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July 6, 2020

**The EdTech Trojan Horse; A critical narrative of the emergency pivot to online learning**

**Written by:** Nathalie Lossec, Nicholas Millar, Mark Curcher and Marko Teräs

*Disclaimer: The views, thoughts, and opinions expressed in this paper belong solely to the authors, and do not express the authors' employers, organisations, committees or other groups or individuals.*

**Introduction**

Almost from the start of confinement in March to April 2020, we began a correspondence on our first-hand experience of the move to online teaching without any preparation whatsoever. These experiences, which quickly morphed into concerns that ranged from equity, to data protection to professional ethics. Like many of our colleagues, we were thrilled to see so many apps and sites becoming free to "help us teach online". Organisations like the Department For Education (U.K.) and UNESCO began producing lists of online tools to help educators which were initially welcomed with open arms. Upon further inspection though, when one would reach the bottom of these lists and read a confusing disclaimer, things became a lot more complicated. As a result, we took a critical look at these emergency distant learning solutions provided and their relations to the General Data Protection Regulation. Finally, our correspondence started a discussion with Marko Teräs, CARDE Lead Researcher at TAMK and Mark Curcher, Senior Lecturer at TAMK, which concludes this paper.

# EMAIL 1. 26 March 2020.  Nathalie to Nicky

To; nicholas.millar

From; nathalie.lossec

Date: 26/03/2020

Subject: Covid-19 & emergency resources

Dear Nicky,

I hope you are well and coping in the Czech Republic, you seem to have a smart but very restrictive Covid-19 response over there, whereas, in Blighty, we were going for a "herd immunity" approach until recently.

Presently we are in lockdown, so school has moved online and upon request from management we are planning for emergency teaching only. This means there are no expectations for a fully functional online course. We are solely using Google Classroom, where we post weekly lessons and then each Monday we monitor and mark the completed

work. As an educator, I am thankful for Google education in general. Our current working conditions may be temporarily worse but in these uncertain times, at least I am still able to work.

However, you know me, I am a born worrier and presently I am concerned about a few things. First the main challenge is (as the Office for National Statistics had already flagged in their report in 2019), inequality of access to technologies. As a result, our school had anticipated this issue just before lockdown. They began printing packs of work for students with no internet connection as well as conducting regular phone calls to keep in touch. The school also lent school Chromebooks to families who had a wi-fi connection but needed more devices to be able to cope with the move online. I was expecting the DfE to address the issue on a national level, but yet, to no avail. Second on my list of worries is the long term effects that our increased screen consumption (presumably with reduced exercise rates) will have on students' health, the level of obesity and depressive symptoms (Stiglic and Viner, 2019) are bound to surge.

Thirdly, with this global educational move online, I feel extremely suspicious of all these new apps or sites, launching new 'freebies' for educators, students and parents to help with home-schooling. Even though we, teachers, have been briefed on GDPR, we are finding ourselves being enticed by new "innovative" offers, which makes me wonder about our general relationship with Ed-tech and data. It reminded me of the description of EdTech (and big data) and how it brings a reductionist and scientific approach to education which seeks to quantify and measure learners in order to create their own grounded theory for 'personalised education' (Williamson, 2017). We must identify and critically approach these 'individualised pedagogies' as they feed back into our educational system under the cloak of 'good' educational practice and data science. Is it a generational difference regarding Ed tech like Prensky (2001a) pointed out with his digital immigrants and digital native terms? Or, is it a lack of critical thinking from "the net generation" as Tapscott, (1997) and Oblinger & Oblinger (2005) observed? From what I am witnessing with younger teachers, their critical reflection is somewhat absent when it comes to 'freebies' and Ed-tech. Teachers should behave "*as critical protagonists in wider debates on the new forms of education, subjectivity, society and culture worked-through by contemporary technological change*" (Bayne, 2015, p.16). Besides this, these attractive offers do not just come from private Ed-Tech companies, one alarming new trend is for well-renowned education agencies to promote lists of unsavoury tools while at the same time rejecting responsibilities by putting legal disclaimers(Gov.UK,2020; UNESCO, 2020). For instance, did you see the DfE response and UNESCO's COVID-19 Education Response, especially their list of 'Distance Learning Solutions'? I am presently evaluating the risk to data privacy that these UNESCO "solutions" pose. I am attaching a spreadsheet of my findings to this email. Let me know what you think.

Anyway, on that "cheery" note, I shall leave you.

All the best to you and your loved ones.

Nathalie

# EMAIL 2. 28 March 2020. Nicky to Nathalie

To; nathalie.lossec

From; nicholas.millar

Date: 28/03/2020

Subject: RE: Covid-19 & emergency resources

Dear Nathalie,

It is good to hear from you, we are all doing well here. The government reacted quickly by shutting everything down and mandating the wearing of masks outside the home. We have been teaching online for almost two weeks now.

We have been instructed by SLT [Senior Leadership Team] to slow the pace of learning and adjust our academic expectations to be relative to the situation at hand. Most are coping well but we are concerned that some may be overwhelmed and that we should prioritise social-emotional wellbeing over academics. Similarly, I am also glad we had Google Education running before the crisis and also the fact that all of our students have school-issued personal laptops, which has ensured immediate access to the online program for all students.

These are good questions about the use of new apps and websites. I know how you feel about younger teachers and critical reflection of EdTech, though currently, I feel for all teachers there is less time to reflect on EdTech as time increasingly becomes the rarest of resources, given our other duties. When time is in short supply, I have to admit, I seek the EdTech 'quick fix' for lesson planning.

It's a little suspicious how many of these companies have suddenly made their online products 'free' (even for a short time). I am wary of putting in my credit card details for a 'free trial'. Like the UNESCO list, I also saw a [list of online educational tools being shared in a forum on Facebook](#) and as you can see there is no warning to teachers or parents regarding data collection or privacy. It is simply shocking how students and teachers from all over the world have simultaneously started to heedlessly pump their data into these sites and platforms. How much? Where and with who is all this aggregated data going to end up and for what reason?

You raise a good point about renowned organisations (such as UNESCO) posting unvetted websites and tools on their websites and then labelling them as 'distance learning solutions'. Under closer inspection, these 'solutions' may become problematic to grassroots organisations. After your comments about security concerns on some of the platforms suggested by the list, I did a little further investigation and actually, most of the websites, platforms and apps on these lists have had issues ranging from questionable data and privacy policies such as Duolingo (Privacy International, 2019) to full-on data breaches like Edmodo

(Edmodo, 2017). I am also extremely shocked to see Zoom on the list after the 'Zoombombing' fiasco (Xia et al, 2020; O'Flaherty, 2020) which I'm sure you saw in the news led to uninvited attendees in Zoom meetings posting pornographic and inappropriate content to users, a serious child protection concern in anyone's opinion wouldn't you agree? It is shocking that UNESCO deems it acceptable to associate itself with any EdTech that exhibits privacy or child protection concerns, of any type.

I want to elaborate on the word 'associate' because I am actually not quite sure what word to use. It is hard to explore what UNESCO is doing here. Focusing on the text at the top of the webpage 'Distance Learning Solutions' UNESCO have said in their introduction, "*While these solutions **do not carry UNESCO's explicit endorsement**, they tend to have a wide reach, a strong user-base and evidence of impact.*" Additionally, at the bottom of the page, almost out of view, is the following, "*UNESCO does not endorse any product, service, brand or company.*" If UNESCO is not "endorsing" these links, then what are they doing? Recommending? Promoting? Simply posting? This is very confusing to educational administrators and frontline teachers seeking a quick and reliable solution to their current and possibly desperate situation.

I am wary that these suggested platforms may be seen as shiny new toys or quick fixes during this time. I think we need to slow down and think a little about data privacy, corporate encroachment and how third parties are going to use all the new data that is being collected. What is your stance? How do you think schools can address this?

Keep safe and best wishes,

Nicky


# EMAIL 3. 30 March 2020.  Nathalie to Nicky


To; nicholas.millar

From; nathalie.lossec

Date: 30/03/2020

Subject: RE:RE: Covid-19 & emergency resources


Dear Nicky,

Glad to hear you and your family are ok. All is as "well" as it can be in Blighty. Looking at our present situation, we are in full lockdown and schools have only remained open for vulnerable and key workers' children. The IT provision is still not ideal, but we are finding our ways online and setting into a routine.

Regarding your findings on the UNESCO distance learning solutions list, I know! Shocking, isn't it?

UNESCO have listed nine MOOC platforms but only one does not present risks to its users/subscribers' privacy; the same applies to the collaboration platforms that support live-video communication and yeah, they even added Zoom on this. Also, most learning management systems here are tracking and/or sharing data with third parties. Any systems or apps for mobile phones mentioned on the list also track users' data. Additionally, the Self-directed learning content tools are either tracking or sharing data with third parties or have limited security, which means a future breach could not be ruled out. Some have previously had a breach like the British Council in 2009 and Youtube in 2019. Overall, it is a pitfall for school leaders and teachers.

I understand that UNESCO was quickly creating a document to help during the crisis but on top of everything else that is going on in our teaching and personal lives right now, it would be nice to rely on an "irreproachable" organisation for help and guidance. Instead we are expected to go through this list and read every privacy policy just to make sure we, teachers, are in-line with the GDPR.

The Department of Education also published a less exhaustive list. I am thankful for their input, but I was appalled that they had put a legal disclaimer to place the liabilities on anyone but themselves;

 *"The DfE does not at any time: verify whether the Resources that can be accessed through this website comply with the General Data Protection Regulation (GDPR) and other legislation governing the processing of personal data nor has it carried out any independent security certification or tests."* (DfE, 2020)

To me, this is a dreadful and alarming behaviour that rhymes with John Selden's expression: "do as I say, not as I do".

I don't know for you, Nicky, but for me, the teaching standards that I have pledged to follow, makes me ethically responsible for my colleagues' and students' rights to be respected when using digital technologies upon my request. Thus, I have to be conscious of the privacy settings, data collection and user limitations of the apps, websites and software that I promote and utilise. I must be especially careful if they are enticingly "free".

Yet, this should not be a solo ride. Being not only a national issue but a global issue, the DFE has a responsibility to schools and teachers to be more proactive and raise awareness in their stakeholders of GDPR, especially, when it concerns minors. As a result, they should have published a list that was carefully screened in-line with GDPR and the 2018 Data Act. As mentioned before about UNESCO, it took me about two hours to briefly assess the list for issues and find red flags on multiple entries on that list. Is this an unreasonable expectation for an organisation which, in their Ministerial Department alone, have almost four thousand staff members (DFE, 2018)?

Anyhow, I can't wait to read your take on these topics.

All the best to everyone, hugs to the dog,

Nathalie

# EMAIL 4.  05 April 2020. Nicky to Nathalie.

To; nathalie.lossec

From; nicholas.millar

Date: 05/04/2020

Subject: RE:RE:RE: Covid-19 & emergency resources

Dear Nathalie,

I hope things in the UK have improved since your last message. Life here is looking to be better, the Czech prime minister today announced that the country may return to normal around mid-May/early June.

What you mentioned in your last email on GDPR, responsibility and ethics, is accurate and at the same time perplexing. The way in which UNESCO and the DFE have essentially relinquished themselves of accountability for the potential negative effects of utilising these EdTech indicates that both organisations have prior knowledge of data concerns about the platforms outlined on their list, which calls their ethical and social responsibility into question. I think UNESCO should revise the following statement on their main education page.

*"UNESCO provides global and regional leadership in education, strengthens education systems worldwide…"* (UNESCO, 2020).

There is no such a thing as leadership without responsibility or without accountability (Bass & Steidlmeier, 1999; Brown & Treviño, 2006). Especially when that avoidance of accountability may lead to the weakening of education systems. With the creation of the European GDPR (2018), the English Data Act (Gov, 2018) and the Czech PDPA (Ecovis, 2019), in secondary schools, the issue of liabilities in the event of a data breach has become a grey area. Obviously, to the DFE, UNESCO and some school leaders, these legislations read that teachers are responsible. This issue becomes even a darker shade of grey when the ethical reputation of these "irreproachable" organisations can be challenged. For example, the DfE currently works hand in hand with Pearson, who is currently facing a lawsuit regarding a data breach which exposed one million student's records (Wire, 2019). Also, UNESCO are promoting an online LMS that belongs to Google, who recently settled a lawsuit for a data breach (CISOMAG, 2020) and who are also under two separate investigations in the US for breaking children's privacy laws (Federal Trade Commission, 2019 and Farwell v. Google, 2020).

Besides, teachers have little say in the choice and implementation of an online LMS in their school, which could be seen as an "unfair power imbalance", a bit like the first school-based GDPR fine given in Sweden (Hanselaer, 2019). On the one hand, teachers are asked by the DfE to promote the vast array of Edtech to students (DfE, 2014), which for the majority of "Digital immigrants" (Prensky, 2001a) (such as us), is a novel area and therefore goes against the teaching standards on demonstrating good subject knowledge (Standard 3, DfE, 2011). We are being asked to promote a love of learning (Standard 4, DfE, 2011) and develop children's intellectual curiosity by using Educational technologies advocated by the Department for Education (2019). Simultaneously and paradoxically teachers are expected to uphold Part II of the standards on safeguarding (DFE, 2011) while (in the most part) being blissfully ignorant of present and future consequences of legal/illegal collection and sharing of data with governmentally endorsed private LMS, e.g. Google Classroom.

Consequently, for teachers to be made indisputably liable, they would need to be consistently and regularly trained on the development of technologies and the laws, amendments surrounding their use. However, presently we get one CPD lecture a year on the latter (void of any ultimate verification of teacher understanding), thus most teachers have limited knowledge and understanding of the GDPR (2018) or Data Act (2018) or PDPA ((Ecovis, 2019). It will be interesting to see who, ultimately, the liability will fall on, Departments of Education, Edtech companies, school management, or frontline teachers.

I hope you are well and healthy,

Best wishes,

Nicky

# EMAIL 5. 22 April 2020.  Nathalie to Nicky.

To; nicholas.millar

From; nathalie.lossec

Date: 22/4/2020

Subject: RE:RE:RE:RE: Covid-19 & emergency resources

Dear Nicky,

Sorry for the delay.

How is the family? All is well here as usual, despite the situation getting worse. If the trend keeps going, we will have more deaths in the UK than in Italy. I guess the herd immunity idea was not a brilliant one.

This month there has been some good news, for instance today the DfE (2020) has finally announced that "vulnerable and disadvantaged" young people will get free laptops as part of a push to make remote education accessible for pupils staying at home during the coronavirus outbreak", which means they are to finally follow Human Rights for equal opportunity (UN, 1948,p6). Yet, I find it hard to believe it will as the Office for National Statistics flagged in their report in 2019 that

"60,000 students of 11 and 18 years reported having no home internet access at all. Of those in this age group, 68% who did have home internet access reported that they would find it difficult to complete schoolwork without it, suggesting that there may be educational implications for those without internet access"

and it does not seem to look into any other solutions for them or even for SEN or EAL students, who are falling behind in literacy and numeracy skills, forgetting that the cultural capita is transmitted through the close environment the child lives in and only reproduce inequalities in educational achievements (Bourdieu, 1986; Green et al., 2014).

On a bigger scale, websites using cookies, and particularly analytical cookies, will require consent now as imposed by the Irish Data Protection Commission (DPC, 2020), who is the implementing body of the GDPR. As a result, organisations that we researched on the UNESCO Distance learning solutions list like Khan Academy, Quizlet etc., have updated their privacy policies. There is still work to do regarding privacy but this is a small improvement. Once again, I am not sure that people will know or even understand what it means as it was not really publicised.

You raise good questions, ethically speaking, on the roots of this lack of data-privacy knowledge from the vast majority of teachers and also what we could do to sort it out. Presently it is interesting to note that when a data breach happens with big companies, lawsuits are often settled, and companies resume their activities like you pointed out. Yet, we can feel that there is a wind of change coming in Education thanks to the GDPR implementation, for example, some schools are getting fined for being overly zealous in data collection like the school in Poland with fingerprinting (Hanselaer, 2020). For us, as teachers, I wonder who will foot the responsibility of a school data breach or if student data ends up being illegally shared with some unsavoury characters (if you remember the conversation in January we had about the handing over of 28 million UK school children's data stored by the DfE to gambling companies) (Bryan et al., 2020). Presently it seems that this major breach has had no legal consequences.

Classroom teachers and school administrators cannot be the sole vetters of EdTech company data practices (Petterson, 2016) given their sometimes limited resources. Yet, it feels that the liabilities will lay more and more on teachers and SLT as seen in the DfE legal disclaimer when we should be placing more responsibility on these organisations to be more accountable. To counterbalance this trend, my school is being very cautious and has been following a protocol to follow GDPR guidance but just like we have been discussing previously, it has proven difficult to follow for some teachers as the 'freebie' offers and the

increased volume of resources made available during Covid-19 have been so enticing. Has your school worked out a protocol during Covid-19 too? How did they implement it?

I shall leave you for now.

All the best,

Nathalie

# EMAIL 6.  25 April 2020. Nicky to Nathalie

To; nathalie.lossec

From; nicholas.millar

Date: 25/04/2020

Subject: RE:RE:RE:RE:RE Covid-19 & emergency resources

Dear Nathalie,

Firstly, yes all is well, and I hope you are keeping well also. The cafes and bars here are beginning to open although customers must sit outside and be two metres apart.

I think you have really hit a nerve here. I completely agree about the ethics of accountability, similarly our school has been following GDPR protocols also. This being said, it is hard to identify whether or not teachers have been unknowingly not adhering to GDPR regulations (even if they have attended a CPD session on it). Also, the more alarming thing is that schools and teachers seem to be forking the majority of the accountability for misuse like in the case of Greenwich University (ICO,2018).

What solutions are there, I wonder? Below are just a couple of ideas I have about the issue.

1. Trusted organisations, whom educators rely on, need to act more responsibly, and stop promoting platforms with track records of patchy privacy and misuse of data.
2. Teachers, SLT and students need to be made aware of the possible liabilities and accountability they may carry in terms of making students subscribe to certain websites and sharing personal student data with these organisations. They must also be given the non-consequential right to autonomously reject the use of these websites or platforms if they deem them a risk in any way.
3. Schools need to be given the tools, training and funding to be much more autonomous, so they are not becoming over reliant on massive tech giants like Google for their services. We need to be less reliant on huge corporations to provide fundamental services in schools as this IS going to create an unfair power balance in the future. We have seen what the privatisation of the NHS can result in, I do not want to see this happen in education, (this is a dangerous and undemocratic notion in my opinion).

4. If staff with access to children and their data undergo rigorous vetting, then EdTech should be subjected to similar vetting in terms of company history, privacy policy and data protection. Immediately adopting EdTech which poses child protection concerns should not be an option for schools and teachers so why are our leading institutions advocating such Edtech? A legally binding policy needs to be created to control, record and vet Edtech in schools.
5. The SAMR model could be introduced to SLT staff to help evaluate if the EdTech is necessary or not. There could also be annual GDPR enforcement audits on EdTech companies who operate in the education sector. Or some sort of endorsement or educational license awarded to EdTech companies from DfE or UNESCO or….oh wait…

Organisations such as UNESCO and DfE need to demonstrate more social responsibility and cease using disclaimers and playing pass the parcel with their accountability. If they claim to be the leaders of educators and student wellbeing, then they need to take responsibility for this leadership.

On my point about schools becoming autonomous, I refer to what we discussed about the ethical dilemma teachers face. We find ourselves between a rock and a hard place as we are continually asked to introduce new Edtech to our classrooms (and sometimes it is 'required') and at the same time we are asked to uphold child protection and safeguarding policies when sometimes (under closer inspection) this EdTech is contradictory to these policies.

We need to address other questions which we have not discussed in great detail, but which are linked to this;

● Is the centralisation and efficiency of school-based administration and learning activities a good thing? At what costs?

● If Google for Education began charging for their services tomorrow, would schools be able to afford it?

● What if the apps and services these companies are linked to were to be bought by companies from countries that do not have data protection laws, would schools be informed of the move and be able to ask for their data to be removed ?

Also did you see the DfE's announcement today (DfE, 2020) about a new partnership between the DfE and Google/Microsoft. Both tech giants will now offer free technical support to set up Google for Education and Microsoft 360. This could be seen by schools and educators as a push by the government towards one or the other. The government is not keeping in mind here that there are other providers of these services out there such as Linux and a plethora of LMSs such as Tapestry and Purple Mash. Bottlenecking schools into choosing between one tech giant or another does not do a lot for the competitive market and does not do a lot to reassure us that education is not for sale.

I look forward to hearing from you, keep safe,

Nicky

# Discussion and (in)conclusion

Correspondence between Nathalie and Nicholas raises several important themes about implementing ed-tech in education. In a way, one could even argue that the very fact they need to have such an email exchange in order to "read the world together" (Freire 2018) shows something about the complexity of EdTech in education. Nathalie and Nicholas reflect on how some educational institutions have had to adopt quick technological fixes to continue with their teaching. In connection to this, they note the many EdTech platforms and apps, sometimes offered for free, that appear as quick and easy solutions in the Covid-19 crisis. Still, as they write, many of these platforms have presented technical and pedagogical issues, raised privacy concerns, and some of the corporations providing them are engaged in lawsuits. This also presents the EdTech market as slightly rigged where large corporations with their 'solutions' appear to get special benefits and recommendations for example due to existing market shares, even if their products might not always be the best ones for educational institutions in the long run. They also note how jumping into fully online learning has highlighted inequalities, and how some students might be left behind during this time. When one adds unclear guidelines and recommendations even from large respected global institutions that sometimes appear to contradict regulations like the EU General Data Protection Regulation (GDPR), in addition to apps and platforms that keep changing in a rapid fashion, no wonder if some find it difficult to keep up with the complexity of the situation.

Covid-19 has revealed not only possible gaps and shortcomings of the state of online learning (or distance teaching), but also the complexity of the current EdTech market and the actors involved within it. The presented email exchange thinks deeper on how some of the EdTech 'solutions' function on the ground level, and the myriad ways they impact the educators' immediate context of work (e.g. Selwyn 2010). Therefore, as a narrative, currently shared by many educators, this exchange of ideas between two educators shows why it is vital to engage educators and pedagogical professionals, in the discussions and developments of the future of EdTech. If we do not involve the educators and connect them with policymakers, how will these so-called ed-tech 'solutions' be developed and implemented? Can we really trust large corporations to decide what is good teaching and learning, and how do they make such decisions anyway? As for example Teräs, Suoranta, Teräs and Curcher (forthcoming) have discussed that EdTech and digital learning platform developments might not always be driven by the best pedagogical practices, but market penetration tactics (e.g. giving the platform for free) and emerging new ways of making a profit (e.g. leveraging user data).

That said, instead of seeing their email exchange just as a critique towards certain institutions or EdTech companies, it should be seen as a guiding narrative from the ground level as well as a call for a wider dialogue. Before we move too far from the Covid-19 crisis and our current quick solutions become new and possibly unwanted structures and processes in education, we should engage educators, policymakers and developers for more strategic pedagogical development if we want to see EdTech that can genuinely serve wider group of students on a global scale.

**References**

Bass, B., & Steidlmeier, P. (1999). Ethics, character, and transformational leadership behaviour. *Leadership Quarterly, 10*(2), 81-217.

Bayne, S. (2015). What's the matter with 'technology-enhanced learning'? *Learning, Media and Technology, 40*(1), 5-20. doi:10.1080/17439884.2014.915851

Bourdieu, P. (1986). 'The Forms of Capital' in J. Richardson (ed) Handbook of Theory and Research for the Sociology of Education, Greenwood Press, Westport, CT.

Brown, M., & Treviño, L. (2006). Ethical leadership: A review and future directions. *Leadership Quarterly, 17*(3), 595-616.

Bryan, K., Griffiths, S., Ungoed-Thomas, J., (2020), Revealed: betting firms use schools' data on 28m children, The Times. Retrieved from https://www.thetimes.co.uk/article/revealed-betting-firms-use-schools-data-on-28m-children-dn37nwgd5

CISOMAG. (2020). *Google Agrees to Pay US$7.5M Over Google+ Data Breaches*. [online] CISO MAG | Cyber Security Magazine. Retrieved from https://www.cisomag.com/google-agrees-to-pay-us-7-5m-over-google-data-breaches/

Department For Education. (2011). *Teachers' standards*. [online] GOV.UK. Retrieved from https://www.gov.uk/government/publications/t eachers-standards

Department for Education. (2014). Government outlines how technology can benefit further education. Retrieved from https://www.gov.uk/government/news/government-outlines-how-technoogy-can-benefit-further-education

Department for Education. (2018). DfE monthly workforce management information: January 2018 - GOV.UK. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/707006/January_2018_DfE_family_monthly_workforce_MI_-_updated.CSV/preview

Department For Education. (2019). Realising the potential of technology in education, Crown copyright 2019. Policy Team, The National Archives, Reference: DFE-00072-2019. Retrieved from www.gov.uk/government/publications

Department For Education. (2020). Online learning support - Education in the media. [online] dfemedia.blog.gov.uk. Retrieved from https://dfemedia.blog.gov.uk/2020/04/20/online-learning-support/ [Accessed 29 May 2020].

DPC. (2020). Homepage | Data Protection Commission. [online] Homepage | Data Protection Commission. Available at: https://www.dataprotection.ie/sites/default/files/uploads/2020-04/Guidance%20note%20on%20cookies%20and%20other%20tracking%20technologies.pdf [Accessed 29 May 2020].

Edmodo. (2017). Important Notice About Your Edmodo Account. [online] Edmodo Help Center. Retrieved from: https://support.edmodo.com/hc/en-us/articles/115007376848-Important-Notice-About-Your-Edmodo-Account [Accessed 28 Jun. 2020].

Ecovis. (2019). New Czech Personal Data Processing Act 2019. [online] Czech law firm, Czech lawyers, Czech legal services. Retrieved from: http://www.ecovislegal.cz/en/other-legal-areas/new-czech-personal-data-processing-act-2019/ [Accessed 26 May 2020].

Farewell v. Google LLC. (2020). Case: 5:29-cv-02257-NC, Class Action Complaint of the United States District Court, Northern District of California

Federal Trade Commission. (2019). Google and YouTube Will Pay Record $170 Million for Alleged Violations of Children's Privacy Law. Retrieved from https://www.ftc.gov/news-events/press-releases/2019/09/google-youtube-will-pay-record-170-million-alleged-violations

Freire, P. (2018). *Pedagogy of the Oppressed.* 50th Anniversary Edition. New York: Bloomsbury.

General Data Protection Regulation (GDPR). (2018). General Data Protection Regulation (GDPR). [online] Retrieved from https://gdpr-info.eu/.

GOV.UK. (2018). Data Protection Act 2018. [online] GOV.UK. Retrieved from  https://www.gov.uk/government/collections/data-protection-act-2018.

GOV.UK. (2018). Health and safety: responsibilities and duties for schools. [online] Retrieved from https://www.gov.uk/government/publications/health-and-safety-advice-for-schools/responsibilities-and-duties-for-schools.

GOV.UK. (2020). Coronavirus (COVID 19) online education resources: legal disclaimer. [online] Retrieved from https://www.gov.uk/government/publications/coronavirus-covid-19-online-education-resources/coronavirus-covid-19-online-education-resources-legal-disclaimer [Accessed 8 May 2020]

Green, A., Green, F., & Pensiero, N. (2014) Why are Literacy and Numeracy Skills in England so Unequal? Evidence from the OECD's Survey of Adult Skills and other International Surveys, published by the Centre. Retrieved from https://www.llakes.ac.uk/sites/default/files/Inequality%20paper.pdf

Hanselaer, S. (2019). Facial recognition in school renders Sweden's first GDPR fine - European Data Protection Board - European Data Protection Board. [online] European Data Protection Board - European Data Protection Board. Retrieved from https://edpb.europa.eu/news/national-news/2019/facial-recognition-school-renders-swedens-first-gdpr-fine_en.

Hanselaer, S. (2020). Fine for processing students' fingerprints imposed on a school. [online] European Data Protection Board - European Data Protection Board. Retrieved from https://edpb.europa.eu/news/national-news/2020/fine-processing-students-fingerprints-imposed-school_en [Accessed 29 May 2020].

ICO (2018). The University of Greenwich fined £120,000 by Information Commissioner for "serious" security breach. [online] ico.org.uk. Retrieved from https://ico.org.uk/about-the-ico/news-and-events/news-and-blogs/2018/05/the-university-of-greenwich-fined-120-000-by-information-commissioner-for-serious-security-breach/

O'Flaherty, K. (2020). Beware Zoom Users: Here's How People Can 'Zoom-Bomb' Your Chat. [online] Forbes. Retrieved from https://www.forbes.com/sites/kateoflahertyuk/2020/03/27/beware-zoom-users-heres-how-people-can-zoom-bomb-your-chat/#7a4e58d3618e [Accessed 25 May 2020].

Oblinger, D. G., & Oblinger, J. L. '. (Eds.). (2005). Educating the Net Generation. Washington, DC: Educause. Retrieved from http://www.educause.edu/educatingthenetgen/

Office of National Statistics, (2019). Exploring the UK's digital divide - Office for National Statistics. [online] Exploring the UK's digital divide. ons.gov.uk. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04

Peterson, D. (2016). EdTech and student privacy: California law as a model. Berkeley technology law journal [Vol. 31:AR. [online] Retrieved from https://btlj.org/data/articles2016/vol31/31_ar/0961_0996_Peterson_WEB.pdf [Accessed 29 May 2020].

Prensky, M. (2001a). Digital Natives, Digital Immigrants. On the Horizon, 9(5) Retrieved from http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf

Privacy International. (2019). Guess what? Facebook still tracks you on Android apps (even if you don't have a Facebook account). Retrieved from https://privacyinternational.org/blog/2758/appdata-update

Selwyn, N. (2010). Looking beyond learning: Notes towards the critical study of educational technology. *Journal of Computer Assisted Learning, 26*(1), 65–73. Retrieved from https://doi.org/10.1111/j.1365-2729.2009.00338.x

Stiglic, N., & Viner, R. M. (2019). Effects of screen time on the health and well-being of children and adolescents: a systematic review of reviews. *BMJ open*, *9*(1), e023191. Retrieved from https://doi.org/10.1136/bmjopen-2018-023191

Tapscott, D. (1999). Educating the net generation. Educational Leadership, 56(1), 6-11. Retrieved from http://epotential.education.vic.gov.au/showcase/download.php?doc_id=762

Teräs, M., Suoranta, J., Teräs, H., & Curcher, M. (forthcoming). Post-Covid-19 Education and Education Technology 'Solutionism': A Seller's Market. *Postdigital Science and Education*. DOI: Retrieved from http://10.1007/s42438-020-00164-x

UN, United Nations. (1948). Universal Declaration of Human Rights Preamble. Retrieved from https://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf.

UNESCO (2020). Education transforms lives. Retrieved from
https://en.unesco.org/themes/education

UNESCO (2020). Distance learning solutions. [online] UNESCO. Retrieved from
https://en.unesco.org/covid19/educationresponse/solutions

Williamson, B. (2017). Who owns educational theory? Big data, algorithms and the expert power of education data science. *E-Learning and Digital Media*, *14*(3), 105-122.

Wire, S.-T. (2019). *Book publisher Pearson sued for exposing 1 million student records to hackers*. [online] Chicago Sun-Times. Retrieved from
https://chicago.suntimes.com/2019/9/5/20852194/pearson-hack-student-records-class-action-lawsuit [Accessed 26 May 2020].

Xia, R., Blume, H., Money, L., (2020). USC, school districts getting 'Zoom-bombed' with racist taunts, porn as they transition to online meetings, Los Angeles Times. Retrieved from  https://www.latimes.com/california/story/2020-03-25/zoombombing-usc-classes-interrupted-racist-remarks