principle, use the e-proctoring tool to process students' personal data to prevent cheating in online exams. Such processing could be grounded in Art. 6(1)(e) GDPR (necessity to perform a task in the public interest). However, the DPA expressed serious concerns about the lack of an appropriate assessment of the necessity and proportionality of the processing for the declared purpose. Additionally, the investigated school failed to provide an adequate lawful basis for the processing of sensitive data which can be collected by the e-proctoring tool (the necessity for substantive interests' reasons, referred to in Section 7(4) of the Danish Data Protection Act, was not deemed an appropriate ground because it has a narrow scope of application, such as processing for the purpose of a serious threat to health).

Finally, the School did not provide specific information to the students about the e-proctoring processing.

Denmark, Datatilsynet (DPA) - 2020-432-0034 ("Denmark 2")

After receiving a phone inquiry, the DPA launched an investigation concerning the use of a recorded e-proctoring tool by a Danish university in the spring of 2020. The DPA ascertained that the processing involved personal data of approximately 330 examinees in the form of audio and video recording of the students, screenshots of their desktops and browsing history, and IDs. No facial recognition software was used: students' identity was manually checked at the start of the session.

The DPA found that:

- The processing was based on a lawful ground (Art. 6(1)(e) GDPR). E-proctoring was necessary for the performance of a task in the public interest (i.e. to supervise students during exams and prevent cheating) in connection with one specific test assessing the acquisition of basic knowledge and concepts (one answer correct with no space for further elaboration);

- The university performed an assessment about the nature, form, and purpose of the processing, showing that the need to guarantee the integrity of exams and the modalities of the online invigilation were limited to the processing of necessary data, and respected the principles of lawfulness, fairness,

transparency, and data minimisation;

- The DPA considered that the processing of sensitive data during the examination was, in principle, unintentional and that the necessity for substantive interests' reasons did not constitute an appropriate lawful basis for the e-proctoring processing (Section 7(4) Danish Data Protection Act). To prevent the processing of special categories of data, the DPA recommended the university to inform and encourage students taking measures to minimise the unintentional sharing of sensitive information during the session;

- Overall, the university has provided information about the processing in a concise, timely, and transparent way. However, additional information should have been provided on the recording of the browsing history during the exam, the measures to prevent the unintentional sharing of sensitive information and, how to configure the browser in the most privacy-preserving way; and

- The university performed an assessment of the security risks and available e-proctoring options (choosing the least intrusive). The DPA deemed the assessment and the measures adopted (e.g. encryption) to be adequate. After the DPA noted the lack of two-factor authentication for access control, the HEI addressed the issue.

Germany, OVG Nordrhein-Westfalen, Beschluss vom 04.03.2021 - 14 B 278/21.NE

The Gesellschaft für Freiheitsrechte (GFF) filed, together with a student, an emergency application to the Higher Administrative Court of North Rhine-Westphalia claiming several data protection violations. The aim was to ensure that the examination scheduled for shortly after would not be recorded, but, at most, observed by means of video transmission.

The Court rejected the claim on procedural grounds. In particular, it stated that whether the recording and temporary storage of the audio and video connection and thus the processing of personal data by Art. 6(1) GDPR is justified, this cannot be conclusively assessed in interim legal protection proceedings.

Greece, Αρχή προστασίας δεδομένων (DPA) - Decision 50/2021

The Hellenic Ministry of Education and Religions Affairs (the Ministry) decided to promote and implement a method of distance learning by technological means for students in primary and secondary education during the COVID-19 lockdown period. The teachers' union contested the legality of that government decision at the Hellenic DPA. While the DPA considered this method legal, it found that the Ministry had failed to consider a number of factors and risks in relation to the rights and freedoms of the data subjects when conducting a DPIA.

Recognising the need for distance education, the DPA provided an opinion to the Ministry to address the flaws and shortcomings. The DPA noted in its decision multiple GDPR violations, namely of provisions related to the lawfulness of processing and the obligations of the data controllers. It then called on the Ministry to address and remedy these violations in the coming four months. After that period, the Ministry is called to report its updates to the DPA.

Iceland, Persónuvernd (DPA) - 2020112830

After receiving a complaint by a student, the Icelandic DPA assessed the lawfulness of the online monitoring of a remote examination. The Authority dealt with three main legal issues: a) lawful legal basis for processing; b) data security; and c) transparency.

The Icelandic DPA stated that:

- Concerning the lawful ground for processing, consent may not be an adequate basis for processing in the present case due to the nature of the relationship between the university and the students. However, the DPA considered that consent to the online monitoring of the exam was not forced as it was possible to take the examination in person at the university. According to the Authority, the basis for processing should be the legitimate interest of the controller (Art. 6(1)(f) GDPR);

- As to the security of the personal data, the technical and organisational measures implemented by the university were appropriate, taking into account the existing data processing agreement between the service provider and the university; and

- The university violated the principle of transparency, as there was a lack of information duties concerning the legal basis, purposes, security measures, and the student's data protection rights related to this processing.

Italy, Garante privacy (DPA) - Ordinanza 9703988 - 16 Sep 2021

Following a university student's complaint regarding the use of an automated e-proctoring service with flagging features to spot cheating behaviours, the DPA investigated the lawfulness of such processing.

The DPA stated that:

- The processing of personal data for conducting remote exams is lawful if it is necessary "to comply with a legal obligation to which the data controller is subject" or "for the performance of a task carried out in the public interest or in connection with the exercise of official authority" (Art. 6(1)(c) and (e) GDPR. Consent (Art. 6(1)(a)) or contract (Art. 6(1)(b) GDPR) cannot be considered valid legal bases for such processing. Special categories of data could be processed based on Art. 9(2)(g), however, the DPA recognised that the ground for processing biometric data and profiling was lacking;

- The privacy policy did not contain all the information required by the GDPR (e.g., the lack of mention of all the processing, such as tracking the student's behaviour during the test, subsequent profiling based on such data, and audio-video recording of the test). Information on the retention period was too vague, while the information on data transfer to third countries, and the logic of the supervision system, was missing. Moreover, the information available was not transparently presented;

- The principle of data minimisation was not respected. For example, the processing of information concerning the applications running on the student's terminal was not necessary for the purpose of ensuring the proper completion and validity of the test;

- The university transferred personal data, including biometric data, to a third country (the US) without proving that the transfer complied with the GDPR. The transfer in the US was based on SCCs. However, it was considered unlawful as the technical and organisational measures were not sufficiently described in the contract and, as a consequence, were not in line with the requirements established by the same SCCs; and

- The DPIA was not adequately performed, in particular with reference to the evaluation of the necessity and proportionality of the processing and of the risks to the rights and freedoms of the data subjects. Moreover, there was no mention of the appropriate measures to address existing risks, and to mitigate them.

The Netherlands, Rb. Amsterdam - C/13/684665 / KG ZA 20-481 ("Netherlands 1")

The introduction of online proctoring systems to invigilate exams happening remotely was decided due to the COVID-19 lockdown. The software monitored students while they took their exam from home. The software recorded the user's webcam, microphone, internet traffic, and inputs.

The Amsterdam Court of First Instance rejected the request by student representatives and an individual student for a preliminary injunction against the use of the above-mentioned e-proctoring software. The Court ruled that measures against COVID-19 did not allow for a suitable alternative. Also, it examined the GDPR compliance of the software and found the data processing by the university was based on Art. 6(1)(e) GDPR (necessity to perform a task in the public interest or in the exercise of official authority), and that the processing complied with the requirements set by the GDPR.

This being a preliminary injunction, the Court also examined the admissibility of the student council in bringing forward these claims on behalf of the university student body. The Court applied section 3:305a of the Dutch Civil Code, and concluded that only a foundation or association with full legal capacity can institute legal proceedings that protect similar interests of other persons, insofar as they represent these interests under its Articles of Association and these interests are sufficiently safeguarded. In that regard, and according to the court, the student councils are not a foundation or association with full legal capacity.

The Netherlands, Gerechtshof Amsterdam - 200.280.852/01 ("Netherlands 2")

This case is the appeal of the Netherlands 1 preliminary decision. It concerns a civil dispute between the Central Student Council (CSR) at the university, the Student Council at the Faculty of Economics and Business (FSR), and an individual student against the defendant, the university.

The preliminary injunction was filed first, and the District Court of Amsterdam ruled in favour of the university, finding that the government's COVID-19 measures did not allow for suitable alternatives and that the surveillance had a legal basis in Art. 6(1)(e) GDPR. The plaintiffs appealed to the Court of Appeals Amsterdam Court.

The plaintiffs claimed that the introduction of the e-proctoring system chosen by the university breached the GDPR in several respects. They claimed

that it was unnecessary to introduce monitoring software, that more data than necessary was processed, that there was a lack of transparency and security, and that sensitive personal data was processed without a legal basis.

The Court found that the university successfully demonstrated that the use of the software was necessary for the performance of the task of exercising official authority under Art. 6(1)(e) GDPR. It also found that the plaintiffs failed to prove that its use violated the principles of purpose limitation and data minimisation. The plaintiffs had argued that less intrusive alternatives could be used, but the court placed the burden of sufficiently presenting these feasible alternatives to them. The plaintiffs argued that the university had not provided full insight into how the proctoring software detects cheating. However, the Court held that the plaintiffs had not plausibly demonstrated that anyone not authorised by the university to view the video and audio, such as the service provider or US intelligence agencies, could gain access. In addition, the claimants argued that the images collected could be sensitive personal data for which there was no legal basis for collection. The Court ruled that images identifying an individual could not simply be sensitive personal data revealing, for example, religion or race. The court could not foresee that the images would be used by the university to discriminate against test takers based on protected characteristics.

While the Court acknowledged that it was disruptive that students could not go to the bathroom during online exams, it noted that the same was true for on-site exams. The Court therefore held that it could not consider this complaint in assessing the legality of online examinations.

The CSR sent a letter to the university's Executive Board, which was described in the judgement as "unsolicited advice". In this letter, the CSR strongly opposed the use of e-proctoring, recommended against the use of room scanning, and advised that the university provide students who cannot/would not use proctoring with alternative means of taking exams without delaying their studies.

The plaintiffs also argued that e-proctoring violated Art. 8 ECHR. The Court considered whether the interference with privacy by proctoring was justified under Art. 8(2) of the ECHR. To do this, it looked back at the reasoning it had used in assessing the lawfulness of proctoring in relation to the GDPR. It held that it was plausible that the interference with privacy was necessary in a democratic society and could be considered proportionate.

From a procedural side, the plaintiffs alleged that the university had violated the law by changing the so-called Teaching and Examination Regulations (Onderwijs- en Examensregeling, "OER") without following due process. Art. 7.13 of the Higher Education and Scientific Research Act (WHW) requires that every Dutch higher education program adopts an OER. A higher education institution may also adopt a OER for a group of programs. The Court found that the university had not breached any procedural rules in deciding to introduce e-proctoring. Specifically, the Court referred to Art. 7.13(2)(l) WHW which allows the Board of Examiners to depart from OER in special circumstances. The Court found that the COVID-19 restrictions qualified as a special case where the exam board is allowed to deviate from the OER.

The Netherlands, College voor de Rechten van de Mens (Netherlands Institute for Human Rights), Decision 2022-146 ("Netherlands 3")

A university student called on the Netherlands Institute for Human Rights (NIHR) to establish that the use of the e-proctoring software was discriminatory. Specifically, the student argued that she was discriminated against due to her skin colour when she was using the contested software. The student had trouble logging in the exams and was only able to do so when shining a direct light on her face. According to the preliminary decision, the person claiming discrimination has succeeded in this for two reasons. First, the parties agree that the anti-cheat software hindered the woman. Second, there is academic research showing that face detection software generally performs worse on darker skinned individuals. Taken together, these facts are sufficient for a presumption of indirect discrimination on the basis of race.

The NIHR established that the student had provided sufficient facts from which it can be assumed that the university had indirectly discriminated on the grounds of race by using anti-cheat software for the supervision of exams. If there is a suspicion of discrimination, the university must prove that it has not acted in violation of the law. The Board considers that the university has not provided sufficient evidence for this. The intermediate judgement gives a 10-week deadline to the university to provide evidence that there was no discrimination.

Portugal, Comissão Nacional de Proteção de Dados (DPA) - Deliberação/2021/622

The DPA carried out a preventive assessment of the lawfulness of an e-proctoring tool with flagging features to spot cheating behaviours that were

meant to be used by a Portuguese university (the reference was anonymised by the DPA).

The decision focuses on four main aspects: the application of the principles of i) purpose limitation; ii) data minimisation; iii) the legal basis of processing; and iv) the lawfulness of data transfers to the US.

The DPA affirmed that the rectoral order authorising the e-proctoring tool did not provide specific criteria about the cases where such a tool could be used. The lack of such criteria led to the violation of the purpose limitation principle, as the processing purpose was not sufficiently specified, and of the data minimisation principle, as the discretion of the teaching staff concerning the use of such a tool may lead to process data not necessary for the stated purpose.

Furthermore, the Authority doubted that the legitimate interest (Art. 6(1)(f) GDPR) is the correct legal basis for processing. The DPA found that the legitimate interest basis was not used correctly in the present case. In particular, the Authority stated that: i) the data controller did not carry out the balancing test between the legitimate interest at stake and the rights and interests of the data subjects; and ii) the processing at stake was particularly important, as it involved profiling and biometric data.

However, the DPA, taking into account the public interest at stake, stated that Art. 6(1)(e) GDPR should be applied, according to the rules provided for by Art. 6(2) GDPR, concerning national rules on processing for public interest purposes.

In any case, the Authority affirmed that the processing concerning video and audio recordings of students' behaviour, based on consent, was unlawful. The Authority considered that the consent did not meet the requirements set forth by the GDPR, as students are obliged to give their consent if they want to take exams.

As to extra-EU data transfers, the DPA applied the CJEU rationale in C-311/18 Data Protection Commissioner/Maximilian Schrems v. Facebook Ireland, 16 July 2020. It stated that students' personal data must not be transferred to the US, as there was a lack of additional measures preventing the access to the transferred personal data by the US authorities.

Hence, the DPA concluded that the e-proctoring processing at stake violated the principle of lawfulness, purpose limitation, and data minimisation (Art. 5 (1)(a)(b)(c) GDPR) and ordered the e-proctoring provider to destroy the personal data collected through the tool.

The exceptional mismatch of copyright teaching exceptions in the post-pandemic university

– insights from Germany, Bulgaria, and Ireland

by **Alina Trapova** *

Overview

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A. Introduction

1 The pandemic days are over, or so it feels for the moment. During the last two years, the educational sector underwent an immense transformation. What used to be an almost futuristic business model—the delivery of education irrespective of the physical locations of teachers and learners—became not only the norm for instruction across all levels, but also essential for any sort of teaching to be delivered.[1]

* Alina Trapova is Lecturer in Intellectual Property Law, University College London (UCL)

1 F Haider Alvi and others, '4 Lessons from Online Learning That Should Stick after the Pandemic' (*The Conversation*, 1 May 2022) <https://theconversation.com/4-lessons-from-online-learning-that-should-stick-after-the-pandemic-179631> accessed 27 October 2022; Alberto Muñoz-Najar and others, 'Remote Learning during Covid-19: Lessons from Today, Principles for Tomorrow' (World Bank Group 2021) <https://documents1.worldbank.org/curated/en/160271637074230077/pdf/Remote-Learning-During-

An integral part of education, via distance, or face-to-face in brick-and-mortar classrooms, is the use of material that illustrates and supports teaching and learning. Much of this material is protected by copyright. Historically, such material had been reproduced and distributed in physical form as photocopies or other types of graphical reproductions or accessed by learners in libraries. In reality, already long before the pandemic the provision of such materials had increasingly shifted to digital spaces, with various platforms for collaboration, exchange of materials and online teaching at the disposal to both students and teachers. However, it was the physical impossibility to access and circulate teaching materials during the pandemic that brought many copyright problems to light and with that (legal) uncertainty to educators. Whether it was the closure of libraries, the mere inability to (lawfully) travel to them, or the logistical barrier to distribute physical class handouts to large groups of students, digital access to education materials became the norm.

2 At the EU level, the copyright rules aimed at facilitating access to digital material in the context of teaching were already under discussion before the pandemic started.[2] In September 2016, the European Commission proposed a new directive focusing on copyright and related rights in the Digital Single Market ("CDSM Directive").[3] After a strenuous legislative process, the Directive was eventually adopted in 2019, leaving Member States time until 7 June 2021 to implement its provisions into national law. That said, many Member States did not transpose the CDSM Directive on time.[4] One of the new provisions, Article 5, addresses the use of works and other subject matter in digital and cross-border teaching activities.[5] Although the inception of this new provision pre-dates the Pandemic highlighted the importance of an express digital teaching exception. What was missing, and what Article 5 CDSM Directive seeks to provide, are express exceptions that cover digital and cross-border teaching activities, thus closing a perceived gap in the copyright legal framework in this respect. This shortcoming is a result of the earlier regime for copyright exceptions established by Article 5 of the 2001 Directive of copyright and related rights in the information society ("InfoSoc Directive").[6] Within its scope of application, Article 5 CDSM sought to remedy the legal uncertainty surrounding the use of works and other protected subject matter for modern, or one might argue perfectly normal, necessary and pedagogically absolutely appropriate, educational practices. Nonetheless, as will be argued below, its sectoral approach has failed to achieve its goal and thus creates additional legal uncertainty, or at least moderate confusion, since the provision relates solely to specific (digital and cross-border) teaching activities.

3 Indeed, the adoption of the CDSM Directive by the EU legislator was far from the last step in this legislative endeavour. As per usual, the devil lies in the details. Member States have notoriously implemented directives with diverging results, which sometimes (effectively) defeats the purpose of legislative harmonisation altogether. This provision is one such example. This contribution turns to the German, Irish and Bulgarian implementations of Article 5 CDSM Directive. Following this introduction, the next section will set out the legal context, providing an overview of both the regime under the old InfoSoc Directive, as well as the new provisions as per the CDSM Directive. This will be followed by a critical examination of the setting in which educational establishments would have to manoeuvre in the post-pandemic digital teaching environment in the three jurisdictions. While Ireland and Germany have implemented the texts that will be analysed below (respectively in November 2021 and May 2021), the Bulgarian version is still at a proposal stage.[7]

4 In an ideal world, the copyright laws across Member States would provide for a universal cross-border exception in the context of education with little conditions. However, this is far from what the current implementations reflect—there are

COVID-19-Lessons-from-Today-Principles-for-Tomorrow.pdf> accessed 27 October 2022.

2 The Republic of Ireland already significantly reformed its relevant rules in 2019 (Copyright and Other Intellectual Property Law Provisions Act 2019).

3 Directive 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market Official Journal L 130.

4 'Copyright: Commission Urges Member States to Fully Transpose EU Copyright Rules into National Law' (*European Commission*, 19 May 2022) <https://ec.europa.eu/commission/presscorner/detail/EN/IP_22_2692> accessed 27 October 2022.

5 For a systematic critique, see Bernd Justin Jütte, 'Uneducating Copyright: Member States Can Choose between "Full Legal Certainty" and Patchworked Licensing Schemes for Digital and Cross-Border Teaching' (2019) 41 EIPR 669.

6 Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society Official Journal L 167.

7 As it currently stands, considering the political instability in Bulgaria, it is unlikely that the directive will be implemented any time soon. For an up to date tracker with all reference documents in all Member States with respect to the implementation process, see 'CDSM Implementation Resource Page – CREATe' (*CREATe*) <https://www.create.ac.uk/cdsm-implementation-resource-page/> accessed 29 January 2023.

significant incoherencies both externally, i.e., when comparing the manner in which the exception has been transposed in the various Member States, as well as internally—within the same national framework when it comes to the interaction with the old exception deriving from the InfoSoc Directive. This article illustrates that the harmonisation purpose across the different Member States has been somehow defeated since the newly introduced exception relates to inherently local activities and includes a country-of-origin principle. Secondly, turning more specifically to how the provisions operate nationally, it becomes clear that there has been little to no effort to render the copyright regimes coherent even within one single legal system. All these substantive and systemic concerns once again lead to an exceptional mismatch between promises from the EU for a harmonised internal market in the context of copyright exceptions and a rather messy legal reality for educational establishments and their teaching staff.

B. The legal context

5 The tools that allow teachers to share material that falls within copyright protection with their students without prior authorization are the exceptions and limitations to copyright. Since 2001 these have been exhaustively harmonized by the European legislator. Most prominent amongst the relevant legal instruments are the 2001 InfoSoc Directive and the 2019 CDSM Directive. The former contains a general exception "for the sole purpose of illustration for teaching or scientific research",[8] while the latter introduced in 2019 an exception for the "[u]se of works and other subject matter in digital and cross-border teaching activities".[9]

6 Prior to the adoption of the CDSM Directive, all Member States had some sort of a teaching exception already as part of their copyright laws—either one that predates the adoption of the InfoSoc Directive, or one that was included in the course of the directive's implementation.[10] The CDSM Directive forces Member States to rethink, modernize or clarify their existing teaching exceptions—or to confirm that their existing exceptions were already compliant with the 'new' requirements of Article 5 of the CDSM Directive. Whilst the process of transposing the CDSM Directive is still ongoing in many Member States,[11] the effects of this legislative intervention can already be observed. What becomes apparent is the complete lack of coordination.

7 The aim of Article 5 CDSM Directive was to clarify the scope of application of the existing teaching exceptions[12] "as they apply to digital uses" and specify how "those exceptions or limitations would apply where teaching is provided online and at a distance."[13] In addition, the legislator appreciated that the copyright framework for cross-border teaching is problematic. With this new provision it ostensibly seeks to facilitate indispensable aspects of modern education, namely the digital use of protected material in the context of teaching activities.

8 In pursuing this aim at national level, by transposing Article 5 of the CDSM into their respective national laws, the Member States succeeded to different degrees. To illustrate the different implementation approaches, this article examines the German, Irish and Bulgarian transpositions. The approach of this paper is not to comparatively and exhaustively examine and scrutinise the implementation in these three Member States. This has been done elsewhere.[14] Instead, on the basis of these three implementations, this paper extracts good and bad practices to distil

8 InfoSoc Directive, art. 5(3)(a).

9 CDSM Directive, art. 5.

10 Jonathan Griffiths, Tatiana-Eleni Synodinou and Raquel Xalabarder, 'Comment of the European Copyright Society Addressing Selected Aspects of the Implementation of Articles 3 to 7 of Directive (EU) 2019/790 on Copyright in the Digital Single Market' (European Copyright Society 2022) 17 <https://europeancopyrightsociety.org/2022/05/03/https-europeancopyrightsocietydotorg-files-wordpress-com-2022-05-ecs_exceptions_final-1-pdf/> accessed 25 August 2022; 'Assessment of the Impact of the European Copyright Framework on Digitally-Supported and Training Practices' (PPMI 2016) <https://op.europa.eu/es/publication-detail/-/publication/1ba3488e-1d01-4055-b49c-fdb35f3babc8> accessed 25 August 2022; Jean-Paul Triaille, 'Study on the Application of Directive 2001/29/EC on Copyright and Related Rights in the Information Society' (De Wolf & Partners 2013) 368 <https://op.europa.eu/en/publication-detail/-/publication/9ebb5084-ea89-4b3e-bda2-33816f11425b.> accessed 25 August 2022.

11 At the time of writing some Member States had not completed the implementation of Directive (EU) 790/2019, in May 2022 the European Commission issued reasoned opinions to 13 of them due to their failure to implement the directive within the 7 June 2021 deadline.

12 Directive 1996/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases OJ L 77 Articles 6(2)(b) and 9(b); InfoSoc Directive Article 5(3)(a).

13 Recital 19 CDSM Directive.

14 Ana Lazarova, 'Bulgaria Falls into All the Traps Set by Article 5 of the CDSM Directive' (2022) 17 Journal of Intellectual Property Law & Practice 407; Giulia Priora, Bernd Justin Jütte and Péter Mezei, 'Copyright and Digital Teaching Exceptions in the EU: Legislative Developments and Implementation Models of Art. 5 CDSM Directive' (2022) 53 IIC - International Review of Intellectual Property and Competition Law 543.

the elements of, not necessarily and ideal clause, but an implementation of Article 5 that more likely than not fulfils the vision (if there indeed was one) of the European legislature. Importantly, such an approach would provide educational institutions and teachers the legal certainty to use learning and teaching material flexibly and across various platforms and channels.

I. The old teaching exception: Article 5(3)(a) InfoSoc Directive

9 The background to Article 5(3)(a) dates to 1995, when the European Commission published its Green Paper on Copyright and Related Rights in the Information Society.[15] The Commission rightly identified education as a relevant area for new services in the information society. It listed "tele teaching", the point-to-point, i.e., on demand, delivery of educational services, as an emerging type of service and "information and education" and as one of the most relevant areas in which markets were most likely to develop.

10 With this in mind, Article 5(3)(a) InfoSoc Directive was drafted in a technologically neutral way. Neither does it state that the exception applies to digital uses, nor does it exclude digital uses from its scope. Not least given the title of the InfoSoc Directive itself, Member States could have assumed that some digital uses would come within the scope of the provision. Even then, the sheer array of digital uses that we know today could not have been anticipated more than two decades ago when the InfoSoc Directive was conceived. The extremely broad margin of appreciation was indeed used by the transposing Member States to come up with great variety of implementation models.[16]

11 Nonetheless, all exceptions in Article 5 of the InfoSoc Directive suffer from systematic deficiencies. First, the catalogue of exceptions is not mandatory (aside from one),[17] meaning that Member States are free to decide whether they would adopt any of the exceptions in their national copyright regimes. Secondly, the exceptions provided for in the directive are phrased in general terms, leaving Member States even more margin of discretion as to the specifics of how the national corresponding norm would look like. Having said that, when turning to the national provisions it quickly crystalises that while all Member States implemented the teaching/scientific research exception in Article 5(3)(a) in one or the other way into their national laws, the broad margin of discretion resulted in varying implementation models.[18]

II. The new digital teaching exception: Article 5 CDSM Directive

12 The broad margin of discretion left by Article 5(3)(a) InfoSoc Directive was reduced by Article 5 CDSM Directive, albeit only to a certain extent. The first choice that the EU legislator made in this respect is to ensure that, different to Article 5 of the InfoSoc Directive, Article 5 CDSM Directive had a mandatory nature, namely taking away from Member States the discretion as to whether to implement or not.

13 Substantively, several differences are notable. To begin with, it is much more detailed than its 2001 predecessor. The new provision provides more precise rules for "digital and cross-border teaching activities". For this purpose, "works and other subject matter" can be used "for the sole purpose of illustration for teaching, to the extent justified by the non-commercial purpose to be achieved".[19] Such uses are either limited to the premises of an educational establishment or other places where such establishment exercises its authority, e.g., rented venues, or a secure electronic environment. For uses in such secure electronic environments, a country-of-origin rule applies to the effect that relevant legal acts are presumed only to occur in the Member States where the educational establishment under which such acts are performed is established.

14 Even with these qualifications, the types of uses permitted under this new exception are significant. Member States could use this broad scope to revise their existing exception that permitted the use of works and other subject matter for the illustration of teaching. As it will become clear in the next section, this has now always been the case and the legal regime in most Member States can be better described as a poor patchwork effort than bringing clarity for the post-pandemic modern digital teaching environment.

15 With this in mind, it should be underlined that the 'new' exception does not replace the 'old' exception—

15 'Green Paper on Copyright and Related Rights in the Information Society' (1995) COM(95) 382 final 19–20.

16 Teresa Nobre, 'Educational Resources Development: Mapping Copyright Exceptions and Limitations in Europe' (Creative Commons 2004) <http://oerpolicy.eu/wp-content/ uploads/2014/07/working_paper_140714.pdf> accessed 12 April 2017.

17 See Article 5(1) InfoSoc Directive.

18 Andrea Renda and others, 'The Implementation, Application and Effects of the EU Directive on Copyright in the Information Society' (Centre for European Policy Studies (CEPS) 2015) Nr. 120 80.

19 CDSM Directive art 5(1).

nowhere in the CDSM Directive does the legislator indicate priority of one over the other. Quite on the contrary—in Recital (3), the Directive emphasises that the existing exceptions and limitations in Union law should continue to apply. It explicitly refers to the exception education and states that those pre-existing measures continue to apply "as long as they do not limit the scope of the mandatory exceptions or limitations provided for in this Directive, which need to be implemented by Member States in their national law." Furthermore, Article 1(2) of the CDSM Directive stresses that, except if specifically indicated in Article 24 of the CDSM Directive, the new regime "shall leave intact and shall in no way affect existing rules laid down in the directives currently in force in this area." One of the directives the provision explicitly refers to is the InfoSoc Directive. Interestingly, Article 24 of the CDSM Directive refers specifically to the teaching exception in the InfoSoc Directive. While it maintains its general language which has been elaborated above, it once again reiterates that the old exception should operate "without prejudice to the exceptions and limitations provided for in Directive (EU) 2019/790". This is easier said than done. Unsurprisingly, Member States have thus approached their national CDSM Directive transpositions in very different ways. While the German legislator chose to consolidate its existing exception without significantly distinguishing between digital and analog uses, the Irish and Bulgarian legislators both adopted models that establish binary and layered regimes with specific rules and conditions for different types of uses. What is striking in the latter cases is the absence of meaningful coordination between the old teaching exception as per the InfoSoc Directive and the new digital teaching exception introduced by the CDSM Directive. That said, the German implementation, even though mindful of the pre-existing legal regime, equally fails at effectively modernising the setting in which educators would have to manoeuvre when it comes to copyright. All of this leads to an exceptional mismatch between old and new laws, as well as theory and practice.

C. Failed attempts to reach legal certainty

I. The well-known problem with directives

16 With the exception of two regulations in the field, harmonisation of EU copyright law has almost always been driven by directives.[20] This can be attributed to the fact that finding an agreement on copyright issues between the Member States has always been very difficult. This is evident in many copyright initiatives (both European and international). A recent example is the legislative process behind the CDSM Directive—the EU Commission's proposal dates back to September 2016,[21] while the final text, following numerous amendments (86 as per the agreed Parliamentary Position for the trilogue meetings),[22] was adopted in April 2019.[23] Still, some Member States have not implemented the directive, regardless of the deadline having passed on 7 June 2021.[24]

17 The making of EU law in the form of directives inherently sacrifices full harmonization for a certain degree of normative diversity, which is to say that full harmonization is often not achieved, but for various reasons divergences in transposition are tacitly accepted. A directive leaves Member States room for implementation,[25] which, if used carefully, respects the important balance between the Union and the Member States as sovereign entities.[26] Yet, many times, the general language of the directive is copied literally into the national law without specifying further the operation of the newly introduced provisions and their significance in the already existing legal framework. Other times, Member States use their margin of discretion—this is the case with the Irish and German transpositions

20 Directive 93/83/EEC; Directive 96/9/EC; Directive 2001/29/EC; Directive 2006/115/EC; Directive 2006/116/EC; Directive 2001/84/EC; Directive 2004/48/EC; Directive 2009/24/EC; Directive 2011/77/EU; Directive 2012/28/EU; Directive 2014/26/EU; Directive 2017/1564; Directive 2019/790; Regulation 2017/1563; Regulation (EU) 2017/1128.

21 European Commission, "Proposal for a Directive on copyright in the Digital Single Market" COM(2016) 593 final (14 September 2016).

22 'Amendments Adopted by the European Parliament on 12 September 2018 on the Proposal for a Directive of the European Parliament and of the Council on Copyright in the Digital Single Market' (European Parliament 2018) <https://www.create.ac.uk/wp-content/uploads/2018/09/Amendments_DSMCopyright_12Sep.pdf?x24425> accessed 29 January 2023.

23 For a comprehensive overview of the legislative history of the CDSM Directive, see 'EU Copyright Reform – Evidence on the Copyright in the Digital Single Market Directive' (*CREATe*) <https://www.create.ac.uk/policy-responses/eu-copyright-reform/> accessed 29 January 2023.

24 For a tracker of the implementation process in each EU Member State, see 'CDSM Implementation Resource Page – CREATe' (n 8).

25 Treaty on the Functioning of the European Union (OJ C 326) art 288.

26 Peter Lindseth, 'Democratic Legitimacy and the Administrative Character of Supranationalism: The Example of the European Community? Columbia Law Rev 99': (1999) 99 Columbia Law Review 628, 706.

of Article 5 CDSM Directive, which will be explored below. At times, Member States have mistakenly copied the implementation of others without considering whether its own national legal setting realistically reflects the same issues and requires the same solution. This seems to be the case in Bulgaria where the national legislator following France's lead introduced an optional licensing carve-out under Article 5(2), without appreciating that such licensing practice and models practically do not exist in Bulgaria.[27]

18 The discrepancies between national implementations could, of course, have been avoided had the CDSM Directive been passed as a regulation instead. Arguably, in the case of cross-border digital, online, and offline teaching it is imperative that all Member States are on the same page in order to provide for a clear setting of operation for educational establishments. Yet, reaching a political agreement on regulations in the field of copyright law would have been very difficult. This status quo of the law, while understandable, is not surprising. However, this passes the the challenging task of installing coherence in the teaching exception from the hands of the European to those of the of the national legislators.

II. Interaction with earlier InfoSoc exception

19 Even though not always explicitly framed in the form a teaching exception, at the time the CDSM Directive was approved all Member States had a pre-existing exception which would cover teaching in one way or another. This derives either from Article 5(3)(a) of the InfoSoc Directive or a pre-existing national clause. Article 5 of the CDSM Directive was an excellent opportunity to revise the operation of that earlier exception, which would have neatly responded to calls by international academia for "coherent and seamless provisions exempting the use of works for teaching purposes regardless of the means (digital or otherwise) employed to achieve those purposes".[28]

20 Bulgaria and Ireland, however, have failed in this respect. Both Member States have decided to introduce a new layer of rules on top of the pre-existing exception, which unnecessarily and unjustifiably compromises legal certainty for its beneficiaries. This essentially has the effect of retaining one regime for offline teaching and another one for digital cross-border teaching. Such a setup is at least counter-intuitive, especially in the light of the mixed hybrid teaching models that have been widely adopted in various institutions in the post-pandemic reality. Unfortunately, as they currently stand the copyright regimes of Ireland and Bulgaria, instead of consolidating the conditions under which teaching, digital, cross-border or not, would take place, introduce yet another layer of complexity in this respect.

21 For example, in Bulgaria the legislator makes a distinction between the type of educational establishments with respect to the old and the new exception. To that end, non-formal education such as private tutoring would fall within the old regime as per Article 24(3) of the Bulgarian Copyright and Neighbouring Rights Act,[29] while formalised education as defined within the new provision would benefit from the new exception as per Article 26h(6) of the same Act.[30] The new exception benefits solely institutions in the pre-school and school education system, institutions entered into the registers maintained under the Vocational Education and Training Act and higher education institutions established in accordance with the Higher Education Act. This bifurcation complicates the legal framework in which all educational institutions—public, private and hybrid—would have to operate.[31] It should be borne in mind that these sectors are already very rich in numerous bureaucratic hurdles, which makes not only for a very complicated legal setting, but one that lacks transparency.

22 Similarly in Ireland, Sections 53 to 57 of the Copyright and the related Rights Act 2000 correspond to the old exception, while Section 57A of the same Act introduces the new provision. As it will become apparent in the analysis below, the mismatch between the two clauses materialises most clearly when it comes to the amount permitted to be copied. Section 57) reflects the old exception—in particular, reprographic copying by educational establishments of certain works for the sole purpose of illustration for education, teaching or scientific research. Section 57(3) states that not more than 5 per cent of any work can be copied under in any calendar year. There is no corresponding maximum threshold when it comes to the new exception. This leads to practical issues when hybrid teaching, education and research is concerned. For example, if a guest speaker is invited to deliver a lecture remotely, while another instructor is in the classroom with the student cohort, how much of the student handouts can be projected and/or printed to distribute to students in the classroom?

27 Lazarova (n 15) 411.

28 Griffiths, Synodinou and Xalabarder (n 11) 25.

29 See more at <https://www.strategy.bg/PublicConsultations/View.aspx?lang=bg-BG&Id=6348> accessed 29 October 2022.

30 Ibid.

31 Lazarova (n 15) 412.

23 Germany instead has taken the opposite direction—it revised its existing exception to include digital and cross-border activities. The revised provision is situated in Article 60a of the Germany Copyright Act. The German legislator wisely appreciated that the manner in which the earlier provision was drafted originally was technologically neutral. Thus, it already covers digital cross-border teaching activities. As a consequence, the only two amendments to the educational exception deriving from the CDSM Directive related to the introduction of a licensing option for certain uses and the country-of-origin approach.[32]

24 On a more general level, the new CDSM Directive exception relates solely to digital and cross-border teaching activities, while the old InfoSoc one covered teaching *and* research. This leads to difficult questions for hybrid activities, going beyond teaching in its traditional sense. For instance, scientific international conferences, hosting both in person and remote speakers, where students are invited (and sometimes, obliged to) attend create difficulties. Which legal regime applies to these hybrid activities that combine teaching and research? It appears that in these cases the only safe way forward would be to obtain a licence for the use of copyright protected material or restrict access. The latter is entirely counterintuitive to the notion of inclusive education.

III. The ideal clause that no one aced

25 Arguably, an ideal forward-looking and fully technologically neutral clause on teaching exceptions for copyright in the context of offline, as well as digital and/or cross-border activities, does not exist. Technology would continue not only to challenge the modern classroom, but to also provide new tools in making education more inclusive, interactive and accessible for various groups. Therefore, at the heart of a sound teaching exception meant to operate well in the Digital Single Classroom, but also beyond, must lie legal certainty for rightsholders, beneficiaries of the exception, educational and research institutions.

26 The following depicts the most important facets of such a clause. It does not engage in a comprehensive analysis of all aspects of the implementations of the three jurisdictions concerned here, but instead it pinpoints the good and bad practices. For that purpose, four features will be studied: the beneficiaries, the moment when the exception arises, the amount that can be copied and the type of activities covered.

1. Who are the beneficiaries?

27 Article 5 CDSM applies only to digital uses "under the responsibility of educational establishments", where such uses take place either on the educational establishments' premises or through secure electronic environments to which only teaching staff and students have access.

28 From the three jurisdictions subject to the analysis in this paper only Bulgaria seems to have confused matters further. As it mentioned above, Bulgaria's suggested transposition arbitrarily divides formal from non-formal educational establishments, leaving the latter outside the scope of a digital and cross-border teaching exception. On the other hand, in Germany, already prior to the CDSM Directive the education exception benefited the following three categories: (i) teachers and participants at the respective event; (ii) teachers and examiners at the same educational establishment; and (iii) third persons insofar as this serves the presentation of lessons or lectures or the results of tuition or training or learning outcomes at the educational establishment.[33] In Ireland, the law does not define "educational establishments" any further, but the newly introduced Section 57A(1)(a) adds the specification that any uses take place "under the authority of an educational establishment, on its premises or at other venues, or through a secure electronic environment access to which is limited to an educational establishment's teaching staff and to pupils or students enrolled in a study programme, in particular through appropriate authentication procedures including password-based authentication." The reference to "in particular" indicates that this is just one example of how an electronic environment could be secured. This reflects rather accurately the manner in which most educational establishments currently operate. In the past five years, authenticator systems have been widely introduced to target the security of personal data.[34]

29 Hence, when it comes to beneficiaries, the German and Irish approaches can be taken as examples of good practices.

32 Priora, Jütte and Mezei (n 15) 555.

33 German Copyright Act, section 60a(1), available in English here: https://www.gesetze-im-internet.de/englisch_urhg/englisch_urhg.html

34 Elizabeth Kennedy and Christopher Millard, 'Data Security and Multi-Factor Authentication: Analysis of Requirements under EU Law and in Selected EU Member States' (2016) 32 Computer Law & Security Review 91.

2. When does the exception arise?

30 One of the aspects stemming directly from the CDSM which aligns the three jurisdictions is the fact that the use is done for the sole purpose of illustration for teaching, and to the extent justified by the non-commercial purpose to be achieved. The non-commercial aspect is present and uncontroversial in all three transpositions. An important caveat is that the private nature of the institution should not deprive the applicability of the exception. Recital 20 of the CDSM Directive restates the rationale from Recital 42 InfoSoc Directive, whereby "the organisational structure and the means of funding of an educational establishment should not be the decisive factors in determining whether the activity is non-commercial in nature." Thus, the public interest that justifies the analog and/or digital teaching exception should be separated from the organisation of the educational establishment as such.[35]

31 What is more interesting is the definition of "illustration for teaching". The German Copyright Act maintains this terminology as it is its legacy from its old exception. The Bulgarian implementation proposal uses the term "necessary for the purpose of illustration for education" to qualify the exempted activities. The available documents on the Irish implementation currently point to no specific purpose specification when it comes to the cross-border digital exception.[36] Nonetheless, following the spirit of the legacy provisions (Sections 53 to 58 of the Irish Copyright Act),[37] one can safely assume that since the new provision will fall within the same Part of the act, Section 57A, it is most likely that it will also be addressed at uses "in the course of instruction or of preparation for instruction" as per Sections 53(1) and 53(3) and/or "for the purposes of an examination by way of setting questions, communicating questions to the candidates or answering questions" as per Section 53(5).

32 All in all, this terminology should make little difference. Like the European Copyright Society reminds, the meaning of "illustration for teaching" must be understood broadly and interpreted flexibly in accordance with 10(2) of the Berne Convention.[38] Therefore, it is safe to say there should the national implementation be interpreted appropriately, none of the three jurisdiction can be examples of bad practices, despite the seemingly narrow specification of purposes in the Irish implementation.

3. How much can be taken?

33 A common misperception among educators (even among certain legal academics) suggests that the reproduction of a specific percentage or a number of words from a specific work does not infringe copyright or is at least permitted under some sort of permitted use or exceptions.[39] Most of the times, these are unfounded claims. Yet, when it comes to the German and Irish teaching exceptions, there are references to certain fixed percentages. Such an approach to teaching exceptions is highly formalistic. Instead, "the kind and amount of works authorised under the exception or limitations will be decided *in casu*, "to the extent justified" by the teaching purpose".[40] At times, the teaching purpose can only be successfully achieved if the entire work is reproduced. The classic examples are copyright law lectures demonstrating the notion of copyright infringement. These have paradoxically led to some unjustified take-down notices.[41]

34 The German Copyright Act is very clear in this respect—the teaching exception permits the use of up to 15 percent of the published works (Section 60a(1)). This is not pre-empted *per se* by the CDSM Directive. On the contrary, Recital 21 CDSM permits Member States "to specify, for the different types of works or other subject matter, in a balanced manner, the proportion of a work or other subject matter that can be used for the sole purpose of illustration for teaching." It is fair to state that in Section 60a(2) the Act states that illustrations, individual articles from the same professional or scientific journal, other small-scale works and out-of-commerce works may be reproduced in their entirety. This second qualification, however, is far from reflective of the balanced approach encouraged by the recital. On the contrary, it once again reflects a very rigid and formalistic approach.

35 Griffiths, Synodinou and Xalabarder (n 11) 22.

36 Consult the European Union (Copyright and Related Rights in the Digital Single Market) Regulations 2021, < **https://www.irishstatutebook.ie/eli/2021/si/567/made/en/pdf> accessed 31 January 2023.**

37 See more here: https://www.irishstatutebook.ie/eli/2000/act/28/enacted/en/print.html.

38 ibid 20–21; Sam Ricketson and Jane C Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond Two Volume Set* (Second Edition, Oxford University Press 2006), §13.45.

39 Bernd Justin Jütte and others, 'Zooming in on Education: An Empirical Study on Digital Platforms and Copyright in the United Kingdom, Italy, and the Netherlands' (2022) 13 European Journal of Law and Technology, see section 4.

40 Griffiths, Synodinou and Xalabarder (n 11) 21.

41 Mike Masnick, 'Sony Music Issues Takedown On Copyright Lecture About Music Copyrights By Harvard Law Professor' (*TechDirt*, 16 February 2016) <https://www.techdirt.com/2016/02/16/sony-music-issues-takedown-copyright-lecture-about-music-copyrights-harvard-law-professor/> accessed 30 October 2022.

35 As it was mentioned above, the analog provision in the Irish Copyright and Related Rights Act in Section 57(3) states that not more than 5 percent of any work can be copied under this section in any calendar year. No such corresponding percentage is introduced for the digital use. The rationale behind such differential treatment is not clear. Interestingly, the new cross-border digital teaching provision in section 57A further states that where the exception beneficiary "has legal access to the relevant protected work or subject matter, the relevant author or performer shall ensure that that beneficiary has the means of benefiting from that exception or limitation to the extent necessary to do so." This specification is certainly welcome in ensuring the proper functioning of the exception and that the rightholders cannot in fact circumvent its applicability. In particular, this may prevent rightholders from claiming that beneficiaries are entitled to copy only 5 percent of a given work.

36 To this end, the Bulgarian implementation could be referred to as the best practice among the three since it omits any reference to a fixed amount. Reflective of the spirit of the CDSM Directive, it merely repeats the already familiar reasoning that the use of the works must be made only to the extent justified by the non-commercial purposes to be achieved. This clarification is also present in the Irish analog exception (yet, with the caveat of the 5 percent, which entirely defeats the purpose of a balanced teaching exception). In this respect, the proposal in the Bulgarian implementation is welcoming to all modes of teaching and effectively achieves its goals of inclusive digital and cross-border teaching.

4. What kind of activities are covered?

37 Looking at the scope of exempted uses, the CDSM Directive is very clear and perhaps there is no need for any creative implementation on behalf of the Member States. The Directive states that the rights affected by the exception are:

- the exclusive rights of reproduction in digital formats and of communication to the public, including making available online (Articles 2 and 3 Information Society Directive 2001/29/EC);
- the exclusive rights granted in databases, including the *sui generis* right (Articles 5 and 7 Database Directive 96/9/EC);
- the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole (Article 4(1) Computer Programs Directive[42])
- the new exclusive rights of reproduction and making available online of press publications granted to press publishers by Article 15(1) of the CDSM Directive.

38 This presents Member States with a rather clear framework. The extended applicability of the exception to other rights on an individual national level is permitted in light of the subsidiarity principle as per Article 5(3) of the Treaty on European Union and Protocol 2 on the application of the principles of subsidiarity and proportionality.[43]

39 While Germany and Bulgaria did not adapt the exempted uses in any particular manner, the situation in Ireland appears to be more problematic and lacks all sorts of transparency. While the official Copyright Act and the the European Union (Copyright and Related Rights in the Digital Single Market) Regulations 2021 seem to be silent on this point, an Unofficial Consolidated Copyright and Related Rights Act 2000 (as amended up to 14 July 2022) suggests certain caveats.[44] The text is published on the website of the Department of Enterprise, Trade and Employment and specifies two digital uses in the context of teaching that narrow the scope of the uses. First, it states that it is not an infringement if an educational establishment, for the educational purposes of that establishment, communicates a work as part of a lesson or examination to a student of that establishment by telecommunication, and secondly, it is equally not an infringement if a student who has received such a lesson or examination makes a copy of the work in order to be able to listen to or view it at a more convenient time. These are arguably the two most relevant uses of copyright protected material in the context of teaching and learning activities—as part of a lesson, during examination and use "on demand" by students, but these are not the only ones. The 'unofficial' nature of the document should be taken into account. Yet, if this is indeed what the law in Ireland is now, it is arguable that such an implementation with its emphasis on the notion of "lesson" and "examination" once again fails to comprehensively appreciate that teaching no longer follows one single model. In many contexts, students are encouraged to carry out tasks prior to attending lessons. One may wonder whether in their preparation they would fall within the scope of the exception should a student who has not received a

42 Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs 2009 268.

43 Griffiths, Synodinou and Xalabarder (n 11) 20.

44 See more at <https://enterprise.gov.ie/en/legislation/unofficial-consolidated-copyright-and-related-rights-act-2000-as-amended-.html> accessed 31 January 2022.

lesson or examination make a copy of a copyright infringing work. Once again, a broad and flexible interpretation should be encouraged to avoid short-circuits of this kind where creative teaching models end up being undermined.

D. Conclusion

40 The different national implementations of Article 5 of the CDSM Directive examined in this contribution differ in substance and in their systematic approaches. It is safe to say that this particular legislative intervention has not contributed to greater harmonization in the Digital Single (education) Market. But this was also not the intention of the legislator. Instead, Article 5 of the CDSM Directive established certain minimum standards to enable activities that are essential for the digital delivery of education (broadly understood) within the Member States.

41 A first criticism is unsurprisingly the diverse implementation models that were adopted in the various Member States. The mandatory nature of the provision has not remedied entirely the possibility for diverging national transpositions. This paper turned to some such discrepancies emerging from the Irish, Bulgarian, and German implementations as case studies. While an ideal implementation comes close to wishful thinking, there are aspects that should have been clear—the quantity of the copied material, the personal scope and the restricted acts all remain blurry leading to confusion.

42 Substantively, the new or revised exceptions are difficult to criticize as they largely reflect justifiable policy decisions. One could take issue with the relatively low threshold of 5 percent for certain reproductions under the Irish Copyright and Related Rights Act and contrast this with the 15 percent permitted under the German Copyright Act. To an extent, these numbers are probably arbitrary, at best, or the outcome of a political bargaining process, at the worst. What precise numbers fail to appreciate are the needs and requirements of educational activities, which might, in many cases, require reproductions of more than a small percentage of a given work—for instance, in the case of media and communication, classics or even copyright law teaching, where reproducing larger chunks is essential to the educational process from both the perspective of the educators and the students. The laws examined reflect concerns in this regard, either by excluding certain types of works from quantitative limitations, or by applying flexible standards that relate to the context of the use, as provided by the revised Bulgarian Copyright Act.[45]

43 A second criticism focuses on Article 5 CDSM's interaction with the old, i.e., analog teaching exception of Article 5(3)(a) of the InfoSoc Directive. Most of the implementations, it seems, maintain differentiated treatments of analog and digital uses. In some cases, the national old provision is broad enough and technologically neutral such as the Bulgarian case, in others, such as in Ireland, the surviving teaching exceptions are limited to specific technological teaching methods. The reality is that nowadays teaching is rarely going to be just offline, or just online. Therefore, coherence when it comes to hybrid teaching and copyright permitted uses is essential. While opinions of educators differ significantly whether digital, hybrid, blended, or otherwise 'modern' teaching methods are 'good' or 'bad', the effects of copyright law on teaching can be severe. The hybrid classroom has opened doors to many disadvantaged groups who could not take part in the education process due to various reasons—from accessibility to caring obligations. In order to maintain this new welcoming and inclusive classroom a reality, the teaching exceptions in the post-pandemic university—offline and online—should talk to each other and work like communicating vessels. Unfortunately, none of the three Member States examined in this article achieve this goal.

45 Lazarova (n 15) 411.

Open Educational Resources through the European lens: Pedagogical opportunities and copyright constraints

by **Giulia Priora and Giovanna Carloni** *

Abstract: The adoption of Open Educational Resources ("OERs") in schools and universities is a phenomenon also on the rise in Europe. Increasingly relying on digital, open, freely adaptable materials that are specifically designed for educational purposes is not only a response to the disruptions brought by the COVID-19 pandemic, but a consistent policy step towards an inclusive, diverse, and quality education in the EU. The article examines the potential and constraints of OERs from both a pedagogical and legal perspective. It demonstrates how these types of resources are fit for purpose to achieve diversity, knowledge co-creation, and student agency in educational ecosystems. It also flags points of weakness of the EU copyright legal framework, such as the lack of harmonization of rules on co-authorship and adaptation, which need to be tackled to fully enable OER-enabled pedagogies across the Union.

Keywords: Open Educational Resources, Europe, OER-enabled pedagogy, EU copyright law, open access

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A. Introduction

1 The educational sector has been undergoing constant, profound changes reflecting the evolution of societies. Recently, the COVID-19 pandemic represented a disruptive boost towards an almost complete reliance on digital technologies to impart education. This has led institutions, teachers, and students to suddenly face the opportunities and challenges of the online world. The pandemic experience also re-emphasized the inequalities persisting within the sector: from infrastructural gaps to technological illiteracy.[1] It became ever

* Giulia Priora is Assistant Professor at NOVA School of Law Lisbon (Faculdade de Direito da Universidade Nova de Lisboa), Director at NOVA IPSI Knowledge Centre on Intellectual Property and Sustainable Innovation, Researcher at CEDIS (Centre of Research and Development in Law and Society) (giulia.priora@novalaw.unl.pt). Giovanna Carloni is Adjunct Lecturer in World Language Didactics at University of Urbino, Italy (giovanna.carloni@uniurb.it). The article is the result of a genuinely collaborative research effort. Should a specific attribution be necessary for institutional reasons, Giulia Priora wrote sections 1, 4, and 5; Giovanna Carloni wrote the abstract, sections 2 and 3. The authors would like to thank the journal editors, peer reviewers, Faith Majekolagbe, Francisco Pereira Coutinho for their valuable comments on earlier versions of this article. All cited online resources have been last accessed on 19 January 2023.

1 E.g., Herman G van de Werfhorst, Emma Kessenich, Sara Geven, 'The digital divide in online education: Inequality in digital readiness of students and schools' [2021] Computers & Education 168; María José Sosa Diaz, 'Emergency remote education, family support and the digital divide in the context of the COVID-19 lockdown' (2021) Int J Environ Res Public Health 18(15), 7956; Natacha Duroisin, Romain Beauset, Chloé Tanghe, 'Education and digital inequalities during COVID-19 confinement: From the perspective of teachers in the French speaking Community of Belgium'

more evident that we cannot simply presume that everyone can access and benefit from quality education. The pandemic exacerbated the need to promptly tackle relevant social inequalities. As the problem is multi-faceted, solutions are expected to stem from different angles and synergic approaches between the regulatory responses, the technological reality, and—not less importantly—practices and behaviors of schools, universities, teachers, and students. In this light, one of the developments that has been underemphasized, at least from a European doctrinal point of view, is the role played by Open Educational Resources ("OERs") in Europe.

2 OERs represent a typology of freely accessible, reusable, and mostly digital content that is specifically designed for educational purposes. OERs, and the pedagogical approaches relying on them, pursue the objective of bringing diversity, equality, and inclusion into the teaching and learning environments. OER-enabled pedagogies pivot on teaching techniques that maximize access to education, acknowledge differences in the classroom, and embrace those differences transforming the way we learn, act, and perceive the world following criteria of fairness and justice in society.[2] As a research topic, OERs are often associated with the US and Canadian realities.[3] This article takes up the challenge of looking at OERs through a European lens, investigating their main features, pedagogical traits, and legal constraints from a EU perspective. The study aims to support any processes of assessment by institutions, teachers, or students that look into the *why* and *how* to choose OERs. To achieve this goal, the article first presents OERs and their evolution across the EU (Section B). It then dives into their pedagogical value, offering a European take on the practical access, use, and creation of OERs (Section C). Lastly, it explores the legal constraints and uncertainties related to the reliance on OERs by educational institutions, teachers, and students within the EU (Section D).

B. Open Educational Resources as an (also) European phenomenon

3 OERs are generally understood as freely available contents specifically designed for teaching and learning purposes. As the term suggests, the emphasis is on the openness of such materials. On the EU Science Hub portal,[4] OERs are defined as "content that is *libre* (openly-licensed content) and at the same time *gratis* (free of charge)."[5] Similarly, yet more precisely, the dedicated webpage run by UNESCO identifies OERs as "learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others."[6] In light of both these definitions, freely downloadable course pack materials, video lectures, open access handbooks, Creative Commons-licensed presentations would be rightly understood as examples of OERs.

4 The idea of openness behind OERs is, however, very rich in meanings. This is because of how openness can be concretely built and what it aims to achieve. Concretely, OERs are not only easily retrievable online and free of charge, but openly licensed, meaning that, in line with the so-called

(2021) Eur J Educ 56, 515-535; Sara M González-Betancor, Alexis J López-Puig, M Eugenia Cardenal, 'Digital inequality at home. The school as compensatory agent' [2021] Computers & Education 168.

2 See Beth Tillinghast, Marie K Fialkowski, Jennifer Draper, 'Exploring Aspects of Open Educational Resources Through OER-Enabled Pedagogy' (2020) Frontiers in Education 5(76); Cailean Cooney, 'What impacts do OER have on students? Students share their experiences with a health psychology OER at New York City College of Technology' [2017] Intl Review of Research in Open and Distributed Learning 18, 155–178; Rajiv Jhangiani and Surita Jhangiani, 'Investigating the perceptions, use, and impact of open textbooks: a survey of post-secondary students in British Columbia' [2017] Intl Review of Research in Open and Distributed Learning 18, 172–192; Fred Mulder, 'The logic of national policies and strategies for open educational resources' [2013] Intl Review of Research in Open and Distributed Learning 14, 96–105.

3 Among the remarkable efforts to study and promote OERs in the US see e.g., American University Washington College of Law Program on Information Justice and Intellectual Property, 'Code of best practices in fair use for Open Educational Resources' (2021) <auw.cl/oer>; Tanya Spilovoy, Jeff Seaman, Nate Ralph, 'The impact of OER initiatives on faculty selection of classroom materials' (2020) <www.onlinelearningsurvey.com/oer.html>; Hong Lin, 'Teaching and learning without a textbook. Undergraduate student perceptions of Open Educational Resources' (2019) International Review of Research in Open and Distributed Learning 20(3); in Canada e.g., Rory McGreal, Terry Anderson, Dianne Conrad, 'Open Educational Resources in Canada' (2015) Intl Review of Open and Distributed Learning 16(5), 161-175; Stephen Downes, 'Models for Sustainable Open Educational Resources' (2007) Interdisciplinary Journal of E-Learning and Learning Objects 3(1), 29-44.

4 The EU Science Hub is one of the main websites run by the European Commission's Joint Research Center, which compiles together information about scientific research and education in the EU. See European Commission, 'EU Science Hub – science for policy', <https://joint-research-centre.ec.europa.eu/index_en>.

5 European Commission, 'Open Educational Resources (OER)', <https://joint-research-centre.ec.europa.eu/what-open-education/open-educational-resources-oer_en>.

6 UNESCO, 'Open Educational Resources' (2020), <https://www.unesco.org/en/open-educational-resources>.

5Rs framework, OERs can be Re-used, Retained, Revised, Remixed, and Redistributed.[7] This implies huge impacts on the educational sector. In the UNESCO Recommendation on Open Educational Resources issued in 2019, the key objectives being discussed are access, inclusion, equity, and pedagogical innovation. In particular, UNESCO calls for "nurturing the creation of sustainability models for OERs (...) at national, regional and institutional levels, and the planning and pilot testing of new sustainable forms of education and learning".[8] This endorsement of OERs as a key tool to foster a more equitable and innovative education is in line with the UN Sustainable Development Goal 4 of the 2030 Agenda, which focuses on promoting lifelong learning opportunities for all.[9] The need to devise sustainable and OER-supported models for teaching and learning—also known as Open Educational Practices ("OEPs")—takes centre stage in today's and tomorrow's learning activities and cultures.[10]

5 Although OER repositories are mostly available online, OEPs have not tapped their potential at global level yet.[11] A gap between Northern America and the rest of the world, including Europe, emerges in this respect. In the US and Canada, the adoption of OEPs, particularly in higher education, has developed consistently and exponentially in the last decades. The publication and adoption of open textbooks have characterized several academic disciplines and so-called Zero-Textbook-Cost ("ZTC") degree programs and courses are broadly available in various Canadian and US colleges.[12] North American universities have also started offering capacity-building programs specifically targeted at developing educators' skills to enhance the implementation of OER-supported methods.[13] Efforts have been put forward also to support the scaling-up of OEPs in the region. A meaningful example in this regard is the quality assurance mechanism developed at BCcampus in Canada, which provides guidance in the form of checklists for teachers, students, and librarians to enable them to assess the quality of OERs before using them.[14] The BCcampus quality assurance mechanism has turned into a model of reference to guarantee the reliability and effectiveness of OERs.

6 The European scenario on OERs looks rather different. Despite the ambition of the EU to achieve an open, diverse, and inclusive educational environment[15] and an open science culture that builds, in particular,

7 David Wiley, TJ Bliss, Mary McEwen, 'Open Educational Resources: A Review of the Literature' in J Michael Spector, M David Merrill, Jan Elen, MJ Bishop, *Handbook of Research on Educational Communications and Technology* (Springer 2014) 782; David Wiley, 'The access compromise and the 5th R' (*Improving Learning*, 5 March 2014) <https://opencontent.org/blog/archives/3221>.

8 UNESCO, Recommendation on Open Educational Resources (OER) of 25 November 2019, CL/4319.

9 UNESCO, 'Unpacking Sustainable Development Goal 4: Education 2030' (2016) <https://unesdoc.unesco.org/ark:/48223/pf0000246300>.

10 On the interplay of OEPs and sustainability see also Maria S Ramirez-Montoya, 'Challenges for open education with educational innovation: A systematic literature review' (2020) Sustainability 12(17), 7053; Andreia Inamorato dos Santos et al, 'Policy Approaches to Open Education--Case Studies from 28 EU Member States (OpenEdu Policies)' (2017) European Commission Joint Research Center Technical Report EUR 28776 EN.

11 Daniel Otto, Nadine Schroeder, Daniel Diekmann, Pia Sander, 'Trends and Gaps in Empirical Research on Open Educational Resources: A Systematic Mapping of the Literature from 2015 to 2019' (2021) Contemporary Educational Technology 13(4); Olaf Zawacki-Richter et al, 'Elements of Open Education: An Invitation to Future Research' (2020) Intl Review of Research in Open and Distributed Learning 21, 319–334; Daniel Otto, 'Adoption and diffusion of open educational resources in education: A meta-analysis of 25 OER-projects' [2019] The International Review of Research in Open and Distributed Learning 20, 122–140.

12 Among the higher education institutions where ZTC degrees and/or ZTC courses are available are: Kwantlen Polytechnic University (KPU), Canada, https://www.kpu.ca/open/ztc; CUNY (The City University of New York), USA, https://sps.cuny.edu/academics/zero-textbook-cost-courses; SUNY (The State University of New York), USA, https://oer.suny.edu; University of Northwestern St. Paul, USA, https://unwsp.edu/news/introducing-unws-first-z-degree-zero-textbook-cost-degree.

13 Examples are: the professional program in Open Education offered at Kwantlen Polytechnic University, Surrey, Canada; the program for Open Scholarship and Education offered at the University of British Columbia, Vancouver, Canada; the master's degree program in Learning and Technology offered at Royal Roads University, Victoria, Canada; the Open Education Resources for Instruction Certificate offered at the University of Illinois, Springfield, USA; the Certificate in Open Educational Practices offered at the University of Minnesota, Minneapolis, USA; the Certificate in OER Librarianship offered at the University of Minnesota, Minneapolis, USA.

14 BCcampus OpenEd, 'Collection Evaluation Rubrics' <https://open.bccampus.ca/use-open-textbooks/evaluate-open-textbooks>.

15 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on achieving the European Education Area by 2025, 30 September 2020, COM/2020/625 final. See also e.g., European Commission, 'Towards equity and inclusion in Higher Education in Europe. Eurydice report' (Publications Office of the European Union 2022) <https://op.europa.eu/en/publication-detail/-/publication/fa946919-b564-11ec-b6f4-01aa75ed71a1/language-en/format-PDF/source-255273612>.

on EU-funded research initiatives,[16] the uptake of OEPs in Europe still appears to be a scattered and disharmonized phenomenon.[17] To start with, across Europe there is neither a consolidated definition nor shared understanding of what OERs are.[18] In light of the existing literature, the main obstacles to the flourishment of a European OER culture could be identified in the scant number of OER repositories and OER-proof learning ecosystems,[19] a problem of mistrust in such resources due to the absence of coordinated OER quality assurance mechanisms,[20] and the lack of dedicated training to teachers and students.[21]

7 Despite these structural deficiencies, recent developments showcase a newly rising attention towards OERs in Europe. As Ehlers and Kunze observe during their coordination of the European Network for Catalysing Open Resources in Education ("ENCORE"), the topic of OERs in Europe is "moving from a phase in which it was representing a philosophy and activist movement to a phase in which OER infrastructures are more and more available to students and to teachers as a normal phenomenon in education processes".[22] The focus on OERs is growing from several different national and disciplinary angles.[23] European universities are moving their first steps towards the promotion of OERs and OEPs. Pilot projects carried out in Estonia and Romania and the Master's Degree Program in Leadership in Open Education offered by the University of Nova Gorica in Slovenia[24] are examples of capacity-building efforts in this direction. Some broader-scope initiatives have been launched in Ireland, with the creation of a forum for the enhancement of higher education targeted at fostering the adoption of OEPs nationwide,[25] and in Austria, with a national repository of massive open online courses ("MOOCs"), a national inter-university OER infrastructure enabling access to open textbooks and the adoption of OERs in online training courses for teachers.[26]

8 Even in these countries where OEPs seem to be flourishing, there is a lack of nation-wide policy strategies supporting these efforts.[27] As highlighted

16 European Commission, 'Open access' (*Funding and Tender Opportunities)* <https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm>.

17 See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'Opening up Education: Innovative teaching and learning for all through new Technologies and Open Educational Resources' COM/2013/0654 final, 8 ("The use of OERs in Europe is still too fragmented and not sustained."); European Network for Catalysing Open Resources in Education, 'Open Education and Training. Where does Europe go from here? State of Play for an Emerging European OER Ecosystem' (2021) <https://encoreproject.eu/2021/11/09/open-education-and-training-where-does-europe-go-from-here/?utm_source=rss&utm_medium=rss&utm_campaign=open-education-and-training-where-does-europe-go-from-here>. '

18 Grainne Conole and Mark Brown, 'Reflecting on the Impact of the Open Education Movement' (2018) Journal of Learning for Development 5(3), 196.

19 Daniel Otto and Michael Kerres, 'Increasing Sustainability in Open Learning: Prospects of a Distributed Learning Ecosystem for Open Educational Resources' [2022] Front Educ 7, 5.

20 European Network for Catalysing Open Resources in Education, 'Open Education and Training. Where does Europe go from here?', 10.

21 Conole and Brown, 'Reflecting on the Impact of the Open Education Movement', 197.

22 European Network for Catalysing Open Resources in Education, 'Open Education and Training. Where does Europe go from here?', 26.

23 The Support Framework for Higher Education Institutions compiled by Inamorato dos Santos, Punie, and Castaño Muñoz represents an unprecedented comprehensive attempt to map OEPs across Europe. See Andreia Inamorato dos Santos, Yves Punie, Jonatan Castaño Muñoz, 'Opening up Education: A Support Framework for Higher Education Institutions' (2016) <https://publications.jrc.ec.europa.eu/repository/handle/JRC101436>. See also, among others, Martin Ebner, Sandra Schön, Swapna Kumar, 'Guidelines for leveraging university didactics centers to support OER uptake in German-speaking Europe' (2016) Education Policy Analysis Archives 24, 39; Giles Pepler, 'Developing Policies To Stimulate The Uptake Of OER In Europe' (2014) eLearning & Software for Education 1, 276-282; Jonatan Castaño Muñoz, Christine Redecker, Riina Vuorikari, Yves Punie, 'Open Education 2030: planning the future of adult learning in Europe' (2014) Open Learning: The Journal of Open, Distance and e-Learning 28(3), 171-186; Isobel Falconer, Lou McGill, Alison Littlejohn, Eleni Boursinou, 'Overview and Analysis of Practices with Open Educational Resources in Adult Education in Europe' (2013) <http://oro.open.ac.uk/50933/1/JRC-Adult%20Learning%20Report%202013.pdf>.

24 University of Nova Gorica, <https://www.ung.si/en/schools/school-of-engineering-and-management/programmes/2NVOI/>.

25 National Forum for the Enhancement of Teaching and Learning in Higher Education, 'Supporting Open Education', <https://www.teachingandlearning.ie/our-priorities/digital-transformation/supporting-open-education/>.

26 Sandra Schön and Martin Ebner, 'Open Educational Resources in Austria' in Ronghuai Huang et al (eds), Current State of Open Educational Resources in the "Belt and Road" Countries. Lecture Notes in Educational Technology (Springer, 2020), 17-33.

27 See Gabriela Grosseck, Carmen Holotescu, Diana Andone, 'Open Educational Resources in Romania' in Ronghuai Huang et al (eds), *Current State of Open Educational Resources in the "Belt and Road" Countries. Lecture Notes in Educational*

by Nascimbeni with regards to the Italian national scenario, the absence of institutional regulatory strategies is one of the main reasons why the country is not fully embracing OERs, alongside with problems related to the quality perception, searchability, language, and teachers' skillsets.[28] Slovenia and Germany represent two, very recent, meaningful exceptions in this regard. In the last decade, the German government has set a solid focus on OERs, moving towards a wider digitization of learning materials and a more education-friendly legislation.[29] This led to a substantial policy paper in 2022 that advances proposals for legislative reforms focused on the balance and consolidation of the reliance and lawful use of OERs through the establishment of so-called "communities of practices".[30] Slovenia has embraced a more bottom-up policy approach. Since 2015, through the government-funded initiative "Opening Up Slovenia",[31] the country has progressively implemented a national strategy of dialogue between stakeholders, providing them the resources to develop their own pathways towards open educational and professional training.[32] Among the expected outcomes of the initiative, coordinated by the Slovenian Ministry of Education, are the enhancement and decentralization of digital infrastructures and nationwide OER repositories, and the collection of valuable inputs for effective legislative reforms to the extent and in the specific scenarios where this turns to be necessary.[33]

9 In the wake of these national developments, several EU-funded projects are studying ways to further support and coordinate OEPs across Europe. Among them, the ENCORE Network[34] aims to study four identified challenges to OERs in Europe, i.e., the lack of adequate technology, policy, quality, and innovation by raising awareness among educators and practitioners in educational and business sectors and supporting the development of OER repositories and open learning cultures.[35] Other initiatives pilot new ways to introduce openness in education, such as the Open Game project,[36] which produced gamified online learning materials and made them available as OERs for university instructors all across Europe. One of the main objectives pursued by these EU-funded initiatives seems to be to introduce educators to the use, selection, and adoption of OEPs in their classrooms. In light of all these developments, it cannot be excluded that OERs may start playing a decisive role in European education. OER- and OEP-focused parameters could be soon included in the evaluations of projects and universities' performance, and specific training could be provided ever more widely across schools, universities, and libraries. It is, therefore, necessary to scrutinize the main features of OERs embracing the perspective of their most proactive promoters and users, i.e., teachers and students.

C. The OER-enabled pedagogy

10 The achievement of openness and inclusivity in the educational sector requires all actors involved, in particular teachers and students, to undergo a shift in terms of "changed mindsets, attitudes, and values",[37] as well as, more concretely, professional habits and practices.[38] In this respect, it is worth noting that the term Open Pedagogy, describing the interaction

Technology (Springer, 2020), 151-174; Hans Põldoja and Mart Laanpere, 'Open Educational Resources in Estonia' in Ronghuai Huang et al (eds), *Current State of Open Educational Resources in the "Belt and Road" Countries. Lecture Notes in Educational Technology* (Springer, 2020), 35-48.

28 Fabio Nascimbeni, 'Open Educational Resources in Italy' in Ronghuai Huang et al (eds), Current State of Open Educational Resources in the "Belt and Road" Countries. Lecture Notes in Educational Technology (Springer, 2020), 49-62.

29 See Inamorato dos Santos et al, 'Policy Approaches to Open Education', 60-62.

30 German Ministry of Education and Research, 'OER-Strategie. Freie Bilgungsmaterialen für die Entwicklung digitaler Bildung' (2022) <https://www.bmbf.de/SharedDocs/Publikationen/de/bmbf/3/691288_OER-Strategie.html>, 4, 10.

31 Opening Up Slovenia, <https://ouslovenia.net>.

32 See Inamorato dos Santos et al, 'Policy Approaches to Open Education', 118-122.

33 Ibid, 120 ("(...) the following objectives of the initiative: (...) Develop a legislative environment and mechanisms for quality assurance and control of open learning services. The objective will be achieved by: updating the existing legislation, and where necessary introducing new legislation that will be geared to enable the development and implementation of open learning principles; creating clear quality standards of open education in cooperation with all the relevant stakeholders.").

34 European Network for Catalysing Open Resources in Education, <https://encoreproject.eu>.

35 European Network for Catalysing Open Resources in Education, 'Open Education and Training. Where does Europe go from here?', 7.

36 Open Game, <https://opengame-project.eu/project>.

37 Ebba Ossiannilsson, 'Ecologies of Openness: Reformations through Open Pedagogy' [2018] Asian Journal of Distance Education 2, 103. See also Ebba Ossiannilsson et al, 'From Open Educational Resources to Open Educational Practices' [2020] Distances et médiations des savoirs 31.

38 See A W Tony Bates, 'Teaching in a Digital Age. Guidelines for Designing Teaching and Learning' (2019) <https://teachonline.ca/teaching-in-a-digital-age/teaching-in-a-digital-age-second-edition>, who stresses how, for OEPs to trigger pedagogical innovation, "it is essential to embed OER within a robust and appropriate teaching framework or pedagogy that exploits the potential of OER".

between the open movement and pedagogy,[39] has recently been criticized as too general.[40] De Rosa and Jahngiani define Open Pedagogy as a "site of praxis, a place where theories about learning, teaching, technology, and social justice enter into a conversation with each other [...]. This site is dynamic, contested, constantly under revision, and resists static definitional claims."[41] Due to the excessive malleability of this term, the concept of Open Pedagogy has transitioned into the idea of OER-enabled pedagogy, that is "the set of teaching and learning practices that are only possible or practical in the context of the 5R permissions which are characteristics of OER".[42]

11 In OER-enabled pedagogies, the main focus can be on contents or processes.[43] They are content-centric, if the focus lies on the creation of new OERs, while if they look primarily at the interactions among knowledge co-creators, they are process-centric.[44] They can also be teacher-centric, if the instructor is expected to mostly operate with OERs, or learner-centric, if students engage in knowledge co-building and the teachers limit their activity to providing only scaffolding.[45] In both cases, learners are constantly and fundamentally deemed to be co-creators of knowledge, engaging with learning materials and showing their degree of understanding by way of collaborative exercises. In other words, OER-enabled pedagogy implies a process of knowledge production that is "not a closed process, but one to which information is continually added".[46] This means that, essentially, OER-enabled pedagogies are conceptualized as a learner-focused approach which entails a participatory component fostering students' agency and empowerment, often reframing the relationship between educators and learners.

12 If teachers adopt OERs in their courses, they can personalize their teaching materials by "adapt[ing], adjust[ing] and/or modify[ing], or alter[ing] the content itself"[47] and remix it by "combin[ing] the original or revised content with other open content to create something new".[48] The benefits of such practices enhance the effectiveness of teaching activities, as materials result being more suitable, if not tailored, on the students' needs. As Moist suggests: "adaptation or adoption of OERs will almost always be more efficient than creating teaching materials from scratch".[49] This reflects in a wide array of different teaching activities, including assessment and student-centred exercises. Through the use of OERs, collaborative knowledge production is facilitated in activities like the creation of public webpages, the revision or remixing of learning materials by teachers, as well as by senior students for more junior peers, annotated bibliographies,[50] and Wikipedia edit-a-thons.[51] Both teachers and students share the experience of the potential of OERs in stimulating creativity and inclusivity in the educational sector[52] in the same threefold way: accessing, using, or creating them.

39 Alan Witt 'Towards a Working Definition of Open Pedagogy' (2020) Milne Library Faculty/Staff Works 8, <https://knightscholar.geneseo.edu/library-research/8>.

40 See Michelle Reed, 'Creating learning opportunities in open education: An exploration of the intersection of information literacy and scholarly communication' in Andrew Wesolek, Jonathan Lashley, Anne Langley (eds), *OER: A field guide for academic librarians* (Pacific University Press 2018) 73-92; David Wiley and John L Hilton, 'Defining OER-enabled pedagogy' (2018) International Review of Research in Open and Distance Learning 19(4), 133-146; Fredrick W Baker, 'An alternative approach: Openness in education over the last 100 years' (2016) Tech Trends 61(2), 130–140; Martin Weller, *The battle for open: How openness won and why it doesn't feel like victory* (Ubiquity Press 2014).

41 Robin Derosa, Rajiv Jhangiani, 'Open pedagogy' in Elizabeth Mays (ed), *A guide to making open textbooks with students* (Rebus Press 2017), 7.

42 Wiley and Hilton, 'Defining OER-enabled pedagogy', 135.

43 See Suzan Koseoglu and Aras Bozkurt, 'An exploratory literature review on open educational practices' (2018) *Distance Educatio*n 39(4), 441–461; Jeremy Knox, 'The limitations of access alone: Moving towards open processes in education technology' (2013) Open Praxis 5(1), 21–29.

44 See Maha Bali, Catherine Cronin, Rajiv S Jhangiani, 'Framing Open Educational Practices from a Social Justice Perspective' (2020) Journal of Interactive Media in Education 1(10).

45 Ibid.

46 Eric Werth and Katherine Williams, 'The why of open pedagogy: a value-first conceptualization for enhancing instructor praxis' (2022) Smart Learning Environments 9(10) ("Collaborative knowledge construction is at the heart of Open Pedagogy, where learners are able to provide valuable insight into learning materials, and the open practitioner recognizes that knowledge construction is not a closed process, but one to which information is continually added.").

47 David Wiley, 'The access compromise and the 5th R' (*Improving Learning*, 5 March 2014) <https://opencontent.org/blog/archives/3221>.

48 Ibid.

49 Shannon Moist, 'Faculty OER Toolkit' (2018) <https://eduq.info/xmlui/handle/11515/35733>.

50 Delene White, 'Students Creating a Shared Bibliography' (2018) <http://delenecasewhite.net/ITW101_27/course-info/student-work-contribution-to-knowledge/students-creating-a-shared-bibliography-on-zotero/>.

51 Elvis Bakaitis, 'Zines as Open Pedagogy' (Open Pedagogy Notebook, 4 August 2019) <https://openpedagogy.org/assignment/zines-as-open-pedagogy/>.

52 Michael Paskevicius and Valerie Irvine, 'Open Education and Learning Design: Open Pedagogy in Praxis' (2019) *Journal of Interactive Media in Education* (1) 10; Torrey Trust, Robert Maloy, Sharon Edwards, 'College Student Engagement in OER Design Projects: Impacts on Attitudes, Motivation, and Learning' (2022) Active Learning in Higher Education 340.

I. Access to OERs

13 The choice to embrace an OER-enabled pedagogy can be motivated by the push towards social justice.[53] Conceived as the "parity of participation [...] [where] all the relevant social actors [...] participate as peers in social life",[54] social justice in educational contexts acquires a particularly meaningful role in "enhanc[ing] opportunities for self-development and self-expression, and [...] encourag[ing] participation of different groups in decision-making through group representation".[55] OEPs set the limelight on the potential of education in achieving these goals, by promoting a threefold evolution: "from content-centric to process-centric; from teacher-centric to learner-centric; from primarily pedagogical to primarily social justice focused".[56]

14 The idea of social justice underlying OER-enabled pedagogy is multi-fold, touching upon moral, economic, and cultural aspects that lie at the core of society in and beyond the classroom.[57] In this light, the main definitional feature of OER-enabled pedagogies is their potential in widening the access to education to everyone, including those who might not otherwise afford to take advantage of other educational resources and opportunities.[58] In other words, the embedded value of OERs, as materials that are and need to remain freely accessible to everyone, lies in the equal opportunity given to all teachers and all learners. This implies a second important characteristic, which is the inclusivity of OERs. While opening education to everyone, OER-enabled pedagogies foster the diversity of learning communities. Pedagogically, this is an effective way to include and involve cultural minorities, vulnerable and under-represented groups, enabling them to access and proactively engage with all educational materials.[59]

II. Use of OERs

15 The open use of OERs is often listed as the first requisite of OER-enabled pedagogies,[60] presuming the ability to search, identify, and select OERs based on their value and potential within the design and development of learning activities. These aspects are or should be tackled in dedicated training activities. Not less importantly, the adoption and use of OERs is closely linked to the idea of openness in a creative and remixing way. There is a vast array of uses that can and are expected to be done with OERs; based on the so-called 5Rs framework, sharing, revising, remixing, transforming, and peer reviewing educational materials are all acts that are and need to remain freely possible while working with OERs.[61]

16 In particular, educators engage in open teaching by way of designing their courses, selecting and sharing OERs, digitizing and transforming materials to devise activities targeted at fostering students' active learning, providing room for learners to act as knowledge co-builders, and adapting materials to the needs of the class and the learning objectives.[62] The markedly creative and participatory nature of OER-enabled pedagogies sheds light on the importance of fostering teachers' and students' autonomous and collaborative construction of knowledge. Both these categories of actors in the educational sectors are deemed a fundamental part of the open learning community, with students being engaged in knowledge co-construction, enhancing reflective and critical thinking.[63]

53 See Sarah Lambert and Laura Czerniewicz, 'Approaches to Open Education and Social Justice Research' (2020) Journal of Interactive Media in Education 1(1); See Bali, Cronin, Jhangiani, 'Framing Open Educational Practices from a Social Justice Perspective'; Sarah R Lambert, 'Changing our (Dis)Course: A Distinctive Social Justice Aligned Definition of Open Education' (2018) Journal of Learning for Development 5(3).

54 Nancy Fraser, 'Reframing Justice in a Globalizing World' in Julie Connolly, Michael Leach, Lucas Walsh (eds), *Recognition in Politics: Theory, Policy and Practice* (Cambridge Scholars 2007).

55 Ibid.

56 See Bali, Cronin, Jhangiani, 'Framing Open Educational Practices from a Social Justice Perspective'.

57 See ibid; Cheryl A Hodgkinson-Williams and Henry Trotter, 'A social justice framework for understanding open educational resources and practices in the Global South' (2018) Journal of Learning for Development 5(3), 204–224.

58 See Hodgkinson-Williams and Trotter, 'A social justice framework for understanding open educational resources and practices in the Global South'.

59 See Phil Tietjen and Tutaleni I Asino, 'What Is Open Pedagogy? Identifying commonalities' (2021) Intl Review of Research in Open and Distributed Learning 22(2), 185–204.

60 See Tietjen and Asino, 'What Is Open Pedagogy? Identifying commonalities'; Ronghuai Huang et al, 'Disrupted classes, undisrupted learning during COVID-19 outbreak in China: Application of open educational practices and resources' [2020] Smart Learning Environments 7, 19.

61 Tietjen and Asino, 'What Is Open Pedagogy? Identifying commonalities', 196.

62 See Fabio Nascimbeni and Daniel Burgos, 'In Search for the Open Educator: Proposal of a Definition and a Framework to Increase Openness Adoption Among University Educators' (2016) Intl Review of Research in Open and Distributed Learning, 17(6).

63 See Huang et al, 'Disrupted classes, undisrupted learning during COVID-19 outbreak in China: Application of open educational practices and resources'. See also Bronwyn Hegarty, 'Attributes of Open Pedagogy: A Model for Using Open Educational Resources' (2015) Educational Technology 55(4), 3–13, in which the main attributes of OER-enabled

III. Creation of OERs

17 Most of the studies and assessments of the potential of OERs presume their existence and abundance online. OERs do not simply exist, but they need to be created, updated, remixed, and kept alive. Students' participation emerges as a key dimension in this regard.[64] In OER-enabled pedagogies, learners join their teachers in the shaping and design of the learning experience.[65] The case of renewable assessments, also known as non-disposable assessments, is particularly insightful in this regard. Under the OER-enabled pedagogy model, the renewable assessments given to the students to assess their understanding and knowledge have a purpose beyond class grading.[66] Motivated by the connection of the tasks with real-life contexts, renewable assessments pivot on the impact the students can have in applying their knowledge, shaping new views, and engaging with the topics more extensively.[67]

18 Renewable assignments often require students to co-create OERs, such as updating materials, writing commentaries, and remixing parts of open textbooks.[68] Through renewable assignments, learners become knowledge co-creators and engage in critical and creative thinking.[69] Wiley and Hilton provide a framework to assess the effectiveness of such pedagogical practices based on four key aspects: "1. Are students asked to create new artifacts (essays, poems, videos, songs, etc.) or revise or remix existing OERs? 2. Does the new artifact have value beyond supporting the learning of its author? 3. Are students invited to publicly share their new artifacts or revised or remixed OER? 4. Are students invited to openly license their new artifacts or revised or remixed OER?".[70] By and large, the proactive role of students in the creation of knowledge, both within and beyond the scope of their renewable assessments, can be defined as the most innovative elements of the evolving OER-enabled pedagogies at global scale.

D. EU copyright law and OERs

19 It turns evident that OERs epitomize one of the most innovative attempts to build a fairer and inclusive educational sector. As illustrated above, their underlying idea of openness is deeply intertwined with the notions of diversity, equality, and collaboration.[71] This is highly meaningful from the EU legal perspective. Aware of the recognition of all EU Member States of the human right to education,[72] and in virtue of Article 14 of the Charter

pedagogies are listed to be participatory technologies; people, openness, and trust; innovation and creativity; sharing ideas and resources; connected community; learner-generated knowledge; reflective practice; and peer review.

64 Bali, Cronin, Jhangiani, 'Framing Open Educational Practices from a Social Justice Perspective'; Werth and Williams, 'The why of open pedagogy: a value-first conceptualization for enhancing instructor praxis'.

65 In terms of pedagogical practices, this connotation of social justice has recently been reframed under the notion of Design Justice by Costanza-Chock: "Design justice rethinks design processes, centers people who are normally marginalized by design, and uses collaborative, creative practices to address the deepest challenges our communities face. [...] Design justice focuses explicitly on the ways that design reproduces and/or challenges the matrix of domination (white supremacy, heteropatriarchy, capitalism, ableism, settler colonialism, and other forms of structural inequality). Design justice is also a growing community of practice that aims to ensure a more equitable distribution of design's benefits and burdens; meaningful participation in design decisions; and recognition of community-based, Indigenous, and diasporic design traditions, knowledge, and practices." See Sasha Costanza-Chock, Design Justice: Community-Led Practices to Build the Worlds We Need (MIT Press 2020), 6-23. See also Hodgkinson-Williams and Trotter, 'A social justice framework for understanding open educational resources and practices in the Global South'.

66 David Wiley, 'Toward Renewable Assessment' (*Open Content*, 2016 <https://opencontent.org/blog/archives/4691>.

67 See ibid; Aderson Oliveira, 'Seven Considerations When Creating Renewable Assessments' in Students of TLHE 720 at Centennial College (eds), *On Assessment. An Exploration of Emerging Approaches* (Pressbooks 2021).

68 See Rajiv S Jhangiani and Arthur G Green, 'An open athenaeum: Creating an institutional home for open pedagogy' in Andrew Wesolek, Jonathan Lashley, Anne Langley (eds), *OER: A Field Guide for Academic Librarians* (Pacific University Press 2018).

69 Ibid; Ragad Anwar et al, 'Encouraging Academic Integrity Through a Preventative Framework' (Pressbooks 2020).

70 Wiley and Hilton, 'Defining OER-enabled pedagogy', 137.

71 On the interplay between the principles of diversity, equality, and inclusion, and the educational sector, see e.g., Gregor Wolbring and Aspen Lillywhite, 'Equity/ Equality, Diversity, and Inclusion (EDI) in Universities: The Case of Disabled People' (2021) Societies 11(2), 49; Milton A Fuentes, David G Zelaya, Joshua W Madsen, 'Rethinking the Course Syllabus: Considerations for Promoting Equity, Diversity, and Inclusion' [2021] Teaching of Psychology 48, 69–79; Lisa M Harrison-Bernard et al, 'Knowledge gains in a professional development workshop on diversity, equity, inclusion, and implicit bias in academia' [2020] Advances in Physiology Education 44, 286–294; Gary S Weissmann, Roberto A Ibarra, Michael Howland-Davis, Machienvee V Lammey, 'The multicontext path to redefining how we access and think about diversity, equity, and inclusion in STEM' [2019] Journal of Geoscience Education 67, 320–329.

72 Protocol No. 1 to the European Convention for the Protection of Human Rights and Fundamental Freedoms, 1952, art.2

of Fundamental Rights of the EU,[73] the European Commission has been working on regulatory measures that consistently aim at promoting lifelong, inclusive, digital, quality learning experiences, from early childhood until adult learning.[74] The specific goals being pursued are the enhancement of EU competitiveness, its economic and cultural growth, higher and better qualified employment rates, and the valorisation of its rich cultural diversity.

20 In a Communication issued in 2013, the Commission expressly recognized the key role and potential of OERs as "opportunities to reshape EU education",[75] stressing how their developments and availability enable teachers and education institutions to "reach thousands of learners from all five continents simultaneously", and stating that "stimulating the supply and demand for high-quality European OERs is essential for modernizing education".[76] Even though in absence of an ad hoc legal framework dedicated to this specific type of learning materials, the Commission identifies best practices in, *inter alia*, the coordinated attempt to launch a European Massive Open Online Courses ("MOOCs") portal,[77] and national initiatives designed to foster innovative learning environments, including the online adaptation of analogue contents and broad uses of digital-born teaching materials.[78]

21 However, the EU approach towards OERs shows an important clash between policy and legal objectives. If, on the one hand, the goal is to foster quality and inclusive education, on the other hand, the legal protection of intellectual property rights, and specifically copyright, has been expanding in size and scope.[79] In other words, the tightening of the enclosure of intellectual works within the idea of exclusive control by their creators can represent a strong constraint to the culture of openness sought in the educational sector.

22 As seen at the beginning of this study, the 2019 UNESCO Recommendation on OERs seems to reflect this clash rather explicitly, defining OERs as "learning, teaching and research materials in any format and medium *that reside in the public domain* or are *under copyright that have been released under an open license*".[80] This definition showcases the reality in the EU and beyond: it is copyright protection that draws the boundaries between what is an OER and what is not. OERs qualify as such due to the possibility of accessing and using them freely, despite being types of works and resources that are typically protected by copyright law. This means that OER-enabled pedagogical activities use works that are:

i outside of copyright protection (i.e., works belonging to the public domain due to copyright expiration or falling outside of copyright subject matter, e.g., news and facts of the day[81]), or

("No person shall be denied the right to education. (...)").

73 Charter of Fundamental Rights of the European Union, 2012, art.14 ("Everyone has the right to education and to have access to vocational and continuing training. This right includes the possibility to receive free compulsory education. (...)").

74 See Joint Report of the Council and the Commission on the implementation of the Strategic Framework for European cooperation in education and training (ET 2020) — 'Education and Training in a smart, sustainable and inclusive Europe' (2012) OJ C 70, 9–18; Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'Strengthening European Identity through Education and Culture. The European Commission's Contribution To The Leaders' Meeting In Gothenburg 17 November 2017' COM(2017) 673 final ("Provided that it is of *good quality and inclusive*, education from childhood on lays the groundwork for social cohesion, social mobility and an equitable society. (...) education and culture help make Europe an attractive place to live, study and work, marked by freedom and common values, which are reflected in fundamental rights and an *open society*. Europe's cultural diversity is a strength that fuels creativity and innovation (...). Education and culture play a pivotal role for people to (i) know better each other across borders, and (ii) experience and be aware of what it means to be 'European'.") (emphasis added). For an overview of EU policies on education, see European Commission, 'Policy on educational issues' <https://ec.europa.eu/info/education/policy-educational-issues_en>.

75 Communication from the Commission, 'Opening up Education', 2.

76 Ibid, 8.

77 The European Commission refers in particular to the efforts put forward by the European Association of Distance Teaching Universities, <https://www.openuped.eu/>.

78 Communication from the Commission, 'Opening up Education', 7-9 ("(...) stakeholders involved in the provision of 'traditional' educational materials can also help to make high-quality digital content more available: textbook authors, publishers and booksellers can contribute to joint collaborative efforts to find new innovative technical solutions ensuring that high-quality resources are available to all."). See also Inamorato dos Santos et al, 'Policy Approaches to Open Education'.

79 See e.g., Bernt P Hugenholtz, 'Copyright in Europe: Twenty years ago, today, and what the future holds' (2013) Fordham Intellectual Property, Media and Entertainment Law Journal 23(2); James Boyle, 'The second enclosure movement and the construction of the public domain' (2003) *Law and Contemporary Problems* 66(1), 33-74.

80 See also the EU Commission Communication of 2013 calling for coordinated national action to make "the rights and obligations of users of educational materials under copyright (...) more transparent". Communication from the Commission, 'Opening up Education', 9.

81 Berne Convention for the Protection of Literary and Artistic

ii subject matter of copyright protection, whose use is permitted by law (i.e., uses of protected works covered by copyright exceptions and limitations, e.g., the free use of works for teaching purposes[82]), or

iii subject matter of copyright protection, whose use is licensed (i.e., uses of protected works that are authorized by the copyright holders, e.g., Creative Commons licensed materials).

23 Despite providing clarity to the definition of OERs, copyright law may present a serious obstacle to their adoption for three main reasons. First, copyright is a *broad* type of legal protection. This means that its subject matter and scope covers an extremely wide range of different types of creative contents (e.g., texts, music, videos, images, multimedia works).[83] It also means that copyright holders enjoy the exclusive right to authorize (or prohibit) numerous uses of their works by third parties: from the act of mere copying to the revision, adaptation, translation, sharing of the work up to its commercial distribution.[84]

24 Second, copyright is an *automatic* right that is *long* in its duration. The sole creation of an original work automatically confers to its author the exclusive control over it for 70 years after their death in the EU.[85] This occurs without the need to deposit or otherwise formally register the work at any public authority.[86] This generates a presumption of non-openness: in absence of any indications by the author, materials found online are presumed to be covered by copyright protection and thus *not* free to be used.

25 Lastly, copyright law presents a firmly rooted problem of *unawareness* across society. The poor familiarity with the technicalities and with the application of copyright rules often leads to chilling effects affecting teachers and students uncertain whether and how they can use content found online,[87] thus playing against one of the main objectives pursued by copyright law itself, i.e., the flourishment of knowledge and culture.[88]

26 In the EU, copyright legislation presents one additional disadvantage and one recent advantage to the wide spreading of OERs. On the problematic side, copyright rules in the EU are still significantly fragmented.[89] Substantial differences exist between how the 27 Member States regulate, for example, how much of a book teachers can freely use in their activities, or which entities qualify as educational institutions.[90] However, on the bright side, the EU

Works, 1886 as last amended in 1979 (Berne Convention), art.2(8).

82 Berne Convention, art.10(2); Directive 2001/29/EC on the harmonization of certain aspects of copyright and related rights in the information society [2001] OJ L167 (EU InfoSoc Directive), art.5(3)(a); Directive EU 2019/790 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC [2019] OJ L130 (EU CDSM Directive), art.5.

83 See e.g., Enrico Bonadio and Nicola Lucchi, 'How far can copyright be stretched? Framing the debate on whether new and different forms of creativity can be protected' [2019] Intellectual Property Quarterly 2, 115-135; Tanya Aplin, *Copyright Law in the Digital Society. The Challenge of Multimedia* (Hart 2005) 16-35.

84 Berne Convention, artt.8-11; EU InfoSoc Directive, artt.2-4.

85 Directive 2006/116/EC on the term of protection of copyright and certain related rights [2006] OJ L372/12 (EU Term Directive), art.1.

86 Berne Convention, art.5(2).

87 Communication from the Commission, 'Opening up Education', 9, observing from the public consultations that "[t]he absence of clear information on authorised uses for a specific online learning material (e.g. text, images and videos) deters users." See also Péter Mezei, Digital Higher Education and Copyright Law in the Age of Pandemic - The Hungarian Experience, 14 (2023) JIPITEC 328 para 1.; Bernd J Jütte et al, 'Zooming in on education: An empirical study on digital platforms and copyright in the United Kingdom, Italy, and the Netherlands' (2022) European Journal of Law and Technology 13(2).

88 See e.g., Hayleigh Bosher, 'An Explorative Review of Copyright Education: Studies and Resources' (2017) CREATe Working Paper 2017/04; Jane Secker and Chris Morrison, 'Copyright literacy in the UK: A survey of librarians and other cultural heritage sector professionals' (2015) Library and Information Research 39(121), 75-97.

89 Communication from the Commission, 'Opening up Education', 2 ("Even though the key for success depends foremost on Member States, the EU also has a role to play. It can promote best practices and support exchanges across Member States. It can deliver benefits from economies of scale and interoperability, thus avoiding fragmentation.").

90 Communication from the Commission, 'Opening up Education', 9 ("The EU copyright framework includes exceptions for the use of material for teaching purposes. The implementation of these exceptions varies across Member States. Given the cross-border potential of innovative practices in using educational content, it is important to assess whether the current legal framework ensures in practice sufficient transparency and legal certainty for users."). See also Inamorato dos Santos et al, 'Policy Approaches to Open Education'. See also Teresa Nobre, 'Educational Resources Development: Mapping Copyright Exceptions and Limitations in Europe' (2014) Creative Commons Project Open Educational Resources Policy in Europe Working Paper; Raquel Xalabarder, 'Study on Copyright Limitations and Exceptions for Educational Activities in North America, Europe, Caucasus, Central Asia and Israel' (2009) WIPO Standing Committee on Copyright and Related Rights Nineteenth Session Proceedings,

legislator is committed to building a more uniform and education-sensitive system of copyright rules. The EU Directive on Copyright in the Digital Single Market ("CDSM")[91] of 2019 represents a step forward in this direction. In virtue of its Article 5, teachers and students all across the EU can share materials online via their school/university electronic environments without the need for authorizations by or payments to the copyright holders—as long as the Member State where their education institution is based do not give expressed priority to licensing mechanisms or compensation schemes.[92] This new provision carries the potential to enlarge the definition and use of OERs in Europe. This potential is dramatically lowered in those Member States where the use of textbooks and educational materials is excluded from the scope of Article 5 and, for those, the need to seek authorization is preserved.[93]

27 In this light, OERs represent not only a phenomenon on the rise, but an opportunity to critically assess EU copyright law and finetune it with the evolving needs of the educational sector and society as a whole. It is thus worth focusing on each of the three main activities teachers and students engage with in OER-enabled pedagogies, i.e., the access, use, and creation of OERs, and inquire which obstacles EU copyright law might pose to them.

I. Identifying the public domain and OERs

28 *Accessing* OERs has to do with knowing how to identify works of public domain. As briefly mentioned above, this is both the case of works whose copyright protection have expired and of those that fail to qualify as copyright subject matter. With the progressive expansion of the long-arm of copyright[94], the public domain has been shrinking over the centuries. It still includes ideas, methods, procedures, mathematical concepts, news of the day,[95] and, in some countries, official documents issued by public authorities (e.g., parliamentary acts, legislation, judicial and administrative proceedings).[96]

29 From the OER perspective comes a push towards an EU copyright legal framework that fully harmonizes and effectively protects the public domain. The current debate on the copyrightability of AI-generated works resonates with this line of argument, too. The emergence of machine learning models and the valuable outcomes of these automated processes, in the form of data, texts, or of even more complex nature such as artworks and music works,[97] might represent an opportunity to achieve a more open and flourishing public domain educational culture.[98]

II. Lawfully using OERs

30 *Using* OERs, when these are not public domain but rather protected works, needs to be lawful. This emphasizes an important premise to the study of OERs from a copyright perspective: not all OERs can be used in any way, by anyone, for any purpose. In order to be lawful, any specific uses of copyrighted OERs carried out by teachers and students need to be either licensed or covered by copyright teaching exceptions. Due to lack of expertise, it may be difficult for them to autonomously determine the legality of their uses of OERs. Uncertainties may arise, for instance, with regards to the amount of material they can use, the possibility of digitizing analogue contents, the sharing of OERs outside institutional channels, the assessment of the non-commercial nature of their activities.

31 On the side of licensing, such uncertainties have been mitigated by the advent of open licensing practices[99]

SCCR/19/8.

91 EU CDSM Directive.

92 For thorough analyses on Article 5 CDSM Directive, see Alina Trapova, The exceptional mismatch of copyright teaching exceptions in the post-pandemic university – insights from Germany, Bulgaria, and Ireland, JIPITEC 14 (2023) 307 para 1; Giulia Priora, Bernd J Jütte, Péter Mezei, "Copyright and digital teaching exceptions in the EU: Legislative developments and implementation models of Article 5 CDSM Directive" (2022) IIC 53(4), 543-566; Ana Lazarova, 'Bulgaria falls into all the traps set by Article 5 of the CDSM Directive' (2022) JIPLP 17(5), 407-413.

93 See e.g., Italian Copyright and Related Rights Act, art.70-bis(3).

94 Pamela Samuelson, 'The Copyright Grab' (1996) Wired Magazine 4(1).

95 Berne Convention, art.2; Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement), art.9(2).

96 Berne Convention, art.2(4).

97 Daniel J Gervais, 'The machine as an author' (2020) Iowa Law Review 105, 2053; Martin Senftleben and Laurens Buijttelaar, 'Robot creativity: An incentive-based neighboring rights approach' (2020) EIPR 42(12), 797-812.

98 Begoña Gonzales Otero, 'Machine learning models under the copyright microscope: Is EU copyright fit for purpose?' (2021) GRUR Intl 70(11), 1043-1055.

99 See OECD/Jan Hylén, 'Open Educational Resources: Opportunities and Challenges', <http://www.oecd.org/edu/ceri/37351085.pdf> ("Open licensing provides a way of controlled sharing with some rights reserved to the author. Open licenses have the benefit of introducing certainty and clarity into the process of obtaining permission to use the work of others.").

and Creative Commons licenses,[100] which represent a virtuous example of sensitive legal design for the educational sector. Their standardization of licensing terms has managed to empower copyright holders to clearly indicate which uses they license for free. In turn, this makes teachers and students more aware and confident in adopting and working with OERs. On the side of copyright teaching exceptions. The introduction of a new digital teaching exception in Article 5 of the EU CDSM Directive attempts to improve a framework of provisions that allows Member States to fully promote open education, should they wish to do so.[101]

32 What remains problematically unharmonized in the EU are the rules on the act of adaptation. In light of the analysis above, it could be stated that most of the activities promoted in OER-enabled pedagogies, in copyright jargon, qualify as adaptations: e.g., the revision of a textbook, the creative rethinking of a text or an assignment, the translation of materials. In the words of one of the former Advocates General of the Court of Justice of the European Union, adaptation is to be understood as an encompassing "technique of creative expression which seeks to intervene in the work itself (...), making the work, in its own language, a different work in so far as it is only vaguely recognisable in its original expression."[102] International copyright law imposes that authors shall enjoy the exclusive right to authorize or prohibit any of these adaptations, arrangements, adjustments, and translations of their works.[103] These rights, however, are regulated only at national level in the EU and very rarely specifically regulated by licenses attached to OERs,[104] thus leaving teachers and students unsecure about how they can use educational materials in their offline and online class activities.[105]

III. Co-authoring OERs

33 *Creating* OERs is, as seen above in this study, very often a process of co-creation. Besides the problems of poor copyright literacy by the individual authors of OERs,[106] the collaborative approach to the production of knowledge and the direct involvement of students that characterize OER-enabled pedagogies pose serious questions to the fitness of copyright rules in the EU to fairly protect among all authors involved, teachers and students alike. The rules on co-authorship are largely left unharmonized in the EU.[107] In the case of educational materials, it is left to Member States to determine *what* can qualify as an original contribution and *who* can be defined a co-author in a co-created OER.

34 This creates a twofold problem. On the one side, a problem of consistency in the regulation, due to the important objective of EU copyright law of providing a fair and equitable protection to all creators, especially those in vulnerable contractual positions.[108] On the other side, the diversity of co-authorship rules across the EU generates, once again, a problem of fragmentation of the public domain: depending on whether the collaboration of students qualifies as an act of original (co-)creation, the date of expiration of the copyright on the resulting OERs may vary from country to country.[109]

100 Creative Commons, 'About the licenses' <https://creativecommons.org/licenses/>.

101 Alongside with the illustration for teaching exception ex EU InfoSoc Directive, art.5(3)(a) and the digital teaching exception ex EU CDSM Directive, art.5, several other EU copyright provisions allow for the introduction of copyright exceptions pursuing an educational and cultural purpose. Among them, the exception for reproduction by educational establishments ex EU InfoSoc Directive, art.5(2)(c); the exception for the use of public lecture for informatory purpose ex EU InfoSoc Directive, art. 5(3)(f); the exception for private study ex EU InfoSoc Directive, art. 5(3)(n); the exception for public lending ex Directive 2006/115/EC on rental right and lending right and on certain rights related to copyright in the field of intellectual property [2006] OJ L376 (EU Rental Directive), art.6.

102 *Case C-419/13 Art & Allposters International BV, Opinion of AG Cruz Villalón* [58].

103 Berne Convention, artt.11ter(2) and 12.

104 Some Creative Commons licenses display a "non-derivative works" reservation option, which, besides being inspired by the US copyright legal language, may not fully cover the exclusive right of adaptation, depending on its scope at the various national levels in the EU.

105 See Jonathan Griffiths, 'Exhaustion and the Alteration of Copyright Works in EU Copyright Law (C-419/13) *Art & Allposters International BV v Stichting Pictoright*' (2016) ERA Forum 1-17

106 Communication from the Commission, 'Opening up Education', 9 ("(...) it is difficult for authors of new content to define the usage rights and/or limitations they wish to associate with a certain resource.").

107 EU copyright law limits itself to comply with Article 7(2) of the Berne Convention obligation to measure the duration of the copyright protection of a co-created work starting from the death of the last surviving co-author (EU Term Directive, art.1(2)) and regulating the scenarios of songs, movies, computer programs, and databases by appointing the legal status of co-authors to all the typical actors involved in the creation of such works. For a complete overview of co-authorship regulation at EU level, see Giulia Priora, 'Copyright law and the promotion of scientific networks: some reflections on the rules on co-authorship in the EU' (2019) Queen Mary Journal of Intellectual Property 9(2), 217-232.

108 See e.g., EU CDSM Directive, artt.18-23 and recitals 72-81.

109 Highlighting this same problem in the music industry scenario before the 2011 amendment of the Term Directive,

35 One possible solution, timidly advanced by the European Commission in 2013, would be to assign the copyright over OERs created in public schools and universities automatically to public authorities.[110] Although this proposal still needs to be fully developed and scrutinized, what emerges already is its apparent opposition to the essence and the evolution of EU copyright law in the last decades. Comparing the educational sector with the scientific research scenario, which share the EU policy objective to build more open, collaborative, and quality ecosystems, one can notice how copyright law in the EU is supporting the quest for "openness" in scientific research without any shift of authorship from the individual authors to the State. On the contrary, national legislations and policy initiatives are moving towards the creation of a new right for *authors* to allow their second (open access) publication of their contributions stemming from publicly funded research projects.[111]

E. Conclusion

36 Our analysis stems from the observation of a phenomenon in expansion. From several disciplinary angles, OERs are starting to be studied, embraced, fostered, and used across Europe. The policy intent at both international and EU levels is straightforward: building inclusive and quality education by, also, endorsing the creation of OERs and maximizing their use and visibility.[112] This represents a threefold opportunity for today's Europe. Firstly, it leads European schools and universities, as well as their teachers and students, to reflect on their pedagogical choices and learning approaches. It also raises awareness about the lawfulness of specific uses of third parties' creative content within and beyond the classrooms and empowers all the contributors in this collaborative effort of knowledge co-creation to know about their rights and possibilities to proactively pursue openness. Secondly, it leads EU and national legislators to assess and finetune copyright rules to strike a sustainable balance between authors' protection and right to education. In particular, the policy intention to promote OERs builds a strong case for the full EU harmonization of public domain, adaptation, and co-authorship rules. Lastly, the advent of OER-enabled pedagogies in Europe calls for a coordinated effort of incentivization and support of open licensing practices in the educational sector since, as the European Commission declares, this is a pondered and sustainable choice of sharing and generating information and knowledge, thus benefiting teachers and students alike.[113]

which harmonized the legal status of co-authors for lyricists and music composers in the EU, is Christina Angelopoulos, 'The Myth of European Term Harmonisation: 27 Public Domains for the 27 Member States' (2012) 43 International Review of Intellectual Property and Competition Law 572.

110 Communication from the Commission, 'Opening up Education', 10 ("Encourage formal education and training institutions to include digital content, including OERs, among the recommended educational materials for learners at all educational levels and encourage the production, including through public procurement, of high-quality educational materials whose copyrights would belong to public authorities.").

111 See e.g., Christina Angelopoulos, 'Study on EU copyright and related rights and access to and resuse of scientific publications, including open access' (Publications Office of the European Union 2022); Roberto Caso and Giulia Dore, 'Academic copyright, open access, and the 'moral' second publication right' (2022) Trento LawTech Research Paper 47; Christoph Bruch and Thomas Pflüger, 'Das Zweitveröffentlichungsrecht des § UrhG § 38 Abs. 4: Möglichkeiten und Grenzen bei der Anwendung in der Praxis' (2014) Zeitschrift für Urheber- und Medienrecht 58(5), 389-394.

112 See UNESCO/International Council for Open and Distance Education, 'Ljubljana OER Action Plan' (2017) <https://www.icde.org/knowledge-hub/join-icde-and-partners-for-a-side-event-at-the-2nd-world-open-educational-resources-oer-congress-19-september-from-14-00-to-15-30-in-room-m2>; EU Communication from the Commission, 'Opening up Education', 8-10.

113 Communication from the Commission, 'Opening up Education', 8 ("European education and training institutions, teachers and learners should also be encouraged to share their own educational materials freely with peers through the use of open licenses.").

Digital Higher Education and Copyright Law in the Age of Pandemic - The Hungarian Experience

by **Péter Mezei** *

Abstract: Digital technologies have triggered significant methodological, business and behavioural changes in higher education. The increasing gap in the needs and possibilities of digital learning and education was partially due to the rigid and outdated copyright norms, which were designed for an analogue environment. The legislation of the European Union has accepted Directive 2019/790 on Copyright and Related Rights in the Digital Single Market (CDSM Directive) in 2019. As a part of this reform, the EU has amended (broadened) the scope of educational limitations and exceptions. Life has abruptly changed with the global outbreak of the SARS-CoV-2 (COVID-19) pandemic. It has led to the closure of the premises of educational institutions and libraries. The online access, use and sharing of copyright protected materials turned out to be the only way to continue education in the early lockdown period and continues to be a significant way of learning in the "new normal". Hungary had to face the same challenges of the pandemic. Importantly enough, this country was the first to implement Article 5 of the CDSM Directive in April 2020. The empirical analysis of the new copyright regime and the effects of pandemic on higher education (and educational limitations and exceptions) is nevertheless still missing. This paper intends to fill in this gap. First, the paper shortly introduces the novelties of the CDSM reform related to educational limitations and exceptions in general and in Hungary, and discusses how the COVID-19 pandemic has affected higher education throughout 2020-2022. Second, it includes the empirical analysis of the awareness, perceptions and use practises of students, educators and librarians of the University of Szeged with respect to digital (distance and online) learning and teaching in the pandemic.

Keywords: digital higher education, COVID-19 pandemic, copyright law, Article 5 CDSM Directive, Hungary

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A. Introduction

1 The use of copyrighted materials for the purposes of education has become more important than ever. For a long time, digital technologies have triggered significant changes in the methodology of higher education; they prompted the academic publishers to rethink their strategies; and affected the behaviour of students, educators and organisations on the creation, access, use and dissemination of educational materials.[1]

* Professor, University of Szeged (Hungary); Adjunct Professor (dosentti), University of Turku (Finland). Member of the European Copyright Society. E-mail: mezei.peter@szte.hu. Members of the student research group contributing to the drafting of the questionnaire were *Bence Auer, Viktória Lauer, Lilla Tóth, János Vass* and *Napsugár Vass*. Parts of this paper were presented at the annual conference of the European Copyright Society on 21 May 2021; at the American University's Right to Research in International Copyright: Accepted Papers Workshop 3 on 18 November 2021; at the American University's Annual Meeting of the Global Expert Network on Copyright User Rights on 22 April 2022; at the annual conference of the European Copyright Society

2 Viewed from a global perspective, the changes of this field were far from uniform. Wealthier universities of wealthier countries could finance shifting towards online/distance education or accessing expensive databases quicker and more efficiently. American universities are pathfinders in offering massive open online courses,[2] and many of them are global leaders in finding the most optimal solutions for education in the pandemic as well.[3] Other nations struggled to keep this pace, which has reaffirmed the existence of an academic digital gap.[4] For many, distance and online education remained an exception rather than the default. The digital divide in and among countries is more than visible regarding education and the use of information and communications technologies.[5]

3 The increasing gap in the needs and possibilities of digital learning and education was partially due to the rigid and outdated copyright norms,[6] which were designed primarily for an analogue environment. This has necessitated the recalibration of the copyright system in order to guarantee broader end-user educational rights, most generally within the frames of copyright limitations and exceptions.

4 As a notable example, the European Union ("EU") has accepted Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC in 2019 (with an implementation deadline of June 7, 2021) ("CDSM Directive").[7] The CDSM Directive has updated and expanded the scope of user rights of individuals and privileged institutions alike. As Séverine Dusollier aptly noted, "[e]xceptions – at least some of them – have mutated from mere limitations of exclusive rights to proper enabling devices sustaining socially-benefiting uses of works and creations".[8] Cultural heritage

on 27 May 2022; at the NOVA Law School's JIPITEC Special Issue "The Law and the Digital Classroom" Workshop on 12 July 2022; and the Annual Law & Society Conference on 15 July 2022. I am grateful for the comments of Patricia Aufderheide, Jorge Contreras, Carys Craig, Rossana Ducato, Branislav Hazucha, Bernd Justin Jütte, Zsolt Nagy, Teresa Nobre, Michael Palmedo, Argyri Panezi, Giulia Priora and Joshua Sarnoff on the context and content of this paper, as well as on the methodology of the empirical research. I am also grateful to Sándor Hettinger for the translation of the questionnaire, and to research assistant Mustafa Rajkotwala for his invaluable support in the editing of this paper. The research was supported by the ICT and Societal Challenges Competence Centre of the Humanities and Social Sciences Cluster of the Centre of Excellence for Interdisciplinary Research, Development and Innovation of the University of Szeged. The author is a member of the Legal, Political Aspects of the Digital Public Sphere research group. The research was also funded by the American University's research grant „Right to Research in International Copyright Law".

1 Jack M. Balkin and Julia Sonnevend, 'The Digital Transformation of Education'. In: Christine Greenhow, Julia Sonnevend and Colin Agur (Ed.), 'Education and Social Media', The MIT Press, Cambridge-London, (2016) 9-24. All online sources of this paper were last accessed on 10 August 2022.

2 On the MOOC "revolution" see especially: Paul Kim (Ed.), 'Massive Open Online Courses – The MOOC Revolution', Routledge, New York (2015); Minhtuyen Mai, Adam Poppe and Christine Greenhow, 'Social Media and Education on a Massive Scale: The Case of MOOCs'. In: Greenhow et al. (2016) 209-214. On the intersections of MOOC and copyright law see e.g. Samantha Bernstein, 'MOOCs, Copyright, and the Many Meanings of "Open"'. In: Kim (2015) 116-126; Ratnaria Wahid, Azizuddin Mohd Sani, Bakri Mat, Muhammad Subhan and Khaliza Saidin, 'Sharing Works and Copyright Issues in Massive Open Online Courseware (MOOC)' (2015) 2 International Journal for Research in Emerging Science and Technology 10, 24-29.

3 Certain American and Brazilian universities offer personalized, AI-assisted, skills-based and adaptive learning tools. See Felipe Child, Marcus Frank, Mariana Lef, and Jimmy Sarakatsannis, 'Setting a new bar for online higher education' McKinsey & Company, 18 October 2021 <https://www.mckinsey.com/industries/education/our-insights/setting-a-new-bar-for-online-higher-education>.

4 Melissa Bond, Victoria I. Marín, Carina Dolch, Svenja Bedenlier and Olaf Zawacki-Richter, 'Digital transformation in German higher education: student and teacher perceptions and usage of digital media' (2018) 15 International Journal of Educational Technology in Higher Education 48, 1-20.

5 Compare to Colin Agur, 'ICTs and Education in Developing Countries: The Case of India'. In: Greenhow et al. (2016) 61-65. The types of responses of higher educational institutions on the COVID-19 pandemic also showed a significant divergence depending upon the level of development of the countries. Compare to Joseph Crawford, Kerryn Butler-Henderson, Jürgen Rudolph, Bashar Malkawi, Matt Glowatz, Rob Burton, Paola A. Magni and Sophia Lam, 'COVID-19: 20 countries' higher education intra-period digital pedagogy responses' (2020) 3 Journal of Applied Learning & Teaching 1, 9-28.; Giorgio Marinoni, Hilligje van't Land and Trine Jensen, 'The Impact of COVID-19 on Higher Education Around the World' (2020) IAU Global Survey Report, International Association of Universities <https://www.unibasq.eus/wp-content/uploads/2020/06/iau_covid19_and_he_survey_report_final_may_2020.pdf>.

6 Compare to Nicholas Bramble, 'Copyright Reform and Educational Progress'. In: Greenhow et al. (2016) 153.

7 Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC (Text with EEA relevance).

8 Séverine Dusollier, 'The 2019 Directive on Copyright in the

organisations shall also change their internal policies related to the preservation and dissemination of cultural goods for the benefit of students, educators and researchers.[9]

5 Life has abruptly changed in the early months of 2020. No one could foresee the challenges that the global outbreak of the SARS-CoV-2 (COVID-19) pandemic will cause for life in general and education in specific. Indeed, the educational sector was among those hit the hardest by the pandemic;[10] or, as Rof et al. put it, "[t]he COVID-19 pandemic is an example of an exogeneous shock".[11] Due to the closure of the premises of educational institutions and libraries the online access, use and sharing of materials – including copyright protected ones – turned out to be the necessary and only way to continue education in the early lockdown period (and continues to be a significant way of learning in the "new normal").

6 In Hungary, the legislation has always been keen to implement EU copyright directives relatively quickly and almost verbatim (with the necessary alignment to the domestic legal terminological traditions). The educational limitations and exceptions covered by the InfoSoc Directive[12] were introduced as early as the country joined the EU in 2004.[13] Indeed, the Hungarian Copyright Act ("HCA")[14] has even offered slightly more than the EU norms, including an exception for the adaptation of audio-visual contents for on-the-spot educational purposes; and interlibrary loan. At the same time, industry-level innovations (license-based services of authors/publishers) were almost completely missing in Hungary, leading to a rather "dry" environment for creative education. Nevertheless, Hungary was the first EU Member State to implement Article 5 of the CDSM Directive in April 2020.[15] This legislative move was certainly hailed by the educational community. It is far from settled whether the full potential of the new law is applied by higher educational institutions. Importantly, the empirical analysis whether the newly introduced copyright norms effectively support distance and online education is completely missing in Hungary. This paper intends to fill in this gap by checking whether educators, students and librarians are aware of the EU's copyright reform and its novel possibilities, and whether they rely on these norms to make distance and online education effective enough. In order to do so, the paper shortly introduces how, how broadly and how flexibly are educational limitations and exceptions regulated and applied in Hungary. As a part of that, the paper empirically tests the level of perception and awareness of university students, educators and librarians about the existing copyright rules; and it analyses how the existing limitations and exceptions support individuals to exercise their educational rights. As Bartolomeo Meletti put it, "[c]opyright exceptions enable lawful copying of whole or substantial parts of protected works without the need for the copyright owner's permission. They are intended to allow uses that the legislator considers to be socially, culturally, politically or economically beneficial, such as education, the preservation of cultural heritage, or research, among many others".[16] Indeed, the empirical analysis of educational exceptions is of utmost importance, and can ultimately support the consideration whether legislative changes have led to the intended goals. Throughout the research, special attention was paid to the COVID-19 pandemic's effects on individuals in exercising their educational rights.[17]

7 The paper starts with the short introduction of the various issues at stake. It is necessary to compare the substance and functioning of the educational copyright limitations and exceptions preceding

Digital Single Market: Some Progress, A Few Bad Choices, And an Overall Failed Ambition' (2020) 57 Common Market Law Review 4, 982.

9 While this paper is not discussing Article 6 of the CDSM Directive, its benefits can certainly have indirect relevance for education as well.

10 Child et al. (2021).

11 Albert Rof, Andrea Bikfalvi and Pilar Marques, 'Pandemic-accelerated Digital Transformation of a Born Digital Higher Education Institution: Towards a Customized Multimode Learning Strategy' (2022) 25 Educational Technology & Society 1, 125.

12 Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

13 The paper focuses on Hungary's copyright law after the country's accession to the European Union on May 1, 2004.

14 Act LXXVI of 1999 on Copyright Law <https://net.jogtar.hu/jogszabaly?docid=99900076.tv>.

15 On the legislation via government decrees in the early period of the special legal order see Rudi Alexandra and Ujhelyi Dávid, 'A szellemi tulajdonjog területén megvalósult különleges jogrendi jogalkotás – háttér és eredmények' (2020) 6 Fontes Iuris 2, 53-58.

16 Bartolomeo Meletti, 'A review of the empirical evidence on copyright exceptions' (2021) CREATe Working Paper no. 2021/9, 2. <https://zenodo.org/record/5705970#.Yo4ITFRBxPY>.

17 Although the research is mainly triggered by and intends to introduce the normative and practical challenges of the COVID-19 pandemic, and is mainly a research paper, the experiences gathered might be relevant for the post-pandemic operation of copyright limitations and exceptions benefiting distant and online education. Hence, the research intends to provide policy recommendations both for the University of Szeged (how to broaden the scope of legitimate online uses) and for the Hungarian legislation (whether the normative basis of distance and online education is capable of benefiting society as a whole).

and following the CDSM reform in Europe and in Hungary. Likewise, special attention shall be paid to the COVID-19 pandemic's challenges on education throughout 2020-2022.

8 Second, the paper empirically tests, whether and to what extent the relevant copyright rules support distance and online education in Hungary. For that purpose, an online questionnaire has been developed to analyse the perception and the level of awareness of students, lecturers and librarians of the University of Szeged related to copyright law and the use of lawful and "grey" resources in education. The questionnaire has paid close attention to the pandemic (or hybrid educational) period of 2020-2022.

9 Our findings will indicate that against the early implementation of the new digital educational exception, there is a sensible lack of awareness on and interest in copyright law and its flexibilities. In other, quite straight words: we believe that the analysed period is a missed opportunity to enhance digital education and make university practices "lockdown-proof".

B. Crossroads

I. Education and Copyright Law in the EU and Hungary preceding the CDSM reform

10 The copyright aspects of higher education, with a special view on the digital perspectives of it, has been discussed by academia ever since the InfoSoc Directive was introduced in 2001. Article 5(3)(a) of the InfoSoc Directive – as well as Article 5(2)(c) for connected libraries[18] – has already offered a flexible environment for higher educational institutions.[19] Although both the directive and the Berne Convention are drafted in a technologically neutral way with respect to the educational limitations and exceptions,[20] Member States remained "short-sighted" to extend the scope of the new limitations and exceptions to distance and online education.[21] This is even more problematic in light of the InfoSoc Directive's express reference to the inclusion of "distance learning" into the frames of Article 5(3)(a).[22]

11 In sum, the national transpositions of Article 5(3)(a) have led to a great disharmony among the EU countries.[23] This has been evidenced by various studies[24] and empirical analysis.[25]

12 Hungary's pre-CDSM logic of the teaching exception could be similarly characterized as a primarily "brick-and-mortar" exception. The use of protected works and subject matter for teaching purposes was either limited to the premises of the educational institution (including, of course, the use of digital means to present materials on-the-spot); or to the sharing of tangible copies of materials (reproduced strictly in line with the number of involved students) among the participants of the educational event or examinations.[26] Article 38(1)(b) of the HCA was

18 Maria Daphne Papadopoulou, 'Copyright Limitations and Exceptions in an E-Education Environment' (2010) 1 European Journal of Law and Technology 2, 22.

19 Michel Walter and Silke von Lewinski, 'European Copyright Law - A Commentary' (2010) Oxford University Press, Oxford, 733-735.

20 Raquel Xalabarder, 'Study on Copyright Limitations and Exceptions for Educational Activities in North America, Europe, Caucasus, Central Asia and Israel' (2009) WIPO Standing Committee on Copyright and Related Rights Nineteenth Session Proceedings (SCCR/19/8), Geneva, 14-18 December 2009, 135.; Ana Lazarova, 'Bulgaria Falls into All the Traps Set by Article 5 of the CDSM Directive' (2022) 17 Journal of Intellectual Property Law & Practice 5, 408.

21 Silke Ernst and Daniel M. Häusermann, 'Teaching Exceptions in European Copyright Law – Important Policy Questions Remain' (2006) Berkman Center for Internet & Society Research Publication Nr. 2006-10 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=925950>.

22 Compare to recital (42) of the InfoSoc Directive.

23 Raquel Xalabarder, 'On-line teaching and copyright: any hopes for an EU harmonized playground?' In: Paul Torremans (Ed.): 'Copyright Law. A Handbook of Contemporary Research' (2007) Edward Elgar, Cheltenham, 390-395.; Giulia Priora, Bernd Justin Jütte and Péter Mezei, 'Copyright and Digital Teaching Uses in the EU: Recent Legislative Developments and Implementation Models of Article 5 CDSM Directive' (2002) 53 IIC – International Review of Intellectual Property and Competition Law 4, 545-546.; Lazarova (2022) 408.

24 Andrew Gowers, 'Gowers Review of Intellectual Property' (2006) 47-48.; Lucie Guibault, Guido Westkamp, Thomas Rieber-Mohn, Bernt Hugenholtz, Mireille van Eechoud, Natali Helberger, Lennert Steijger, Mara Rossini, Nicole Dufft and Philipp Bohn, 'Study on the Implementation and Effect in Member States' Laws of Directive 2001/29/EC on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society – Final Report' (2007) Institute for Information Law, University of Amsterdam, 49-51.

25 Teresa Nobre, 'Copyright and Education in Europe: 15 everyday cases in 15 countries' (2017) RIGHT COPYRIGHT Final Report <https://www.communia-association.org/2017/05/08/copyright-and-education-in-europe-15-everyday-cases-in-15-countries/>.

26 Péter Mezei, 'Hungary'. In: Reto M. Hilty - Sylvie Nérisson (Eds.), 'Balancing Copyright - A Survey of National Approaches' (2012) Max Planck Institute Studies on

limited with respect to the number of copies; the venue of use; or the technology involved. Indeed, the lending right wasn't extended to cover the lending of e-books,[27] not even after the decision of the Court of Justice of the European Union ("CJEU") in the *Vereniging Openbare Bibliotheken v Stichting Leenrecht* case.[28] Similarly, the *TUD v Ulmer* decision[29] of the CJEU on digital services of libraries remained completely unreflect in Hungarian law. At the same time, multiple other norms of the HCA have been capable to be used – and are practically applied – for educational purposes, including citation,[30] "borrowing",[31] adaptation for educational purposes,[32] or interlibrary loan.[33] The limited nature of the normative framework, the complete lack of national case law on this field and the shrinking role of libraries in the digital age in supporting modern educational activities was spotted and led to deep concerns among Hungarian librarians.[34] This, coupled with budgetary limitations or the dominance of English language over small languages[35] have led to a decrease in the impact of local/regional (including university) libraries in the field of higher education,[36] and Hungary was not an exception to this trend.

II. The CDSM Reform and Article 5

13 Article 5 of the CDSM Directive was introduced in order to reflect on the social and technological changes of the last two decades related to education. These provisions of the CDSM Directive were analysed by academia in great details.[37] Most recently, the European Copyright Society has published its comment on the new limitations and exceptions. The drafters of the comment noted that the harmonisation achieved by Article 5 is "relatively minimal".[38] Giulia Priora, Bernd Justin Jütte and Péter Mezei, based on the analysis of the partially overlapping and partially divergent national implementations of Article 5 in Italy, Germany and Hungary,[39] concluded that the new European legislator has only partially reached its goal to further harmonize educational exceptions by the introduction of a new mandatory exception (or limitation). They argued that it is especially the voluntary use of the licensing carve-out of Article 5 that expressly limits the harmonization effects of the CDSM Directive.[40] Ana Lazarova, based on the implementation flexibilities granted to the Member States by the CDSM Directive (related to the beneficiaries, types of covered works, volume

Intellectual Property and Competition Law, Volume 18, Springer Verlag, München, 475-505.

27 Mezei Péter, 'A könyvtárak és a változó szerzői jog' (2015) 17 Könyv és nevelés 2, 15-17.

28 Case C-174/15 - Vereniging Openbare Bibliotheken v Stichting Leenrecht, Judgment of the Court (Third Chamber), 10 November 2016, ECLI:EU:C:2016:856.

29 Case C-117/13 - Technische Universität Darmstadt v Eugen Ulmer KG, Judgment of the Court (Fourth Chamber), 11 September 2014, ECLI:EU:C:2014:2196.

30 Article 34(1) HCA.

31 Article 34(2)-(3b) HCA. 'Grand citation' is a form of citation that allows for the use of greater excerpts for research purposes (including completing thesis, home assignments etc. by students).

32 Article 34(4) HCA.

33 Article 40 HCA.

34 Kokas Károly, 'Mi dolga lesz a könyvtáraknak az internet korában? A felsőoktatási könyvtárak új feladatairól és a régiek megújításáról'. In: 'Hagyomány és újítás a 21. századi könyvtárban, Erdélyi Évszázadok – A Kolozsvári Magyar Történeti Intézet Évkönyve III' (2018) Egyetemi Műhely Kiadó, Bolyai Társaság, Kolozsvár, 87-119.

35 Balkin and Sonnevend (2016) 14.

36 On the global nature of this phenomenon see e.g. Hafijull Mondal, 'The Library: Changing Role and Services in 21st Century's Information Societies'. In: 'Conference: ICT and Library in Higher Education: An Indian Perspective' (2020) Volume 1, Chandidas Mahavidyalaya, Birbhum <https://www.researchgate.net/publication/339711839_The_Library_Changing_Role_and_services_in_21st_century%27s_information_societies>.

37 See especially Bernd Justin Jütte, 'Uneducating copyright: Member States can choose between "full legal certainty" and patchworked licensing schemes for digital and cross-border teaching' (2019) 41 European Intellectual Property Review 11, 669-671.; Anna Despotidou, 'The New Mandatory Teaching Exception or Limitation (Article 5 of the CDSM Directive): Ensuring Its Application in the Digital and Cross-Border Environment(s) While Losing the Way to Harmonization?' In: Tatiana-Eleni Synodinou, Philippe Jougleux, Christiana Markou and Thalia Prastitou-Merdi (Eds.), 'EU Internet Law in the Digital Single Market' (2021) Springer, Cham, 99-139.; Irini Stamatoudi and Paul Torremans, 'The Digital Single Market Directive'. In: Irini Stamatoudi and Paul Torremans (Eds.), 'EU Copyright Law - A Commentary' (2021) Second Edition, Edward Elgar, Cheltenham, 691-695.; Eleonora Rosati, 'Copyright in the Digital Single Market - Article-by-Article Commentary to the Provisions of Directive 2019/790' (2021) Oxford University Press, Oxford, 93-127.; Ana Lazarova, 'The EU Copyright Reform's great disservice to free use for educational purposes' EuropeanaPro, 7 July 2021 <https://pro.europeana.eu/post/the-eu-copyright-reform-s-great-disservice-to-free-use-for-educational-purposes>.

38 Jonathan Griffith, Tatiana-Eleni Synodinou and Raquel Xalabarder, 'Comment of the European Copyright Society Addressing Selected Aspects of the Implementation of Articles 3 to 7 of the Directive (EU) 2019/790 on Copyright in the Digital Single Market' 13 April 2022, 6. <https://europeancopyrightsociety.org/2022/05/03/https-europeancopyrightsocietydotorg-files-wordpress-com-2022-05-ecs_exceptions_final-1-pdf/>.

39 Priora, Jütte and Mezei (2022) 552-557.

40 Ibid. at 563-564.

of permitted use, types of uses), even questioned "why the exception is [...] labelled as mandatory".[41] Concerns regarding the effectiveness of the new norms are widely shared by commentators. As Eduardo Santos rightly pointed out, "[w]hen the mandatory component of an exception refers solely to the mere existence of the provision, while allowing its substance to be susceptible of significant derogation, legal approximation and certainty can hardly be achieved".[42]

14 Hungary was the first EU Member State to implement Article 5.[43] The Ministry of Justice of Hungary ("Ministry"), in close collaboration with the Hungarian Intellectual Property Office ("HIPO"), prepared the first, publicly unavailable version of the implementation draft by the end of the summer of 2019. In line with this draft, the Ministry and HIPO organized six preparatory public consultation meetings on key areas of the CDSM Directive.[44] Shortly after the COVID-19 pandemic reached Hungary, the Parliament declared a state of danger. Based on this, the Government was granted the right to temporarily legislate via government decrees from as early as 30 March 2020.

15 Education in Hungary switched from in-person to remote from 16 March 2020. In the lack of a safe copyright exception for the benefit of teachers and educational institutions to enable them to share third-party contents with students, a pressing need emerged to introduce the new digital teaching exception via a governmental decree. Such a decree was published on 16 April 2020.[45] The implementation of Article 5 CDSM Directive took its final form by the acceptance of Act LVIII of 2020 on 16 June 2020 on the cessation of the state of danger.[46] This law has transposed the rules of the government decree into the domestic Copyright Act.

16 The preparations for the implementation of the rest of the CDSM Directive did not stop during the pandemic. Following almost a full year of drafting and consultations, the Parliament passed Act XXXVII of 2021 on April 28.[47] The transposition of Article 5 CDSM Directive thus occurred in two main phases. Act LVIII of 2020 amended several existing articles of the HCA and introduced several other articles. In the second, more formal phase, Act XXXVII of 2021 renumbered and amended a few of the relevant articles.

17 The key novelties of the reform are as follows. Article 33/A introduced the definition of secure electronic systems. Article 34(3a) codified the country-of-origin approach by declaring that the relevant use is deemed to occur on the soil of the country where the educational institution is domiciled. The new exception allowed for the on-the-spot digital and online educational use of works that "borrow" from third parties' works or other protected subject matter ("grand citation");[48] the making and presenting of derivative works (adaptations) in

41 Lazarova (2022) 409.

42 See Alina Trapova, The exceptional mismatch of copyright teaching exceptions in the post-pandemic university – insights from Germany, Bulgaria, and Ireland, JIPITEC 14 (2023) 305 para 1; Eduardo Santos, 'A concerned look on the new copyright teaching exceptions' Kluwer Copyright Blog, 19 July 2022 <http://copyrightblog.kluweriplaw.com/2022/07/19/a-concerned-look-on-the-new-copyright-teaching-exceptions/>.

43 The Hungarian "fast track" process has gained considerable attention in the blogosphere, too. See Péter Mezei, 'An update on the Hungarian implementation process of the CDSM Directive' Kluwer Copyright Blog, 22 June 2020 <http://copyrightblog.kluweriplaw.com/2020/06/22/an-update-on-the-hungarian-implementation-process-of-the-cdsm-directive/>; Paul Keller, 'Hungary's fast tracked implementation of Article 5 CDSM directive in response to the pandemic' Kluwer Copyright Blog, 23 June 2020 <http://copyrightblog.kluweriplaw.com/2020/06/23/hungarys-fast-tracked-implementation-of-article-5-cdsm-directive-in-response-to-the-pandemic/>; Dávid Ujhelyi, 'A third take on the Hungarian implementation of Art 5 of the CDSM Directive' Kluwer Copyright Blog, 31 August 2020 <http://copyrightblog.kluweriplaw.com/2020/08/31/a-third-take-on-the-hungarian-implementation-of-art-5-of-the-cdsm-directive/>.

44 No records of the meetings are available online. The call for participating on the preparatory consultation meetings is, however, available yet. See Az Igazságügyi Minisztérium és a Szellemi Tulajdon Nemzeti Hivatala közös felhívása a szerzői jogi irányelvek átültetését érintő konzultációban való részvételre, 2019. augusztus 1. <https://2015-2019.kormany.hu/download/7/2a/a1000/Általános tájékoztató_DSM_SatCab.pdf>.

45 Hungarian Government Decree No. 125/2020 (IV.16.) <https://wipolex.wipo.int/en/text/577884>.

46 The law entered into force on June 18, 2020.

47 The first (full) draft bill was published on 7 May 2020 and a public consultation took place between May and June 2020. The MoJ and the HIPO, based on more than 100 responses, published an amended draft bill at the end of July 2020. This version was offered for a targeted (semi-public) consultation in August 2020. Taking into consideration the recommendations at this stage, a third version was submitted for a final semi-public consultation in February 2021. The bill was finally submitted to the Hungarian Parliament on 31 March 2021. The Parliament passed the bill with 136 yeas, 29 nays, and 1 abstain. Act XXXVII of 2021 was published on 6 May 2021 and entered into force on 1 June 2021, a few days before the official transposition day. See Magyar Közlöny, 2021, Issue 81, p. 3184-3197.

48 Article 34(3)(b) HCA. In Hungarian copyright law, "[a]ny use of a work in another work to a degree that exceeds quotation or citation constitutes borrowing". At the same time, the scope of borrowing is limited to certain types of subject matter. See Article 34(2) HCA.

the course of (in-person, synchronous) digital and distance education;[49] as well as the distributing and making available to the public via secure electronic systems parts of books or (full) journal or newspaper articles for purposes of education or examination, in line with the number of involved students.[50] These provisions represent a continuity in the logic of the Hungarian copyright system. All provisions are either verbatim implementations of the CDSM Directive's provisions, or "digital updates" to the formerly existing educational exceptions. This is not to say that the new rules are meaningless. Indeed, they effectively clarify the extended scope of lecturers' and students' possibilities in the digital educational environment by classifying the new rules are exceptions (not subject to authorization and payment) and they clarify the exclusion of the possibility of licensing carve-out.

III. The challenges of COVID-19 on education and copyright law

18 The pandemic necessitated (and certainly curbed) some recalibration of the copyright system to meet the changing social needs and technological innovation. Carys Craig and Bob Tarantino have argued that "[w]e need to actively *recalibrate* the copyright system to restore its equilibrium in the digital environment, recognizing that there is nothing perfect about perfect control, and counterbalancing technical measures by building leaks and limits back into the system by design".[51] Emily Hudson and Paul Wragg have also analysed the licensing and exceptions framework in the United Kingdom copyright law in great details, and provided various suggestions for universities to encourage teaching during the pandemic.[52]

19 The Hungarian literature is silent on the COVID-19 pandemic's effects on distance and online education and copyright law yet. An important article from the educational scientist István Polónyi has noted that the Hungarian education was completely unprepared for the education in lockdown against all investments into the relevant infrastructure. Indeed, as all investments were provided to the schools directly, they could not reflect the individual needs of, e.g., poorer elementary and secondary students in disadvantaged regions of the country.[53] Higher education was affected less negatively by the pandemic, especially since college students are better equipped with the necessary technology.[54] The Hungarian experiences showed that "higher education involved heterogeneous platforms, extremely heterogeneous educational materials, educators lacking digital literacy, where [students] were examined with immature methods almost incapable to exclude cheating".[55] To speak of some positive signs as well, Hungarian libraries did their best to continue providing their services during the early lockdown period.[56]

C. Empirical analysis of distance and online education and copyright law

20 Based on the above discussion, it seems inevitable to test whether Article 5 CDSM Directive could contribute to the better functioning of digital education.

21 There is a sensible amount of academic literature with respect to various aspects of distance and online education and copyright law. Some authors have surveyed the awareness and perceptions of students on copyright law and education;[57] others have researched the community of educators[58]

49 Article 34(4) HCA.

50 Article 35(5) HCA.

51 Carys J. Craig and Bob Tarantino, 'An Hundred Stories in Ten Days: Covid-19 Lessons for Culture, Learning, and Copyright Law' (2021) 57 Osgoode Hall Law Journal 3, 601. (italics in original)

52 Emily Hudson and Paul Wragg, 'Proposals for Copyright Law and Education During the Covid-19 Pandemic' (2020) 71 Northern Ireland Legal Quarterly 4, 571-594.

53 Polónyi István, 'Pandémiás oktatás' (2021) 30 Educatio 1, 13.

54 Ibid. at 19. Even if Polónyi's statement could not reflect on deeper social realities, e.g. the lack of enough computers for a complete family (that is splitting the time of use among children – maybe at various levels of education – and family members for both work/study and leisure purposes).

55 Ibid. [Translation by the present author.]

56 Bódog András, 'Könyvtárak a koronavírus-járvány idején – Pandémia és infodémia' (2020) 66 Könyvtári Figyelő 3, 423-425.

57 Enrique Muriel-Torrado and Juan-Carlos Fernández-Molina, 'Creation and Use of Intellectual Works in the Academic Environment: Students Knowledge About Copyright and Copyleft' (2015) 41 The Journal of Academic Librarianship 4, 441-448.; Adexinka Tella and Francis Oyeyemi. 'Undergraduate Students' Knowledge of Copyright Infringement' (2017) 11 Brazilian Journal of Information Studies: Research Trends 2, 38-53.; Amanda Wakaruk, Céline Gareau-Brennan, and Matthew Pietrosanu, 'Introducing the Copyright Anxiety Scale' (2021) 5 Journal of Copyright in Education and Librarianship 1, 1-38.; Sara Rachel Benson, Kelli Trei, and Merinda Kaye Hensley, 'A Qualitative Study of Undergraduate STEM Majors' Copyright Knowledge and Educational Experiences' (2021) 82 College & Research Libraries 6, 845-862.

58 Magdalena Biernat, Agnieszka Urbańska, Teresa Nobre, Alek Tarkowski, and Maja Bogataj, 'Remote education during the

or librarians.[59] Some of these papers precede the pandemic period, but some are expressly drafted to gain knowledge on COVID-19's possible consequences on higher education.

22 The Hungarian empirical resources are quite limited in this field. Koltay et al. have surveyed librarians in line with the Todorova et al. report and similarly found a significant lack of awareness in the nuances of copyright law among Hungarian librarians.[60] Hargitai et al. tested the existing studying habits of university students preceding the March 2020 lockdown. The authors tried to locate the needs and practises of students that could contribute to the decision-making on the smooth continuation of education after the closure of university premises.[61]

23 These research papers—as well as Patricia Aufderheide's paper on the chilling effects of copyright licensing on academic research[62] and John Willinsky and Catherine Baron's empirical analysis of the amount of readings requested by lecturers of Canadian universities as part of their classes[63]—were used as a starting point to draft an online questionnaire to test the awareness, perceptions and use practises of the academic community of the University of Szeged (students, lecturers and librarians) related to digital education and copyright law.

I. Methodology

24 The paper has already introduced the basic copyright law background of higher educational uses of protected subject matter in Section B. In the followings, we introduce the key findings of the empirical research based on an anonym online questionnaire.

25 There are multiple reasons why in-person interviews were omitted, including the ever-changing pandemic situation, the expected high number of respondents, and the fact that a significant amount of answers were given on a five-level Likert scale.[64] The number of questions allowing the free explanation of individual experiences and opinions were limited.

26 A group of undergraduate students from the University of Szeged were involved in the drafting of the questionnaire during February 2022. This group was separated into two subgroups. Subgroup A contributed to the drafting of the questionnaire, and subgroup B worked as a control group to test the validity, relevance,s and clarity of the questions. The final list of questions was further tested by the leading legal sociologist of the Faculty of Law and Political Sciences of the University of Szeged, who has over 20 years of experience in conducting empirical research and is involved in research on higher education. The research was carried out with the permission of the University's vice-rectors for educational affairs and for research.

27 The questionnaire was communicated via email (sent out by the central administration of the University) to the students and lecturers. This email was directly sent to all librarians by the director of the Klebelsberg Library (the central library of the University of Szeged). The target persons were contacted twice. The first email was sent out on March 7, 2022; and a repeat email was sent on March 23, 2022. Google Forms was used to draft and fill out the questionnaire. The questionnaire was open throughout March 7-28, 2022.

28 Three distinct questionnaires[65] were set up in order to allow students, lecturers and librarians to answer only questions relevant for them. A significant

pandemic - Teacher's Perspective' (2021) Centrum Cyfrowe and Communia <https://centrumcyfrowe.pl/en/remote-education-during-the-pandemic/>.

59 Tania Todorova, Tereza Trencheva, Serap Kurbanoğlu, Güleda Doğan, Aleksandra Horvat, and Joumana Boustany, 'A Multinational Study on Copyright Literacy Competencies of LIS Professionals'. In: Serap Kurbanoğlu, Sonja Špiranec, Esther Grassian, Diane Mizrachi, and Ralph Catts (Eds.), 'Information Literacy: Lifelong learning and digital citizenship in the 21st century' (2014) Springer, Cham, 138-148.; Chris Morrison and Jane Secker, 'UK copyright literacy survey: summary report' (2015) University of Kent - London School of Economics and Political Science <http://openaccess.city.ac.uk/17508/>.

60 Koltay Tibor, Murányi Péter, Jávorszky Ferenc, and Amberg Eszter, 'Szerzői jogi műveltség a magyar könyvtárosok körében' (2017) 63 Könyvtári Figyelő 4, 507-518.

61 Hargitai Dávid Máté, Sasné Grósz Annamária and Veres Zoltán, 'Hagyományos és online tanulási preferenciák a felsőoktatásban – A COVID-járvány kihívásai' (2020) 98 Statisztikai Szemle 7, 839-857.

62 Patricia Aufderheide, 'The Chilling Effect of Copyright Permissions on Academic Research' (2020) Joint PIJIP/TLS Research Paper Series 49, 1-8.

63 John Willinsky and Catherine Baron, 'What Should Students Pay for University Course Readings? An Empirical, Economic, and Legal Analysis' (2021) 51 Canadian Journal of Higher Education | Revue canadienne d'enseignement supérieur 4, 40-53.

64 Likert scale is a psychometric scale commonly involved in research that employs questionnaires. It is the most widely used approach to scaling responses in survey research, such that the term is often used interchangeably with rating scale, although there are other types of rating scales.

65 Only the questionnaire for students and lecturers were translated to English, as the Klebelsberg Library does not employ foreign language librarians (even if it provides its services in English language).

number of questions were identical in the three questionnaires. All questionnaires started with a short introduction of the research itself and were followed by basic demographics questions. The second part of the questionnaires were identical for all target groups and focused on the copyright awareness/literacy of the respondents. The third part of the questionnaires were distinct for the three groups. They were purposefully designed to include questions that address the certain target group's experience the most effectively. This part of the questionnaires, however, included certain identical questions so that some correlations can be spotted and—more importantly—some answers and their validity could be tested in light of another target group's answers. Finally, the questionnaires ended with identical questions related to the overall opinion of the target groups on digital education and copyright law.

29 The University of Szeged consists of 12 faculties dedicated to almost all significant disciplines of sciences and hosting over 20,000 Hungarian and international students.[66] The initial plan was to gather at least 400 student responses (approximately 2% of the university students), including as much diversity of students of different disciplines as possible. The university employs over 4600 lecturers (including adjuncts).[67] The initial plan was to reach approximately 10% of them. There are "big" and "small" faculties at the University of Szeged. We expected to have significantly more student and lecturer responses from big faculties; hence, we also expected that there will be some bias towards the understanding of the research question by students and lecturers of the faculties of natural sciences, arts, medicine, and law. According to the director of the Klebelsberg Library, the number of people working for the library in a position that made them capable to fill out the questionnaire was approximately 60; we planned to reach a quarter of them.

66 The exact number of active students of the University of Szeged is liquid. Students can leave the university at any time, and others might join the training several weeks after the semester's start. Their active status depends upon the payment of their tuition fees. As such – also bearing in mind the dates of the emails – it could happen that some students were not among the active students at the time when the first email was sent out, but they were active at the time when the second email was sent out. And vica versa, some might have deactivated their studies for any reasons. The first email was sent to 20.964 students; and the second email was sent to 19.558 students. (These numbers show a 6,7% decline in the number of students with active status just in 16 days.) In order to find a compromise sample for the students' target group, the two numbers were averaged. As such, the sample of the students' target group was declared to be 20.261.

67 The first email was sent to 4.364 lecturers of Hungarian language modules and 1.648 lecturers of foreign language modules. The latter group, however, included also those who also teach in Hungarian besides the foreign language modules. The second email was sent jointly to all Hungarian and foreign-language lecturers with active status at the moment, a total of 4679 people. The latter number represents a more valid number, and therefore it was used as the sample of the lecturers' target group.

II. Findings

1. General remarks

The questionnaires were filled by a total of *1001 persons*. They were split as follows:

Students (Hungarian language)	Students (English language)	Lecturers (Hungarian language)	Lecturers (English language)	Librarians
594	*173*	*199*	*17*	*18*
Total: 767		**Total: 216**		**Total: 18**

30 We received response from approximately 3.78% of the total student population, which is almost the double of the expected student responses. The 216 responses from lecturers was—sadly—far from the expected 10% response rate of lecturers (it is approximately 4.61%). The 983 responses from the approximately 24,940 people meant an approximate 3.94% response rate among students and lecturers. Although these numbers—coupled with the 18 librarians (which is 30% of the librarian sample), and hence reaching an ultimate 1001 responses—are not small for such a special, dedicated research, they—also read in conjunction with the demographics of respondents (especially the big versus small faculties imbalance)—might put the questionnaires' representativeness into question. At the same time, the high overall number of responses allows us to locate meaningful trends among the university community.

2. Demographics

a.) Students

The current level of training of the student respondents split as follows, including their share from the language groups in (brackets) and from the overall student target group in [brackets]:

	BA	MA	Undivided[68]	Postgraduate specialisation	PhD
Hungarian students	*338 (56,9) [44,4]*	*65 (10,9) [8,5]*	*145 (24,4) [19]*	*27 (4,5) [3,5]*	*19 (3,2) [2,5]*
International students[69]	*43 (25,6) [5,6]*	*27 (16,1) [3,5]*	*10 (6) [1,3]*	*3 (1,8) [0,4]*	*85 (50,6) [11,1]*
Total	**381 [50]**	**92 [12,1]**	**155 [20,3]**	**30 [3,9]**	**104 [13,6]**

31 The split of students among the various levels of trainings is, on the one hand, mainly due to the programs of the University. More students are enrolled in bachelor-level programs than in master-level trainings. The relatively high number of respondents from undivided trainings (in Hungary, these are medical and legal trainings) also reflects the greater enrolment of students to those trainings. There are significantly fewer postgraduate programs offered for international students than for Hungarian nationals, which can clarify the low response rate among this group of international students. There is, however, one hardly explainable imbalance among the number of respondents. Hungarian PhD students showed significantly less interest in filling out the questionnaire, unlike international PhD students, who completed the survey in much greater proportion.

32 Half of the 12 faculties were represented by at least 50 students (varying between 65 and 162);[70] but significantly less responses (varying between 4 and 42) were submitted by students of the other six faculties. Four of the six faculties with over 50 respondents are oriented towards social sciences; and five of the six "underrepresented" faculties focus on natural sciences or engineering. At the same time, the high or low number of students from the various faculties is generally in line with the size of the respective faculty. The "overrepresented" faculties have the most enrolled students among the twelve faculties of the university.

33 From the 762 students who answered the question on gender, females outnumbered other gender groups. Overall 487 females filled out the questionnaire (405 Hungarian and 82 international students; 63.9% of the respondents), while males counted for 258 (177 Hungarian and 81 international students; 33.8% of the respondents).[71] There was a small number of students who identified themselves as non-binary (4 Hungarian and 2 international students; 0.8% of the respondents); and 11 students wished not to answer this question (8 Hungarian and 3 international students; 1.4% of the respondents). All these numbers do reveal at least two interesting things. First, the gender split of respondents is generally in line with the enrolment averages (slightly over 60% of the enrolled students at the University are female). Second, there was a clearly low willingness among *Hungarian males* to fill out the questionnaire (international male students' responses supported a slight increase in males' contribution to the research).[72]

34 Finally, from the 767 respondents, 318 (41.4%) studied during the spring of 2020; 466 (60.7%) studied during the fall of 2020; 489 (63.7%) studied during the spring of 2021; and, finally, 725 (94.5%) studied during the fall of 2021. These numbers indicate that there was a greater willingness among freshmen (first year students) to respond to the questionnaire versus those who enrolled (at least) one year earlier and were studying at the university already during the first "pandemic semester" (spring 2020). Without any qualitative analysis of students' reasons, we can assume that, on the one hand, this lack of willingness of senior students is related to their "fatigue" of digital education (including anything related to the topic, also research on it), and/or their broader use of shadow libraries versus lawful sources (including materials made available via the library, lawfully accessible databases etc.). It is also plausible to assume that freshmen, in the lack of relevant knowledge on digital education at the university level, are keen to get more information on this field.

35 Based on the comparison of various selected variables[73] and compared with the overall averages

68 In Hungary, the BA/MA split (or Bologna) system is not introduced on a general level. Certain trainings – e.g. medical or legal programs – are offered only as undivided (5-6 years long) trainings.

69 Five international students skipped answering this question, and therefore the sample for these question is 168 international and 762 overall students.

70 50 as a threshold is mentioned in line with Muriel-Torrado & Fernández-Molina's research who have selected 50 students from 8 dedicated faculties of their university to guarantee the representativeness of their research. See Muriel-Torrado & Fernández-Molina (2015) 443.

71 Approximately 54,5% of all enrolled higher educational students are females. See: Oktatási adatok, 2021/2022 (előzetes adatok), Központi Statisztikai Hivatal <https://www.ksh.hu/docs/hun/xftp/idoszaki/oktat/oktatas2122e/index.html>. Although the University of Szeged has no publicly available statistics about its students' gender-split, it is plausible that the local numbers are generally in line with the national statistics. If so, female students filled out the questionnaire at a much higher proportion than their overall presence in higher education.

72 Another Hungarian empirical research reported similar numbers. Compare to Hargitai et al. (2020) 848.

73 These variables were the following: did respondents have any formal copyright education or any training on digital educational; did they properly know the term of protection

of students' answers, we found that the over-representation of Hungarian BA students, females and big faculties had no sensible bias on the results.[74] To the contrary, international PhD students claimed to be more familiar with recent copyright matters, but their answers were significantly less correct regarding the term of protection, registration requirement, and they relied much less on the ETA and much more on shadow libraries.[75]

b.) Lecturers and librarians

36 The great majority of the lecturer respondents had at least 10 years of experience (overall 169 persons, 78.2%). Lecturers with 5 to 10 years of experience (overall 26 persons, 12%) and with less than 5 years of experience (overall 21 persons, 9.7%) showed significantly less interest in filling out the questionnaire.[76] This lack of willingness of junior and intermediate-level lecturers had no significant bias on the research findings.[77] Senior librarians (with more than 10 years of experience) dominated among the librarians, too (10 out of 18); versus librarians with 5 to 10 years of experience (3) or less than 5 years of experience (5).

37 Lecturers were also asked to indicate at which faculties they are teaching. Here, they could select more faculties (as they are generally allowed to deliver guest lectures at different faculties). The overall 216 respondents ticked an overall 251 faculties; that is, respondents teach at an average of 1.16 faculties. Five faculties were dominant (with representation of at least 9% each, varying between 9.2 and 21.1%, combining for an overall 74.9%).[78] An overall 25.1% of the respondents teach at "small" faculties (faculty representation varied between 2 and 4.8%).[79]

38 Lecturers were completely balanced regarding their gender: 105 males and 105 females responded (48.6% each), while 1 person identified themself as non-binary (0.5%) and 5 wished not to answer this question (2%). 10 out of 18 librarians identified themselves as female (55.6%) and 8 as male (44.4%).

39 From the 216 lecturers, 201 (93.1%) worked during the spring of 2020; 189 (87.5%) worked during the fall of 2020; 187 (86.6%) worked during the spring of 2021; and, finally, 184 (85.2%) worked during the fall of 2021. These numbers show a much smaller diversity among the responses, and, indeed, it seems to be impossible to figure out whether the reported numbers are mainly due to any "COVID fatigue" or the hiring of new colleagues for the fall semester of 2021. Finally, among the librarians, the 18 respondents almost unanimously reported that they have worked for the whole period subject to the research. From the 18 persons, only 1 reported not to be occupied by the Klebelsberg Library during the first pandemic semester.

3. Copyright awareness

and that registration is not a prerequisite of copyright protection in Hungary; were they up-to-date in copyright law in general and the 2020 changes to the HCA in specific; did they use ETA and shadow libraries during the pandemic more frequently; and whether they are interested in gaining more copyright training in the future.

74 Hungarian BA students claimed to be undereducated in copyright law, however, they responses to the other questions show insignificant distinction from the overall averages of students. The average scores of International and Hungarian female students as well as students of big faculties were almost identical with the overall averages of all students.

75 These students showed, however, a significantly greater interest (by a +0,46 margin on a five-point Likert scale) in future education on copyright law.

76 There is no publicly available data on the age pyramid of the lecturers of the University of Szeged, but it is certain that far more than 21,8% of the lecturers of the University of Szeged have less than 10 years of teaching experience.

77 Based on the comparison of various selected variables and compared with the overall averages of lecturers' answers, we found that 1% and 3,6% less seniors had formal copyright education or any training on digital educational, respectively; 1,9% less of them answered correctly on the term of protection question; and they showed an average of 0,17 less interest (on a 1-5 Likert scale) in gaining more copyright training in the future. On the other hand, 1,8% more seniors claimed to be up-to-date with copyright changes, but only 0,1% of them claimed to be familiar with the 2020 changes to the HCA; 2,5% more seniors answered the question on the lack of need for registration correctly; 0,1% and 1,4% more seniors used ETA and shadow libraries, respectively, more frequently during the pandemic period. These margins are minimal and support our opinion that senior lecturers' answers did not disproportionately affect the final results of the complete cohort of lecturers.

78 Faculty of Science and Informatics: 53 persons (21,1%); Faculty of Humanities and Social Sciences: 52 persons (20,7%); Albert Szent-Györgyi Medical School: 36 persons (14,3%); Juhász Gyula Faculty of Education: 24 persons (9,5%) and Faculty of Law and Political Sciences: 23 persons (9,2%). These are the greatest faculties in terms of the number of lecturers.

79 Faculty of Health Sciences and Social Studies: 12 persons (4,8%); Faculty of Pharmacy: 10 persons (4%); Faculty of Engineering: 9 persons (3,6%); Faculty of Agriculture: 8 persons (3,2%); Faculty of Dentistry: 7 persons (2,8%); Faculty of Economics and Business Administration: 7 persons (2,8%); Bartók Béla Faculty of Arts: 5 persons (2%) and Foreign Language Centre: 5 persons (2%).

40 The second main part of the questionnaire was identical for all respondents. This cohort of questions focused on the general awareness of respondents on the substance as well as on education-related issues of copyright law.

41 The first three closed questions addressed whether the respondent (1) has ever studied copyright law in a formal way; (2) follows the changes to copyright law; and (3) has heard about the CDSM-Directive's changes to copyright law with respect to online education. Students' (especially those of Hungarians') and lecturers' (especially those who teach in foreign language) answers show a significant lack of information in this field; while librarians show a much higher degree of literacy with copyright legislation.[80]

	Students (Hungarian language) (n = 594)	Students (English language) (n = 173)	Students (overall) (n = 767)	Lecturers (Hungarian language) (n = 199)	Lecturers (English language) (n = 17)	Lecturers (overall) (n = 216)	Librarians (n = 18)
Have you ever taken a copyright education course?	Yes: 16,8 No: 83,2	Yes: 17,3 No: 82,7	***Yes: 16,9 No: 83,1***	Yes: 18,6 No: 81,4	Yes: 11,2 No: 88,8	***Yes: 18,1 No: 81,9***	***Yes: 44,4 No: 55,6***
Do you keep up to date with changes in copyright law?	Yes: 7,7 No: 92,3	Yes: 19,7 No: 80,3	***Yes: 10,4 No: 89,6***	Yes: 24,6 No: 75,4	Yes: 11,2 No: 88,8	***Yes: 23,6 No: 76,4***	***Yes: 66,7 No: 33,3***
Are you aware of the changes to the Copyright Act in 2020 in relation to digital education?	Yes: 4,4 No: 95,6	Yes: 15 No: 85	***Yes: 6,8 No: 93,2***	Yes: 4,5 No: 95,5	Yes: 5,9 No: 94,1	***Yes: 4,6 No: 95,4***	***Yes: 44,4 No: 55,6***

42 Our findings show that students, especially Hungarian ones, are extremely unaware of the copyright rules, and rarely follow news related to copyright law, especially Article 5 on digital education. Even more surprisingly, lecturers have only slightly greater awareness in this field. Indeed, they reported a minimally greater lack of knowledge on the CDSM Directive than students. This lack of awareness correlates with the lack of formal education on copyright law at the majority of the faculties.[81] Based on the data request to the administers of the University of Szeged's Unified Education System (Neptun), other than the numerous copyright classes of the present author delivered at the Faculty of Law and Political Sciences, we could only identify four individual modules focusing partially or completely on copyright law at the whole university. These modules were offered in various trainings of two faculties.[82] Librarians reported a relatively high level of knowledge in copyright law, which is due to their systematic training on copyright matters. As the director of the Klebelsberg Library confirmed in an interview, they invite external speakers to educate the librarians; they circulate emails on noteworthy copyright-related events and trainings; and develop their own internal procedural rules related to copyright-relevant services that librarians are required to learn and apply.[83]

The second cohort of questions related to the knowledge of the respondent on various (basic) copyright issues;[84] namely (1) whether certain expressions are protected by copyright law; (2) the copyright term; (3) registration of copyright; and (4) open access contents. In the first question, we listed four protected subject matters (poetry, software, music, and film); and four unprotected "expressions" (idea, Braille, recipe, and code of law). In the second question, we offered five options to choose from: copyright lasts (a) from the birth of the work until the death of the author; (b) during the life of the author and for thirty years from the date of his death; (c) during the life of the author and for seventy years from the date of his death; (d) as long as there is a market demand for the work; (e) I do not know. The third question was a closed one. Finally, in the fourth question, we offered five options to choose from: open access content (a) can be used at any time and in any way without attribution; (b) can be used at any time and in any way for a fee; (c) may not be used at any time without prior permission of the author; (d) may only be freely used with attribution and without modification; (e) I do not know.

80 As such, our findings indicate a much deeper copyright knowledge on the librarians' side than what the works of Todorova et al. (2014) and Koltay et al. (2017) have suggested.

81 Students other than the ones of the Faculty of Law and Political Sciences attended copyright related courses 1,5% less than the overall average of students.

82 The Juhász Gyula Faculty of Education offered one BA-level and two vocational training-level modules; and the Bartók Béla Faculty of Arts offered an MA-level course.

83 Where the latter element seems to comply with the need of librarians as Todorova et al. found, according to whom "the majority of respondents (84%) declared the need for an institutional copyright policy for libraries, archives and other cultural institutions". See Todorova et al. (2014) 145.

84 It shall be noted that these questions tested the knowledge related to the legality of certain uses under Hungarian copyright law. It might be possible that the correct answer is different in jurisdictions other than Hungary.

	Students (Hungarian language) (n = 594)	Students (English language) (n = 173)	Students (overall) (n = 767)	Lecturers (Hungarian language) (n = 199)	Lecturers (English language) (n = 17)	Lecturers (overall) (n = 216)	Librarians (n = 18)
Do you think that copyright protection should be given to a...	Correct: 88,7-93,4 Not correct: 26,3-41,4	Correct: 65,3-76,9 Not correct: 27,2-57,8	***Correct: 83,4-87,4 Not correct: 26,5-37,8***	Correct: 90,5-95,5 Not correct: 19,6-28,6	Correct: 70,6-88,2 Not correct: 23,5-70,6	***Correct: 90,3-94,4 Not correct: 20,4-31,9***	***Correct: 94,4-100 Not correct: 5,6-27,8***
Please continue with the sentence: Copyright lasts...	Correct: 34,2 (Do not know: 17,3)	Correct: 16,2 (Do not know: 32,9)	***Correct: 30,1 (Do not know: 20,9)***	Correct: 53,3 (Do not know: 19,1)	Correct: 47,1 (Do not know: 17,6)	***Correct: 52,8 (Do not know: 19,0)***	***Correct: 88,9 (Do not know: 0)***
Do you think that copyright protection requires the registration ("protection") of a work of authorship?	Yes: 76,1 No: 23,9	Yes: 84,4 No: 15,6	***Yes: 78 No: 22***	Yes: 40,2 No: 59,8	Yes: 47,1 No: 52,9	***Yes: 40,7 No: 59,3***	***Yes: 27,8 No: 72,2***
Please continue with the sentence: Open access content ...	Correct: 57,1 (Do not know: 17,3)	Correct: 23,7 (Do not know: 16,2)	***Correct: 49,5 (Do not know: 17,1)***	Correct: 88,9 (Do not know: 5)	Correct: 41,2 (Do not know: 17,6)	***Correct: 85,2 (Do not know: 6)***	***Correct: 94,4 (Do not know: 0)***

43 When we dug into deeper layers of copyright awareness, we once again spotted a significant difference regarding the rate of knowledge of students, lecturers, and librarians. As earlier, librarians responded with the greatest level of correctness. They selected the protected subject matters with the highest average score, and the unprotected subject matters with the lowest average score. They are properly aware of the term of protection and the copyright status of open access contents. Finally, they know very well that copyright protection does not depend upon the registration of the work. Lecturers showed a medium level knowledge on all fields (with a slightly surprising 52% correctness related to the term of protection); but students performed poorly. While they spotted protected subject matters at a relatively high rate, they also gave false negative answers at a relatively high rate.[85] Only a third of the students selected the correct term of protection, and almost 4 out of 5 students falsely claimed that registration of works is a prerequisite of protection. Only half of them answered correctly on the open access question.[86]

44 In sum, students' (especially those of Hungarians') and lecturers' (and especially those who teach in foreign language) answers show a significant lack of information in this field. These numbers reassure that students' low level of copyright awareness is in correlation with their limited copyright education. Their scores on the substantive questions indicate, though, that there is a certain kind of "natural awareness" on the substance of copyright law.

45 Two more questions were raised to get acquainted with the awareness and use practices of the target groups on copyright-related aspects of (online) education. First, respondents had to determine whether they think certain copyright-relevant uses are lawful or not. Second, respondents were asked to evaluate on a 1-5 Likert scale how much certain online educational practices are relevant for them or how true they find the given statement for themselves.

The following table summarizes the *ratio of correct answers* on the lawfulness of certain uses.

Do you think it is legal, without the permission of the copyright holder, to...	Students (Hungarian language) (n = 594)	Students (English language) (n = 173)	Students (overall) (n = 767)	Lecturers (Hungarian language) (n = 199)	Lecturers (English language) (n = 17)	Lecturers (overall) (n = 216)	Librarians (n = 18)
photocopy a textbook bought in a shop for your own use?	56,6	43,4	***53,7***	80,4	58,8	***67,4***	***72,2***
upload a digital copy of a textbook purchased in a shop to a cloud storage for your own use?	50,8	37,6	***47,8***	57,5	64,7	***58,1***	***44,4***
parodize a work for humorous, critical purposes?	72,9	43,4	***66,3***	79,3	58,8	***77,7***	***83,3***
quote an extract from a work?	86,3	68,2	***82,2***	89,4	76,5	***88,4***	***94,4***
quote an entire work?	60,6	75,1	***67,7***	75,3	82,4	***75,8***	***88,9***
adapt a work for educational purposes (e.g. translation)?	67,2	69,9	***67,8***	55,5	41,2	***54,4***	***55,6***
digitise a work by a library?	59,2	53,2	***57,9***	52,7	35,3	***51,4***	***55,6***
make a digitised work available online by a library for educational purposes?	56,9	57,6	***57,1***	54,7	52,9	***54,6***	***61,1***
reproduce copyrighted works for text and data mining (analysis) purposes?	23,2	48	***28,7***	31,3	47,1	***32,6***	***55,6***
record by a student of the audio of an online university lecture?	75,6	51,4	***70,2***	74,9	47,1	***72,7***	***77,8***

85 Students declared code of law to be protected with the highest rate of incorrectness.

86 These results are show similarity with some other international empirical researches (especially related to questions on the copyright term of the registration requirement). Compare to Muriel-Torrado & Fernández-Molina (2015) 443-445.

46 The answers of the respondents were generally correct, although there is a sensible difference among Hungarian and international students. Once again, librarians answered with the highest correctness rate, which is in line with their broad knowledge on copyright law. Importantly, however, the low rate of correctness related to library uses as well as the complete lack of understanding the lawfulness of text- and data-mining indicate that there is a significant lack of knowledge on uses that are indirectly relevant for higher digital education.[87]

Finally, the following table summarizes the *average score of relevance/truth* of every sub-question for the respondents.

How true are the following statements about you?	Students (Hungarian language) (n = 594)	Students (English language) (n = 173)	Students (overall) (n = 767)	Lecturers (Hungarian language) (n = 199)	Lecturers (English language) (n = 17)	Lecturers (overall) (n = 216)	Librarians (n = 18)
I check the legality of the source when using a work	2,9	3,4	***3,01***	3,3	3,71	***3,33***	***3,78***
I indicate exactly the source from which I have worked	4,3	4,12	***4,26***	4,61	4,53	***4,61***	***4,56***
Compared to the previous period, during the COVID-19 pandemic [= "Compared to…"] I made digital copies of several works for private use	2,51	3,02	***2,63***	2,27	3,35	***2,35***	***2,11***
Compared to (…) I made paper copies of several works for private use	2,13	2,68	***2,25***	1,55	2,12	***1,59***	***2,0***
Compared to (…) I made more copies of library content	1,71	2,43	***1,84***	1,34	2,18	***1,4***	***1,78***
Compared to (…) I used more open access content	2,97	3,57	***3,1***	3,08	3,53	***3,12***	***3,22***
Compared to (…) I spent more time studying the resources available in the library building	1,64	2,89	***1,93***	1,4	2,0	***1,45***	***3,0***
Compared to (…) I used more works in my work (studies)	2,62	3,33	***2,78***	2,11	3,24	***2,19***	***2,44***
Compared to (…) I upload more copyrighted works to online content sharing (e.g. social media, streaming, hosting) sites for	1,57	2,65	***1,82***	1,82	2,88	***1,91***	***1,39***

87 See Janis Wong, Lea Racine, Tristan Henderson, and Kirstie Ball, Online Learning as a Commons: Supporting students' data protection preferences through a collaborative digital environment, 14 (2023) JIPITEC 251 para 1.

47 These numbers are somewhat devastating. Other than the broadly known citation requirement (question 2 above), respondents uniformly scored less or at best slightly more than 3 on a five-point Likert scale. These averages indicate a clear lack of interest in digital education related issues, e.g., open access contents, online resources, library uses. One piece of these numbers is especially telling. Biernat et al.'s empirical analysis of digital educational practices during the pandemic has shown that "Open Educational Resources were regularly used by 54% of surveyed teachers, on average. The data shows immense spread and rise in recognition of OER in the last decade".[88] Although we used different methodology and terminology to address the same question, our numbers are quite telling. Only 99 out of the 216 lecturers, that is, only 45.8% claimed to use open access materials during the pandemic period.[89] This more than 8% difference sadly indicates that the Hungarian lecturers missed the opportunity to work more digitally during the pandemic.[90]

4. Digital education

48 The third main group of questions focussed on digital education separate of and during the COVID-19 pandemic. Some of these questions were raised to check correlations among students and lecturers (with certain outlook at librarians' experience); while some other questions were raised for only a certain target group to check their practices related to and opinion on certain matters.

a.) Common questions

49 First, students and lecturers were asked to report on a 1 to 5 Likert scale on the frequency of use of various digital educational materials/resources in online education. These materials were grouped in lecturers' own materials and external resources.

50 Based on the Hungarian lecturers' responses, the three most often used "own" materials (developed by the lecturers themselves) were new digital learning materials (3.69); revised old teaching

88 Biernat et al. (2021) 17.

89 From these 99 respondents, 79 (approximately 80%) were seniors. Lecturers with 10+ years of experience represented 78,2% of the overall respondents. As such, there seems to be no statistically relevant correlation the above results and the respondents' teaching experience.

90 See Rossana Ducato and Giulia Priora, Editorial, 14 (2023) JIPITEC 231 para 1.

materials (3.22); and control questions (3.20).[91] Among Hungarian lecturers, the least often used own materials were digitised textbooks available for a fee (1.57).[92] Hungarian lecturers also reported on the rather limited use of external resources.[93] The most often used external materials were digitised textbooks available free of charge (3.03); and the least often used external study materials were digital contents (other than textbooks) available for a fee (1.47); digitized textbooks available for a fee (1.57); and blogposts (1.58).

51 Lecturers of international modules reported a more frequent use of digital educational materials.[94] The top three "own" materials that this target group reported using were: scientific papers (3.76); new digital learning materials (3.71); and digitised textbooks available free of charge as well as revised old teaching materials (3.59 alike). The least frequently used "own" materials were digitised textbooks available for a fee (2.47). Lecturers of international modules also reported a more frequent use of external digital educational materials.[95] The most often used such resources were digitised textbooks available free of charge 3.71; and the least often used external study materials were blog posts (2.12); educational material produced by other lecturers (e.g., video lessons) (2.12); and digitised textbooks available for a fee (2.18).

52 Hungarian students reported a more frequent use of lecturers' and external materials than what Hungarian lecturers' averages showed.[96] Hungarian students reported that video lessons (3.92), reading lessons (3.64) and new digital learning materials (3.53) were the most frequently used study materials of the lecturers. The least often used materials were lecturers' digitised textbooks available for a fee (2.08). Among the external educational study materials, digitised textbooks available free of charge (3.21) were ranked number one.[97] Blog posts (1.99); digital contents (other than textbooks) available for a fee (2.03); and digitised textbooks available for a fee (2.10) were reportedly least used.

53 International students reported on an even more frequent use of digital educational study materials.[98] The top-ranked study materials of the lecturers were video lessons (3.74); scientific papers (3.62); and reading lessons (3.59). The least often applied "internal" educational study materials were—just as for almost all other target groups—digitised textbooks available for a fee (2.66). International students relied most often on external contents available from search engines (3.53). Educational materials produced by other lecturers (e.g., video lessons) (2.61); blog posts (2.70); and digitised textbooks available for a fee (2.75) were reportedly least used by international students.

54 In sum, these numbers seem to reconfirm that lecturers have primarily followed a "defensive strategy" by using either existing, updated, or novel study materials, to which they were already accustomed to during the pre-pandemic, mainly offline educational environment.

Second, lecturers and students were asked to answer on the use of certain repositories and online sources of educational materials. The following table summarizes the ratio of the *answers in the affirmative (%)* on every repository.

91 From the remaining six listed categories, only video lessons (3,04) and digitised textbooks available free of charge (3,01) were used more frequently (rather than less frequently). Three further categories were rather less used by Hungarian lecturers [scientific papers (2,83); reading lessons (2,42); audio materials (2,27)].

92 This is in line with the findings of Centrum Cyfrowe and Communia's empirical research, which also found that "only 2 of 10 teachers on average claim to have used paid digital versions of commercial textbooks on a regular basis" and "96% of the teachers have used, on a regular basis, copyrighted works that are freely available only without payment". See Biernat et al. (2021) 10 and 13, respectively. The University of Szeged does not automatic cover the fees of materials prescribed by the lecturer, but leaves the costs of purchase/access of the sources to be covered either the lecturers or students. As such, it is understandable that both lecturers and students omit using paid contents.

93 Six from the nine listed categories were used by Hungarian lecturers below an average of 2,00.

94 The nine types of digital educational materials were used between the averages of 2,47 and 3,76.

95 The nine types of digital educational materials were used between the averages of 2,12 and 3,71.

96 The nine types of digital educational materials were used between the averages of 2,08 and 3,92. These differences do not necessarily show inconsistency. It is impossible to check whether the students are the actual ones that the respondent lecturers taught.

97 Just as international publishers, Hungarian publishing houses have offered free access to educational materials in the early period of the COVID-19 pandemic. See e.g. Sujtó Attila, 'Ingyenesen elérhető online tartalmak (nemcsak) történelemtanároknak' Ujkor.hu, 20 March 2020 <https://ujkor.hu/content/ingyenesen-elerheto-online-tartalmak-nemcsak-tortenelemtanaroknak>; No author, 'Néhány a járványhelyzet alatt (is) elérhető online forrás' Könyvtártudományi Szakkönyvtár, 8 April 2020 <https://ki.oszk.hu/hir/konyvtartudomanyi-szakkonyvtar/nehany-jarvanyhelyzet-alatt-elerheto-online-forras>.

98 The nine types of digital educational materials were used between the averages of 2,66 and 3,74.

Did you use in your online education...	Students (Hungarian language) (n = 594)	Students (English language) (n = 173)	Students (overall) (n = 767)	Lecturers (Hungarian language) (n = 199)	Lecturers (English language) (n = 17)	Lecturers (overall) (n = 216)
ETA[99]	41,7	22,0	***37,3***	21,6	23,5	***21,8***
Other repositories of the Klebelsberg Library[100]	26,4	50,9	***31,9***	28,1	35,3	***28,7***
Other digitized items of the Klebelsberg Library	23,7	45,7	***28,7***	25,1	35,3	***25,9***
External author repositories (e.g. Academia, ResearchGate)	37,2	76,9	***46,2***	48,2	47,1	***48,1***
Shadow libraries (e.g. zlibrary.com)	48,5	57,8	***50,6***	28,6	23,5	***28,2***
Websites containing other students' notes (e.g. Diákoldal.hu)	38,4	30,0	***35,2***	-	-	-

In your opinion, during the pandemic period, ...	Students (Hungarian language) (n = 594)	Students (English language) (n = 173)	Students (overall) (n = 767)	Lecturers (Hungarian language) (n = 199)	Lecturers (English language) (n = 17)	Lecturers (overall) (n = 216)
the amount of material to be processed in digital education has increased	3,45	3,89	***3,55***	3,13	3,76	***3,18***
the library responded quickly and effectively to changing needs	3,31	3,52	***3,36***	3,36	3,35	***3,36***
the information provided by the library was of good quality	3,33	3,57	***3,38***	3,53	3,53	***3,53***
the library supported digital learning with high-quality services	3,43	3,55	***3,45***	3,49	3,53	***3,50***

55 These numbers are also quite telling. For example, both students and lecturers relied on shadow libraries far more than on the University's own internal platform that hosts digital education materials. Indeed, the reliance on external resources generally outweighed the use of internal collections of the University.[99] The reliance on free, external author repositories can also be classified as robust. Lawsuits, however, like the one against ResearchGate,[100] one of the leading repositories for authors in Europe, or against digital libraries, e.g., Google Books or Internet Archive, can put this free and digital access to contents by lecturers and students into jeopardy.[101]

56 Third, all target groups were asked to evaluate on a 1 to 5 Likert scale the effect of various aspects of the COVID-19 pandemic on online education and the target groups' performance during the pandemic. Some of the sub-questions were raised to all target groups, and other sub-questions were only addressed to one or two target groups. The following table summarizes the *average score of respondents' opinion* on every sub-question.

57 These numbers indicate, first, a clear disagreement among lecturers and students regarding the number of materials to be processed in digital education during the pandemic. While both results confirm that people had to consult more materials in this period, there was a significant, 0.37-point difference on a five-point scale (which equals to 7.4%) between the opinion of students and lecturers regarding the growth of the amount of materials to be processed during digital education. Second, respondents reported on a modest satisfaction with the University Library's services during the pandemic period. These numbers, especially the last ones related to the high-quality services provided by the library, seem to be inconsistent with the extremely low interests of students and lecturers alike regarding questions analysed above (e.g., copying library content; spending time studying the resources available in the library building; or using the library repositories).

58 Fourth, we asked lecturers whether they imparted and students whether they received information on copyright related matters of online education. Only a minority of Hungarian lecturers (84 out of 199; an average of 42.2%), and close to a two-third majority (11 out of 17; an average of 64.7%) of lecturers of international modules (44% of all lecturers) reported that they advised students on copyright matters. The numbers were even lower for students' receipt of information: 204 out of 594 (an average of 34.3% of) Hungarian students, and 66 out of 173 (an average of 38.1% of) international students (35.2% of all students) reported on lecturer's advice on copyright law. Students were also asked whether they received information from librarians. The responses—71 out of 594 (an average of 12% of) Hungarian students, and 41 out of 173 (an average of 23.7% of) international students (14.6% of all students)—indicate an even

99 Indeed, senior lecturers and international PhD students used shadow library more often than other members of their cohort. 81,9% of the lecturers and 55% of the international students who used shadow libraries were senior lecturers and PhD students. These are 3,7% and 4,4% more than their overall presence in their cohort, respectively.

100 Diana Kwon, 'ResearchGate Dealt a Blow in Copyright Lawsuit' (2022) 603 Nature, 17 March 2022, 375-376.

101 Argyri Panezi, 'A Public Service Role for Digital Libraries: A Code of Emergency Electronic Access to Library Material and the Unequal Battle Against Misinformation Through Copyright Law Reform' (2022) 31 Cornell Journal of Law & Public Policy, 74-96.

more limited involvement of librarians in the teaching of students on copyright matters. It seemed unreasonable to ask librarians whether they advised students or lecturers on copyright matters, since a significant number of them work in a position that is not directly connected to students' or lecturers' educational activities. They were, however, asked to evaluate how properly they could answer copyright related questions of students or lecturers. The responses, submitted on a 1 to 5 Likert scale, showed a medium confidence (a 3.33 average; 4 as the median) with their own abilities to answer such questions.

b.) Unique questions to students

59 Students were asked to respond a few further questions on their online educational practices. First, in order to understand whether and to what degree did students use platforms that can be classified as secure electronic systems,[102] we asked them to name all services that they applied in online education. From the 8 predetermined services (Coospace;[103] Big Blue Button;[104] Skype; Zoom; Google Meet; Google Classroom; Cisco Webex; and Microsoft Teams) the top three services were:

- Coospace [727 students (573 Hungarian and 154 international students; overall 94.8%)];
- Zoom [647 students (497 Hungarian and 150 international students; overall 84.4%)];
- Big Blue Button [531 students (457 Hungarian and 74 international students; overall 69.2%)].[105]

60 A more limited number of students relied on Skype (overall 44.7%); Microsoft Teams (overall 43.4%); and Google Meet (overall 40.3%). Finally, a very low percentage of students applied Google Classroom (overall 18.9%); and an insignificant number of students used Webex (overall 4.6%). As students were allowed to tick multiple services used as well as name other platforms they relied on,[106] we also measured how much is the average number of platforms used by students. The 594 Hungarian students indicated the use of a total of 2509 applications (4.22 on average); and the 173 international students indicated the use of a total of 622 applications (3.59 on average). This means that all student respondents (n = 767) applied an average of 4,08 services for online educational purposes.

61 We further inquired students to indicate what resources did they rely on during the preparation for their own course obligations (e.g., submitting assignments, preparing presentations, coursework, etc.). Students could select from 9 predetermined study resources,[107] and from these, the top- three resources were:

- digitised, freely available textbooks, reference works, scientific papers [667 students (535 Hungarian and 132 international students; overall 86.9%)];
- digital teaching materials [599 students (487 Hungarian and 112 international students; overall 78,1%)];
- content available from online search engines [578 students (473 Hungarian and 105 international students; overall 75,3%)].

62 A significant number of students relied on paper-based textbooks, course guides, academic works as well (overall 67%). A moderate number of students used online encyclopaedia entries (overall 42.5%); and student-generated material (overall 37.3%). Finally, a low percentage of students accessed contents available from social media sites (overall 21.9%); blog posts (overall 18.2%); and the least number of students voted for digitised textbooks, reference works, scientific works available for a fee (overall 17.6%).

102 In line with the CDSM Directive, "[s]ecure electronic environments should be understood as digital teaching and learning environments access to which is limited to an educational establishment's teaching staff and to pupils or students enrolled in a study programme, in particular through appropriate authentication procedures including password-based authentication". See Recital 22 CDSM Directive.

103 Coospace is the University of Szeged's official platform to share static materials with students (e.g. syllabus, slides, questions).

104 Big Blue Button is the officially licensed live streaming service of the University of Szeged.

105 See Edoardo Celeste and Giovanni De Gregorio, Towards a Right to Digital Education? Constitutional Challenges of Edtech, 14 (2023) JIPITEC 234 para 1; Roberto Caso and Maria Chiara Pievatolo, A liberal infrastructure in a neoliberal world: the Italian case of GARR, 14 (2023) JIPITEC 349 para 1.

106 Students mentioned 17 further other services, including Moodle, Discord, Jitsi, YouTube, social media platforms, etc.

107 Namely, paper-based textbooks, course guides, academic works (e.g. journal articles); digitised, freely available textbooks, reference works, scientific papers; digitised textbooks, reference works, scientific works available for a fee; digital teaching materials (e.g. video lessons, lecture notes, etc.); blog posts; online encyclopaedia entries; content available from online search engines; content available from social media sites; student-generated material (e.g. submissions).

c.) Unique questions to lecturers

63 Lecturers also received questions on their practices of online education and access to digital educational materials. First, 175 lecturers (164 Hungarian and 11 lecturers of international modules; overall 81%) reported that they received no prior education related to digital education. Similarly, 175 lecturers (160 Hungarian and 15 lecturers of international modules; overall 81%) confirmed that they were well equipped with adequate equipment (e.g., desktop computer, laptop, notebook, phone, tablet, webcam, microphone, broadband internet access, etc.) to facilitate the effective participation in online education. From the 42 lecturers who answered negatively on the presence of adequate equipment, the vast majority (33 Hungarian and 2 lecturers of international modules; overall 83%) claimed that they had to purchase the necessary tools on their own.[108]

64 Lecturers were asked to name all platforms they used in online education. From the 8 predetermined services (Coospace; Big Blue Button; Skype; Zoom; Google Meet; Google Classroom; Cisco Webex; and Microsoft Teams) the top three services were:

- Coospace [188 lecturers (178 Hungarian and 10 lecturers of international modules; overall 87%)];
- Zoom [166 lecturers (152 Hungarian and 14 lecturers of international modules; overall 76.9%)];
- Big Blue Button [112 lecturers (108 Hungarian and 4 lecturers of international modules; overall 51.9%)].

65 A more limited number of lecturers relied on Microsoft Teams (overall 35.2%); Google Meet (overall 31.9%); and Skype (overall 29.6%). Finally, an insignificant number of lecturers used Google Classroom (overall 10.2%); and Webex (overall 5.6%). As lecturers were allowed to tick multiple services used as well as name the platform they relied on, we also measured how what was the average number of platforms used by lecturers.[109] The 199 Hungarian lecturers indicated the use of a total of 701 applications (3.52 on average); and the 17 lecturers of international modules indicated the use of a total of 48 applications (2.82 on average). This means that lecturers (n=216) applied an average of 3.47 services for online educational purposes.[110]

66 Lecturers were also asked whether they used business (subscription-based) versions of the services applied for online education. Overall, 134 lecturers (126 Hungarian and 8 lecturers of international modules; overall 62%) responded negatively and 82 (72 Hungarian and 10 lecturers of international modules; overall 38%) answered positively. From those, who did not use business models, 131 also named the reason for their decision. 88 argued that they were not interested or did not need such services; 20 claimed that they had no budget for a subscription; and 18 noted that they did not receive support from their workplace to subscribe. Five further arguments were added by respondents, which generally overlapped with the previous three main reasons. From those, who subscribed to business models, 85 also named the source(s) they used to subscribe from. (Respondents could mention more financial resources as well.) 47 respondents claimed they relied on their own resources; 27 named they department to fund the subscription. Only a handful of people referred to their faculties (6), the whole university (9) or any project grant (2).[111]

d.) Unique questions to librarians

Librarians were asked to evaluate the Klebelsberg Library's performance during the pandemic.

In your opinion, during the pandemic period, ...	Librarians (n = 18)
the library provided adequate information to lecturers and students about the services available	***4,44 (Do not know: 0)***
the use of the ETA has increased	***4,5 (Do not know: 4)***
the use of other repositories of the library has increased	***4,54 (Do not know: 5)***
the demand increased for other content held digitally by the library	***4,29 (Do not know: 4)***
the library was able to fully meet the demand for electronic content during the pandemic	***3,81 (Do not know: 2)***
more requests arrived from students regarding digital education issues	***3,93 (Do not know: 4)***
more requests arrived from instructors regarding digital education issues	***4,07 (Do not know: 4)***

67 This self-confidence seems to be at odds with—or, more politely, it is significantly higher than—the answers of students and lecturers on similar questions.

68 We also asked librarians to name the three most important digital education-related services of the Klebelsberg Library. Here, based on the many inputs given by the 18 respondents, the three

108 Four Hungarian respondents stated that its department had purchased the equipment, and two Hungarian lecturers claimed to have project funding for this purpose.

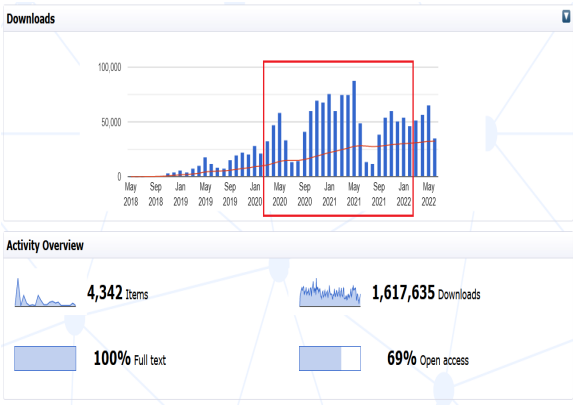
109 We filtered out those services that are not generally designed for classroom education, e.g. e-mails.

110 This number is practically one exact service less than what Centrum Cyfrowe and Communia's empirical paper found in 2021. According to their report, "teachers used 4.5 tools and platforms while teaching online and the longer the period of online education, the more methods and tools were used by teachers". See Biernat et al. (2021) 16.

111 The 85 respondents identified 91 sources of funding, on average 1,07.

main groups of services were: (1) repositories;[112] (2) online accessible resources (study materials, database, e-books etc.); and (3) proxy access of the library's services. In an interview with the then-director of the Klebelsberg Library, she similarly identified the repositories as the most important service element of the library during the pandemic period. She also named two communication-related items as significant services: the library's general communication services (receiving and answering questions on all available technological channels) as well as an e-learning material on the use of library services.

69 The library's statistics on the use of the e-learning materials uploaded to and hosted at the ETA repository are shown on the following image.



Source: SZTE Repository of Educational Resources[113]

70 These statistics indicate that ETA's use almost doubled for the March and May 2020 period (the first pandemic semester) and was at the peak during the complete 2020 to 2021 academic year (with only modest decrease during the summer from June to August 2021). It was used less during the fall semester of the 2021 and 2022 academic year, when university education was carried out in a hybrid form (with a growing number of in-person classes). The librarians' responses and the actual statistics seem to properly reflect the high demand and the success of the use of the repositories during the COVID period, even if students and lecturers reported only a modest use of ETA.[114]

71 In close connection to this topic, librarians were also asked to estimate the amount of the repertoire of the Klebelsberg Library accessible online. Only 5 respondents (27,8%) selected the proper 0 to 20% range.[115] Indeed, as the head of the Klebelsberg Library estimated, the library has so far digitized only 1 to 2% of its complete repertoire, focusing mainly on internal documents (e.g., theses, minutes of the meetings of the University boards) and sources with regional relevance (e.g., local newspapers), while international publications and even Hungarian books and scientific journals are expressly omitted from the digitization strategy of the library.

72 We further inquired whether the respondents are aware of any internal regulations on copyright law or any person responsible for copyright issues. 17 out of 18 respondents properly answered that the Klebelsberg Library has its own regulation on copyright law. Respondents showed greater diversity with respect to the second question. Only half (9 persons) of them answered correctly that there are persons among themselves who are responsible to licensing the use of works for educational purposes; five claimed there is no copyright staff; and four answered that they do not know the answer to this question.

73 Finally, we asked for the opinion of the librarians, whether they think copyright law should be taught better among (a) students of library and information science studies; (b) any student of the university. The respondents almost uniformly confirmed the need for such training (17 and 16 supporters, respectively).

5. Overall impressions on online education and copyright law

74 We requested all participants to answer three final questions on their overall impression on online education and copyright law. The first question focused on the satisfaction with digital education; the second question was related to the target groups' opinion on the other groups' digital skills development; and, finally, the third question inquired whether the respondents would be interested in deepening their knowledge on copyright law.

a.) The satisfaction with online education

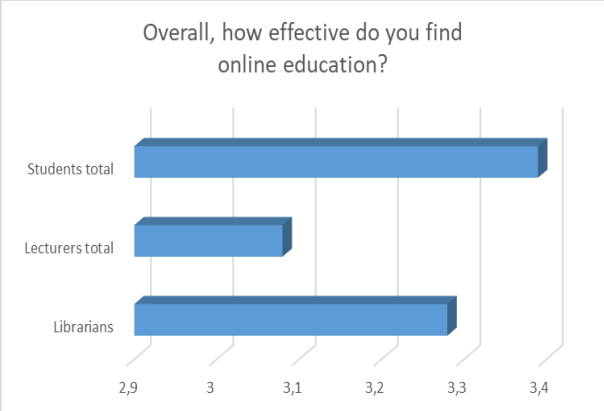
75 The overall satisfaction of students, lecturers and librarians are more positive than negative, but in all cases, satisfaction is closer to the mean of 3.

112 These are especially the ETA and Contenta series of the Klebelsberg Library.

113 See <https://eta.bibl.u-szeged.hu/cgi/stats/report> data retrieved on 21 June 2022.

114 As introduced in section C.II.4.(a) supra, 37,3% of the students and 21,8% of the lecturers confirmed the use of this repository.

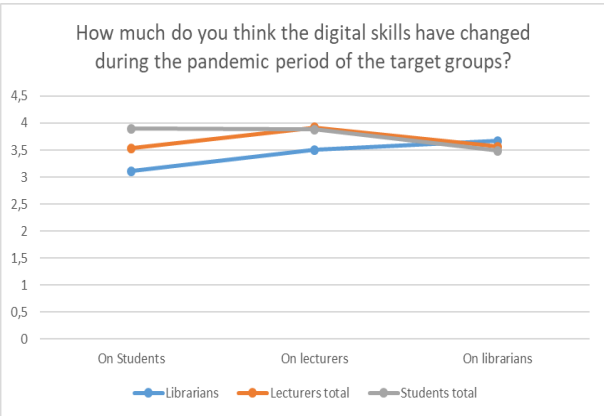
115 Other 3 librarians (16,7%) voted for the 21-40% range; 6 (33,3%) estimated that 41-60% of materials are digitized; and 4 (22,2%) selected the 61-80%. None of the respondents believed that over 80% of the library's repertoire is available online.



Students were the most satisfied with digital education (3.39; with a median of 4); who were followed by the librarians (3.28; with a median of 3); and lecturers formed the least satisfied group (3.08; with a median of 3).[116]

b.) The development of digital skills

76 We requested the three target groups to evaluate how much they think the digital skills of the other target groups have changed during the pandemic period. The overall impression of students, lecturers, and librarians are more positive than negative.



77 Here, we tested the subjective impression of respondents on the digital skills development of the other target groups as a whole group rather than individual changes of students, lecturers, or librarians. We did not ask respondents to evaluate their own personal digital skills developments.

78 There are at least three interesting findings to report here. First, members of all target groups evaluated their own target groups' development the best. This also means that such "self-appreciation" is not confirmed by any of the other target groups.

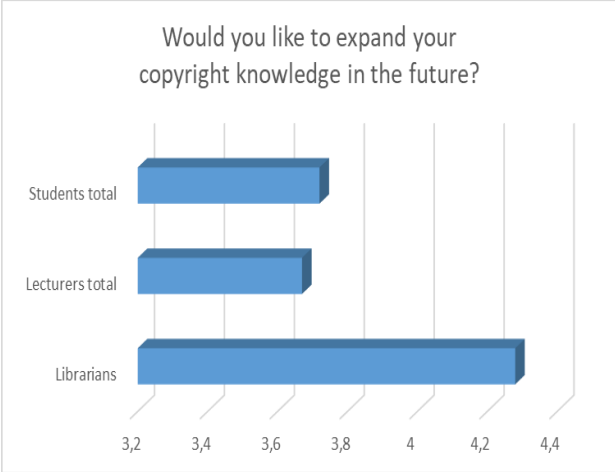
79 Second, the evaluation of students showed the greatest dispersion. The score of students' self-evaluation was almost the highest score (3,9 remained only 0,02 below lecturers' self-evaluation), but lecturers and librarians showed greater dissatisfaction with students' development. On the other hand, there was an almost complete agreement among the three target groups on librarians' development, with a maximum +/-0.1 difference from the mathematical average (3.57) of librarians' evaluation by the three target groups. The difference was maximum +/-0.4 in case of students' and maximum +/-0.26 in case of lecturers' average evaluation. The numbers also show that lecturers evaluated the three target groups in the most balanced way: their opinion on the others differed from the target groups' average evaluation between -0.01 and +0.16 (an overall 0.17 span); while students' opinion differed from the averages between -0,08 and +0.39 (an overall 047 span), and librarians' opinion differed from the averages between -0.4 and +0.1 (an overall 05 span).

80 Finally, librarians' digital skills development was ranked the lowest. This number shall no way devaluate librarians' and the Klebelsberg Library's overall efforts to support the University community. These numbers shall mainly be connected to the mere fact that librarians were most "far" from the actual participants of online education, and, for some time, they were simply banned from their own premises, the library building, where they have their ideal equipment to serve students' and lecturers' needs.

c.) Expanding the copyright knowledge

81 Finally, we requested respondents to answer whether they would be interested in expanding their knowledge on copyright law. The overall interest of students, lecturers and librarians towards copyright law is more convincing (with an average of three target groups' scores of 3.89).

116 If we break down the numbers of lecturers and students, we might also notice that international students (3,60; with a median of 4) and lecturers of foreign language modules (3,29; with a median of 3) were more satisfied with digital education than the Hungarian students (3,33; with a median of 4) and lecturers of Hungarian modules (3,07; with a median of 3)



82 From the three target groups, librarians showed the greatest interests in further copyright education and training (4.28; with a median of 5). They were followed by the students (3.72; with a median of 4); and, finally, lecturers showed the less interest in expanding their knowledge in the field of copyright law (3.67; with a median of 4).[117] These numbers look counter-intuitive at first sight. Librarians, who performed the best in the analysis of their substantive copyright knowledge, show the greatest interest in deepening their awareness; and, vice versa, students and lecturers, who performed low (or modest at best) shy away from learning on the details of copyright law. There is no way to figure it out without any further qualitative analysis, whether these results are due to students' and lecturers' lack of interest in copyright law, or to a self-perpetuating act, where people best educated in the field understand the importance of copyright law, and hence they are willing to develop their knowledge further.

D. Conclusion

83 Guido Noto la Diega et al. have pointed out that "the pandemic has consolidated a double move. On the one hand, universities are becoming increasingly aware of the strategic value of copyright. On the other hand, the necessity to embrace distance education is making universities realise that there is a wealth of issues that go beyond ownership of research outputs and reprography rights".[118] While this double move might be true for many universities (especially for those that the authors of the cited paper speak about), it might be far from the reality in other cases. Our empirical findings indicate—at least for the University of Szeged, but probably for other higher educational institutions, too—that digital education during the pandemic was heavily dominated by the interest to "survive" the pandemic rather than taking the next step towards more effective digital education. Consequently, the pandemic has also out shadowed the possible legal flexibilities of the new CDSM system—also leading to a missed opportunity to make lawful uses more common. This was clearly evidenced by the much broader use of shadow libraries and external repositories versus the lawful, internal repositories of the University during the pandemic; or the reliance on new or updated PPTs instead of relying on external and/or more interactive materials, e.g. Coursera MOOCs.

84 The lack of awareness on copyright and/or digital educational possibilities, as well as the actual use of certain platforms or contents has a direct and great importance on how lecturers structure their classes; what information and in what manner do they pass to their students; and, put simply, how do they educate them on the "use of materials" (e.g., paid versus free; external versus internal sources). And the actual decisions of lecturers and students on accessing and using certain resources and platforms can also have direct consequences for the functioning of fundamental rights like freedom of education and academic freedom.

85 As we conducted only a quantitative analysis, we were unable to locate certain reasons and motivations among our target groups. We therefore recommend qualitative interviews—most ideally on a national level—to complement our findings in order to provide university leaderships, national policy-makers and maybe even the legislation a clear view on the future steps to enhance digital education and how to make it "lockdown-proof".

117 If we break down the numbers of lecturers and students, we might also notice that international students (4,14; with a median of 5) and lecturers of foreign language modules (3,88; with a median of 5) were more interested in any copyright training than the Hungarian students (3,59; with a median of 4) and lecturers of Hungarian modules (3,65; with a median of 4).

118 Guido Noto la Diega, Giulia Priora, Bernd Justin Jütte and Léo Pascault, 'Capturing the Uncapturable: The Relationship between Universities and Copyright through the Lens of the Audio-Visual Lecture Capture Policies'. In: Cristiana Sappa and Enrico Bonadio (eds), 'Art and Literature in Copyright Law: Protecting the Rights of Creators and Managers of Artistic and Literary Works' (2022) Edward Elgar, Cheltenham, 207.

A liberal infrastructure in a neoliberal world: the Italian case of GARR

by **Roberto Caso and Maria Chiara Pievatolo** *

Abstract: This paper aims to outline some issues concerning the interaction, in European Union law, between data policy, university regulation, open science, intellectual property and infrastructure policy. On the one hand, such issues primarily regard intellectual property: exclusive rights deriving from copyright and related rights, patents, trademarks, and trade secrets. On the other hand, they also concern forms of exclusive control on data that are not strictly related to intellectual property but enhanced by the control on technology and infrastructure. This exclusive control can accompany or be independent from the protection of intellectual property conferred by law.

To make science open and to limit the market power of intellectual monopolies and oligopolies, restricting and reshaping intellectual property rights on data is not enough. It is also necessary to create or to revive public infrastructures and to implement open standards for texts, data, and code. An example of a public infrastructure for a university is the Italian consortium GARR, which during the COVID-19 pandemic contributed to anchor the local debate about academic and teaching freedom to an actual and viable alternative, protecting independent and public knowledge not just de jure but de facto as well.

Keywords: university, intellectual property and data regulation, open science, GARR, Italy

Recommended citation: Roberto Caso and Maria Chiara Pievatolo, A liberal infrastructure in a neoliberal world: the Italian case of GARR, 14 (2023) JIPITEC 351 para 1.

A. Introduction

1 The COVID-19 pandemic forced Italian universities to move their teaching and learning activities online. The majority of them preferred proprietary platforms like Microsoft Teams, Google Meet and Zoom, in spite of the likelihood of their unlawful processing of personal data and regardless of the recent CJEU judgment C-311/18 (Schrems II). Such a sudden shift away from the classrooms ignited a lively debate about remote teaching. On the one hand, intellectuals like Giorgio Agamben rejected the digitization of teaching as technological barbarity undermining the very possibility of a community of knowledge; on the other hand, enthusiastic neophytes identified Microsoft Teams and Google Meets as the most recent instance of an information and communications technology ("ICT") advancement that is both unavoidable and praiseworthy. Both approaches, however, failed to take into account the proclivity of Google and Microsoft to accumulate personal and research data and to shape our activities according to commercial purposes and interests other than our own.

2 A minority of institutions (e.g., the Politecnico di Torino) and some professors discovered that there was a free and public alternative: the remote teaching platforms provided by the GARR Consortium.[1] The GARR Consortium is a public and

* Roberto Caso is Associate Professor of Comparative Private Law, University of Trento, Faculty of Law. Roberto Caso is the author of Sections 1 to 3; Maria Chiara Pievatolo is Professor of Political Philosophy, University of Pisa, Department of Political Sciences. Maria Chiara Pievatolo is the author of Sections 4 to 6.

1 GARR is the acronym of Gruppo per l'Armonizzazione delle

non-profit association federating Italian universities and research institutions; its mission is to design and manage the ultra-broadband network dedicated to the Italian research and education community. Although understaffed and underfunded, it succeeded both in offering free, open, and privacy-friendly remote learning platform to schools, universities and even to individual teachers refusing to give their data to Big Tech. It also gave a major contribution to the network Iorestoacasa.work,[2] built from scratch by a group of free software activists, which enabled teachers, students and even workers to use decentralized and non-proprietary platforms.

3 The very existence of the GARR helped to make the debate more articulate than a partisan clash. Even where, like in Italy, universities are too small and poor to face Big Tech without being swallowed up by them, the legacy of conceiving each university as a part of a national system helped to show that an alternative can be imagined and carried out.

4 The idea of a federated participatory service available to the community of Italian scholars and students as a whole may sound revolutionary like the project suggested by Kathleen Fitzpatrick's *Generous Thinking*,[3] if compared to the neoliberal universities, which view themselves as firms engaged in a relentless market competition rather than as parts of a single research and teaching network. It is, indeed, revolutionary, but in an astronomical meaning, since it belongs to a model of higher education that the Italian government has tried to dismantle from the beginning of the Bologna process.[4] Unsurprisingly, its almost forgotten legacy did help university teachers and students to create a free space that is small but could become larger if Italian professors and university administrators dare to come to terms with it.

B. The future of university and democracy in a neoliberal world

5 Recently, Karen Maex, during her speech on 8 January 2021 for the 389th Dies Natalis of the University of Amsterdam, announced that the future of universities and democracy is at risk. In particular, Maex brought to attention the fact that large private companies (in particular, giant Internet platforms) play an increasingly important role in the life of universities by decreasing their degree of autonomy and freedom:

6 "Since the 1980s, the pre-eminent role libraries held during the era of paper has gradually been eroded, initially by the development of advanced knowledge systems in commercial publishing. Instead of owning works in their collection, as in the days of printed editions, now university libraries only have licences granting rights of use. Publications on university research in effect have to be 'bought back' through subscriptions to expensive journals in order to make them available through university libraries. That means publishers get to decide who has access to knowledge. This has enabled commercial academic publishers to gain the upper hand. What makes this especially worrisome is that their role is limiting that of libraries as free and open arenas for research.

7 Open access is bringing about yet another shift. Publishers are responding by seeking alternative ways to retain their power and profit margins, such as by charging for open access publications in renowned journals or for impact analyses. [...]

8 In addition to supplying data storage and search functionalities and information gathering, those same companies also play a considerable role in steering wider public discussions. In doing so, they draw no distinction between scientific information and, for instance, political or other interests. And, just as in other sectors, their consolidation of functions and buying up of other businesses is leading to a concentration within the market.

9 This concentration of power among tech companies can also impinge on the autonomy of university research in other ways. An important European Commission report warns that by interlinking information services, research publishers may indirectly come to wield tremendous influence on universities' strategic policies. For instance, on decisions around staffing policy – through the systems used to recognise and reward scientific research – and even on choices about what is researched. Compared to the big tech firms, publishers are of course relatively small players. Many researchers now use Google Scholar to find their h-index, Google Docs to collaborate with colleagues, Google Dataset Search to track down research data and Amazon cloud services to do calculations and store data. [...]

10 What applies to the future of democracy applies equally to the future of universities and of independent education and research as vital building blocks for the organisation of knowledge. We cannot simply leave the future of knowledge to the corporate boardrooms."[5]

Reti della Ricerca (in English: Group for the Harmonization of Research Networks).

2 <https://iorestoacasa.work>.

3 <https://generousthinking.hcommons.org/>.

4 <https://www.ehea.info/index.php>.

5 Karen Maex, *Protect independent and public knowledge*, University of Amsterdam, 8 January 2021 <https://www.uva.nl/binaries/content/assets/uva/nl/over-de-uva/speech-karen-maex---dies-2021.pdf>.

11 Maex's speech is informed by some criticisms of the current neoliberal world and it refers, in particular, to Shoshana Zuboff's work on surveillance capitalism.[6] But another source mentioned in the speech is the analysis of Claudio Aspesi et al. for SPARC on the application of surveillance capitalism to the world of university and research.[7] Maex's speech ends with the hope for the creation at the European Union level, of a new law called the Digital University Act:

12 What we need is a 'Digital University Act', aimed at:

13 "1. Public storage and access to research data organised by universities and public infrastructure

14 2. Freely accessible university research publications. Open access must not give rise to high publication fees or, worse, to a private company lock-in, whereby universities find themselves trapped in a growing commercial data-analysis industry.

15 3. Control over digital learning and research tools (productivity tools, learning environments, video conferencing, etc.). These tools should be supplied partly as public infrastructure and partly through collaboration with platform companies, with universities retaining control over the gathering and processing of user data as well as influence on the development of such tools.

16 4. Access to platform data. The EU should require that researchers and teachers also are given access to platform data for teaching and research purposes. This is crucial for moderating the public space and monitoring public communication."[8]

17 The analysis of the weaknesses of the EU data strategy and the proposals made by Maex have been developed in a document from the League of European Research Universities ("LERU") that is from December 2021.[9] This document advances some proposals on data policy declined and detailed on 16 principles addressed to various stakeholders starting from the risk that EU data strategy frames universities as companies: 1) legislators, 2) digital providers, 3) individuals in universities, 4) universities, and 5) industry.

18 The University of Amsterdam is also the institution of prominent intellectual property scholars. Some of these scholars are the authors of independent recent studies carried out on behalf of the European Commission. These studies suggest that EU copyright law and data strategy should be rethought and reformed in several aspects to encourage the development of Open Science. At the same time the existing rules could be better interpreted to promote Open Science.[10]

C. European contradictions between open science, data strategy and intellectual property

19 During the last decade, the European Union has developed a large open-science policy concerning:

- research framework programs (FP7, H2020, Horizon Europe);
- research infrastructures (OpenAire, Zenodo, European Open Science Cloud, Open Research Europe);
- research assessment (new metrics, prizes, incentives and awards to researchers who practice Open Science);[11]
- research integrity;
- training and skills on open science;
- citizen science.

20 However, this policy minorly addressed the harmonization of laws across Member States. Two significant interventions in this regard are: i) the Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information C/2018/2375 that builds on and replaces Recommendation 2012/417/EU; and

6 Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (1st edn Public Affairs 15 January 2019).

7 Claudio Aspesi et al., *SPARC Landscape Analysis* (2019) <https://doi.org/10.31229/osf.io/58yhb>. See also Jeffrey Pooley, 'Surveillance Publishing', (2022) 25(1) The Journal of Electronic Publishing, 39, doi: <https://doi.org/10.3998/jep.1874>.

8 Maex, *Protect independent and public knowledge* (n.3).

9 *LERU Data Statement*, LERU, December 2021 <https://www.leru.org/publications/is-university-autonomy-threatened-by-eu-data-policy-and-law>.

10 European Commission, Directorate-General for Research and Innovation, Senftleben, M., *Study on EU copyright and related rights and access to and reuse of data*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2777/78973>; European Commission, Directorate-General for Research and Innovation, Eechoud, M., *Study on the Open Data Directive, Data Governance and Data Act and their possible impact on research*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2777/71619>.

11 Cf. Council of the European Union, Conclusions on research assessment and implementation of open science, Brussels, 10 June 2022 (OR. en) 10126/22 <https://www.consilium.europa.eu/media/56958/st10126-en22.pdf>.

ii) Article 10 of the Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information that obliges Member States to adopt national open-access policies.[12]

21 With regards to the subject matter of intellectual property, the EU has opted for an increasing strengthening of exclusive rights, including during the COVID-19 pandemic.[13] This is not only a question of expansion of existing exclusive rights, but also of the creation of new exclusive rights, e.g., new copyright related rights.[14] Moreover, this alluvial legislation does not even share common definitions of fundamental concepts, e.g., information and data. In short, the legislative framework has become more unbalanced, fragmented, and inconsistent. Overall, a contradiction emerges: on the one hand, Open Science is promoted, on the other hand, intellectual property is strengthened.[15]

22 Copyright in principle does not give to the copyright holder an exclusive right on data but only some exclusive rights on works of authorship. Ideas, facts, information, and data of the work of authorship can be freely reproduced. Instead, the expression of the work cannot be reproduced. The principle is known with the formula of the idea/expression dichotomy. Despite controversial interpretations, for a long time this principle constituted has protected of some fundamental freedoms and rights: in particular, the freedom of expression and information and academic freedom. However, a series of regulatory changes have reduced the relevance of the idea/expression dichotomy. For example, the Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases (database directive) has established a *sui generis* right (distinct from copyright) for the maker of a database. The definition of "database" is the following (Article 1.2):

23 "For the purposes of this Directive, 'database' shall mean a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means."

24 Articles 7.1 and 7.4 of the Database Directive state:

25 "1. Member States shall provide for a right for the maker of a database which shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database. [...]

26 4. The right provided for in paragraph 1 shall apply irrespective of the eligibility of that database for protection by copyright or by other rights. Moreover, it shall apply irrespective of eligibility of the contents of that database for protection by copyright or by other rights. Protection of databases under the right provided for in paragraph 1 shall be without prejudice to rights existing in respect of their contents."

27 The goal of the database directive was to encourage the creation of a flourishing market of databases, thanks to the establishment of a new exclusive right.[16] The equation behind the regulatory intervention was that more intellectual property equals more innovation and more competitiveness. In short, the new exclusive right should have helped European companies in a global competition, especially with USA. The equation was wrong. The United States, despite the lack of an exclusive right equivalent to the European *sui generis* right, have won the competition. In evaluating the impact of

12 Heiko Richter, 'Open Science and Public Sector Information – Reconsidering the exemption for educational and research establishments under the Directive on re-use of public sector information', (2018) 9(19 JIPITEC, 51; European Commission, Directorate-General for Research and Innovation, Senftleben, M., *Study on EU copyright and related rights and access to and reuse of data*, (n. 8); European Commission, Directorate-General for Research and Innovation, Eechoud, M., *Study on the Open Data Directive, Data Governance and Data Act and their possible impact on research*, (n. 8); Marta Arisi, 'Open Knowledge. Access and Re-use of Research Data in the European Union Open Data Directive and the Implementation in Italy', forthcoming (2022) The Italian Law Journal <https://www.theitalianlawjournal.it/>.

13 European Commission, 'Making the most of the EU's innovative potential. An intellectual property action plan to support the EU's recovery and resilience', COM/2020/760 final <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0760>.

14 Caterina Sganga, 'The Many Metamorphoses of Related Rights in EU Copyright Law: Unintended Consequences or Inevitable Developments?', (2021) 70(9) GRUR International, 821 <https://doi.org/10.1093/grurint/ikab071>.

15 The contradiction is old and not only European. See, *e.g.*, Paul A. David, 'Can 'Open Science' be Protected from the Evolving Regime of IPR Protections?', (2003) Stanford SIEPR Discussion Papers <https://siepr.stanford.edu/publications/working-paper/can-open-science-be-protected-evolving-regime-ipr-protections-revised>; Jerome H. Reichman, Ruth Okediji, 'When Copyright Law and Science Collide: Empowering Digitally Integrated Research Methods on a Global Scale', (2012) 96(4) Minnesota Law Review, 1362 <https://scholarship.law.duke.edu/faculty_scholarship/2675/>.

16 Cf. recital n. 12 of the Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

the directive—once in 2005 and again in 2018[17]—the European Commission admited that there is no evidence on the impact of a *sui generis* right in the production of databases. Nonetheless, the EU has decided to leave the directive unchanged. At present, the wind apparently seems to be changing (at least with reference to the database directive). In the European data strategy, the watchword has become "sharing".[18]

28 For example, Article 1.6 of the recently introduced Directive (EU) 2019/1024 (Open Data Directive) states:

29 "The right for the maker of a database provided for in Article 7(1) of Directive 96/9/EC shall not be exercised by public sector bodies in order to prevent the re-use of documents or to restrict re-use beyond the limits set by this Directive."

30 The push towards sharing data is also to be acknowledged in Data Governance Act and in the proposal of Data Act.[19] However, the progressive strengthening of intellectual property contrasts the development of Open Science. An additional example of this issue comes from the controversial Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC. Article 3 of Dir. 2019/790/EU is the exception to the copyright and database *sui generis* right that, amongst the provisions of the directive, affects the issue of data sharing in the scientific and academic fields more closely.[20] Without further details, it may suffice here to explain that the exception is guarded by a series of restrictions, placed to protect the interests of the copyright holders. The result is that the room for the application of the provisions is largely reduced. This example deserves to be mentioned because it offers an idea of the current EU legislative policy on copyright and related rights. Exclusive rights should be counterbalanced by specific exceptions and limitations. But currently the system of exceptions and limitations has turned into a tangle of complex and scarcely useful rules scattered in several different and poorly coordinated directives.

31 The problem of the endless expansion of copyright also pertains to specific political and constitutional choices. The European Union decided to insert intellectual property (including copyright) in the Article 17.2 of the Charter of Fundamental Rights of the European Union,[21] without any reference to the limits of the exclusive rights (e.g., to the social function).[22] As of today, a spark of hope for (re)balancing intellectual property remains in the work of international and national courts, with all its risks[23] and opportunities.[24] In short, even if the world of university and scientific research would succeed to obtain the so-called Digital University Act, this

17 European Commission, 'First evaluation of Directive 96/9/EC on the legal protection of databases', Brussels, 12 December 2005 <https://ec.europa.eu/info/sites/default/files/evaluation_report_legal_protection_databases_december_2005_en.pd>; European Commission, 'Evaluation of Directive 96/9/EC on the legal protection of databases', Brussels', 25 April 2018, SWD(2018) 146 final <https://digital-strategy.ec.europa.eu/en/library/staff-working-document-and-executive-summary-evaluation-directive-969ec-legal-protection-databases>.

18 Mireille van Eechoud, 'Please share nicely — From Database directive to Data (governance) acts' (*Kluwer Copyright Blog*, 18 August 2021) <http://copyrightblog.kluweriplaw.com/2021/08/18/please-share-nicely-from-database-directive-to-data-governance-acts/> accessed 8 September 2022.

19 European Commission, Directorate-General for Research and Innovation, Senftleben, M., *Study on EU copyright and related rights and access to and reuse of data*, (n. 8); European Commission, Directorate-General for Research and Innovation, Eechoud, M., *Study on the Open Data Directive, Data Governance and Data Act and their possible impact on research*, (n.8); Marta Arisi, 'Open Knowledge. Access and Re-use of Research Data in the European Union Open Data Directive and the Implementation in Italy', forthcoming (2022) The Italian Law Journal <https://www.theitalianlawjournal.it/>.

20 See, *e.g.*, Rossana Ducato, Alain M. Strowel, 'Ensuring Text and Data Mining: Remaining Issues With the EU Copyright Exceptions and Possible Ways Out', (2021) 43(5) E.I.P.R., 322, preprint available at <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3829858>; Thomas Margoni, Martin Kretschmer, 'A deeper look into the EU text and data mining exceptions: harmonisation, data ownership, and the future of technology' (2022) 71(8) GRUR International, 685 <https://doi.org/10.1093/grurint/ikac054>.

21 Caterina Sganga, *Propertizing European Copyright. History, Challenges and Opportunities* (1st edn Edward Elgar, 2018, 88 ff.

22 Christophe Geiger, 'Intellectual Property Shall be Protected? – Article 17(2) of the Charter of Fundamental Rights of the European Union: a Mysterious Provision with an Unclear Scope', (2009) 31(3) E.I.P.R, 115.

23 Cesare Salvi, *L'invenzione della proprietà. La destinazione universale dei beni e i suoi nemici* (1st edn Marsilio 2021) 128.

24 See, *e.g.*, Federica Giovanella, *Copyright and Information Privacy. Conflicting Rights in Balance* (1st edn Edward Elgar), 6-44; Caterina Sganga, 'A Decade of Fair Balance Doctrine, and How to Fix It: Copyright Versus Fundamental Rights Before the CJEU from Promusicae to Funke Medien, Pelham and Spiegel Online' (2019) 41(11) E.I.P.R., 672; Christophe Geiger, Elena Izyumenko, 'From Internal to External Balancing, and Back? Copyright Limitations and Fundamental Rights in the Digital Environment' (December 2, 2021), forthcoming in: Conception Saiz Garcia and Julian Lopez (eds.), *Digitalización, acceso a contenidos y propiedad intelectual* (Madrid, Dykinson, 2022), available at SSRN: <https://ssrn.com/abstract=3976407> or <http://dx.doi.org/10.2139/ssrn.3976407>.

island of freedom would still not solve fundamental problems of the legal framework, which pertain to the constitutional structure of the EU and its general policy on intellectual property and data. In other terms, without rethinking the legal framework of intellectual property and copyright at international and European level it seems impossible to imagine a transition to a full Open Science system.[25]

D. University, data, and infrastructures

32 As mentioned, the scenario described is not only informed by intellectual property and data policy issues, but also by issues regarding universities' infrastructures. The large commercial platforms dominate the Internet through intellectual property, but also by means of factual control of data and computational power. It is no coincidence that the most advanced studies on the development of Open Science and the privatization of research data end up focusing on infrastructures.[26] These studies converge in advancing solutions that aim to regain control of the essential infrastructures or, at least, to support infrastructures that are independent from the Big Tech. In this paper, we focus on three of these proposals: SPARC road map (Claudio Aspesi et al.), Plan I (Biorn Brembs et al.), and Digital Europa (Massimo Florio).

33 In the updated version of the report of Claudio Aspesi et al. for SPARC, there is a road map for an open data infrastructure.[27] One of the proposed actions is to invest in community-controlled infrastructure:

34 Corporations move fast - often much faster than academic institutions. Since the November SPARC 2019 Roadmap for Action, the pandemic has understandably set back plans for community investment in infrastructure. However, commercial players have continued to advance their plans for leveraging data analytics and further entrenching themselves in critical academic processes. Senior leaders of academic institutions still have an opportunity to mobilize the financial resources and talent necessary to develop community-owned infrastructures that both support open and equitable dissemination and preservation of research communications and the attached metadata, and that also allow analyzing those metadata to help senior decision makers manage their institutions by their own priorities.

35 Considering the benefit to the community, the resources required to fund such a project may be a wise investment. Building a fully functioning research dissemination and data analytics company may require an investment of less than $40–50 million, but this money must be raised, and that leads to questions of whether this is best accomplished by partnerships between the academic community and the private sector, between the academic community and NGOs, or between the academic community and governments. In turn, this requires understanding if there is an opportunity to build and operate a sustainable community-owned infrastructure, how it should be funded, and whether the intellectual and knowledge output of academic institutions should generate financial resources to fund this infrastructure. The launch of Invest in Open Infrastructure (IOI) provides appropriate coordination for the academic community to develop a full community-controlled infrastructure. Alternatively, leaders from research institutions around the world should commit to building this infrastructure, with the support of funding bodies, if necessary. This leadership group would commit to designing the infrastructure to further the interests of the global academic community, and not just those of wealthy countries or institutions.

36 The choice between open and closed data and knowledge has implications along a spectrum of issues extending beyond funding academic knowledge infrastructure. For example, open data raises national security and economic competitiveness issues, as well as questions about academic freedom, academic priorities, and even the fundamental goals of academic institutions. Launching a structured process to analyze these implications appears a critical step that leaders of academic institutions need to take sooner rather than later.

37 Plan I—where the "I" stands for infrastructure—

25 There is a growing number of initiatives that are proposing intellectual property and copyright reforms finalized to a more balanced and flexible system. See *e.g.* Creative Commons <https://creativecommons.org/about/program-areas/policy-advocacy-copyright-reform/>; Communia Association <https://communia-association.org/>, ReCreating Europe <https://www.recreating.eu/the-project/>; Right to Research in International Copyright Law <https://www.wcl.american.edu/impact/initiatives-programs/pijip/impact/right-to-research-in-international-copyright/>.

26 One of the last relevant documents comes from LERU. See LERU, *Developing a strong, politically and societally relevant research infrastructure ecosystem in Europe*, September 2022 <https://www.leru.org/publications/research-infrastructures>.

27 Claudio Aspesi et al., *SPARC Landscape Analysis and Roadmap for Action* (September 2021), 38-39 <https://sparcopen.org/wp-content/uploads/2021/10/2021-Landscape-Analysis-101421.pdf>.

is a proposal advanced by Björn Brembs et al.[28] Brembs and his colleagues start from an analysis of the current status. For thirty years scientists and university researchers have abandoned the field of innovation of research infrastructures. That field was occupied by large commercial publishers now data analysis companies, such as Elsevier, and by Big Tech as Microsoft. Plan I is composed by two mail actions.

38 1) Opening the standards of texts, data and code in order to trigger the competition of publishing services. In other words, opening the standards would help to decrease the market power of the big oligopolies and destroy the "vendor lock-in" (economic dependence on the oligopolist supplier).

39 2) Incentivizing the use of open standards and reforming the research assessment. In particular, according to the principles of DORA declaration,[29] evaluation criteria that reward the publication venue instead of the content of the publication should be abolished.

40 Research and scholarship are crucially dependent on an information infrastructure that treats all scholarly output, text, data and code, equally and that is based on open standards and open markets. With concerted action it is possible to realize such an infrastructure without additional costs to the scientific community. The benefit to society, due to the increase in efficiency and reliability of science, would be enormous. Researchers, decision-makers and civic society must work cooperatively and quickly towards such a solution[30].

41 The final goal is to dismantle the oligopolistic scientific publishing system and build a competitive market of editorial services in which texts, data and codes are freely accessible and reproducible. According to Brembs and colleagues, in a competitive market of publishing services, research institutions would save 90% of current costs for the subscriptions to oligopolistic databases.

42 The Digital Europa proposal comes from the economist Massimo Florio.[31] The alternative to intellectual oligopolies—it is argued—can be a large European public research infrastructure.

43 It would be necessary to imagine a European supranational subject who does not only have coordination functions, but also managerial autonomy, budget, tangible and intangible capital and dedicated staff with the mission of creating a public platform alternative to the Tech Giants.[32]

44 These three proposals show that there is great and widespread awareness of the problems afflicting current academic and research data ecosystem. However, all these proposals leave the legislative framework of intellectual property rights unchanged, and this is a limitation. Next to the changes of the infrastructures, there is a need to limit and reorder intellectual property rights that insist on data.

E. Is there no alternative? An Italian debate about remote learning

45 Yet, the invention and the success of bottom-up initiatives like Richard Stallman GPL license and Lawrence Lessig's Creative Commons licenses might suggest that people of good will could pursue the public use of reason even *rebus sic stantibus*, both by playing intellectual property against itself and by applying the funders' leverage, as suggested by Brembs' plan I. Such initiatives, however, are located in a proprietary environment so pervasive to be taken for granted even by the most critical intellectuals: are they actually able to change the system by themselves without being swallowed by it? An Italian example might help us to find an empirical answer.

46 The COVID-19 pandemic forced Italian universities to shift their teaching and learning activities online. Most of them preferred proprietary platforms like Microsoft Teams, Google Meet and Zoom, even though their choice exposed them to the risk of unlawful processing of personal data, as the CJEU ruling C-311/18 (Schrems II) confirmed.[33] Such a

28 Björn Brembs, Konrad Förstner, Michael Goedicke, Uwe Konrad, Klaus Wannemacher, Jürgen Kett,'Plan I - Towards a sustainable research information infrastructure' (2021) Zenodo <https://doi.org/10.5281/zenodo.4454640> accessed 8 September 2022.

29 See The Declaration on Research Assessment (DORA) <https://sfdora.org/>.

30 Björn Brembs, Konrad Förstner, Michael Goedicke, Uwe Konrad, Klaus Wannemacher, Jürgen Kett,'Plan I - Towards a sustainable research information infrastructure' (2021) Zenodo <https://doi.org/10.5281/zenodo.4454640> accessed 8 September 2022.

31 Massimo Florio, *La privatizzazione della conoscenza* (1st edn Laterza October 2021), 178.

32 Ibid., 209-210 (translation from Italian to English by Roberto Caso).

33 Rossana Ducato, Giulia Priora, Chiara Angiolini, Alexandra Giannopoulou, Bernd Justin Jütte, Guido Noto La Diega, Leo Pascault. Giulia Schneider 'Didattica di emergenza o Emergency Remote Teaching: un'analisi empirica in tema di privacy e diritto d'autore dei termini e condizioni dei servizi online più diffusi', *Law and Media Working Paper Series*, 2 (2020). <https://www.medialaws.eu/wp- content/uploads/2020/06/Law-and-Media-WPS-2-2020.pdf>.

sudden shift away from classrooms sparked a lively debate on remote teaching. For example, a renowned philosopher like Giorgio Agamben suggested that the digitization of teaching itself was a technological barbarity that threatened the very possibility of a community of knowledge.[34] More enthusiastic newcomers, on the other hand, saw Microsoft Teams and Google Meets as the frontier of an ICT evolution that was both ineluctable and desirable.[35]

47 Umberto Eco would probably have viewed the Italian debate about remote teaching just as another instance of the clash between apocalyptic and integrated intellectuals.[36] In 1964, Eco could still afford to take an intermediate position between the radical yet ineffective critique of the former and the conformism of the latter, by asking "in what circumstances man's relationship with the production cycle made him a slave to the system, and what was required in order to elaborate a new image of man in relation to the objective conditions; a man not free *from* the machine, but *free in relation to the machine*."[37] Nowadays, however, we have to consider the possibility that "the machine" has become so powerful that no third way, between apocalyptic refusal and integrated complacency, could be actually taken.

48 First of all, Italian universities do not fear being customers of companies whose business model is so-called surveillance capitalism.[38] E-mail, for instance, is a critical infrastructure both for public administration in general and for universities and research institutions in particular: yet, the CINECA, the Minister of Education and the bulk of Italian universities outsourced it to US-based cloud providers like Microsoft and Google,[39] giving them the opportunity to capture a lot of data and metadata about their activities.

49 Furthermore, the monopolists of surveillance capitalism are not only able to directly manipulate the experience of all their "users",[40] but their very financial power can influence research itself, by selectively funding scholars whose beliefs are aligned with their interests.[41]

50 Finally, the surveillance capitalism model is being embraced by commercial scientific publishers as well, by "expanding beyond journals and textbooks to include research assessment systems, productivity tools, online learning management systems – complex infrastructure that is critical to conducting the end-to-end business of the university. Through the seamless provision of these services, these companies can invisibly and strategically influence, and perhaps exert control, over key university decisions – ranging from student assessment to research integrity to financial planning".[42]

51 The only way not to be worried about such a deep entanglements between universities and Big Tech monopolies is conceiving information science as a kind of computer science literally taken, whose task is designing systems for storing, assembling, and moving data. Indeed, if computer science were just about neutral "pipes" transporting data without shaping and influencing the environment in which teachers teach and researchers search, it would be irrelevant whether software and clouds are free or proprietary, closed, or open-source, centralized in the hands of a very few oligopolists, or decentralized among the organizations that are using and developing them. The difference, if any, would be calculated by the institutional decision-makers in the usual terms of cost and efficiency, as befits universities understanding themselves as hierarchically structured enterprises.

52 However, viewing ICT as a science about "pipes" misses, at least, one major point. The automation made possible by information technology is based on formal systems and procedures executable by machines that can be implemented without the intervention of human interpreters.[43] Therefore, it applies rules that are stronger than laws, because the enforcement of the latter still depends on

34 Giorgio Agamben, 'A che punto siamo? L'epidemia come politica', Macerata, Quodlibet, 2001, Also available at <https://gliasinirivista,org/requiem-per-gli-studenti>.

35 Christian, Fuschetto, 'Agamben e le insensatezze sulla dittatura telematica', Scienza in rete, 2020. <https://www.scienzainrete.it/articolo/agamben-e-le-insensatezze-sulla-dittatura-telematica/cristian-fuschetto/2020-06-06>.

36 Umberto Eco, *Apocalyptic and Integrated Intellectuals: Mass Communications and Theories of Mass Culture* (1964), now in U.Eco, R. Lumley (ed) *Apocalypse Postponed,* Bloomington and London, Indiana University Press, 1994, pp. 17-35.

37 *Ibid*., p. 23.

38 Shoshana Zuboff,. 'Big Other: Surveillance Capitalism and the Prospects of an Information Civilization', *Journal of Information Technology* 30, n. 1 (March 2015), pp. 75–89 <https://doi.org/10.1057/jit.2015.5>.

39 Damiano Verzulli, *La posta elettronica negli Atenei Italiani*, 2021 <https://dvblog.soabit.com /la-posta-elettronica-negli-atenei-italiani>

40 Richard Stallman, *Reasons not to be used by Facebook* <https://stallman.org/facebook.html>.

41 Laurie Clarke, Oscar Williams, Katharine Swindells, 'How Google Quietly Funds Europe's Leading Tech Policy Institutes', The New Statesman, July 30 2021, https : / / www . newstatesman . com / business / sectors / 2021 / 07 / how - google - quietly - funds - europe - s - leading - tech - policy -institutes

42 Claudio Aspesi et al., *SPARC Landscape Analysis* (2019) (n.5).

43 Edsger W. Dijkstra, *On a cultural gap* (EWD 924). E.W.Dijkstra Archive, 1986. <https://www.cs.utexas.edu/users/EWD/transcriptions/EWD09xx/EWD924.html>.

the mediation of humans.[44] Even remote learning platforms collect and select data, and implement relations and patterns in an automatic way; therefore, the environment they shape cannot avoid being stiff, non-negotiable, and not open to interpretations. "While engineers have to come to terms with the material world, programmers (and their employers) are legislators of the universes they create."[45] Hence, choosing free software, whose code is known and modifiable, and preferring community platforms is not a luxury, but a necessity. Shifting classes and libraries to virtual environments subject to surveillance and non-negotiable uses implies alienating the control over our teaching, our texts, and our research to foreign commercial monopolies whose concerns are not necessarily aligned with the purposes of research and teaching.[46]

F. The GARR: the living legacy of a public infrastructure

53 Both the enthusiastic neophytes and the university administrators advocating the use of Microsoft and Google's proprietary platforms used to believe, or, at least, to state that there was no alternative. However, during the COVID-19 pandemic, a minority of institutions (e.g., the Politecnico di Torino) and professors demonstrated that such a belief was baseless. Indeed, in Italy, there was a free and public alternative to proprietary platforms and clouds: the remote teaching platforms provided by the GARR Consortium.[47]

54 The GARR Consortium is a public and non-profit association federating Italian universities and research institutions; its task is designing and managing the ultra-broadband network dedicated to the Italian research and education community. Although understaffed and underfunded, it succeeded and succeeds both in offering free, open, and privacy-friendly remote learning platform to schools, universities and to even individual teachers that refuse to give their data to Big Tech. Furthermore, it offered a major contribution to the network iorestoacasa.work,[48] built from scratch by a group of free software activists.

55 The debate could have been nothing more than an unarticulated partisan fight between apocalyptic and integrated intellectuals, with both sides tacitly agreeing that distance education cannot escape the grip of Big Tech, especially where, as in Italy, universities are too small and poor to confront Big Tech without being swallowed up by it. The very existence of the GARR, however, offered a realistic, non-utopian alternative, which depended on the legacy of conceiving universities, teachers and even students as parts of a national system.

56 The neoliberal university has become more similar to a corporate enterprise than to a republic of scholars: in particular, their "decision making takes place within more hierarchical structures designed to provide leaders with authority and managerial resources to make and enforce strategic decisions within the organization."[49] The philosophy of GARR, however, is very different:

57 "GARR network is unique and differs from commercial providers not only in its institutional nature, but also for its extremely high transmission capacity (up to 200 Gbps) in both download and upload. GARR governance model promotes inclusiveness and *involves users in decision-making on the future evolution of the network and digital infrastructures*. Unlike with commercial providers, *users on GARR network aren't just consumers of data, content and services; they can also share their own resources for the benefit of the scientific community*, thus becoming active contributors."[50]

58 Furthermore, the first paragraph of the Article 33 of the Italian constitution guarantees both the freedom of arts and sciences, and of the *teaching* of them. Therefore, the professors that dared to criticize the administration of their own universities and refused to use the proprietary platforms that the bulk of university administrators had chosen for them were able to appeal to a constitutional-grade principle without losing the possibility to teach by taking part in the experimentation of GARR's platforms. Although the dissenters were a minority, no university administrator could compel them to use Google or Microsoft platforms: on what basis, indeed, could they have coerced them to abstain from using the services provided by an organization to which the universities themselves belonged?

44 Joseph Weizenbaum, *Computer power and human reason.* San Francisco: W. H. Freeman and Company, 1976, p. 12; Alain Supiot, *La gouvernance par les nombres.* (Fayard, Paris, 2015), 'Introduction'.

45 Weizenbaum, *Computer power and human reason,* p. 115 (n36).

46 The conference *Fra diritto e informatica: esperienze di teledidattica a confronto*, <https://cisp.unipi.it/fra-diritto-e-informatica-esperienze-di-teledidattica-a-confronto/>, 2021 hosted a lively debate between two computer scientists, Antonio Cisternino and Giuseppe Attardi, about the University of Pisa's choice to adopt Microsoft Teamd as the preferred remote teaching platform, which displayed these two conflicting approaches very clearly.

47 See <https://garr.it/en/garr-en>.

48 <https://iorestoacasa.work>.

49 Ivar Bleiklie. 'New Public Management or Neoliberalism, Higher Education', In *Encyclopedia of International Higher Education Systems and Institutions*. Dordrecht: Springer, 2018. Doi: 10.1007/978-94-017-9553-1_308-1.

50 GARR, Who we are <https://www.garr.it/en/garr-en>.

G. Conclusion: Siding with power or being a power in its own right?

59 According to Wilhelm von Humboldt, it was "a peculiarity of the higher scientific institutions that they always treat science as a problem that has still not been fully resolved and therefore remain constantly engaged in research".[51] Hence, a Humboldtian university could not have reduced teaching to a kind of automated delivery of notions,[52] because its purpose was involving students in an unfinished quest. Students and teachers, however, do not need to embrace Humboldt's philosophy to ask themselves not only what they teach or are taught, but also how and why they teach or are taught: how is it possible to learn in environments in which students and teachers are surveilled, conditioned and sometimes censored?[53]

60 The tools we use also have a pedagogical function, because they convey and apply the ways of relating to the world according to which they were designed.[54]And even Microsoft's or Google's remote teaching platforms have their own pedagogy: the pedagogy of digital minority. They are designed to make administrators, technicians, teachers, and students, each in their own way, passive, disengaged, dependent, ignorant, addicted.[55] In other words, they accustom people to consider the platforms as an unchangeable environment which cannot be chosen or rejected, so that only duly marginalized apocalyptic intellectuals or "Luddites" dare to challenge it. But does such a disempowering pedagogy suit a university wishing to attract students by providing something so specific that it cannot be replaced by digital platforms and their data analytic? Generally speaking, a university outsourcing its primary activity, i.e., teaching, to commercial platforms and their algorithms not only deprives itself of the opportunity to conceive of and experiment with new methods and remote learning environments, but it also exposes itself to the risk of becoming first submissive and eventually redundant.[56]

61 Yet, Karen Maex[57] and LERU did ask the EU legislators for a Digital University Act to protect independent and public knowledge, as if universities were unable to keep themselves free from the grip of the influence of surveillance capitalism. Indeed, if such an influence depends on a growing and pervasive intellectual property regulation and on legal and *de facto* monopolies producing huge private collection of data, convoluted privacy rules regulating data collection and consent are not enough.[58] Accordingly, the Digital University Act aims to both reduce private collections of data and to make data Findable, Accessible, Interoperable, Reusable (FAIR), by entrusting their custody to research institutions whose independence from commercial purposes is guaranteed by the law.

62 It is worth noticing that the GARR is already able to comply with Karen Maex's requests, both because it is a public infrastructure aimed to be independent of any commercial cloud and because of its inclusive and federal structure that provides an environment for research built by and for researchers. Its example shows that even without a law, a Humboldtian legacy institution was and would be able to provide, among other things, remote learning platforms for the public use of a technologically civilized reason. The choice between siding with power, as replaceable peddlers of training and subjugation, and being a power in its own right, as actors with active critical thinking skills and technology, would be up to Italian universities themselves.

63 Why, then, was the GARR infrastructure chosen just by a minority of institutional and individual users?

51 Wilhelm von Humboldt, «Über die innere und äussere Organisation der höheren wissenschastlichen Anstalten in Berlin», ed. Christoph Markschies, 229–241. Humboldt-Universität zu Berlin, Humboldt-Universität, Leitung und Verwaltung, 2010. <https://doi.org/10.18452/4653>, transl. in <http://germanhistorydocs.ghi-dc.org/sub_document.cfm?document_id=3642&language=english>.

52 Google claims to provide adaptive learning technologies that customize teaching and educational resource according to the needs of each individual student, by having the data it gathered about us processed by an AI (Ben Williamson. 'Google Magic'. *Code Acts in Educatio*n, 2022 <https://codeactsineducation.wordpress.com/2022/03/17/google-magic >. The rhetoric claiming that automatic educational technologies can personalize teaching, although they indeed normalize it, is not a novelty (Paulo Blikstein and Izidoro Blikstein. «Do Educational Technologies Have Politics? A Semiotic Analysis of the Discourse of Educational Technologies and Artificial Intelligence in Education». *Algorithmic Rights and Protections for Children*, 29 giugno 2021. https://wip.mitpress.mit.edu/pub/do-educational-technologies-have-politics/release/1).

53 Chris Hedges, 'On Being Disappeared', in: T*he Chris Hedges Report* (2022). <https://chrishedges.substack.com/p/ on-being-disappeared>.

54 Weizenbaum, *Computer Power*, p. 18 (n36).

55 Brett Frischmann, Evan Salinger. *Reengineering Humanity* (Cambridge U.P.), 2018, I.2.1.

56 See for instance Amanda Meade, 'Anger after News Corp and Google Australia set up journalism academy at university business school, *The Guardian*, 2022. <https://purl.archive.org/purl/mcpievatolocit/anger>

57 Maex, *Protect independent and public knowledge* (n 3).

58 Ari Ezra Waldman, 'How Big Tech Turns Privacy Laws Into Privacy Theater', *Slate*, 2021. <https://slate.com/technology/2021/12/facebook-twitter-big-tech-privacy-sham.html>.

The reason is the same as why Karen Maex calls for a special law for something that universities still capable of "generous thinking" should be able to do by themselves.

64 Universities do not live in a Humboldtian world any longer and are affected by the concentration of power and influence among tech companies that was made possible by the pervasiveness of intellectual property rules and of the monopolies promoted by them. Hence, even where there would be alternatives, they are embraced just by a minority of insulated dissenters. More radically, we might also ask whether protecting universities as institutional dissenters without rethinking and limiting the meaning and the scope of intellectual property could really bring them out of insulation. Could knowledge actually be independent and public if the public use of reason becomes a privilege only cultivated within the walled gardens of a handful of institutions?

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