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The Postdigital Challenge of Pandemic Education

Abstract: This paper briefly introduces key theoretical underpinnings of the postdigital perspective. Based on synthesis of 56 articles on the Covid-19 pandemic published in *Postdigital Science and Education,* 2, issue 3, and a selection of related articles, it distils the main themes, problems, approaches, and solutions identified in postdigital literature. The paper classifies identified themes into three large groups: lived experiences and their responses, politics, and philosophy. It identifies connections between research in these different, often incommensurable areas, and points towards postdigital and postdisciplinary nature of the Covid-19 pandemic. The paper brings these insights together in the concept of viral modernity, explores its theoretical and practical limitations, and develops recommendations for postdigital research in the age of Covid-19. It concludes that it is our duty as educators to move beyond edu-techno-problems and edu-tecno-fixes characteristic for mainstream journals and research approaches, and to address human problems in their entirety.

Keywords: postdigital, viral modernity, Covid-19, pandemic, research, science, education

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Scientific article

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Introduction

Since the World Health Organization (2020) reported the first official case of the Covid-19 disease in Wuhan on 31 December 2019, the world has entered into a »war against the pandemic« (Wagener 2020). Countries, politicians, and even epidemiologists, have advocated radically different responses from full lockdown to herd immunity. Researchers have immediately started working on a wide-range of Covid-19-related problems in medicine, physics, chemistry, social sciences, humanities, and the arts. Academic publishers opened up their paywalled journals to Covid-19-related research (Wellcome Trust 2020). It is still uncertain which epidemiological response to the pandemic will yield satisfactory long-term results (Gibney 2020), whether science will be able to develop an effective vaccine, whether the »utopian dream« of open journal access will permanently remain (Crowe 2020), or, indeed, how the newly reconfigured world will look. However, it is certain that »[p]ostdigital researchers should read, research, and write about all imaginable aspects of Covid-19!—even if that research, at present, does not seem to offer much help in getting us through and over the pandemic« (Jandrić 2020 a, p. 236). This was the starting point for an extensive research effort, both in size and scope, that I recently supported as Editor-in-Chief of *Postdigital Science and Education* (2020).[1]

Following my urgent editorial, *Postdigital Research in the Time of Covid-19*, on 21 March 2020 (Jandrić 2020 a) I published a call for papers entitled *The Day After Covid-19* and invited responses to the Covid-19 pandemic—full-length articles, commentaries, testimonies, and reviews. I conducted my own research, while closely monitoring the efforts of fellow researchers. The Covid-19-themed issue of *Postdigital Science and Education* has just been published and I feel a strong urge to provide a sense of our extensive collective efforts over the last nine months. In a cluttered research space where no-one has enough time to read all publications, a synthesis of research contributions in the field—even an incomplete one—could be highly beneficial to research efforts to come (see Jandrić 2020 a; Peters et al. 2020 a; Peters et. al 2020 b).

[1] The issue in question, *Postdigital Science and Education*, 2, issue 3.

The first part of this article introduces the main theoretical underpinnings of postdigital research. The second section distils themes, approaches, problems, and solutions relating to the Covid-19 pandemic. The third part brings these insights together to conceptualise viral modernity and provide recommendations for postdigital educational research in the future.

The postdigital condition

The concept of the »postdigital« was first described in artistic circles around the turn of the millennium. In works such as Kim Cascone's (2000) article *The aesthetics of failure: 'post-digital' tendencies in contemporary computer music*, early postdigital authors attempted to explain the complex interplay between digital and analogue aspects of the contemporary human condition. In 2018, a group of researchers and introduced the concept into social sciences and humanities. We published our mission statement article, *Postdigital Science and Education* (Jandrić et al. 2018), and soon after we started *Postdigital Science and Education* and a book series.[2] So, what is the concept of the postdigital and why is it relevant?

The first sentence in the mission statement article states: »We are increasingly no longer in a world where digital technology and media is separate, virtual, 'other' to a 'natural' human and social life« (Jandrić et al. 2018, p. 893). As I write this article, my biological body engages with digital bits and bytes on my screen. After I finish writing, these bits and bytes will embark on digital highways from Zagreb destined for inboxes of human editors of *Sodobna Pedagogika* in Ljubljana. During the process of publication, the bits and bytes of this digital article will encounter numerous other people including reviewers, proofreaders, and production managers. En route between these people, the article will pass through various computing machines and software (e.g. routers, switches, wires, word processors, plagiarism detectors, graphic design programmes, web publishing programmes, etc.).

Once the article is published, its readers—human beings—will engage with the digital text stemming from multiple interactions between the digital and the analogue. However, there are other entities, such as automated bots and indexing services, that will also »read« this article. Based on their »readings«, these entities will classify and index the article before placing it in databases such as Google Scholar or Scopus. One may ask, Who cares whether this article is read by bots? People care about these automated digital readings, because they have direct human consequences. For instance, an article's positioning in Google Scholar or Scopus determines its visibility in search engines, increasing its visibility to human readers and citations. Naturally, most authors want their work to reach as many human readers as possible. In today's neoliberal academia, quantitative measures such as the number of quotes strongly influence an academic author's job prospects.

[2] More about this you can read on webside: https://www.springer.com/journal/42438 (journal) and https://www.springer.com/series/16439 (book series).

In our postdigital condition, my work (as a human author) is just as important as the work of non-human entities (such as academic databases and bots) which classify my work. This relationship between human and non-human actors in production and publication of academic work can easily be generalised to various aspects of the contemporary human condition (see Knox 2019). In our postdigital age it becomes ever more difficult to determine where the human ends and where the digital begins.

Developing this thought further, my collaborators and I wrote: »The postdigital is hard to define; messy; unpredictable; digital and analogue; technological and non-technological; biological and informational. The postdigital is both a rupture in our existing theories and their continuation« (Jandrić et al. 2018, p. 895). This statement has already been unpacked so many times (e.g. Jandrić et al. 2018 b; Fawns 2019; Peters and Besley 2019; Sinclair and Hayes 2019) that I do not feel like repeating the same thoughts over again. Yet I do want to stress the rupture and continuation aspect of the definition. The postdigital community is aware that the world does not begin with our own ideas. As an academic author, I understand that my words and ideas in this article are not just mine: they are an amalgam of all encounters with colleagues, friends, and people known and unknown that have passed through my professional and personal life (Mañero 2020). The postdigital condition carries a lot of baggage (continuation) and also dares to introduce new theoretical and practical ruptures. It is within this concept of rupture and continuation, that the postdigital community develops philosophy, praxis, and language suitable for researching today's human condition.

Covid-19 research: themes and perspectives

Themes and perspectives presented in this section are distilled from 56 articles published in *Postdigital Science and Education* 2, issue 3, and a selection of related publications.

Lived experiences and their responses

At the beginning of the pandemic, many researchers and academic editors had the same impulse: to collect lived, real-time experiences of teachers and students, and their responses to these experiences. In *Postdigital Science and Education*, these efforts have resulted in a range of publications about teacher experiences (Jandrić et al. 2020; Czerniewicz et al. 2020), student experiences (Peters et al. 2020 a), and response articles with practical recommendations for coping in pandemic times (Rapanta et al. 2020; Green et al. 2020; Blume 2020; Kertcher and Turin 2020). *Postdigital Science and Education* is hardly unique in these efforts, and worldwide journals of education now often publish similar articles and dedicated issues. Frequently this research points towards distinctions between practice (i.e., current emergency remote learning) (Hodges at el. 2020) and »proper«, theoret-

ically founded and meticulously prepared, distance learning. What can be learnt from these research efforts?

First, these articles build an important »history of the present« (Jandrić and Hayes 2020). It is only through comprehensive understanding of current conditions that we can improve them, so global pandemic-related research is hugely important for educational theory, policy, and practice. Second, these articles establish a dialogue between teachers, learners, administrators, policy makers, and wider communities. Educational systems are integral to their surroundings, and challenges facing schools and universities both reflect, and significantly impact, society as a whole. Third, these articles serve as powerful reminders of the socioeconomic conditions of teachers and learners. For instance, our collection of 81 textual testimonies and 80 workspace photographs submitted by 84 authors from 19 countries entitled *Teaching in the Age of Covid-19* clearly indicates that, within pandemic circumstances, the pre-pandemic social class imbalances have become even more pronounced (Jandrić et al. 2020). Teaching and learning from spacious home offices is much easier than teaching and learning from cramped flats. Individuals with no children or grown-up children are advantaged over those who must care for their young and elderly. White people have it better than people of colour (Chang 2020); men have it better than women (Hurley 2020).

We also witness the return of the »digital divide« (see Jandrić and Kuzmanić 2017), as lockdowns have exposed stark inequalities in access to the Internet, digital devices, and even electricity (Czerniewicz et al. 2020). National policies also matter. Germany, where strict legislation had forbidden the use many online tools, has opened up to employing more digital options during lockdowns (Kerres 2020). But this legislation had been developed for a good purpose. Supporting teachers and students into using any suitable technology opens up numerous concerns about privacy, security, and ownership of data (Kerres 2020). Failure to seriously consider these concerns could be very dangerous (Teräs et al. 2020), especially in relation to understanding and practice of democracy (Carr 2020). Worldwide education systems are responding to pandemic challenges in various ways, yet their early responses have been rushed and often non-systematic (Zhu and Liu 2020; Kerres 2020).

Politics

Lived experiences of the pandemic cannot be divorced from politics. In the 20th century, relationships between education and politics have been in the focus of the critical pedagogy movement based on the works of people such as Paulo Freire, Henry Giroux, Peter McLaren, bel hooks, Paul Willis, Shirley Steinberg, and others. Critical pedagogy is theoretically well-established but far from mainstreamed in educational policy and practice. Actually, its main underpinnings including but not limited to the crucial role of education in matters of social justice and democracy, and its active struggle against sexism, racism, and other forms of systemic inequality, have been tamed by decades of neoliberalisation of global education.

During the past few decades, we have witnessed an increasing shift towards the understanding of education as a commodity that can be sold and bought in the marketplace (Peters and Jandrić 2018). Such commodification goes beyond teaching and learning and reaches all the way to connected »industries« such as academic publishing. Consequently, access to the world's knowledge is controlled by for-profit corporations and inaccessible to many (Jandrić and Hayes 2019). Students' and teachers' lived experiences clearly indicate that the Covid-19 pandemic has only exacerbated these problems. While the pandemic has surely caused some previously unseen challenges such as psychological and social effects of social distancing (Sapon-Shevin and SooHoo 2020), many educational problems exposed by the pandemic have existed for a long time (see Jandrić 2020 b).

Reported experiences of the pandemic, as well as many responses to these experiences, indicate that messages of critical pedagogy, postmodern theory, feminist theory, postcolonial theory, queer theory, and others need to be taken more seriously. In Africa (Czerniewicz et al. 2020) and India (Jandrić et al. 2020), amongst other countries, preparing for the next pandemic does not just consist of introducing new online learning systems. In many cases, it also implies making sure that learners have access to broad infrastructure including electricity, running water, computers, and Internet connection. This leads to an uncomfortable, but necessary conclusion that many critiques of education during the pandemic converge into a critique of capitalism. Similar arguments have been put forward for decades by members of the critical pedagogy movement and also scholars working in other fields (see McLaren and Jandrić 2020). The Covid-19 pandemic necessitates that we take these arguments much more seriously.

Due to their frequency in recent Covid-19-related research, two aspects of pandemic politics require special attention: fake news and post-truth, and the question of the environment. In her work on the negative epistemic postdigital inculcation Jennifer Rose writes: »While pandemics and fake news are not new phenomena, an unprecedented time in history is presently unfolding when considered with the postdigital era [...] Consequently, the ability of humans to discern between fact and fiction diminishes. It has resulted in some people making life-ending decisions based on their exposure to fake news.« (Rose 2020, p. 814)

Rose makes an important point. Fake news about the latest scandal in Buckingham Palace may be inconvenient, but fake news about possible dangers associated with Covid-19, and post-truth environment in which it becomes increasingly difficult to understand dangers of Covid-19, can literally take human lives. A recent example took place in April 2020, when American president Donald Trump suggested injecting disinfectant as a potential treatment for Covid-19. Following his suggestion, several Americans ended up in hospital because they injected lethal chemicals into their bodies (Reimann 2020). Other fake news, perhaps more convincing but still fabricated, could harm many more people.

Perusing the fog of post-truth claims about the coronavirus indicates that scientists have reached a consensus about the origin of SARS-CoV-2: it was most likely transferred to humans from wild animals such as bats or pangolins (O'Sullivan 2020). This brings about inseparability of the Covid-19 pandemic (together with

many smaller epidemics of the last century, such as avian flu) with human dietary customs and modes of meat production. This is why postdigital studies on the Covid-19 pandemic call for the development of »an ecology of practices that might facilitate re-imagining our relationship with non-human animals« (O'Sullivan 2020, p. 594). Analysing Freud's (1961) typology of the main sources of human misery and suffering, Juha Suoranta writes: »In the context of Covid-19, Freud's typology is irretrievably outdated if read dichotomously (human beings here, nature there), or fragmentally (as if different entities of the world did not form a whole). In the global world of mercurial flows and relations (of viruses, human beings, digital bits, material artifacts, and particles), approaches based on fragmentation are unable to describe the whole accurately (Peters 2020). As Morse (1993: viii) remarks, although viruses are biological of origin when »the host is human, social factors can play a very significant role in both dissemination and expression of disease. On a larger scale, many epidemics can be understood only in their ecological context.« (Suoranta 2020, p. 538-539)

Lived experiences and responses to the pandemic cannot be divorced from larger issues pertaining to collective human decision-making. However, politics is not just about deciding how to pick a best strategy for resolving the Covid-19 (or any other) crisis, because our understanding of what makes a good strategy is deeply embedded in philosophical questions such as »What makes a good life?« and »What kind of life is worth living?« It is with this understanding, that many authors writing about Covid-19 have turned to philosophy.

Philosophy

Epidemics and pandemics have always been intrinsic to human race; Covid-19 is merely their latest manifestation. We see our current experience as special only because this is the first pandemic in our lifetimes (Jandrić 2020 c). Thusly, philosophy has an important role in merging our particular experiences with fundamental questions such as postdigital nature of contemporary human condition.

Immediate philosophical responses to the Covid-19 pandemic begin at the intersections of biology and politics, which have acquired their most famous formulation in Michel Foucault's works on biopolitics. Biopolitics refers to the administration of life and human populations into a specific economic and political order. In a recent analysis, Michael Peters adds the important dimension of bioinformation to Foucault's theory.

An aspect of this paradigm that is missing from Foucault's analysis—he died before the genomics revolution got under way—is bioinformation, and the bioinformational paradigm where these two forces of new biology and information coalesce, overlap, and intermingle in the logic that drives bioinformatics and bioinformational capitalism that is self-renewing in the sense that it can change and renew the material basis for life and capital as well as program itself (Peters 2020, p. 559).

In the context of the Covid-19 pandemic, philosophers including Giorgio Agamben, Jean Luc Nancy, Slavoj Žižek, and others, focus on the more practical

questions of governmentality (see Foucault et al. 2020). Their central questions relate to early government responses to the Covid-19 pandemic and whether central governments, such as the Chinese Communist Party, or open markets, such as the United States, are more rational or more efficient forms of government.

During the pandemic, philosophers also pay significant attention to the notion of risk, which Mark Coeckelbergh (2020, p. 549) refers to as »the lived and active relation we have to the world, an openness to the world that puts us at risk and makes us vulnerable«. According to Coeckelbergh (2020, p. 549), »[t]echnologies shape, transform, and mediate this 'being-at-risk'; that is, they shape our vulnerability and risk as lived and enacted risk that is neither purely subjective nor purely objective. From a philosophy of technology point of view, it is therefore important to consider how technologies we call 'digital,' and also other technologies such as material infrastructures, shape what we know about the crisis and 'the virus'.« Based on these premises, Coeckelbergh concludes that »we have always been postdigital« (2020, p. 548). However, technological and material shaping of the Covid-19 crisis is a two-way process. In the words of one of the key contemporary critical theorists of technology Andrew Feenberg (2002), »technology is not destiny«. It is in this dialectic of mutual shaping between technologies and human beings, that various philosophies end up with normative conclusions about our own responsibility, as citizens, teachers, and students, for our own relationships not only to the pandemic, but to technology in general.

Steve Fuller identifies two main intellectual trajectories for navigating the Covid-19 crisis. The precautionary principle is based on the assumption that »humanity is 'always already' subordinated by some generic external agent called, say, 'Nature' or 'Gaia', in terms of which we might be either in equilibrium or in conflict.« (Fuller 2020, p. 555) This principle understands Covid-19 as an external, unchangeable fact. In practice, it contradicts the idea that the transfer of the coronavirus from animals to humans is obviously connected to the ways we produce, transport, and consume our food (O'Sullivan 2020). In theory, it also contradicts the idea that technology is not destiny. The proactionary principle presumes »a more game-like relationship to the opponent, whereby Nietzsche's Zarathustrian imperative, 'What doesn't kill me, makes me stronger', really does apply« (Fuller 2020, p. 555). In this context, continues Fuller, »we should never let a good existential threat go to waste«. Here, Fuller makes an important point that the Covid-19 crisis – with all its negative impacts – is also a moment of opportunity.

Viral modernity

Conclusions derived from lived experiences, politics, and philosophy of the pandemic significantly overlap. Different, often incommensurable research approaches ask similar questions and arrive at similar conclusions; for instance, authors across the disciplines seem to agree that our individual and collective reactions to the Covid-19 pandemic will extend far beyond tackling the current crisis and will significantly impact humanity's future. The Covid-19 pandemic cuts

across all spheres of human existence – its crisis, and responses to this crisis, are equally biological, technological, environmental, social, philosophical, political, and much more. Therefore, it is obvious to revive the decade-old debates about inter-, multi-, trans-, and post-disciplinarity and to advocate a more holistic approach to studying the Covid-19 pandemic and the world at large.

However, epistemology of disciplinarity has reached its theoretical peak a while ago (Fuller and Jandrić 2019). Humans are not just beings of reason; we are equally affected by emotion, myth, and faith. Perhaps it is more appropriate to develop a new narrative—a captivating idea—that could provide shape to these various strands of thought while still considering each strand with equal importance. A possible candidate for such a narrative is Michael Peters' concept of viral modernity.

Viral modernity is a concept that is based upon the nature of viruses, the ancient and critical role they play in evolution and culture, and the basic application to understanding the role of information and forms of bioinformation in the social world. The concept draws a close association between viral biology on the one hand and information science on the other – it is an illustration and prime example of bioinformationalism (Peters 2012) that brings together two of the most powerful forces that now drive cultural evolution. The concept of viral modernity applies to viral technologies, codes and ecosystems in information, publishing, education and emerging knowledge (journal) systems. Evolutionary bioinformatics indicate the conceptual closeness between the two. (Peters et al. 2020, pp. 3–4)

Viral modernity is postdigital, as it erases borders between digital and analogue aspects of human lives. Viral modernity is also post-disciplinary, because it erases borders between traditional disciplines such as medicine, politics, and information science. The concept of viral modernity »insists on the political nature of the Covid-19 pandemic, on dialectics between the biological Covid-19 pandemic and informational pandemics such as post-truth, and sends a clear anti-capitalist message.« (Jandrić 2020, p. 533) However, the concept of viral modernity should be understood as a useful metaphor, not a silver bullet. »Living in the age of viral modernity also does not mean that you and I are real viruses, or that *Postdigital Science and Education* is a real viral host.« (Jandrić 2020, p. 534) While we explore ways in which the concept of viral modernity can help us to make sense of the postdigital human condition, we should be very aware of its theoretical and practical limits.

What does it mean to conduct educational research in the age of viral modernity? By watching the news, and reading my own and my colleagues' universities' policies, it is easy to identify an important trend that has already been explored in philosophy and education: technologization, or the idea that human problems will somehow be magically solved by introducing new technology (Tyack and Cuban 1995). In the context of Covid-19, the latest generation of technologisation is in the field of biotechnology, and consists of a belief that we only need to wait for scientists to develop a vaccine and then life will return to the »old normal«. However, critical philosophy of technology outlines a more nuanced view. Even if a vaccine soon becomes available, who will be the first to get it? Is it feasible to expect that poor countries will get the same access to the vaccine as rich countries? These and

other questions can literally decide who will live and who will die, and radically impact global balance of geopolitical power.

As an average person who just wants to return to normal life, it is tempting to technologise the Covid-19 pandemic. Yet this is simply not possible, as technologies are always dialectically intertwined with the contexts of their development and usage. Working within educational systems, it is tempting to place responsibility for pandemic responses to schools and teachers. Schools are an important part of the solution to the pandemic, yet they cannot resolve it on their own. Environmentalists rightfully point out that transfer of Covid-19 from animals to humans is a clear consequence of our animal-based diet and the industrial production of meat. However, even a global transition to veganism would not end the pandemic. Abraham Maslow wrote »I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail« (1966[2002], p. 15).[3]

The concept of viral modernity avoids Maslow's metaphoric temptation because it posits that the Covid-19 pandemic is at the intersection of natural and social forces which has transformed both our research objectives and our research subjects. Covid-19 is a virus, a school lesson, a dietary issue, and many other things, and all of that at once. Within the perspective of viral modernity, our hammer of disciplinary research needs to morph into a large toolbox packed with a wide range of sophisticated tools that are compatible with one another. With such a toolbox in hand, some problems will lose their apparent nail-like properties and start revealing their true form as screws, bolts, or strips of rubber. It is from mutual communication and collaboration between these tools, that we can start to develop a more wholesome understanding of the Covid-19 pandemic and postdigital research at large.

What about the future?

This article classifies the main themes addressed by postdigital researchers during the Covid-19 pandemic. It distils conclusions developed over thousands of pages of academic material and condenses them into a concise overview. It analyses these themes and offers some recommendations for further research without being prescriptive. It admits its own shortcomings, such as the limits of viral modernity, to foster new forms of postdigital dialogue (Jandrić et al. 2018 b).

Philosophy is important because it gives us a sense of what is right and what is wrong, as well as of our own responsibility. Politics is important because it tackles burning problems of collective decision-making in the age of fake news and post-truth. Documenting our lived experiences of the Covid-19 pandemic, as teachers, learners, and human beings, is crucial for making sense of our postdigital Covid-19 reality. In the meantime, it is still necessary to manoeuvre through the narrow passageways of neoliberal education – we do need to think of ways we will conduct our classes this afternoon and tomorrow morning. However, remaining

[3] While this quote comes from Maslow's book, *The Psychology of Science: A Reconnaissance* (1966) [2002], its many versions can be found in different sources and historical periods.

within the confines of our current educational systems and social superstructures results in missed opportunities. It is our duty as educators to move beyond the sweeping edu-techno-problems and edu-techno-fixes characteristic of mainstream edu-journals and edu-sciences, and to address human problems in their entirety. We must dare to dream, and we must dare to pour our dreams into fresh concepts and research ideas such as viral modernity.

References

Blume, C. (2020). German Teachers' Digital Habitus and Their Pandemic Pedagogy. *Postdigital Science and Education*, 2, issue 3, pp. 879–905.

Carr, P. R. (2020). Shooting Yourself First in the Foot, then in the Head: Normative Democracy Is Suffocating, and then the Coronavirus Came to Light. *Postdigital Science and Education*, 2, issue 3, pp. 722–740.

Cascone, K. (2000). The aesthetics of failure: 'post-digital' tendencies in contemporary computer music. *Computer Music Journal,* 24, issue 4, pp. 12–18.

Chang, B. (2020). From 'Illmatic' to 'Kung Flu': Black and Asian Solidarity, Activism, and Pedagogies in the Covid-19 Era. *Postdigital Science and Education*, 2, issue 3, pp. 741–756.

Coeckelbergh, M. (2020). The Postdigital in Pandemic Times: a Comment on the Covid-19 Crisis and its Political Epistemologies. *Postdigital Science and Education*, 2, issue 3, pp. 547–550.

Crowe, K. (2020). 'We're opening everything': Scientists share coronavirus data in unprecedented way to contain, treat disease. *CBC News*. Retrieved from: https://www.cbc.ca /news/ health/coronavirus-2019-ncov-science-virus-genome-who-research-collaboration-1.5446948 (accessed on 28. 09. 2020).

Czerniewicz, L., Agherdien, N., Badenhorst, J., Belluigi, D., Chambers, T., Chili, M., de Villiers, M., Felix, A., Gachago, D., Gokhale, C., Ivala, E., Kramm, N., Madiba, M., Mistri, G., Mgqwashu, E., Pallitt, N., Prinsloo, P., Solomon, K., Strydom, S., Swanepoel, M., Waghid, F. and Wissing, G. (2020). A Wake-Up Call: Equity, Inequality and Covid-19 Emergency Remote Teaching and Learning. *Postdigital Science and Education*, 2, issue 3, pp. 946–967.

Fawns, T. (2019). Postdigital education in design and practice. *Postdigital Science and Education*, 1, issue 1, pp. 132–145.

Feenberg, A. (2002). *Transforming technology: A critical theory revisited*. New York: Oxford University Press.

Foucault, M., Agamben, G., Nancy, J.L., Esposito, R., Benvenuto, S., Dwivedi, D., Mohan, S., Ronchi, R. and de Carolis, M. (2020). Coronavirus and philosophers. *The European Journal of Psychoanalysis.* Retrieved from: https://www.journal-psychoanalysis.eu/ coronavirus-and-philosophers/ (accessed on 28. 09. 2020).

Fuller, S. (2020). A Post-Truth Proactionary Look at the Pandemic. *Postdigital Science and Education*, 2, issue 3, pp. 551–555.

Fuller, S. and Jandrić, P. (2019). The Postdigital Human: Making the history of the future. *Postdigital Science and Education,* 1, issue 1, pp. 190–217.

Gibney, E. (2020). Whose coronavirus strategy worked best? Scientists hunt most effective policies. *Nature,* 581, pp. 15–16.

Green, J. K., Burrow, M. S. and Carvalho, L. (2020). Designing for Transition: Supporting Teachers and Students Cope with Emergency Remote Education. *Postdigital Science and Education*, 2, issue 3, pp. 906–922.

Hodges, C., Moore, S., Lockee, B., Trust, T. and Bond, A. (2020). The difference between emergency remote teaching and online learning. *EDUCAUSE Review.* Retrieved from: *https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning* (accessed on 28. 09. 2020).

Jandrić, P. and Hayes, S. (2019). The postdigital challenge of redefining education from the margins. *Learning, Media and Technology,* 44, issue 3, pp. 381–393.

Jandrić, P. (2020 a). Postdigital Research in the Time of Covid-19. *Postdigital Science and Education*, 2, issue 2, pp. 233–238.

Jandrić, P. (2020 b). The Day After Covid-19. *Postdigital Science and Education*, 2, issue 3, pp. 531–537.

Jandrić, P. (2020 c). A Message to You, Rudy: Hear Reason, Or Nature Will Make You Feel Her. *Knowledge Cultures*, 8, issue 2, pp. 23–28.

Jandrić, P. and Hayes, S. (2020). Writing the History of the Present. *Postdigital Science and Education*, 2, issue 3, pp. 1062–1068.

Jandrić, P. and Kuzmanić, A. (2017). Digital Postcolonialism. *IADIS International Journal on WWW/Internet*, 13, issue 2, pp. 34–51.

Jandrić, P., Hayes, D., Truelove, I., Levinson, P., Mayo, P., Ryberg, T., Monzó, L.D., Allen, Q., Stewart, P.A., Carr, P.R., Jackson, L., Bridges, S., Escaño, C., Grauslund, D., Mañero, J., Lukoko, H.O., Bryant, P., Fuentes Martinez, A., Gibbons, A., Sturm, S., Rose, J., Chuma, M.M., Biličić, E., Pfohl, S., Gustafsson, U., Arantes, J.A., Ford, D.R., Kihwele, J.E., Mozelius, P., Suoranta, J., Jurjević, L., Jurčević, M., Steketee, A., Irwin, J., White, E.J., Davidsen, J., Jaldemark, J., Abegglen, S., Burns, T., Sinfield, S., Kirylo, J.D., Batarelo Kokić, I., Stewart, G.T., Rikowski, G., Lisberg Christensen, L., Arndt, S., Pyyhtinen, O., Reitz, C., Lodahl, M., Humble, N., Buchanan, R., Forster, D.J., Kishore, P., Ozoli□š, J., Sharma, N., Urvashi, S., Nejad, H.G., Hood, N., Tesar, M., Wang, Y., Wright, J., Brown, J.B., Prinsloo, P., Kaur, K., Mukherjee, M., Novak, R., Shukla, R., Hollings, S., Konnerup, U., Mallya, M., Olorundare, A., Achieng-Evensen, C., Philip, A.P., Hazzan, M.K., Stockbridge, K., Komolafe, B.F., Bolanle, O.F., Hogan, M., Redder, B., Sattarzadeh, S.D., Jopling, M., SooHoo, S., Devine, N., and Hayes, S. (2020). Teaching in The Age of Covid-19. *Postdigital Science and Education*, 2, issue 3, pp. 1069–1230.

Jandrić, P., Knox, J., Besley, T., Ryberg, T., Suoranta, J. and Hayes, S. (2018 a). Postdigital Science and Education. *Educational Philosophy and Theory, 50*, issue 10, pp. 893–899.

Jandrić, P., Ryberg, T., Knox, J., Lacković, N., Hayes, S., Suoranta, J., Smith, M., Steketee, A., Peters, M. A., McLaren, P., Ford, D. R., Asher, G., McGregor, C., Stewart, G., Williamson, B. and Gibbons, A. (2018 b). Postdigital Dialogue. *Postdigital Science and Education,* 1, issue 1, pp. 163–189.

Kerres, M. (2020). Against All Odds: Education in Germany Coping with Covid-19. *Postdigital Science and Education*, 2, issue 3, pp. 690–694.

Kertcher, C., and Turin, O. (2020). 'Siege Mentality' Reaction to the Pandemic: Israeli Memes During Covid-19. *Postdigital Science and Education*, 2, issue 3, pp. 581–587.

Knox, J. (2019). What Does the 'Postdigital' Mean for Education? Three Critical Perspectives on the Digital, with Implications for Educational Research and Practice. *Postdigital Science and Education*, 1, issue 2, pp. 357–370.

Mañero, J. (2020). Review of Peter McLaren and Petar Jandrić (2020). Postdigital Dialogues on Critical Pedagogy, Liberation Theology and Information Technology. *Postdigital Science and Education, Online First.*

Maslow, A. H. (1966) [2002]. *The Psychology of Science: A Reconnaissance.* New York: Zorba Press.

McLaren, P. and Jandrić, P. (2020). *Postdigital Dialogues on Critical Pedagogy, Liberation Theology and Information Technology*. London: Bloomsbury.

O'Sullivan, V. (2020). Non-human animal trauma during the pandemic. *Postdigital Science and Education*, 2, issue 3, pp. 588–596.

Peters, M. A. and Jandrić, P. (2018). Neoliberalism and the university. In: D. Cahill, M. Cooper, M. Koenings and D. Primrose (eds.). *SAGE Handbook of Neoliberalism*. London: Sage, pp. 553–564.

Peters, M. A. (2020). Philosophy and Pandemic in the Postdigital Era: Foucault, Agamben, Žižek. *Postdigital Science and Education*, 2, issue 3, pp. 556–561.

Peters, M. A. and Besley, T. (2019). Critical philosophy of the postdigital. *Postdigital Science and Education*, 1, issue 1, pp. 29–42.

Peters, M. A., Jandrić, P. and Hayes, S. (2019). The curious promise of educationalising technological unemployment: What can places of learning really do about the future of work? *Educational Philosophy and Theory,* 51, issue 3, pp. 242–254.

Peters, M. A., Jandrić, P. and McLaren, P. (2020 a). Viral modernity? epidemics, infodemics, and the 'bioinformational' paradigm. *Educational Philosophy and Theory*, Online First.

Peters, M. A., McLaren, P. and Jandrić, P. (2020 b). A Viral Theory of Post-Truth. *Educational Philosophy and Theory*, pp. 1–23.

Peters, M. A., Wang, H., Ogunniran, M. O., Huang, Y., Green, B., Chunga, J. O., Quainoo, E. A., Ren, Z., Hollings, S., Mou, C., Khomera, S. W., Zhang, M., Zhou, S., Laimeche, A., Zheng, W., Xu, R., Jackson, L., and Hayes, S. (2020). China's Internationalized Higher Education During Covid-19: Collective Student Autoethnography. *Postdigital Science and Education*, 2, issue 3, pp. 968–988.

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L. and Koole, M. (2020). Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigital Science and Education*, 2, issue 3, pp. 923–945.

Reimann, N. (2010). *Some Americans Are Tragically Still Drinking Bleach As A Coronavirus 'Cure'.* Retrieved from: https://www.forbes.com/ sites/ nicholasreimann/ 2020/ 08/ 24/ some-americans-are-tragically-still-drinking-bleach-as-a-coronavirus-cure/#361b6f76748d (accessed on 28. 09. 2020).

Rose, J. (2020). The mortal coil of Covid-19, fake news, and negative epistemic postdigital inculcation. *Postdigital Science and Education*, 2, issue 3, pp. 812–829.

Sapon-Shevin, M. and SooHoo, S. (2020). Embodied Social Justice Pedagogy in a Time of 'No Touch'. *Postdigital Science and Education*, 2, issue 3, pp. 675–680.

Sinclair, C. and Hayes, S. (2019). Between the post and the com-post: Examining the post-digital "work" of a prefix. *Postdigital Science and Education*, 1, issue 1, pp. 119–131.

Suoranta, J. (2020). The Covid-19 World: Learning or Downfall. *Postdigital Science and Education*, 2, issue 3, pp. 538–545.

Teräs, M., Suoranta, J., Teräs, H. and Curcher, M. (2020). Post-Covid-19 Education and Education Technology 'Solutionism': a Seller's Market. *Postdigital Science and Education*, 2, issue 3, pp. 863–878.

Tyack, D. and Cuban, L. (1995). *Tinkering toward Utopia: A century of public school reform*. Cambridge, MA: Harvard University Press.

Wagener, A. (2020). Crushed by the Wheels of Industry: War, Heroes, and Domestic Recolonization in the Time of Covid-19. *Postdigital Science and Education*, 2, issue 3, pp. 576–580.

Wellcome Trust. (2020). *Press release: sharing research data and findings relevant to the novel coronavirus (COVID-19) outbreak*. Retrieved from: https://wellcome.ac.uk/press-release/sharing-research-data-and-findings-relevant-novel-coronavirus-covid-19-outbreak (accessed on 28. 09. 2020).

World Health Organisation. (2020). *Coronavirus disease (COVID-19) outbreak*. Retrieved from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 (accessed on 28. 09. 2020).

Zhu, X., and Liu, J. (2020). Education in and After Covid-19: Immediate Responses and Long-Term Visions. *Postdigital Science and Education*, 2, issue 3, pp. 695–699.

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POSTDIGITALNI IZZIV IZOBRAŽEVANJA V ČASU PANDEMIJE

Povzetek: Prispevek okvirno predstavi ključne teoretske poudarke postdigitalne dobe. Članek na podlagi sinteze 56 člankov o pandemiji covida-19, objavljenih spomladi 2020 v reviji *Postdigital Science and Education* in nekaj drugih člankov, ki obravnajo podobno tematiko, izriše glavne teme, probleme, pristope in rešitve, kot jih opredeljujejo postdigitalni viri. Prispevek identificirane teme razvršča v tri večje skupine: doživete izkušnje in odzivi nanje, politika in filozofija. Avtor prepoznava odnose med raziskovalnim delom na teh raznolikih, pogosto inkomenzurabilnih področjih in opozarja na postdigitalno in postdisciplinarno naravo pandemije covida-19. Spoznanja združuje v konceptu viralne modernosti, raziskuje njegove teoretične in praktične omejitve ter razvija priporočila za postdigitalne raziskave v dobi covida-19. Sklene, da je dolžnost strokovnih delavcev v vzgoji in izobraževanju preseči edu-tehno--probleme in edu-tehno-rešitve, značilne za osrednje revije in raziskovalne pristope, ter poziva, da k obravnavi človeških problemov pristopimo celostno.

Ključne besede: postdigitalno, viralna modernost, covid-19, pandemija, raziskovalno delo, znanost, izobraževanje

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