

**What have we learned from the pandemic? A socio-technical case study on crisis management and its impact on work activities in a higher academic institution**

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**Abstract**

The COVID-19 pandemic had a severe impact on educational institutions. This paper presents the results of a multidisciplinary case study conducted at a university of applied sciences in Switzerland. The study aimed to understand how the pandemic affected the activities of different professions, how staff perceived the measures taken by senior management, what good practices were developed and what elements should be improved following this period of instability. The study was based on a multi-method qualitative design, combining documentary research, chronicle workshops, and semi-structured interviews. The paper focuses on three findings. First, we present a story of how the institution dealt with the pandemic. For each chapter of this story, we list the typical problems faced by managers and staff. Second, we show how different professionals were affected by the crisis and what new skills and practices they have developed. Finally, we analyse the impact of the pandemic using a socio-technical approach.

The analysis of the focus groups led to the identification of 7 chapters and 18 typical situations. The pandemic affected main professions of the institution in very different ways. Within a few weeks, teachers had to switch to online teaching. They developed new skills and experimented with new pedagogical approaches. Administrative staff struggled with teleworking, which had not been widely practised in these professions. They were also faced with additional responsibilities, particularly related to managing the sanitary measures. The pandemic gave some of them greater autonomy and responsibility, at least temporarily. The use of online meetings quickly became the norm and is still very common today. Cleaning and technical staff were heavily involved in implementing hygiene measures and disinfecting premises. They were very active even though the premises were often empty, leading them to question the purpose of this activity. Finally, managers had to take responsibility for the health and safety of staff and students, as well as the continuity of teaching and other priority activities, in a complex, tense and ever-changing context. The sharing of experience and skills between managers in different parts of the institution proved crucial. Finally, local managers played an important role in supporting their teams and maintaining social ties.

Future studies could explore some of these issues in more depth. It would also be useful to compare case studies, in order to identify regularities and better understand which factors are important for the resilience of an academic institution.

**Keywords**

COVID-19, sociotechnical systems, ergonomics, chronicle workshop, management

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## *Context*

The COVID-19 pandemic prompted authorities around the world to implement lockdown measures. These had a severe impact on educational institutions, raising critical questions about access to education and training. Studies have mainly focused on the resilience of students and teachers during the pandemic and on education policy responses (Baumber et al., 2021; Costanza, 2022; Lindblad et al., 2021; Ma et al., 2022). Fewer studies (Bartusevičienė et al., 2021; Oleksiyenko et al., s. d.; Shaya et al., 2022) have examined COVID-19 crisis management or academic and institutional resilience in higher education institutions. In this context, the paper presents the results of a multidisciplinary case study (ergonomics, psychology, management, administrative sciences, and social work) conducted in a university of applied sciences in Switzerland.

## *Objectives*

The study aimed to understand how the pandemic affected the activities of different professions (teachers, researchers, administrative and technical staff, and managers). It also aimed to assess how staff perceived the measures taken by senior management, what good practices had been developed and what elements should be improved following this period of instability.

## *Methods*

The institution where this case study was conducted is a university of applied sciences with 2,900 students and 900 employees. It consists of 5 schools (Health Sciences, Social Work, Management, Engineering, and Design), 9 applied research institutes and 16 educational degrees. The study was based on a multi-method qualitative design, combining documentary research, focus groups, and semi-structured interviews. The first step was to identify and compile the decisions taken by the senior management in relation to the pandemic and to relate them to the evolution of the number of infections at national level. The second step was to identify typical problematic work situations experienced by employees, in the context of the pandemic. Six interprofessional focus groups were conducted in March 2022 with a total of 39 voluntary participants. An adapted version of the Chronicle Workshop approach in two rounds (Grex & Ipsen, 2010; Poulsen et al., 2015) was used, with the aim of jointly constructing a chronological account of the main episodes of the COVID-19 pandemic. The final step was to conduct semi-structured interviews to complete the initial findings. A total of 29 interviews were conducted between May and June 2022. This allowed us to include profiles that were underrepresented in the focus groups (middle and senior management, members of the COVID crisis unit, educational counsellors, and cleaning staff).

The data set was analysed using a socio-technical approach, which consists of analysing the organisation as a complex system of interrelated social components (missions and objectives, people, culture) and technical dimensions (work processes and practices, technology, infrastructure and buildings). According to this perspective, any change and development in one of these components has an impact on the other components of the system (Clegg et al., 2017).

## *Main results*

This paper focuses on three findings. First, we present a story of how the institution dealt with the pandemic, as it was constructed retrospectively and collectively. For each chapter of this story, we have listed the typical problems faced by managers and staff (Table 1) Second, we have shown how different professionals were affected by the crisis and what new skills and practices they have developed (Table 3). Finally, we analysed the impact of the pandemic on the institution, based on the socio-technical approach.

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**Table 1. The story divided into chapters with their corresponding typical situations.**

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| <b>Chapters and typical situations</b>  |
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| <i>Chapter 1: First lockdown (3-7/2020)</i> <ul style="list-style-type: none"><li>(1) Unstable hygiene guidelines for the use of premises</li><li>(2) Formulation of guidelines for faculties and research institutes</li><li>(3) Mandatory teleworking</li><li>(4) Cancellation of fieldwork for students and staff</li><li>(5) Preparation of distance learning course for teaching staff</li><li>(6) Difficulties in circulating documents and collecting signatures during the lockdown</li><li>(7) Reorganisation of faculties to work and teach remotely (colloquia, courses, meetings, etc.)</li><li>(8) The end of time stamps and the introduction of automatic time recording</li></ul> |
| <i>Chapter 2: Back to the premises (7-9/2020)</i> <ul style="list-style-type: none"><li>(9) Discontinuation of teleworking and return to on-site work</li><li>(10) Organising online exams</li><li>(11) Switching again from in-class to distance learning</li></ul>  |
| <i>Chapter 3: COVID counter-attack (9-12/2020)</i> <ul style="list-style-type: none"><li>(12) Recommendations on teleworking, with differences in interpretation and practice between organisational units</li></ul>  |
| <i>Chapter 4: New tightening of measures (1-4/2021)</i> <ul style="list-style-type: none"><li>(13) Difficulties in welcoming and induction of new staff, with many teams not present in the buildings</li></ul>   |
| <i>Chapter 5: Summer relaxation (5-9/2021)</i> <ul style="list-style-type: none"><li>(14) Implementation of online examinations, with difficulties in monitoring and evaluation</li><li>(15) Start of the academic year in-class</li><li>(16) Back to 100% on site</li></ul>  |
| <i>Chapter 6: New increase in cases of contamination (9/2021-2/2022)</i> <ul style="list-style-type: none"><li>(17) Ethical debates and practical difficulties related to the requirement of a personal COVID certificate for students and staff</li></ul>  |
| <i>Chapter 7: Lifting of the measures (2-3/2022)</i> <ul style="list-style-type: none"><li>(18) Overcoming the crisis and learning from the experience</li></ul>  |

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The analysis of the focus groups led to the identification of seven chapters in the collective history of the institution's staff (Table 1). *Chapter 1* lasted from March to July 2020. It was marked by the obligation to telework during the first lockdown. It was described by the participants as a “crash” due to the disruptive effect of the COVID-19 pandemic. *Chapter 2* corresponded to the summer of 2020 with a return to on-site work and some relaxation of the social distancing measures. *Chapter 3*, in the autumn of 2020, was marked by what the staff called the “COVID counter-attack”, where “it all started again”. *Chapter 4* (winter 2020-2021) was marked by a further tightening of the measures, but people had got used to them. *Chapter 5* corresponded to the summer of 2021, which was experienced as quite similar to the previous summer. *Chapter 6* took place in the autumn 2021. On-site courses were maintained thanks to the introduction of the compulsory COVID certificate. *Chapter 7* was the lifting of all measures between February and March 2022. Participants described it as the “big forget” or the “big denial”. People were tired and quite unsure whether this was the end of the crisis or just a false hope.

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The pandemic affected the main professions of the institution in very different ways. These specificities are shown in Table 2.

**Table 2. Impact of the pandemic on the main occupational groups.**

| Impact on work activities  | Development of new skills and practices   |
|--|---|
| <i>Teachers, educational counsellors, and researchers</i>  |   |
| <ul style="list-style-type: none"> <li>– Need to move to online teaching and exams and, at a later stage, to co-modal courses (additional workload, uncertainty, need to learn new skills and rethink teaching, new teacher-student dynamic, etc.).</li> <li>– Finding solutions to ensure practical lessons, laboratories and workshops despite sanitary restrictions.</li> <li>– Teachers faced with a large number of questions from students.</li> <li>– Uncertainty of academic calendars, with repeated changes from on-site teaching to online and co-modal teaching.</li> <li>– Slowdown in ongoing research (as access to the field was made difficult by containment and hygiene measures).</li> </ul> | <ul style="list-style-type: none"> <li>– Developing skills in online and co-modal teaching; adopting new tools and new forms of teaching.</li> <li>– Reflecting on the advantages and shortcomings of new technology-based pedagogical approaches.</li> <li>– Inter-professional collaboration between teaching staff, educational counsellors and IT support teams.</li> <li>– Mutualisation of IT tools between the different schools belonging to the institution.</li> <li>– Positive aspects of the use of digital tools, such as the creation of small online working groups of students for short periods of time, more practical and regular coaching sessions with students, and the use of interactive tools in courses.</li> <li>– Workshops and platforms for sharing teaching innovations and good practice (e.g., group oral exams used for both summative and formative assessment, group work based on video tutorials, etc.).</li> <li>– New research opportunities (on COVID, its health and social impact, organisational resilience, etc.); provision of short-term funding to initiate research projects on these topics.</li> </ul> |
| <i>Administrative staff: secretaries, librarians, human resources officers, etc.</i>   |   |
| <ul style="list-style-type: none"> <li>– Increased difficulty in managing work-life balance for this category of staff, who had little experience of and equipment for teleworking.</li> <li>– Additional tasks related to COVID: distribution of respiratory masks, management of saliva tests, reporting on students' non-compliance with COVID certificate requirements, management of isolation and quarantine measures.</li> <li>– Positive effect of the temporary elimination of commuting time.</li> <li>– Restricted access to libraries.</li> <li>– Obstacles to the induction of new staff due to teleworking.</li> </ul>   | <ul style="list-style-type: none"> <li>– Introduction of rules on teleworking</li> <li>– Increased responsibility for professionals such as the occupational health nurse, safety officers, educational counsellors and, on a less permanent basis, administrative staff.</li> <li>– The use of videoconferencing was seen as particularly appropriate for administrative, organisational, information or validation issues, as well as for the admission of new students and for job interviews.</li> <li>– Interdisciplinary communication with colleagues doing similar work in other schools of the institution.</li> <li>– Virtual coffee breaks to compensate for the loss of direct contact.</li> <li>– Centralisation of library services previously distributed among the schools; development of teaching materials (tutorials, chats, etc.); development of online library services.</li> </ul>  |

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| Impact on work activities  | Development of new skills and practices   |
|--|---|
| <p><i>Technical and cleaning staff</i></p> <ul style="list-style-type: none"> <li>– Constantly changing floor markings and displayed hygiene instructions; constantly rearranging classrooms; disinfecting surfaces and door handles, even though the premises were largely empty during the lockdown periods (feeling of uselessness); providing masks and saliva tests, etc.</li> <li>– Reduced activity during lockdowns or even temporary stoppages for technical staff.</li> <li>– Fewer interpersonal contacts as buildings were almost empty.</li> <li>– Lack of information on management decisions, as cleaning staff do not have a professional email address; feeling of being invisible and unrecognised.</li> </ul>   | <ul style="list-style-type: none"> <li>– Development of autonomy and adaptability.</li> <li>– Informal distribution of work in the team.</li> <li>– Better acquaintance with the few people on the premises.</li> </ul>   |
| <p><i>General directorate, managers, and supervisors</i></p> <ul style="list-style-type: none"> <li>– Taking responsibility for ensuring the health and safety of staff and students, and for the continuity of teaching and other priority activities, in a complex, tense, and ever-changing context.</li> <li>– Making decisions, issuing instructions, communicating them, and monitoring their implementation.</li> <li>– Increased cooperation with cantonal authorities.</li> <li>– Senior and middle managers, executive assistants, and many support services faced with an overwhelming number of questions from students and staff.</li> <li>– Decisions on teleworking (who is entitled to telework, how often, for how long, for what types of tasks, etc.).</li> </ul> | <ul style="list-style-type: none"> <li>– Creation of an internal crisis unit.</li> <li>– Autonomy given to front-line managers to adapt, to some extent, the instructions to the local specificities.</li> <li>– Personalised communication with staff by several middle managers (e-mail, chat, online meetings), following official communications from the Directorate-General.</li> <li>– Reorganisation of Directorate-General meetings: detailed agendas with defined speaking slots to ensure equity between organisational units; invitation of specialists depending on the topics to be addressed (<i>e.g.</i>, occupational health nurse, educational counsellors).</li> <li>– Very useful exchange of expertise between managers and specialists from the institution's various schools (health, management, social work, art, engineering) and central services (HR, IT, facilities management, etc.).</li> <li>– Essential role of line managers in supporting staff, maintaining social ties, ensuring staff autonomy, mutual trust, and proactivity (<i>e.g.</i>, by asking staff about their daily lives and difficulties at the start of online meetings).</li> </ul> |

Finally, the content of the focus groups and interviews was analysed according to the six dimensions of a socio-technical system (Clegg et al., 2017). The first dimension relates to the *goals and priorities* of the system. The context of the pandemic changed the priorities in the missions and objectives. The focus was on maintaining education, ensuring health and safety, and continuing day-to-day operations. The pandemic prompted reflection on the future of education and experimentation with new forms of teaching. Debates arose about the effectiveness of distance learning, especially as field and action learning (workshops, labs, internships, etc.) were discontinued. Health and safety were mainly the responsibility of the facilities department (logistics and disinfection) and the secretaries (ensuring the availability of masks and managing the distribution of saliva tests). The continuation of daily activities depended mainly on the use

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of teleworking. The administrative staff had the most difficulty with this abrupt change, particularly because of the predominance of paper-based work and the lack of mobile computer equipment.

With regard to the second dimension of the socio-technical system —*work processes and practices*— some categories of participants pointed to an intensification of their work, in particular people working on the front line of crisis management (top and middle managers, executive assistants, and various support services), as well as teachers, educational counsellors, and librarians. On the other hand, some administrative and technical staff experienced a reduction or even a halt in their activities during the lockdown period. In addition, the pandemic increased the complexity of work, with unprecedented challenges for teachers, additional demands on administrative tasks, extra meetings and communication channels, and difficulties for managers to respond in times of uncertainty. However, some people described the pandemic as an opportunity to develop self-management, innovative thinking, and new skills, particularly among administrative staff, research assistants and scientific officers. Opinions varied on the impact of the pandemic on work performance, with some citing productivity gains from teleworking, and others citing increased fatigue and constant multiple activities leading to productivity losses. Finally, the pandemic led to an increased role and responsibility for professionals such as the occupational health nurse, safety officers, educational counsellors and, on a less permanent basis, administrative staff.

The third dimension relates to *people*. The pandemic affected the meaning of work, social integration, the interweaving of work and private life, and feelings of self-worth and recognition. It raised existential questions about employees' relationship to their activity, function, and tasks, especially during the lockdown period. Employees experienced an anxious period with very few face-to-face social relationships, both personal and professional, especially for those who started work during this period. Teleworking helped to make working conditions more flexible. Some aspects were appreciated by employees, such as the elimination of commuting time and the possibility to adapt working hours to the private life. Communication tools also helped to reduce the need to travel to meetings and conferences. However, many respondents reported negative effects, such as: difficulty in separating work and private life, less time for breaks, working outside normal hours and outside traditional locations. Finally, while participants reported a high level of commitment to their activities and goals, there was also a sense of frustration at the perceived lack of recognition of their work by their hierarchy.

*Culture* is the fourth dimension and refers to the impact of the pandemic on social cohesion, cooperation and exchange, and institutional coordination and communication. Overall, the comments reflected a climate of solidarity, mutual aid, conviviality, and goodwill between members, with more horizontal exchanges. However, several people reported a general decline in the number and regularity of interactions. Virtual exchanges were also criticised for the loss of informal and non-verbal cues. In addition, the requirement for a vaccination certificate and the introduction of “pooled” testing for non-vaccinated employees caused a lot of tension in the autumn of 2021. Given the uncertainties and fears generated by the pandemic, line managers played an essential role in supporting employees and maintaining social bonds. As a common threat, the pandemic strengthened the sense of unity within the institution. It contributed to a better understanding of the diversity of needs between departments and improved mutual respect between members of the management board. Participants emphasised the complexity of developing a single, structured communication, while taking into account the specificities of the different schools within the institution. Overall, they felt that the guidelines and instructions were clear, and that the communication was consistent, regular and of high quality. The top-down approach to crisis response by senior management was also widely seen as necessary and

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effective, at least during the first part of the pandemic. However, a more participatory approach would have been appreciated and desirable in the longer term.

The pandemic increased the use of *technology*—the fifth dimension of the socio-technical system—within the institution. A VoIP (Voice over Internet Protocol) tool was installed six months before the crisis, allowing social contact and collaboration to be maintained virtually. Despite the difficulties of distance teaching, digital tools made it possible to have short but more frequent coaching sessions with students. Finally, videoconferencing was considered particularly suitable for some organisational and administrative tasks, but unsuitable to replace debate sessions.

With regard to the last dimension of the system—*buildings and infrastructures*—it is clear that the physical presence in the premises has been durably reduced, leading to a rarefaction of informal exchanges. Finally, new needs have emerged in terms of workplace design. On the one hand, participants stressed the inappropriateness of shared workspaces with the increased use of videoconferencing. On the other hand, teleworking has created difficulties for people who do not have a workspace or suitable equipment at home.

### *Discussion/perspectives*

This case study highlights both favourable and unfavourable modes of corporate governance. Some are specific to the pandemic crisis, while others are rooted in previous institutional structures and ways of working. Overall, the institution has managed to adapt its operations to the context. Positive aspects include the teamwork of the Directorate General, the adaptation of measures to the diversity of the institution, and the quality of the networks established with external stakeholders. The commitment, effort and job-crafting initiatives (Wrzesniewski & Dutton, 2001) of frontline workers also played a key role. Other organisational aspects, such as the rigidity of the system, the tendency to work in silos, and potentially harmful working conditions, were identified as institutional weaknesses that already existed before the pandemic. The study covered a complex institution, different professions, a two-year period and a variety of challenging situations. This is a limitation, because it is difficult to synthesise the wealth of data without missing the specificities of certain professions or periods of the pandemic. In addition, the Chronicle Workshop method aims to construct a collective story that smooths out the specificities of each profession and organisational unit. However, this is also a strength, as the study provides an overview of many issues and situations that could be explored in greater depth in future studies. For example, it would be useful to look more closely at the feelings of frustration expressed by administrative staff who saw their roles, responsibilities and skills increase during the crisis, but who were returned to their original professional situation once the crisis was over. A second limitation of the study is its exploratory and descriptive nature. However, this approach is justified by the unprecedented nature of this crisis and by the interest in documenting the events. An interesting research perspective would be to collect and compare different case studies. A cross-case comparison would allow generalisation of the findings to develop a theoretical model of the interplay between socio-technical and contextual factors influencing organisational resilience.

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## References

- Bartusevičienė, I., Pazaver, A., & Kitada, M. (2021). Building a resilient university: Ensuring academic continuity—transition from face-to-face to online in the COVID-19 pandemic. *WMU Journal of Maritime Affairs*, 20(2), 151-172. <https://doi.org/10.1007/s13437-021-00239-x>
- Baumber, A., Allen, L., Key, T., Kligyte, G., Melvold, J., & Pratt, S. (2021). Teaching Resilience: Enabling Factors for Effective Responses to COVID-19. *Student Success*, 12(2). <https://doi.org/10.5204/ssj.1773>
- Clegg, C. W., Robinson, M. A., Davis, M. C., Bolton, L. E., Pieniazek, R. L., & McKay, A. (2017). Applying organizational psychology as a design science: A method for predicting malfunctions in socio-technical systems (PreMiSTS). *Design Science*, 3, e6. <https://doi.org/10.1017/dsj.2017.4>
- Costanza, F. (2022). Covid-related educational policies in action: A system dynamics view. *International Journal of Public Sector Management*, 35(4), 480-512. <https://doi.org/10.1108/IJPSM-07-2021-0187>
- Grex, S., & Ipsen, C. (2010). *The Chronicle Workshop—A method for to enhance and explore innovative processes in project-based organisations*. International Conference on Organizational Learning.
- Lindblad, S., Wärvik, G.-B., Berndtsson, I., Jodal, E.-B., Lindqvist, A., Messina Dahlberg, G., Papadopoulos, D., Runesdotter, C., Samuelsson, K., Udd, J., & Wyszynska Johansson, M. (2021). School lockdown? Comparative analyses of responses to the COVID-19 pandemic in European countries. *European Educational Research Journal*, 20(5), 564-583. <https://doi.org/10.1177/14749041211041237>
- Ma, G., Black, K., Blenkinsopp, J., Charlton, H., Hookham, C., Pok, W. F., Sia, B. C., & Alkarabsheh, O. H. M. (2022). Higher education under threat: China, Malaysia, and the UK respond to the COVID-19 pandemic. *Compare: A Journal of Comparative and International Education*, 52(5), 841-857. <https://doi.org/10.1080/03057925.2021.1879479>
- Oleksiyenko, A., Mendoza, P., Riaño, F. E. C., Dwivedi, O. P., Kabir, A. H., Kuzhabekova, A., Charles, M., Ros, V., & Shchepetylnykova, I. (s. d.). Global crisis management and higher education: Agency and coupling in the context of wicked COVID-19 problems. *Higher Education Quarterly*, n/a(n/a). <https://doi.org/10.1111/hequ.12406>
- Poulsen, S., Ipsen, C., & Gish, L. (2015). Applying the chronicle workshop as a method for evaluating participatory interventions. *International Journal of Human Factors and Ergonomics*, 3((3/4)), 271-290.
- Shaya, N., Abukhait, R., Madani, R., & Khattak, M. N. (2022). Organizational Resilience of Higher Education Institutions: An Empirical Study during Covid-19 Pandemic. *Higher Education Policy*. <https://doi.org/10.1057/s41307-022-00272-2>
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a Job: Revisioning Employees as Active Crafters of Their Work. *The Academy of Management Review*, 26(2), 179-201. <https://doi.org/10.2307/259118>