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Developing good practices and organisational resilience during the COVID-19 pandemic: A retrospective qualitative case study in a higher education institution

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ABSTRACT

The COVID-19 pandemic prompted authorities to enforce social restrictions and business closures, severely affecting the education sector and disrupting academic continuity. While existing studies have primarily focused on the evolution of learning environments, student and academic resilience, and educational policy responses, limited attention has been given to organisational resilience in higher education institutions.

This paper addresses this gap by examining the impacts of the pandemic and organisational resilience components within a university of applied sciences. Using Chronicle Workshops and semi-structured interviews, this case study spans from the onset of the pandemic in March 2020 to June 2022, scrutinising the effects on various professions, including top and middle management, teachers, scientific, administrative, and technical staff.

Key events included the initial lockdown and the subsequent shift to telework. Social tension during the implementation of COVID-19 certificates emerged as a noteworthy factor. The paper identifies best practices, including anticipative exchanges, investments in occupational health and safety, top-down crisis management, collegial decision-making, technology integration into work processes, creative pedagogical and assessment methods, leadership based on trust and autonomy, self-management, and a strong sense of solidarity. Recommendations for improvement encompass addressing siloed functioning, enhancing crisis communication, prioritising health and safety under normal circumstances, reflecting on technology's limits in teaching, recognising commitment and skills, ensuring decision transparency, and providing post-crisis support.

These findings underscore the significance of considering both social and technical aspects in organisational responses to crises like the pandemic. Strengthening managerial capacity to support staff is crucial for enhancing resilience against future threats.

1. Introduction

In early 2020, the world experienced an unprecedented crisis. On 25 February 2020, the novel coronavirus (COVID-19) was detected in Switzerland for the first time. With the rapid deterioration of the situation, the government declared the closure of educational institutions, businesses and public services on 13 March 2020. The state of emergency was declared three days later. After more than two years of combating the spread of the COVID-19 pandemic, Switzerland lifted the final containment measures in April 2022 (Bernard, 2022). This study specifically examines the situation from the perspective of a higher education institutions (HEI) and its staff.

Since the onset of the pandemic, there has been a growing interest in the sudden shift towards online learning and teaching (Bento et al., 2021b; Bertling et al., 2020; de los Reyes et al., 2022; Dohaney et al., 2020; Donnelly et al., 2020; Durnford et al., 2021; Gigliotti, 2020;

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Huber, 2021; Marinoni et al., 2020; Regehr and Goel, 2020; Roache et al., 2020). The resilience of students and academic staff, the management responses of faculties administrators, and governmental responses in education policy are the most frequently addressed themes in the literature. Most studies focus on a specific scope, such as students' learning experiences, psychological impacts, educational responses, or leadership traits. They also tend to target a specific group, such as students, teachers, researchers, or top management. Furthermore, they often examine a specific period or event, such as the quarantine or the first months of the crisis. Moreover, few studies have integrated non-academic staff in their scope of analysis (de los Reyes et al., 2022; Huber, 2021; Regehr and Goel, 2020). In general, the effects on this category of staff are more broadly explored in businesses (Aksay and Sendogdu, 2022; Dirani et al., 2020; Kniffin et al., 2021; Stoller, 2020).

In this context, a study was conducted in spring 2022 with the objective of identifying the impacts of the COVID-19 pandemic on a Swiss university of applied sciences, with a particular focus on the organisation of work and the activities of its staff (top and middle managers, teachers, researchers, mid-level staff, administrative and technical staff), excluding students. The resilience model proposed by Duchek (2014; 2020) was employed. It has been identified as a highly relevant framework for analysing the resilience of HEIs (Asante et al., 2023; Bartusevičienė et al., 2021; Shaya et al., 2022). In a previous publication (Krsmanovic et al., 2023), we identified classes of events experienced during the pandemic and grouped them into chapters of a collective story. The focus of this article is different: it investigates the adaptation dynamics and assesses how the staff perceived the measures put in place by senior management. The research questions were twofold. Firstly, what were the most significant events or situations (in terms of the organisation and the work activities) that marked the everyday lives of the institution members? Secondly, what good practices and resilience initiatives were developed and, conversely, what practices need to be improved? By conducting a retrospective analysis, the purpose was to learn from this major disruption and to contribute to the organisational resilience of HEIs. The pandemic resulted in the initiation of similar research projects across the globe, the findings of which are presented in the next section.

2. Theoretical background

2.1. Education and resilience

Resilient organisations play a critical role in the development of resilient communities (Bartusevičienė et al., 2021; Dohaney et al., 2022; Shaya et al., 2022). Education, as an essential public good, is a key factor in preparing children and young people for current and future threats. In the past, educational institutions experienced critical incidents such as power outages, fires, strikes, epidemics (SARS, H1N1), extreme weather, earthquakes and others (Huber, 2021; Regehr and Goel, 2020). In contrast to the COVID-19 pandemic, these sudden phenomena disrupted daily operations for a limited time and to a limited extent. In essence, the pandemic challenged and prompted HEIs worldwide to move academic and related activities online for an uncertain duration. In this context, academic continuity and organisational resilience have received more attention from policy makers, top managers, teachers and researchers (Bartusevičienė et al., 2021; Bertling et al., 2020; Shaya et al., 2022).

2.2. Organisational resilience

The notion of resilience first emerged in the field of ecological systems and was defined as the ability of an ecosystem to recover to its previous state after being damaged (Dohaney et al., 2020; Holling, 1973). Since then, the concept has been addressed by several disciplines such as psychology, engineering, management, and ergonomics (Chen et al., 2021; Hollnagel, 2018). In the domain of organisational research, the notion of resilience was introduced by Meyer (1982) to characterize an organisation's capability to absorb a shock and return to its original state. In recent years, it has gained more attention, especially in the field of crisis management and high-reliability organisations (Hollnagel, 2018; Weick and Sutcliffe, 2007). Contrary to the notion of robustness, which stresses the capacity of an organisation to absorb shocks and maintain its operations without changing its fundamental structure, organisational resilience is all about flexibility (Bento et al., 2021a). According to Hollnagel (2018), it relies on four processes: anticipating, monitoring, responding, and learning. Anticipation is the proactive approach taken by workers and decision-makers to anticipate disruptions and other challenges to a system. Monitoring consists of scanning, listening, observing, attending, and examining the system's functioning across different time scales to understand its current state. Response—acting or reacting, intervening, correcting, adjusting, fine-tuning, exchanging or even making sacrifices to achieve specific goals—is a dynamic feedback principle allowing work to be performed with continuous improvements. Finally, learning reflects capturing, examining, studying experiences, and integrating knowledge for future practice. According to Autissier and Vandangeon-Derumez (2021), the COVID-19 pandemic could have plunged organisations into what Weick (1993) calls a cosmological incident: a sudden and brutal event in which individuals feel that the rational world is collapsing around them, resulting in a loss of meaning. The pandemic demonstrated the importance of developing forms of organisational resilience to adapt, reinvent, and turn constraints into opportunities.

2.3. Resilient HEIs under COVID-19 pandemic

Asante et al. (2023), Bartusevičienė et al. (2021), and Shaya et al. (2022) suggest applying the conceptual model of Duchek (2014; 2020) to characterise organisational resilience of HEIs. This model describes three successive and interacting stages of anticipation, coping, and adaptation. Resilience is defined as « the ability to anticipate potential threats, to cope effectively with unexpected events, and to learn from these events in order to produce a dynamic capability that is directed toward facilitating organisational change » (Duchek et al., 2020: 390). It considers resilience as both an iterative process and a set of organisational capabilities and routines. Each stage contains cognitive and behavioural actions. Organisational resilience is contingent upon the existing knowledge base, which is essential for anticipating critical developments. It is influenced by three drivers: (1) the availability of financial and human resources, (2) the social resources (information sharing, common objectives and views, support and coordination among staff, employee involvement, networking, etc.), and (3) the power based on expertise and shared responsibilities. The following sub-sections present the findings of studies addressing the resilience of HEIs during the COVID-19 pandemic, according to this model.

2.3.1. Anticipation stage

The anticipation stage refers to the period prior to the disruption and captures the key concepts of preparation, observation, and identification (Duchek, 2014; 2020). Educational institutions were initially not prepared nor equipped to deal with such an unexpected crisis. Organisations have plans and protocols in place to activate in case of an undesirable event (Asante et al., 2023; Dohaney et al., 2020). However, in this case, prior knowledge and anticipative actions were quite limited, whereas the impacts were significant on multiple dimensions: structural, operational, social, psychological, and communicational (Regehr and Goel, 2020). The establishment of crisis management units to monitor the pandemic has been identified as a key move to ensure academic continuity (Bartusevičienė et al., 2021). In addition, a people-centred response to the crisis, the deployment of systematic emergency operations, ongoing leadership communication, and investment in the infrastructure have been identified as important early reactions (Gigliotti, 2020; Huber, 2021).

2.3.2. Coping stage

The coping phase occurs during the crisis. It requires cognitive acceptance of the situation and behavioural operationalisation of resilience strategies and mobilisation of necessary resources to implement solutions (Duchek, 2014; 2020). The transition to online learning and teaching formats combined several challenges, such as adjusting academic planning with the preparation of fully online terms, developing technology-enhanced learning, and designing online teaching material (Bertling et al., 2020; Donnelly et al., 2020; Marinoni et al., 2020; Regehr and Goel, 2020). Academic staff experienced challenges in terms of resources, support, and competences, especially in the early stages of the crisis: difficulties in adjusting and adapting their teaching, lack of access to the necessary resources (digital tools and appropriate workspaces), and a lot of time spent on setting up technological infrastructure and troubleshooting technical problems without adequate support (Bartusevičienė et al., 2021; Dohaney et al., 2020). Nevertheless, the crisis led to the positive emergence of explorative and innovative pedagogical practices. For example, online lectures were at best designed to be more stimulating and to facilitate student participation and concentration (Bento et al., 2021b; Durnford et al., 2021). Experimentation with techniques such as integrating student feedback, developing dedicated discussion forums, minimising lecture time and maximising student interaction by encouraging group activities, ensured the quality of education (Bartusevičienė et al., 2021; Bertling et al., 2020; Huber, 2021).

Particularly in the early months of the pandemic, some employees experienced increased workloads, relentless virtual meetings, working days that extended well beyond normal hours, and difficulties in getting away and taking time off, as work and home life became intertwined with remote working. Other employees were unable to work because their operations were shut down (Regehr and Goel, 2020). At the organisational and management level, significant efforts were made to maintain regular interaction and problem solving through online collaboration and meetings between teams. As the crisis dragged on, top and middle managers had to cope with a constant demand for information from students, academic, and non-academic staff. Indeed, the situation was changing rapidly, and the information and communication process required regular updates. Difficulties in reconciling a consistent message and set of procedures with local needs were also highlighted (Marinoni et al., 2020; Regehr and Goel, 2020). Governance and coordination in large, decentralised organisations are complex, with increased pressure on top management to act and set overarching plans. The literature also shows that decisions and actions were generally taken in a top-down approach (Dohaney et al., 2020; Gigliotti, 2020).

2.3.3. Adaptation stage

The adaptation phase represents the post-crisis period when organisations can reflect on and learn from successes and failures, and implement longer-term changes (Duchek, 2014; 2020). In the education sector, several variables were considered important to successfully address the COVID-19 challenges: a plan for continuity of learning and teaching, digital learning strategies and infrastructures, institutional support to develop digital literacy, reliable IT support, flexible incident management structures, and a strong sense of community among staff and learners (Bartusevičienė et al., 2021; Donnelly et al., 2020; Regehr and Goel, 2020). In addition, staff needed to be flexible, adaptable, collaborative, empathetic, open-minded, responsive, and creative (de los Reyes et al., 2022). The development and implementation of new learning models (blended learning approach and extended online teaching) relied on knowledge transfer at the institutional level, sharing of experiences, and exchange of ideas with more experienced colleagues. These social resources were crucial to overcome pedagogical issues (Bartusevičienė et al., 2021; Dohaney et al., 2020; Huber, 2021).

Across all phases of the crisis, activities required unprecedented levels of interaction and collaboration between stakeholders (Dohaney et al., 2020; Regehr and Goel, 2020). Researchers also highlighted the importance of leadership qualities. In an uncertain environment, being proactive, actively communicating with a coherent crisis communication strategy, and being both realistic and optimistic are important characteristics (de los Reyes et al., 2022; Stoller, 2020). Similarly, effective planning, humility, and agility in management are essential (Kniffin et al., 2021). Moreover, ensuring the financial health of the institution, enabling staff access to technology, and prioritising the emotional state of employees are also characteristics of effective leadership and institutional support (Dirani et al., 2020). In addition, valuing employees, being open to participation, improvising quick and correct decisions, taking precautions and prudence, as well as having strong personality traits (foresight, intuition, analytical thinking, empathy) seem necessary for managing a crisis such as the pandemic (Aksay and Sendogdu, 2022).

The literature also reports on recurring failures and constraints: insufficient buy-in and acknowledgement, limitations of existing digital systems, lack of school-level planning to respond to disruptions, lack of a cohesive institutional community, and absence of institutional incentives to encourage resilience initiatives (de los Reyes et al., 2022). Dohaney et al. (2020) also identified a disconnect between managerial approaches and academics' desire for autonomy. A directive crisis management system may not be the most effective and supportive approach for academic and research staff. These authors suggest a blended top-down and bottom-up approach, with interrelated efforts at all levels of the organisation, to support the autonomy of academics and diversity in learning and teaching. In line with this recommendation, we used both a top-down and bottom-up methodology. On the one hand, we studied the decisions taken by the management of a Swiss academic institution. On the other hand, we examined the experiences of staff in the field. The study was based on qualitative methods presented in the next section.

3. Methods

The study was grounded in a constructivist approach and sought to understand stakeholders' representations, motivations, and experiences (Landry, 2008). According to Bartusevičienė et al. (2021) and Yin (2003), case studies are an appropriate research design for examining a contemporary phenomenon within its real-life context, particularly when the boundaries between the phenomenon and context are unclear. The data was collected at a Swiss university of applied sciences with 2,900 students and 900 employees. It comprises five school units (health sciences, social work, management, engineering, art & design), nine applied research institutes and sixteen educational degrees. The study was based on a multimethod qualitative design, comprising four consecutive steps: a documentary analysis, Chronicle Workshops, semi-structured interviews, and a thematic analysis of the workshops and interviews (Fig. 1). A semi-participatory approach was employed to collect data as closely as possible to the realities on the ground.

3.1. Step 1: Documentary analysis

The initial step entailed the identification and categorisation of the decisions made by the top management, in conjunction with the different phases of the pandemic. These phases were delineated on the basis of the infection and hospitalisation rates provided by the Swiss Federal Office of Public Health. To identify the decisions, we conducted a comprehensive analysis of every pandemic protection plan and every communication sent to employees by the top management. For each key moment, the date, the number of infections, hospitalisations, and deaths at the national level, along with the decisions and measures enacted by the top management, were entered into an MS Excel file. The documentary analysis enabled the identification of the measures involved in the coping stage and their classification according to their nature and temporality.

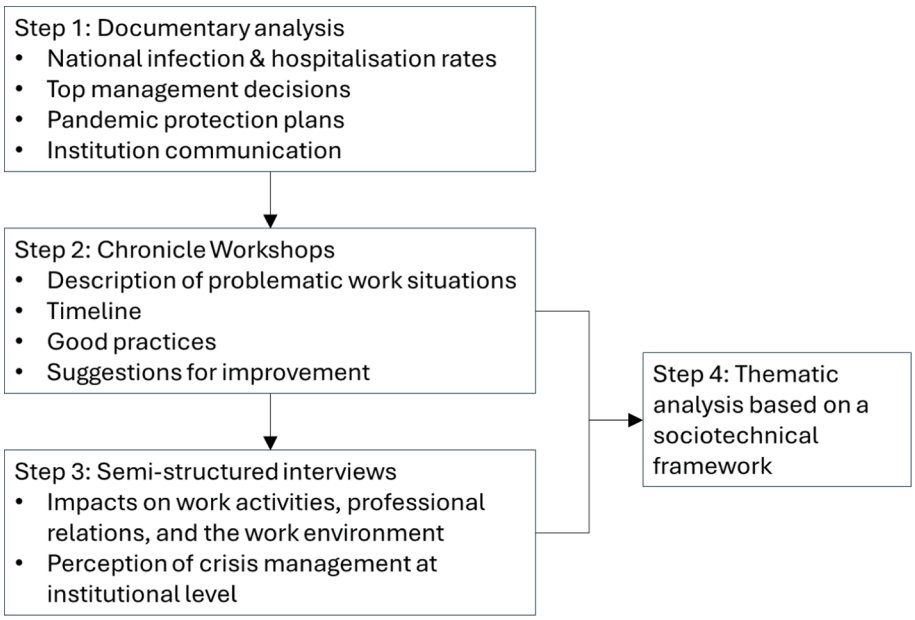

Fig. 1. Methods.

3.2. Step 2: Chronicle Workshops

The capacity of a team to use its resources and exhibit appropriate behaviours represents a fundamental aspect of organisational resilience. As Duchek et al. (2020) posit, the ability to anticipate unexpected events, to cope with them, and to learn from them can only be achieved collectively. Chronicle Workshops appear an appropriate method to address this collective dimension (Grex and Ipsen, 2010; Ipsen et al., 2015; Poulsen et al., 2015). This method draws inspiration from action research, narrative sociology, and organisational theory. Its objective is to reconstruct a collective story through the collaborative exploration and joint analysis of a workplace intervention—in this case, the pandemic management measures. We adapted it to the limited time available (two hours per group). Six inter-professional and inter-school Chronicle Workshops were held in March 2022. An invitation to volunteer was sent to all employees. The participants were requested to describe the typical problematic work situations they had encountered during the pandemic, to situate them on a timeline using post-it notes, to elaborate on the good practices they had observed or developed, and to suggest improvements and supplementary measures. Each workshop consisted of two rounds of discussion. A team of three researchers conducted the workshops: one person was in charge of moderating, while the others transcribed the discussions as accurately as possible. The post-it notes were also transcribed afterwards.

3.3. Step 3: Semi-structured interviews

In the third phase, semi-structured interviews were conducted, in May and June 2022. The objective was to gain further insight into the work situations described during the workshops. An interview guide was developed to address the impacts of the crisis on work activities, professional relations, and the work environment, as well as people's perception of the management of the pandemic at the institutional level. The purposive sample was selected in order to ensure that the voices of those who were under-represented in the Chronicle Workshops were heard, in particular middle and senior management, members of the COVID-19 crisis unit, and local educational advisors. Furthermore, the aim was to achieve a balanced representation of the different sites and functions of the institution. The interviews were conducted by two researchers each, and illustrative parts of the audio recordings were transcribed.

3.4. Step 4: Thematic analysis

In order to achieve methods integration and build a comprehensive understanding of the study case (Fetters et al., 2013), we analysed the data from the workshops and the interviews using a socio-technical framework (Clegg et al., 2017; Davis et al., 2014). An organisation is a complex system comprising interrelated social and technical components. Social components include missions and goals, people, and culture. Technical components include work processes and practices, technology, as well as buildings and infrastructure. Any change or development in one of these components affects the others. This approach enabled us to identify the social and technical factors involved in the organisational resilience to the pandemic and to link them together. This approach was employed to conduct an inductive thematic analysis of workshop and interview transcripts (Braun and Clarke, 2021). The objective was to identify the key social and technical elements that promoted or hindered organisational resilience at each of the three stages of Duchek's (2014; 2020) model. Verbatims were translated into English and used to illustrate how each stage of organisational resilience was experienced. The subsequent section presents the findings.

4. Results

4.1. Sample

A total of 67 individuals participated in the study, comprising 39 individuals who attended the workshops and 29 who participated in the interviews (Table 1); one individual participated in both. Most participants were administrative and technical staff, with half of them (19) employed in the central services and the other half (23) in one of the five school units. This category of staff includes members of the management board and executives, representatives of central services such as IT, HR, finance, and others, administrative employees (executive or administrative assistants, economic and scientific collaborators, coordinators, translators, librarians), and the technical staff (technicians and cleaning staff). The high prevalence of technical and administrative personnel in the sample is attributable to the considerable diversity of their tasks. The teaching staff (professors, lecturers, educational advisors) constituted approximately a quarter of the sample. In contrast, the mid-level staff (scientific officers, PhD students, and research assistants) constituted the

Table 1
Sample constitution.

Sociodemographic variables	Nb (%)
Method (n = 68)[*]	
Chronicle Workshop	39 (57.4)
Interview	29 (42.6)
Gender (n = 67)	
Female	38 (56.7)
Male	29 (43.3)
Organisational unit (n = 67)	
Central services	19 (28.4)
School of management	13 (19.4)
School of social work	11 (16.4)
School of health sciences	11 (16.4)
School of engineering	7 (10.4)
School of art and design	6 (9.0)
Professional category (n = 67)	
Administrative and technical staff	42 (62.7)
Teaching staff	18 (26.9)
Mid-level staff	7 (10.4)

[*] One individual who participated in both a workshop and an interview was counted twice.

smallest category.

4.2. Organisational resilience stages

The following subsections present the results of the Chronicle Workshops and interviews aligned with Duchek's conceptual model (2014; 2020), delineating the three phases of crisis management: anticipation, coping, and adaptation.

4.2.1. Anticipatory actions

The emergence of the COVID-19 was largely unexpected, and knowledge was limited to standard epidemic contingency plans. Consequently, only a few socio-technical elements could be identified as anticipative. The imminent threat of the geographical spreading of the virus gave the management board the incentive to interact in an informal manner with political and administrative authorities, as well as with the management executives, to prepare for the coming crisis. As a male member of the board of directors said,

> *We had been keeping an eye on the situation since January 2020, but we thought it would stay in China. The real wake-up call came when we heard what was going on in northern Italy. People started thinking differently because northern Italy is next door. We started thinking about working differently. Around 24–25 February, the first reaction was to set up an informal group. We then formalised it as a task force, but it was already up and running. Then, unofficially, we asked the managers of school units to discuss the transition to distance learning. It was important to keep it quiet so as not to cause panic.*

The previous crises had not reached such a threatening level, nor did any contingency plan exist to deal with such disruption. Informal discussions enabled the institution to start thinking in-house about strategies to adopt in case the crisis reached Switzerland. Close contact with the cantonal authorities enabled the management board to better anticipate the decisions taken by the Swiss government. These initial anticipatory actions also led to the rapid and efficient inception of an internal crisis cell, which was aimed to quickly and consistently operationalise the governmental directives.

The initial provision of technology resources was sufficient, despite minimal utilisation. Indeed, a VoIP (voice over Internet protocol) tool was installed six months before. The transition of social contact and collaboration to a virtual environment was immediate. The tool became the basis for online courses. A participant (teaching staff, male) explained,

> *Not many people thought this would happen, and nobody knew how it would unfold. We were really lucky to introduce Teams just a few months before the pandemic, which was done for various reasons […]. This, at least, enabled us to work and save the courses. It was a strategic decision by the new IT manager. We were really lucky to have a reliable system that worked from the start. They had to work hard to make it work, but they did, and we didn't have any major problems.*

Despite the limited prior knowledge, the existing social and technological resources permitted to adapt and respond effectively to the crisis. Furthermore, the management board demonstrated a strong institutional desire to learn from the crisis and to potentially contribute to the region's economic and social recovery by launching several research projects focused on the impact of the pandemic on economy and society.

4.2.2. Coping strategies

The documentary analysis of communications and decisions revealed that the management board implemented over a hundred measures between 13 March 2020 and mid-February 2022 to prevent the spread of the virus. A female member of the administrative and technical staff explained that 'Our objective was to avoid becoming a COVID nest that could have spread to the wider community'. The development and implementation of coping strategies had a significant social and technical impact on staff. Three important classes of events were addressed: (1) measures related to teaching formats (distant, hybrid, return in-class), (2) mandatory and recommended periods of remote work, and (3) protective and hygiene measures in buildings.

(a) **Measures related to teaching formats**

The necessity to move teaching activities online, to prevent contagion and protect the health and safety of staff and students, had important social and technical implications, especially during the first lockdown. As a male member of the board of directors stated,

> *From our perspective, what was essential and what informed all management decisions over the past two years, was to fulfil the teaching mission as a matter of priority and, if possible and whenever we could, to do so in a face-to-face format. That was the guiding principle.*

Initially, in-class courses were prohibited, and access to buildings was restricted intermittently for students and the majority of staff. The initial weeks were the most challenging for the top and middle managers, teaching staff, educational advisors, and administrative support, who were required to reorganise activities remotely (courses, meetings, colloquia, etc.), to develop guidelines for study programmes and research institutes, and to respond to a greater number of enquiries from students. The transition from face-to-face to online teaching was described as a challenging and demanding process, particularly for teachers. A female teacher said,

> *Managing working hours is quite a problem, especially when you're at home where you can easily work from 7a.m. to 7p.m. or even later. I had to do some peer coaching to explain how to use IT tools, and how to integrate them into the lessons. With the intermittent changes of course formats, I no longer had the energy to remodel my lessons.*

Other challenges included the initial lack of IT resources and insufficient digital skills in a context of high demand. According to the teaching staff, online courses were not a viable long-term solution due to numerous limitations (lack of human interactions, students' attention deficit, intrusive examination supervision methods, unfairness between students, and others). In addition to these negative consequences, there were instances where the virtual format was simply unsuitable for certain types of learning, such as workshops and laboratories that required secure premises or the demonstration of professional gestures in class. As one of the participants (administrative and technical staff,

male) noted,

> *At the management school, we did not have the challenge of laboratories where you must be present to do things. In fact, we only had this challenge in specific learning formats based on teamwork and coaching sessions, and this was difficult. It is really… where presence itself is part of the training. […] At the art and design school as well as health school, they work in workshops to teach technical or medical procedures. The engineering school also needed labs, because there are safety environments and rules that must be respected.*

The necessity to reconsider teaching activities provided an incentive to develop creative pedagogical approaches and to share knowledge and best practices among colleagues. Similarly, this issue had an impact on researchers who were forced to slow down or even halt projects that relied on access to the field. There was an immediate inter-professional solidarity and collaboration, particularly between teachers, local educational advisors, IT services, and administrative support staff. A male IT specialist explained,

> *The state of emergency led to a phenomenal increase in the digitalisation of teaching. We went from relatively standard teaching, which was basically limited to the use of PowerPoint, except for a few people who had already integrated some interactive tools. Overnight it became more complicated. The usual teaching scenario (1.5 hour per lesson in a classroom with the teacher handing out slides) was very difficult to maintain on-line. […] Before COVID, educational advisors were more part of a closed circle, doing educational monitoring and working on the future of teaching. Suddenly, there was an urgent need for them. And a plethora of super-creative solutions came out of nowhere, from discussions between different stakeholders.*

As the crisis progressed, additional challenges emerged, particularly in relation to academic calendars and formats. Late decisions and their subsequent communication were also perceived as problematic:

> *The chain of command was slow to respond. It was challenging to obtain information, including whether exams were being held, for example. Decisions were not always forthcoming, and answering questions at the front line was complex. Reporting on the action taken should have been more expedient. […] Decisions sometimes took a week to be confirmed. (Administrative and technical staff, male).*

Staff members experienced a sense of responsibility and guilt due to the challenges they faced in providing clear instructions to teams and students. Moreover, teachers and administrative support staff demonstrated a strong commitment to facilitating regular communication with students. These challenges, compounded by the need to manage everything expeditiously, led to an accumulation of fatigue that persisted and intensified over time.

(b) **Mandatory and recommended telework**

The majority of respondents indicated that the continuation of daily business operations was primarily dependent on the improvised deployment of telework. This approach was perceived as detrimental to their work-life balance, particularly for families. Furthermore, respondents reported on the lack of suitable space and appropriate equipment. For individuals living alone, the experience of loneliness was particularly acute. Additionally, many respondents commented on the difficulties in effectively managing the boundaries between professional and private life. Nonetheless, this unanticipated occurrence was also perceived as an opportunity to explore flexible work arrangements and novel family dynamics (for example, shared lunches or homework sessions). Virtual communication channels were established in several teams to sustain social connections (for example, virtual coffee breaks and informal debriefings). A female administrative employee said,

> *I was pretty shocked by the strict confinement. I found it tough to manage day-to-day life with children and pre-teens. I felt guilty. I wanted to do more. […] but it was really a relief not to have to worry about time stamps. I had a good communication with my hierarchy who kept us informed without pressure.*

Administrative staff encountered the greatest difficulties with the sudden transition to teleworking. They were previously accustomed to commuting to the office and were particularly constrained by a predominantly paper-based work environment. Consequently, customary in-situ procedures such as the signature process had to be entirely rethought. Additionally, some departments were also inadequately equipped with mobile computers. As another female administrative employee reported,

> *It was tricky to get people to sign documents without being able to go into the buildings, but we managed to find a solution using email pretty quickly. It was still a bit of a hassle. For instance, you had to submit the expense claim via email. Then, just check it. Then, send it to the manager for the all-clear. Then we had to put it all together in a PDF file and send it to the finance department, while keeping the original one at home. And sometimes people just didn't reply. We had to keep on launching new requests. It was so frustrating and time-consuming.*

Front-line workers (including top and middle managers, executive assistants, teaching staff, and several support services) experienced an overload of work. In contrast, staff without hierarchical positions or with work scopes that were limited by the crisis experienced a reduction or even a halt in their activities, especially during the first lockdown. The few authorised to access buildings for work described a ghostly atmosphere with strongly reduced social ties. Some also questioned the meaning and purpose of their profession. The head of a teaching programme said,

> *There were significant differences between the staff categories. People who had to revise all their courses very quickly worked like hell. Top and middle managers had to deal with the situation as best as they could in their position.*

This contrasts with the experience reported by a female cleaning employee:

> *We had extra tasks, but we weren't overloaded because the buildings were empty and therefore quite clean. It was strange at work when no one was around. It was like a desert. Everywhere. It seemed sad. […] Sometimes, I bumped into two or three people. You talked a bit more. I was more like trying to pamper and boost morale in discussions.*

As the crisis intensified, levels of trust and autonomy were enhanced, particularly between direct managers and employees, and between colleagues. This was partly attributable to the removal of time stamps and the introduction of automatic time recording. For some, this led to enhanced employee productivity. Despite difficulties in networking internally and externally, virtual tools facilitated proactive collaboration and communication. Nevertheless, the accelerated pace of work achieved by front-line staff prompted concerns about the compensation of unrecorded overtime. A comparable perception of disparate treatment was observed in the varying modalities of work across school units and central services during periods of recommended telework. These periods were characterised by confusion due to a lack of clear guidelines from the management board. A male administrative employee recalled,

> *It was a real mess from January 2021 onwards. There were tensions. Some people felt like they were being treated differently from others. The recommendations for teleworking were open to interpretation […] We didn't really have a clear line. For our team, it was quite clear: we would apply teleworking at most. But in other teams, it was quite the opposite. This made it difficult for us to collaborate with other professionals. Is the person on-site or working remotely? It was also unpleasant when you came back and heard people say: 'Well, I haven't seen you in a while'.*

You feel like an outsider because you're doing what you think is right, but it's not the same as what someone else thinks.

As time progressed, staff became increasingly accustomed, organised, and flexible. Some respondents described the current situation as a 'new normal' in their working lives. The organisation continued to function and grow, with new employees being recruited. However, people also expressed difficulties in managing a return to 100 % face-to-face work, particularly regarding the readjustment of private and professional lives, but also due to noise annoyance (online sessions in open-plan offices and co-working spaces).

(c) **Mandatory protection and hygiene measures**

Once the containment period had ended, access to the buildings was subject to a number of rules, such as social distancing, protective mask wearing, regular disinfections, and ventilation of classrooms. These directives underwent significant changes throughout the course of the pandemic, which had a significant impact on the work of the administrative and technical field staff. Indeed, their role expanded to include additional tasks such as floor markings, constant reorganisation of spaces, display of prevention posters, installation of disinfection points, stock provision and supply, and premises sterilisation. A male caretaker explained,

During the lockdown, we were present in the buildings for disinfection. The management board and other authorised staff were still present. We were also installing floor signage and calculating distances between seats. In the first few weeks, there was an avalanche of conflicting measures. Despite the low occupancy rates, we completed a significant amount of work. However, this represented a significant loss of time and money with the return to in-class lessons with only the mandatory mask directive. I felt that we had done almost everything for nothing. Therefore, we left the strips on the floor so that everyone could see that we had done things.

The introduction of a mandatory COVID-19 certificate for students and staff further weakened social cohesion. In the absence of a certificate, staff were permitted to perform a weekly saliva detection test, which would allow them access to the buildings. The implementation of this measure was outsourced, which was highly appreciated by many respondents. However, other employees were more critical. The respondents who were involved in the administration of these tests regretted that they had not been entirely outsourced, as they found the task bothersome and uncomfortable. A female administrative employee reported,

The tests were administered by the technical and administrative teams, who were responsible for preparing, distributing, and collecting them. To do this, they had to temporarily suspend their regular duties. In my opinion, the certificate was highly intrusive. I felt that I was invading the privacy of the person, even without intending to. It placed labels on students and colleagues.

The occupational health nurse played a pivotal role, maintaining close contact with the top management, the regional hospital, and laboratories, while also informing students and staff about quarantine periods, conducting detection tests, and organising vaccination days. Respondents generally appreciated the option to take tests at their own discretion. However, this created a sense of exclusion among staff who were not vaccinated, particularly given that cafeterias were forbidden to them. The debate on vaccination in society thus spread across the institution, with colleagues engaging in heated ethical discussions.

4.2.3. Adaptation: good practices developed

Respondents identified several positive outcomes from the pandemic. Firstly, some noted that it provided an opportunity for top and middle managers to reevaluate activities more effectively and to concentrate on what was essential, particularly regarding the institution's future. This included the revision of strategic plans and reflection on future systemic risks, such as climate change. A school principal said,

The unexpected and dangerous COVID-19 situation made us work really hard. We had to learn how to deal with the uncertainty. We were so used to the usual routine of school, where everything is the same every year. The COVID-19 crisis forced us to think ahead and plan for the future.

Table 2 outlines the results pertaining to good practices developed and the improvements to be pursued post-crisis to enhance resilience. These elements are presented in accordance with the socio-technical approach. Respondents identified several best practices in shaping organisational resilience. Firstly, the institution successfully fulfilled its core mission of maintaining academic and business continuity while ensuring the health and safety of its members. The top-down approach of the collegial top management board was widely regarded as effective. The institution's characteristics—namely, its size, interdisciplinary expertise, and decentralised sites—were reported as strategic assets that facilitated decision-making and ensured the implementation of measures without undermining diversity and autonomy. Nevertheless, some respondents stressed the importance of integrating health and safety considerations into regular operations:

As a result of the crisis, the importance of physical and mental health has come to the forefront. These issues were talked about before the crisis, but they hadn't been properly addressed. The needs were already there. Now, more than ever, we need to develop an occupational health service. Care is essential for both students and administrative and technical staff. (Member of the crisis cell, female)

Similarly, the adoption of digital solutions in teaching and work activities requires further evaluation to assess their benefits and limitations. The transition to online teaching activities and, more broadly, to telework has reinforced the presence of technological equipment in classrooms and workstations, the contractualisation of IT tools for courses, the utilisation of videoconferencing for meetings, and the digitalisation of work processes. A female teacher mentioned: '*The crisis has been a turning point for several colleagues, who have changed their practice and strengthened alternative and creative teaching*'.

Participants recognised the creativity in pedagogical methods but deemed it essential to further ensure the consolidation of knowledge and competencies. Additionally, some respondents emphasised the necessity of encouraging teachers to adopt digital culture more actively in the post-crisis period. The digitalisation of administrative processes should also continue to be expanded:

We've made extra efforts to digitalise some of our work processes. We had to put a lot of thought into things like invoices, expense reports, and electronic signatures on contracts. But now, we've gone back to what we did before. We really need to keep digitalising these processes and continue thinking in this direction. (Administrative and technical staff, male)

To clarify the interpretation of telework guidelines and regulate videoconferencing practices, future digital developments should better consider their impacts on staff health and wellbeing. Although teleworking has posed an unprecedented challenge to social relations, the collaboration between teachers, local educational advisors, and administrative support staff has been a notable example of the solidarity within the institution. Respondents highlighted that transversal cooperation has proven effective and should be further encouraged. Moreover, despite shortcomings due to perceived lack of transparency in decision-making and unfairness among employees, respondents noted positive leadership based on trust and autonomy. Employees have developed self-management skills, enhanced their digital literacy, and gained flexibility in work-life balance. While compensation for overtime and the maintenance of salaries for staff with reduced or halted activities were appreciated, many respondents felt there was insufficient

Table 2
Good practices developed and post-crisis improvements.

Socio-technical components	Good practices developed	Recommended post-crisis improvements
Mission and goals (S)	– Implementation of containment, social distancing, and hygiene measures – Ensuring academic and business continuity through telework deployment – Adoption of a top-down governance approach – Promotion of collegiality within the management board – Establishment of an informal, later formalised, strategic crisis cell – Strengthening of links with authorities and healthcare institutions – Development of a clear and regular communication process for staff and students – Granting of exemptions under strict conditions, such as access to laboratories – Delegation of autonomy to front-line managers to address specific needs of schools	– Better integration of health and safety at work into the institution's mission, particularly concerning work time management – Reflection on the advantages and limitations of online learning and teaching solutions – Formalisation of a contingency plan with regular reviews of risk analysis and mitigation measures – Conducting regular assessments throughout the crisis period – Engagement in more participative governance practices over the medium and long term – Improvement of crisis communication to staff and students (including rhythm, channels, and personalisation)
People (S)	– Development of IT skills, particularly for teachers – Enhanced flexibility in work-life balance – Promotion of autonomy and self-management – Recognition and compensation for extra work undertaken – Maintenance of salary for employees experiencing reduced or halted activities	– Greater emphasis on employee development skills, including IT, innovative thinking, and taking on responsibilities – Enhanced recognition for employees' commitment, particularly for front-line workers without hierarchical positions such as teachers, administrative and technical staff, as well as part-time workers and employees on fixed-term contracts – Provision of support measures for staff in the context of generalised fatigue
Culture (S)	– A culture of solidarity throughout the institution – Enhanced knowledge sharing among teachers – Strengthened collaboration between teachers, local educational advisors, and administrative support staff – Increased cross-functional collaboration with school counterparts – Executive leadership founded on trust and autonomy	– Dismantling operational silos and fostering cross-functional collaboration – Ensuring decision-making transparency – Upholding fairness and preventing disparate treatment in the application of teleworking policies – Facilitating informal gatherings and team-building activities to reinforce weakened social bonds
Work processes and procedures (T)	– Enhanced utilisation of IT tools in courses – Regular monitoring and follow-up of students via video conferencing	– Promoting the integration of IT tools into teaching practices – Facilitating the sharing of knowledge and competencies
	– Creativity in teaching practices and assessment methods – Implementation of a teleworking policy – Implementation of digital authenticated signatures – Digitalisation and centralisation of library services – Increased use of video conferencing for meetings	– Formalising the role of local educational advisors – Clarifying teleworking guidelines – Advancing the digitalisation of administrative processes – Standardising video conferencing practices
Technology (T)	– Provision of mobile IT equipment for staff members – Integration of IT materials into classroom settings – Integration of IT materials into workstations – Institutional procurement of interactive tools through contractual agreements	– Ensuring the availability of adequate technological resources and IT infrastructure – Enhancing IT support services
Buildings and infrastructure (T)	– Provision of protective masks and disinfection equipment – Implementation of signage and reorganisation of premises to ensure safety distances – Vaccination campaign and introduction of a COVID-19 certificate with externalised controls	– Outsourcing the management of saliva test detection to ensure employee privacy during similar crises – Ensuring fairness and avoiding the stigmatisation of different population categories

S: social component. T: technical component.

recognition for the commitments made and the skills developed.

> *Some individuals truly deserve additional recognition due to their hard work and exceptional contributions. The management board holds both the status and remuneration necessary for assuming significant responsibilities, particularly in crisis management. However, it is important to acknowledge and appreciate those individuals without hierarchical status who have been entrusted with substantial responsibilities and demanding tasks. Recognising the efforts of all individuals, regardless of their formal positions, is crucial. (Administrative and technical staff, male)*

In terms of crisis management, the implementation of protective and hygiene measures to mitigate viral contamination within buildings (such as the use of protective masks, disinfection equipment, social distancing protocols, COVID-19 certificates, saliva testing, and vaccination campaigns) was perceived as exemplary practice.

Overall, the institutional response was viewed as supportive and prioritising the well-being of individuals. Both internal and external coordination efforts were deemed effective. Nevertheless, some respondents recommended the formalisation of contingency plans and clarification of roles among stakeholders, alongside the implementation of robust monitoring mechanisms to address systemic threats. The necessity to enhance top-down communication was underscored by critiques of crisis communication strategies, along with the proposal for the establishment of employee counselling services. A female scientific officer explained,

> *All the measures got lifted at once in February 2022. I was really surprised by how sudden it was because I'd been working on my own for two years. I was alone in the offices, still wearing my mask, feeling pretty safe. I would've liked it better if they'd lifted the measures gradually over a few weeks.*

Indeed, achieving greater acceptance and understanding of constraints could be facilitated through participatory decision-making processes.

5. Discussion

5.1. Innovative aspects of the study

This study exemplifies an institutional commitment to learning from the disruptions caused by COVID-19 and adapting accordingly. This was achieved through the collection of staff initiatives and a reflective examination of processes and practices aimed at achieving organisational resilience. Notably, Chronicle Workshops (Grex and Ipsen, 2010; Ipsen et al., 2015; Poulsen et al., 2015) served as a means to foster resilience by providing employees with a platform to share their narratives collectively. This participatory approach enabled each respondent to comprehend the diverse range of experiences encountered amid the common threat, thereby reinforcing mutual understanding. To the best of our knowledge, no prior studies have investigated this subject using this methodological approach.

While our findings align with existing literature on the resilience of HEIs during the pandemic (Asante et al., 2023; Bartusevičienė et al. 2021; Bento et al., 2021b; Bertling et al., 2020; de los Reyes et al., 2022; Dohaney et al., 2020; Donnelly et al., 2020; Durnford et al., 2021; Gigliotti, 2020; Huber, 2021; Marinoni et al., 2020; Regehr and Goel, 2020; Roache et al., 2020; Shaya et al., 2022), they delved deeper into the intricate interplay between social and technical factors and responses to disruption (Clegg et al., 2017; Davis et al., 2014), in accordance with the three interactive stages of organisational resilience and crisis management: anticipation, coping, and adaptation (Duchek, 2014; 2020). Furthermore, our retrospective case study examined crisis management across almost the entire period, contrasting with point-in-time studies. Additionally, the integration of opinions from non-academic staff sets this research apart from others (de los Reyes et al., 2022). Finally, the representativeness of the sample, diversity of occupational categories, and interdisciplinary expertise of the research team (spanning health sciences, social work, and management) facilitated a holistic understanding of the resilience of the organisation.

5.2. Insights on organisational resilience amid COVID-19

Our results regarding institutional goals and priorities during the crisis align with the perception that maintaining teaching and learning activities was the primary concern (Bartusevičienė et al., 2021; Dohaney et al., 2022). Anticipatory actions were limited due to minimal prior knowledge and significant uncertainty (Shaya et al., 2022). However, our findings indicate that the responsiveness of top management in swiftly engaging in informal actions and the availability of necessary technological resources were crucial for the rapid implementation of alternative virtual solutions, ensuring academic and business continuity. Technology played a crucial role in addressing the current crisis marked by unprecedented social distancing. However, without the human factor, technology would not have sufficed. The willingness of teachers and employees to embrace and integrate IT tools into their practices beyond the crisis, thereby acquiring IT skills, enabled them to adapt to the challenges and enhance their organisation's resilience.

Although the respondents considered the overcoming of the crisis a success, the lack of explicit preparedness and equipment in HEIs to handle such unprecedented disruption (Asante et al., 2023; Dohaney et al., 2020) underscores the need for better monitoring of systemic risks and the development of contingency plans that integrate technological alternatives against similar threats. Furthermore, while people's health was a central concern during this crisis (Aksay and Sendogdu, 2022; Gigliotti, 2020; Regehr and Goel, 2020), our results highlighted the insufficient consideration of occupational health before the pandemic.

The institutional deployment of online learning and teaching activities as the primary coping measure is extensively discussed in the educational literature (Bertling et al., 2020; Donnelly et al., 2020; Huber, 2021; Marinoni et al., 2020; Regehr and Goel, 2020; Roache et al., 2020). The consequences for academics and students are well documented. However, our study highlights other institutional coping responses, such as mandatory teleworking and health and safety protocols, which also significantly impacted usual operational activities, the work environment, and socio-professional relations. The effects of implementing remote work and applying protective measures in higher education buildings merit further exploration.

Regarding work processes and practices, our results align with the existing literature (Bento et al., 2021b; Dohaney et al., 2020; Donnelly et al., 2020; Durnford et al., 2021; Huber, 2021; Regehr and Goel, 2020). The challenges faced in preparing fully online terms and distance teaching, such as students' attention deficits, lack of human interactions, intrusiveness, and perceptions of unfairness, are well-documented. Despite these challenges, the development of online teaching content in an exploratory and innovative manner demonstrates positive pedagogical evolution. The institution should learn and adapt by capitalising on this experience. In our case study, educational advisors emerged as key stakeholders, alongside teachers, heads of departments and institutes, and IT services. Our findings provide a better understanding of how the transition to online modes of working was achieved, while also highlighting the varying impacts on different members of the organisation. These impacts include work overload and underload, increased complexity, changing roles and responsibilities, and fluctuations in productivity. For administrative and mid-level staff, the primary challenge was adapting to new ways of working, such as teleworking, virtual communication, and collaboration. One of the key lessons learned is the need to continue digitalising work processes, but not at the expense of staff well-being. Our results underscore the necessity for change management support, regulation of videoconferencing practices, and attention to fairness issues related to technology use.

As documented in the literature (Aksay and Sendogdu, 2022; Bartusevičienė et al., 2021; Dohaney et al., 2020; Huber, 2021; Regehr and Goel, 2020), the COVID-19 pandemic significantly impacted human interactions. Physical spaces saw a reduction in human contact, while virtual exchanges increased. The general weakening of social ties was also linked to a decline in informal discussions typically occurring in corridors, after meetings, or during coffee breaks. Our results regarding culture and social cohesion reflect these effects, but we also observed a strengthening of solidarity and mutual aid. The pandemic, as a common threat, reinforced a sense of unity across the decentralised institution, fostering knowledge sharing, interdisciplinary, and transversal collaboration. However, this positive outcome was most challenged during the final phase of the crisis with the introduction of compulsory COVID-19 certificates for staff. This measure fuelled tensions, sparked controversial debates, and led to feelings of stigmatisation.

Regarding the 'people' component, our results align with the literature, highlighting challenges to mental and physical health at work due to differences in workload, the necessity of working late hours, and the blurring of professional and personal lives (Aksay and Sendogdu, 2022; Dirani et al., 2020; Regehr and Goel, 2020). However, our findings also reveal that individuals questioned the meaning of their work and experienced feelings of diminished self-worth and recognition, particularly among those who faced a reduction or temporary cessation of their activities.

Additionally, our results emphasise the need for greater recognition of the individual efforts, the skills developed, and the dedication shown by staff. Although autonomy and trust from management were acknowledged, the institution should have provided better support measures to address the widespread fatigue as the crisis drew to a close. These aspects converge with the concept of the collapse of sense-making and highlight the necessity for organisations to mobilise resources to reconstruct meaning (Autissier and Vandangeon-Derumez, 2021; Weick, 1993).

Regarding crisis management, scholars highlight the importance of leadership characteristics in times of crisis, including proactivity, agility, making quick and correct decisions, taking precautions and exercising prudence, possessing strong personality traits, and supporting digital literacy (de los Reyes et al., 2022; Dirani et al., 2020; Kniffin et al., 2021; Marinoni et al., 2020; Roache et al., 2020; Stoller, 2020). Another challenge pertains to the communication process in a context of uncertainty, with people having a high demand for information. Given the inherent difficulties of the crisis—such as high variability of changes, numerous unknowns, and lack of certainty about what was feasible—a significant part of the challenge was to standardise messages, measures, and procedures while considering the specificities of each school unit and their members. In line with the literature, our findings reflect a top-down approach to crisis governance (Dohaney et al., 2020; Regehr and Goel, 2020). Although it was considered effective, there is a need for better integration of staff consultation in the decision-making process during long-lasting crises.

Finally, the analysis of results combining socio-technical elements (Clegg et al., 2017; Davis et al., 2014) with Duchek's organisational resilience model (2014; 2020) demonstrated the complementarity of these two approaches. The interactive stages of organisational resilience (anticipation, coping, and adaptation) allowed for a dynamic understanding of supporting and limiting factors throughout the two years of the crisis. The consideration of socio-technical elements provided a deeper exploration of the impact and role of each component in shaping resilience. This was particularly true for the technical components (technology, work processes and procedures, buildings and infrastructure). Duchek primarily identifies social rather than technical drivers. Conversely, the socio-technical approach, which is frequently employed to investigate time-specific critical incidents in complex systems, appears to be a suitable methodology for examining protracted crises.

5.3. Limitations and future avenues of research

The case study approach has faced criticism for yielding findings of limited generalisability compared to quantitative methods (Tsang, 2014). Indeed, outcomes may exhibit variability contingent upon the specific case under examination. Our case was probably subject to similar contextual constraints. However, the congruence of our findings with extant literature permits us to infer their applicability beyond the confines of our study. A potential limitation pertains to the voluntary nature of the participation in the Chronicle Workshops, possibly introducing self-selection bias, whereby individuals with stronger opinions or experiences may have been more inclined to participate. However, this limitation is mitigated by the purposive sampling strategy for the interviews, designed to give a voice to people underrepresented in the Chronicle Workshops. Additionally, the study necessitated trade-offs between breadth and depth, with emphasis placed on presenting a panoramic view of organisational components and the diverse array of staff profiles and experiences, rather than delving into specific components, temporal scenarios, or staff categories.

An avenue for future research involves the comparative analysis of multiple case studies, facilitating the adaptation of Duchek's (2014; 2020) model to encompass the six socio-technical components, thereby yielding actionable recommendations for enhancing organisational resilience in academic institutions. A notable aspect of Duchek's model lies in its cyclical logic, wherein reflection and learning serve as the foundational knowledge for future crises. However, Duchek (2020) argues that organisations often struggle to translate these lessons into tangible behavioural changes and cultural transformations. Our study does not allow for the assessment of the extent to which identified good practices will be implemented and sustained in the post-pandemic landscape. This also presents an avenue for future research to explore.

6. Conclusion

This qualitative case study enriches our understanding of organisational resilience within HEIs amid the challenges posed by the COVID-19 pandemic. It showed the responses of members of a Swiss institution over a nearly two-year period. The coping measures taken by the senior management to prevent the spread of the virus and to ensure business and academic activities carried significant social and technical implications for teaching staff and other employees. Accordingly, this study examines interconnected technical and social dimensions, aligning with Duchek's organisational resilience model, encompassing processes of anticipation, coping, and adaptation. Our findings underscore both favourable and unfavourable modes of governance. Some were specific to the pandemic crisis, while others were rooted in previous institutional structures and modes of operation. Overall, the institution managed to adapt its operations to the context. Positive aspects included collaborative efforts among senior management, the diverse expertise within each unit, tailored measures accommodating the diversity of school units, robust networks with external stakeholders, and the availability of technological resources and safety provisions. Notably, the commitment, diligence, and initiative of staff were pivotal. Without a climate of solidarity, trust, and autonomy, navigating the crisis would have been more arduous. However, certain organisational dynamics, such as the rigidity of the system, the tendency to work in silos, and insufficient attention to occupational health, predated the pandemic and persisted as institutional weaknesses. The crisis, in some respects, laid bare deficiencies in communication processes, employee recognition, disparities among employees, and institutional support for change management in a post-COVID era.

Several policy implications can be drawn from this study. Box 1 presents examples of recommendations that were communicated to the board of directors; these recommendations could be adapted for implementation in other institutions as well. Crisis management processes should be formalised, by learning from recent experiences. The role, activation conditions, and composition of crisis task forces should be clearly defined, incorporating individuals with specific skills tailored to the nature of the crisis. This formalisation should prioritise the health and safety of both students and staff. Regular review and updating of risk analysis and mitigation strategies are also essential. In the context of crisis communication, all staff categories, including those with limited IT usage, must be provided with clear and timely messages. Utilising additional channels such as video conferencing for inquiries, display systems for on-site workers, or paper mail for groups less proficient with digital tools would be advantageous.

The pandemic has brought to light structural and functional challenges. There is a pressing need to adapt institutional management to the evolving work culture of organisations. Efforts are needed to ensure fair treatment in telework arrangements. In addition, providing access to quieter office settings for employees regularly working on-site can improve the working environment. Finally, regarding distance learning, it is crucial to document and evaluate experiences and learning outcomes to analyse its advantages and limitations. This reflection should also acknowledge the skills acquired during the pandemic, thereby recognising the valuable contributions made by both academic and non-academic staff.

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Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used Deepl Pro and

Box 1
Examples of crisis management recommendations.

1. Formalising crisis management procedures in alignment with the institutions missions and values
2. Formalising a crisis management team
3. Regularly analysing risks and mitigation strategies
4. Establishing crisis communication processes ensuring clear and understandable information for all employees
5. Establishing a consultative process for decision-making based on transparency and trust
6. Developing an occupational health and safety crisis plan, especially for mental health issues
7. Adapting the time management concept to crisis situations, including monitoring of working hours
8. Evaluating hybrid work conditions and identifying best practices
9. Drafting best practices for the use of IT and online meetings
10. Ensuring equality of treatment in remote work
11. Recognising and valuing the work carried out during the two years of the pandemic.
12. Reviewing onboarding processes for new employees in times of crisis

ChatGPT v3.5 to improve the English translation. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

CRediT authorship contribution statement

Bozica Krsmanovic: Writing – review & editing, Writing – original draft, Visualization, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Rafaël Weissbrodt:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Florian Bürki:** Software, Methodology, Investigation, Formal analysis, Data curation. **Claude-Alexandre Fournier:** Validation, Resources, Funding acquisition, Conceptualization. **Déborah Glassey-Previdoli:** Software, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Serge Imboden:** Supervision, Methodology, Conceptualization. **Line Pillet:** Validation, Supervision, Resources, Funding acquisition, Conceptualization. **Marion Repetti:** Validation, Supervision, Resources, Funding acquisition, Conceptualization. **Alexandre Santos Mella:** Software, Project administration, Methodology, Investigation, Formal analysis, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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