From Scratch to Screen: Creating an Online Learning Centre

Jennifer Jenson

The University of British Columbia, Vancouver, Canada

jennifer.jenson@ubc.ca

Abstract: This paper describes the foundation and implementation of a free, online virtual learning centre, the Edith Lando Virtual Learning Centre (https://elvlc.educ.ubc.ca) in the Faculty of Education at the University of British Columbia, Canada from June 2021 until the present. As we are by now quite familiar with, the COVID-19 global pandemic ushered in rapid changes to the way education was being delivered, while laying bare deep inequities. Within this altered educational landscape are opportunities for teacher professional development that were neither possible nor prevalent prior to the pandemic. For example, use of video conferencing technologies like Zoom or Microsoft teams might have been a reality for many, but they certainly were not in ubiquitous use, nor was zoom a household name before the pandemic took hold, but during and after, for business and pleasure, we continue to use those video conferencing technologies. This paper will begin with a review of professional learning for K-12 teachers that has been primarily delivered in online settings. While that landscape has changed post-pandemic, documenting what has changed is relevant to showing how the Virtual Learning Centre has been able to thrive. And while quite a lot of that literature focuses on online pedagogies (and better online praxis), the focus of the centre is not online teaching. Instead, it delivers just-in-time high quality professional learning for teachers and other educators in an online setting. The review of related literature is followed by a description of the centre, its goals and priorities, and the work that it has been doing. Following that is an analysis of the impacts the centre is having in its local and extra-local communities, and a discussion of how this model might be adopted in other contexts, both small and large, with a view to sustainability.

Keywords: Online Professional Learning, Virtual Learning, Online Learning, Professional Development, Canada

1. Introduction

The first pandemic of the 21st century – COVID-19 - ushered in rapid changes to the way education was delivered and laid bare deep educational and other inequities. For example, a UNESCO global report on the pandemic persuasively argues, "Students from low- and middle-income countries show major systemwide learning losses.... Even in high-income countries able to quickly organize real-time online instruction, learning losses appear substantial" (The World Bank, UNESCO, and UNICEF, 2021, pp. 15-18). And other scoping review studies report as overall loss of progress for K-12 students despite income, location, or mode of pandemic delivery (c.f. Donnelly & Patrinos, 2022; Engzell, et al. 2021; Moscoviz & Evans). This has renewed calls for educational reform (Zancajo, et al., 2022) as well as new teaching strategies, more instructional time, more and other teacher professional development, new uses of technologies for instruction and learning, and the like.

Within this altered educational landscape are opportunities for teacher professional development that were neither possible nor prevalent prior to the pandemic. For example, use of video conferencing technologies like Zoom or Microsoft teams might have been a reality for many, but they certainly were not in ubiquitous use, nor was zoom a household name before the pandemic took hold, but during and after, for business and pleasure, we continue to use those video conferencing technologies. In the university where I work, we have gone from little to no hybrid options for participation in the everyday business of the university (never mind teaching) to nearly all hybrid options from thesis defences to departmental meetings to hiring committees. Indeed, prior to the pandemic, there would have been a learning curve for staff, faculty and students to join a new or unfamiliar video conference using a client like zoom or teams, but today, that is no longer a barrier for most. And in the intervening distance from the lock downs and isolation orders, many of us continue to use these tele-present technologies to support professional and personal aspects of our lives.

In 2021, with Canada and the world still grappling with COVID-19, it was clear that there were real needs in the educational community for skilled and professional learning supports (Hartshorne et al. 2020). I was appointed as the inaugural director of a fully online, never before realized virtual learning centre. I was invited to imagine the centre from the "ground" up, with a significant investment by a donor who was looking, not for a brick-and-mortar investment, but for something with potential impacts on education and learning more generally, especially as it was clear by this time that there would be lasting effects from the COVID-19 pandemic.

This paper begins with a review of professional learning opportunities for teachers that have been primarily delivered in online settings—the imperative of a virtual learning centre. To be clear, the focus of the centre is on designing and delivering high quality professional programming for educators and teachers at a distance. *not* on training teachers in using technologies or how to better teach online—though we do model online pedagogies.

The related litearture focuses, therefore, on professional learning at a distance. That review of related literature is followed by a description of the centre, its goals and priorities, and an overview of the work that we have been doing. Following that is an analysis of the impacts the virtual learning center is having on our local and extra-local communities, and a discussion of how this model might be adopted in other contexts, both small and large. The paper concludes with a critical consideration of institutional sustainability, and the particular challenges of preserving a virtual creation whose existence is by definition insubstantial given it's only 'presence' is on the internet, and there is no formal means of preservation.

2. Related Literature: Professional Online Learning for Teachers

While professional learning for teachers in online settings has been around for some time (see Dede, et al. 2009), before the pandemic those online learning sessions had barriers for some in terms of software, hardware and internet connectivity (Johnson, 2019; Obizoba, 2016). During the pandemic the compulsory move to online learning for teachers and learners in North American meant for many that they have developed the skills, hardware, software, and connectivity necessary to participate in online professional learning. Online teacher professional development (oTPD) has expanded flexibility in terms of time and place (Morina et al. 2023; Sadler et al. 2020), supporting not just urban, but also rural educators (Maher & Prescott, 2016; Quinn et al. 2022). As well, oTPD allows for 'just-in-time' participation on the part of teachers (Parsons et al., 2019), fitting in with their busy schedules (Lay et al. 2020; Li et al. 2019).

A review of journal articles related to oTPD in the Canadian context from 2000-2020 found just 11 scholarly publications directly related to online teacher professional development (Beach et al., 2021). Using a thematic analytic approach, the authors' identified 4 themes across the 11 articles: "knowledge exchange" meaning simply that information and knowledge sharing was a priority in oTPD; "reflective practice", which involved the participating teachers' exploring their own learning and doing in relation to the oTPD; formal and informal oTPD, the informal mostly being driven by the move to social media; and "just-in-time" support, again, mostly professional learning that is networked, primarily through social media like former Twitter and/or Facebook. For the purposes of this paper, the first and fourth theme are particularly relevant as the virtual learning centre became a hub both for knowledge exchange and, as we show below, "just-in-time" support for the professional learning community developed since the center's inception.

No Bricks, No Mortar: Building a Virtual Learning Centre, a Methodology

In June 2021, when pandemic restrictions were beginning to shift as the COVID-19 vaccines were taking hold in Canada, universities remained mandated by their provincial governments to continue online learning, and while jurisdictions returned to in-person learning for K-12 education, hybrid options created during the pandemic remained in place for many students at all age levels. Within that landscape and catalyzed by a generous donation to the Faculty of Education at the University of British Columbia, I was invited to imagine the construction of a virtual learning centre, from the ground up, but without any actual ground to build on. Here, I'll detail that process before moving on to describing the centre's activities and then analyzing its impacts thus far.

Imaging a virtual learning centre during an ongoing pandemic was certainly challenging – in part because so many of us in the education (and other) sectors were suffering from online fatigue, screen burnout, 'zoom fatigue' (Skylar, 2020) and the like. Was a 'virtual' learning centre even feasible at that time and what would it entail, how would we 'market' it, how would we get the word out that we were doing this work and if we built it, who would come? These questions swirled around as I and a small team of staff began the work of the centre, which started with the construction of a mission statement and goals that would help us lay its (virtual) foundations. Those goals became our building bricks in the establishment of the centre; its mortar was scoping activity which narrowed down the centre's audience, concentrating our efforts across five underserved communities: special needs education, Indigenous education, rural and remote education, early childhood education, and immigrant and refugee education. Those five areas are massive in and of themselves, but that focus allowed me as director to begin shaping our programming, and seeking out faculty, students, and staff with expertise in those areas to find out what needs were not being met (and especially as the pandemic was ongoing at the time).

Following the establishment of the foci of the centre, and the creation of an advisory board and terms of reference for the Board and the centre, I initiated an environmental scan to better understand what else (if anything) was 'out there' in terms of virtual learning centres, and to see if there were any such centers operating on a free, just-in time, learning model. In that 2021 scan, we found that virtual learning centres are primarily

either: 1) paid online learning programs that are typically private, such as teacher and teaching centred portals, training for law enforcement, and other practical and practice-based learning; 2) government sponsored resources for teachers and students that were free, but also limited to specific contexts; and 3) research-led learning centres that were most often affiliated with universities. The latter is closest to what we envisioned, with the caveat that we were not driven by a research agenda *a priori*, but rather were curating research and practice for a kind of knowledge exchange with the public and specifically the education sector, already present in resident expertise at UBC's Faculty of Education. That meant that we were working from existing expertise and were able to support programming that could make use of the infrastructure we had available through the virtual centre to grow and support initiatives. For example, a faculty member with a focus on rural and remote education received Ministry of Education funding to run a series of on-line workshops, focused on rural and remote professional development programming. We were able to leverage the centre's online infrastructure and expertise to create sign up forms, web pages, zoom links, exit polls, and the like to support the faculty member and their sponsors to run the workshops, 3 years later, that partnership is still in place and the workshops have reached now over a thousand rural and remote educators in British Columbia, and further afield.

Of course, an online, virtual learning centre needs a website, and I worked in tandem with a small marketing team in the Faculty of Education to develop the website as we were developing the centre's goals, mandate, terms of reference, advisory board, and initial online programming. The website had to follow university guidelines and constraints with respect to look and feel, and in terms of the back end architecture (Word Press), and other than that I was most concerned that the we have a reason to drive traffic to the website, so we delayed its launch until October 2021, when we were able to announce the above workshops to rural and remote educators, as well as other programming we had developed that first year, including a series of 3 workshops in early childhood education, and another three on Indigenous approaches to math education. The centre's website became the hub for all of our activities, including sign up pages, announcements for workshops, and so on. In 2024 alone, the centre's website had over 47,000 views.

Alongside this early programming, we promised to leverage some of the financial gift to build capacity in the Faculty of Education. This was another major pillar established early in the life of the centre – a grant to support the development of online and digital pedagogies. With this second pillar, we established a rolling (i.e. you can apply for it at any time) small grant, up to \$10,000 CAD. This grant was designed to support the development of digital tools in the service of the goals of the centre, and with particular attention to the 5 areas of focus. The grants are adjudicated on a rolling basis, were small in scope, and were meant to support the experimentation with pedagogical approaches that use digital tools to enhance or support teaching and learning and/or experiment with leading edge digital technologies. Faculty, staff, or students (with faculty supervision) were invited to apply for the grant, and since its inception in late 2021, we have funded over 40 small-scale projects that have led in many cases to follow-on funding for the awardees. This funding, in tandem with a ramping up of free, online workshops as the centre became more established, represents a significant achievement in the virtual 'bricks and mortar' that established the Edith Lando Virtual Learning Centre (https://elvlc.educ.ubc.ca). In the next section, the centre's programming, aimed primarily at professional learning for educators in the pre-K and K-12 system, is described, as well as a few small, scale but highly impactful workshops.

4. Online, Synchronous, Virtual Professional Learning: A Results Snapshot and Discussion

At the time of this writing, we are going into year five of a five-year mandate for the centre. Over its short life course, we have run nearly 200 online, synchronous workshops,(*should you say somewhere that asynchronous learning is supported through the center's digital archiving of the synchronous events, and more of course? the vast majority of which were recorded, edited, and archived to the centre's YouTube channel, and made available in a growing database of videos, and workshop related materials (URL). We have continued to focus our workshops around our mandate to deliver just-in-time, online professional learning for educators around the five themes described above but have also had the flexibility to respond to professional development needs from our own learning communities, of which more below.

Nearly all the content is delivered in synchronous online sessions via zoom. Given the launch of the centre occurred during an ongoing global pandemic, one thing we were able to capitalize on is the nearly ubiquitous uptake of video conferencing tools in and for education. This meant removing a technical barrier to accessing the online programming we provided. This is no small matter, as Francis and Jacobsen (2013) note, technological know-how was in the past a deterrent to many who would have otherwise participated in online professional learning. For the centre, it also meant that we spent very little time providing *technical* support, but instead, were concentrating our efforts on key programming in the five focal areas and supporting facilitation of large and

small online sessions. That doesn't mean that we haven't run sessions focused on using current and developing technologies, such as generative Artificial Intelligence, but it means we were able to reach a larger, interested, and already zoom-savvy audience, which has meant we have had a bigger impact than we might have prior to a pandemic. As all of the content for the centre is publicly available, and while I will not detail every workshop or series, I want to highlight here the kinds of impactful programming that was run by the centre (see Figure 1), and to showcase projects both small and large.

4.1 Professional Learning for Early Childhood Educators

Early in the life of the centre, it was brought to my attention that early childhood educators (ECE) educators, and especially those in rural and remote communities, were struggling to fulfill their mandated number of professional development hours (e.g. ECE educators in British Columbia are required to participate in 40 hours of professional development every 5 years) in part also due to the pandemic cancelling in person sessions. We partnered with the Early Childhood program, housed also in the Faculty of Education, to support a series of online, professional learning opportunities for ECE educators. Our first session, organized and developed by ECE specialists, and was a first foray for them into delivering content in through online video conferencing. This was just a month and a half after we completed the development of the centre's website (little more than a "landing pad") and was the second session in our nascent lineup. While this first session, took quite a lot of effort on the part of the ECE team to put together, it was very well attended with over 100 registrants and over 70 people in zoom. I mention it as it was the start of a very successful, three-part series that had nearly 500 registrations in the end, and between 70 and 115 people in attendance. One video from this series that is now three years old, "Engaging with Critical Reflection in Early Childhood" has over 3,200 views on YouTube, remarkable given that we did not continue to promote that content. It confirms that a need in the community that could be met with online, free, just-in time professional learning was certainly one the centre could meet. Programming e continues meeting that with additional ECE workshops, the last of which was a 3-part series on sustainable pedagogies for ECE educators, which had over 100 attendees for each session.

4.2 Numeracy and Literacy Series

A second opportunity was built from the networks and communities of a rural educator who is also a faculty member, Dr. Leyton Schenllert, and he and his colleagues, along with a math educator, Dr. Cynthia Nichol, deliver numeracy and literacy professional learning for rural and remote educators, with funding and support from the BC Ministry of Education and Child Care, and a rural school district (Greater Victoria School Board) in British Columbia. Their work has attracted the largest ongoing audiences with over 500 registrants and at least 100 or more attendees in each workshop. The series topically engages with questions, problems, and matters of concern related to literacy and numeracy, and a focus on equity, inclusion, and social justice with Indigeneity at its heart. What the centre has contributed to this powerhouse workshop series is an infrastructure to support and promote these workshops, for example, creating the web pages, registration forms, sending out emails and reminder emails, ensuring a facilitator is present for each workshop, editing the videos post-workshop, posting the videos, and curating workshop content for the centre's digital archive.

4.3 Feminist Pedagogies & Digital Literacies for Seniors

Because we are able to run free, collaborative workshops online, it has meant that we have been able to support smaller scale, but just-in-time initiatives driven by faculty, staff, and students. Two such initiatives, one led by a PhD candidate, and the other by an undergraduate student, are of note. The first, a series of 10 workshops, was supported through a collaboration with Vancouver Community College and targeted to adult English language learners taking mid-level English language courses (levels 3 and above). While we invited both men and women to the workshops, in the end only women attended, likely because there was the word 'feminist' in the title. The series was set up by the PhD candidate to accomplish two things: 1) to give English language learners access to university professors and students who focus their analyses on women and girls, and 2) to create a space for free, English language instruction and practice online (and when all of their classes were still online due to the pandemic). In the end, this was a small scale, but intensive project that reached 6 women who attended regularly with a low of 3 in attendance at one point, and a high of 8 at another. This small group allowed the women to also raise issues they couldn't in other settings such as intimate partner violence, patriarchy in their home countries, an exploration of gender fluidity and trans-related issues, and intersectional oppression such as class, ethnicity, disability, sexuality, as well as gender. When hearing from participants in the last session, we learned

of the meaningful impacts it had had in their lives, and that many of them were sharing the recordings of the sessions with friends and family.

4.4 Digital Literacies for Seniors

The second smaller initiative was a series "Digital Literacies for Seniors" that was created by an undergraduate student, and constructed a series of six short, factual, how-to videos: passwords 101, keyboard short cuts, using an internet browser, and how to use Netflix, for example. The workshops came out of our discussions with people in the immigration and refugee education community, who said they were finding that some of their adult learners needed more support for their online activities. An explicit goal for the student was to create 'how-to' videos that were clear and accessible to seniors. To date, the "how to use Netflix" video has been viewed over 8,200 times. To be clear, the centre does not spend any money on advertising — people find us through the internet, word of mouth, our listsery, and formerly our tweeting on X. And while we know a little bit about our audiences, we don't really know who is seeking out help for using Netflix, though the number of views indicate there is a need.

While the sheer volume of the work we have done in the centre prevents detailing all of it in this paper, one other initiative deserves detailing as it connects to the special needs learning mandate of the centre. The centre's Digital Pedagogy Lab grants being open to students opened space for them to pursue their unique interests in creating potential online learning resources. Two students in the Master of Education and Technology online program, Joe Kwan and Joyce Lo, applied for a grant to create resources for teachers, teaching assistants and the public who are caring for students with complex learning needs who are also non-verbal. They created a series of videos that address those challenges and suggestions for how to support those learners in classrooms and in home environment. One of the videos in their series has over 12,000 views on YouTube. In addition to those fantastic video resources, the students run an in-person summer camp, supported by centre staff, resources, and funding. The PANDA AAC Camp, is a camp designed specifically for children with exceptionalities whose primary mode of communication is AAC (augmentative and alternative communication). The camp was hosted for four years in partnership with the BC Association for Advancing Communications (BCAAC), "a non-profit organization focused on promoting literacy for everyone and supporting AAC users, educators, and families in British Columbia". The camp includes parents and caregivers of these special needs children, and hosts between 14 and 18 families each year, including siblings and extended family members. The camp also hosts over 60 volunteers and has Speech Language Pathologists on hand to lead activities. This camp has had a significant impact on this community, and in 2025 alone raised over \$37,000 CAD to support its work.

4.5 Workshop Database/Archive

One final resource worth mentioning is the workshop database that was created. Here we house all of the videos of the synchronous workshops, how-to videos that were created (e.g. digital literacies for seniors) and the additional, related content that was referred to in the workshops. This has allowed us to build out resources related to the five themes of the centre and warehouse the content that we have created to date. As an archive of the work, the database means that content will remain accessible to support a-synchronous learning long after the centre's activities have wound down.



Figure 1: 4-Years of Programming (2020-2024)

5. Conclusion: Digging in and Down, Addressing a Clear Need

Free, online, synchronous professional development and other educational programming post-pandemic remains a need for the communities we reach and who have found us. There are three pieces to this work that are worth emphasizing. First, rural and remote teachers are under-served when it comes to professional learning opportunities whether in person or online, and providing them online, and just-in-time professional development opportunities helps remediate that lack of opportunity. Second, and relatedly, the professional learning we are delivering is driven by the expertise, interests, research, and communities that are resident in the Faculty of Education writ large – faculty, staff and students: the Centre serves as infrastructure for reaching a public audience. While the number of attendees registered for sessions varies from around 10 to over 1,000, and those attending can be half those numbers, the centre continues to generate interest in ECE and K-12 education sectors, as well as higher education.

The challenge present throughout the life of the centre is sustainability: how does the Faculty of Education continue its engagement with the professional learning communities we have developed over the past few years? To continue the free, online, just-in-time professional development that the centre has been so successful at takes some future investment, as its donated funding comes to an end. Right now, with the fiscal deficits in higher education in Canada, including UBC, there is a lack of vision about how a university can discharge its responsibilities to "service" and :community engagement" as part of faculty work to contribute specialized knowledge and abilities not only within but also beyond the academy, when in reality it takes very little actual cash investment once a virtual learning centre has established communities, structures, and activities. Even when something is as insubstantial as a "virtual learning center", given the University's departure from its educational mission in the embrace of monetization and profit-generation, as successful as this centre has been in providing educational resources at no cost to its communities, and at institutional costs the slightest fraction of its brick and mortar counterparts, and notwithstanding the university's stated commitment to knowledge mobilization and community outreach, the Edith Lando Virtual Learning Centre is unlikely to survive once cost its donated funds come to an end. However, it should be able to be sustainable namely because it provides invaluable knowledge transfer to the communities the faculty of education, its staff, students, professors, and instructors work within. That work is written into the fabric of government funded research in Canada, and part of the outreach expected of publicly funded work, and the centre was able to not only support but amplify that outreach through its virtual communities. To conclude, the work of the centre has created has reached local, extra local, and national education communities in Canada and has, for many become a go to site for professional learning.

Ethics Declaration

There was no ethics clearance required to write this paper.

AI Declaration

No AI was used tool was used to develop or write this paper.

References

- Beach, P., Favret, E., & Minuk, A. 2021. Online teacher professional development in Canada: A review of the research. Canadian journal of learning and technology, 47, 2, 1-23. Available at: https://cjlt.ca/index.php/cjlt/article/view/27948/20571
- Dede, C., Jass Ketelhut, D., Whitehouse, P., Breit, L., & McCloskey, E. M. 2009. A research agenda for online teacher professional development. *Journal of Teacher Education*, 60(1), 8 19. https://doi.org/10.1177/0022487108327554.
- Engzell, P., Frey, A., & Verhagen, M. D. 2021. Learning loss due to school closures during the COVID-19 pandemic. *Proceedings of the national academy of sciences*, 118(17), e2022376118.
- Donnelly, R., Patrinos, H.A. 2022. Learning loss during Covid-19: An early systematic review. *Prospects* **51**, 601–609 (2022). https://doi.org/10.1007/s11125-021-09582-6
- Francis, K., & Jacobsen, M. 2013. Synchronous online collaborative professional development for elementary mathematics teachers. *The International Review of Research in Open and Distributed Learning*, 14(3), 319-343. https://doi.org/10.19173/irrodl.v14i3.1460
- Hartshorne, R., Baumgartner, E., Kaplan-Rakowski, R., Mouza, C., & Ferdig, R. E. 2020. Preservice and inservice professional development during the COVID-19 Pandemic. *Journal of Technology and Teacher Education, 28*(2), 137-147. https://www.learntechlib.org/primary/p/216910/.

Jennifer Jenson

- Johnson, N. 2019. Tracking online education in Canadian universities and colleges: National survey of online and digital learning 2019 national report. Canadian Digital Learning Research Association. https://onlinelearningsurveycanada.ca/publications-2019/
- Lay, CD, Allman, B, Cutri, RM and Kimmons, R. 2020. Examining a decade of research in online teacher professional development. *Frontiers in Education*, 20. DOI: https://doi.org/10.3389/feduc.2020.573129
- Li, Q., Richman, L., Haines, S., & McNary, S. 2019. Computational thinking in classrooms: A study of a PD STEM teachers in high-needs schools. *Canadian Journal of Learning and Technology*, 45(3), 1–21. http://dx.doi.org/10.1080/01587919.2018.1476844
- Maher, D., & Prescott, A. 2016. Professional development for rural and remote teachers using video conferencing. *Asia-Pacific Journal of Teacher Education*, 45(5), 520–538. https://doi.org/10.1080/1359866X.2017.1296930
- Morina, F., Fütterer, T., Hübner, N., Zitzmann, S., & Fischer, C. 2023. *Effects of online teacher professional development on the teacher, classroom, and student level: a meta-analysis*. Open Science Framework. https://doi.org/10.31219/osf.io/3yaef. Preprint
- Moscoviz, L., & Evans, D.K. 2022. Learning loss and student dropouts during the covid-19 pandemic: A review of the evidence two years after schools shut down. Available at: https://www.ungei.org/sites/default/files/2022-04/learning-loss-and-student-dropouts-during-covid-19-pandemic-review-evidence-two-years.pdf
- Obizoba, C. 2016. Effective facilitation methods of online teaching. *International Journal of Higher Education Management,* 2(2), 14–25.
- Parsons, S. A., Hutchison, A. C., Hall, L. A., Parsons, A. W., Ives, S. T., & Leggett, A. B. 2019. US teachers' perceptions of online professional development. *Teaching and Teacher Education*, 82(1), 33–42. https://www.learntechlib.org/p/208294/
- Quinn, F., Charteris, J., Adlington, R., Rizk, N., Fletcher, P., & Parkes, M. 2022. The potential of online technologies in meeting PLD needs of rural teachers. *Asia-Pacific Journal of Teacher Education, 50*(1), 69-83. https://doi.org/10.1080/1359866X.2020.1849538
- Sadler, T. D., Friedrichsen, P., Zangori, L. & Ke, L. 2020. Technology-supported professional development for collaborative design of COVID-19 instructional materials. *Journal of Technology and Teacher Education, 28*(2), 171-177. Available at: https://www.learntechlib.org/primary/p/216087/.
- Skylar, J. 2020 April, 24. 'Zoom fatigue' is taxing the brain. Here's why that happens. *National Geographic*. https://www.nationalgeographic.com/science/2020/04/coronavirus-zoom-fatigue-is-taxing-the-brain-here-is-why-that-happens/
- The World Bank, UNESCO, and UNICEF. 2021. The state of the global education crisis: A path to recovery. Washington D.C., Paris, New York: The World Bank, UNESCO, and UNICEF. Available at: https://documents1.worldbank.org/curated/en/416991638768297704/pdf/The-State-of-the-Global-Education-Crisis-A-Path-to-Recovery.pdf
- Zancajo, A. Verger, A., & Bolea, P. 2022. Digitalization and beyond: the effects of Covid-19 on post-pandemic educational policy and delivery in Europe, *Policy and Society*, 41, 1, 111–128. https://doi.org/10.1093/polsoc/puab016