Vol.7 No.1 (2024)

Journal of Applied Learning & Teaching

ISSN : **2591-801X**

Content Available at : **http://journals.sfu.ca/jalt/index.php/jalt/index**

Organisational resilience in a higher education institution: Maintaining academic continuity, academic rigour and student experience in the face of major disruption (Covid-19 pandemic)

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Keywords

Academic rigour;
COVID-19;
higher education;
organisational resilience;
student experience.

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Article Info

Received 14 August 2023
Received in revised form 21 November 2023
Accepted 25 November 2023
Available online 9 January 2024

DOI: https://doi.org/10.37074/jalt.2024.7.1.4

Abstract

This paper aims to understand how an institution responds to a major disruption such as the Covid-19 pandemic by focusing in detail on one university in England. The study collected data from a range of levels, including survey data from students and staff as well as recruitment data, degree outcomes and financial impact to explore how academic continuity, academic rigour and student experience can be maintained.

Using a systems-based approach and drawing on an organisational resilience framework, findings demonstrated that the case study university had made a positive adjustment to the pandemic. It managed to maintain academic continuity, rigour, and the student experience. What was less clear were the longer-term impacts and the extent of that resilience as defined in the organisational resilience literature which focuses on adversity as an opportunity to learn and land in an overall better place after adversity rather than return to a 'business as before' place. This is applicable to other universities that made similar adjustments in response to the pandemic. A better understanding of organisational resilience in higher education institutions is important in order to enable them to plan for other such disruptions that are part of a modern, connected and global world.

Introduction and context

Universities in the UK are acquainted with change and adaptability, largely because the sector is the subject of much policy change and regulation, operating within a neoliberal marketised context (Radice, 2013; Brown, 2015; Andrew, 2023). Post-1992 universities – polytechnics that gained university status in 1992 – are further accustomed to responding to policy, market, and technological changes in a bid to compete with Russell Group universities as well as each other (Boliver, 2015). It means that UK universities are systems, which although complex and dynamic, are familiar with external pressures as 'business as usual' (Ahmed et al., 2015). However, how well UK universities are prepared for major disruptions through high-impact, low-probability (Sheffi, 2005) events is not well-researched. The number of pre-Covid studies on Google Scholar on UK universities and major disruption is zero, compared to other countries such as the USA (e.g. Kapucu & Khosa, 2013), Malaysia (e.g. Jaradat et al., 2015), New Zealand (e.g. (Kachali et al., 2012) or Taiwan (e.g. Han et al., 2020) with greater risks of natural disasters or other major infrastructure-type disruptions like war or civil unrest. The UK political system has fewer geopolitical risks than other parts of the world, which in some ways contributes to greater resilience but could also be a risk because some level of adversity helps develop resilience (Blyth & Mallett, 2020). The Covid-19 lockdown restrictions imposed in March 2020 by the UK government meant universities had to respond rapidly to continual government changes to ensure rigour of the educational award (Gamage et al., 2020a), integrity (Gamage et al., 2020b) and quality of educational experiences – in other words, 'academic continuity' (SchWeber, 2013) – in addition to ensuring ongoing student enrolment (Ahlburg, 2020). Disruption to teaching and learning can lead to "substantial financial loss, reputation damage, job losses, [and] curriculum limitations" (SchWeber, 2008, p. 38), even in the short term. A deeper understanding of universities responses is important for knowing what can be learnt from such disruptions. Grafton et al. (2021) maintain that innovative strategies with individually supportive staff can be successful for academic continuity during disruptions like Covid-19.

This paper is the third in a trilogy of papers centred on a case study of one university in England and how it responded to the global Covid-19 pandemic to enable it to continue its business in a bid to minimise negative impact. This paper explores the university as an organisation and a system, framed within the organisational resilience literature. The study draws on primary student and staff data as well as secondary university-level data on the measures taken to support academic continuity, rigour and student experience. Conclusions will be drawn as to the extent to which the case study university could be deemed resilient based on a review of the literature and what lessons can be learned for future disruptions. It thereby contributes empirical evidence to the growing theoretical field of organisational resilience.

Literature review

Fast-moving technology, political instabilities, instant communication and global events all mean that change, flux and uncertainty is an inevitable part of modern living, and the associated risk of major disruptions can have more profound effects. These include natural disasters, war, terrorism or pandemics which although lower in probability, have the potential for high impact (Sheffi, 2005). Organisations as well as individuals need to develop mechanisms to ensure that they not only cope and manage in the face of such adversities and disruption but also learn from them and end up in a better position than before (Sutcliffe et al., 2016). Plenty has been said about human resilience at the individual level in the field of psychology (e.g. Ungar, 2013). However, the literature on resilience has broadened out to encompass community resilience, organisational resilience, educational resilience, urban resilience, to mention a few. This study is situated within the relatively new fields of organisational resilience and educational resilience literature. Educational resilience was defined by Wang et al. (1997, p. 2) as "the heightened likelihood of educational success despite personal vulnerabilities and adversities brought about by environmental conditions and experiences". These adversities are generally related to external conditions such as socioeconomic disadvantages or other issues outside of the control of the individual learner, such as bereavement or disability. Organisational resilience is contextualised within a systems-based approach (Brown et al., 2017) and defined as:

> the emergent property of organisational systems that relates to the inherent and adaptive qualities and capabilities that enable an organisation's adaptive capacity during turbulent periods. The mechanisms of organisational resilience thereby strive to improve an organisation's situational awareness, reduce organisational vulnerabilities to systemic risk environments and restore efficacy following the events of a disruption (Burnard & Bhamra, 2011 p. 5587).

Here, the importance of identifying opportunity through disruption as a feature of organisational resilience is emphasised. It is in line with wider considerations of organisational resilience with the ability to learn and develop as a result of adversity as a core feature (Rehak, 2020; Bouaziz & Smaoui Hachicha, 2018; Nkwunonwo & Mafimisebi, 2015) and as part of dyadic relationships within wider systems (Sabatino et al., 2016).

This resonates with the principles of the dynamic interactive model of resilience (DIMoR) (Ahmed Shafi et al., 2020), which is about the emergent and agentic nature of resilience. The DIMoR recognises systems (individuals or organisations) within their own right but that they are themselves located within the wider system of community and society, all of which have dynamic and interactive impacts upon them. At the same time, a system also impacts other systems around them and alters the path of external stimuli/systems to meet or even change their own pathway and seek opportunity in the adversity or disruption (see Figure 1). Key conditions within an organisation enable that system and its component parts to be resilient and emerge as a stronger entity, able to proactively seek opportunities (Bouaziz & Smaoui

Hachicha, 2018) through adversity or disruption. In this way, organisational and educational resilience intersect because the university as an organisation can foster conditions to enable the individuals within it to be resilient despite the adversities they may face.

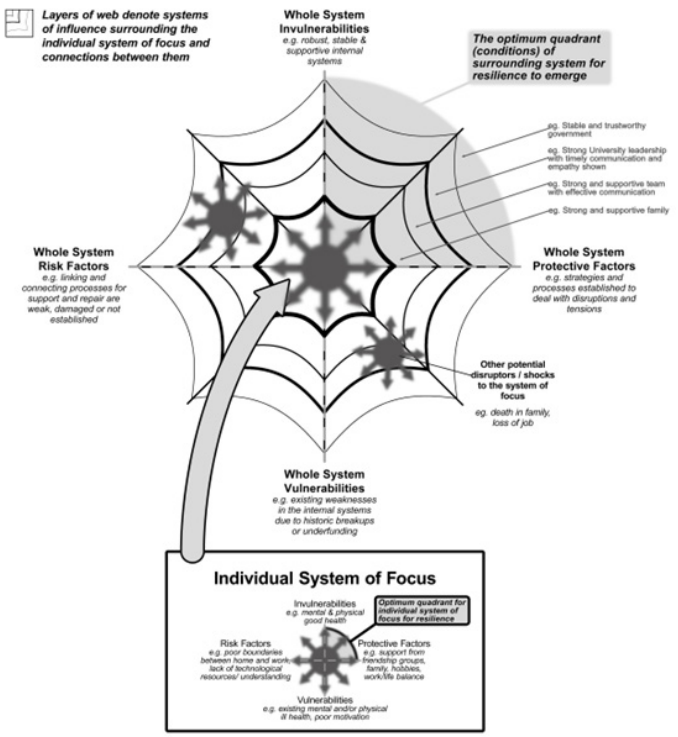

Figure 1. The Dynamic Interactive Model of Resilience (DIMoR) (Ahmed Shafi et al., 2020). The web-like structure illustrates the systems within which an individual may be situated and considers other individual systems within it (represented by the other 'orbs').

The overall model (Figure 1) can represent a university as a system with the orbs being the various actors, such as staff or students. The university would represent the exosystem and meso-system, whereas the web-like structure would represent the systems and processes (e.g. academic regulations, online platforms) within which the various components of the university actors (orbs) operate. The risk-protective aspect of the matrix refers to those elements which can pose as (external) risk or protective factors to the (university) system; these could be the disruptors (e.g. the pandemic) or protective factors (e.g. sound finances). The vulnerabilities-invulnerabilities refer to the (internal) factors such as dwindling student numbers (vulnerabilities) or the impact of the leadership (invulnerabilities). All these factors are inter-connected, interactive and dynamic, shaping the emerging resilience of the system.

Burnard and Bhamra (2011) also present a conceptual model of organisational resilience as a useful theoretical lens. Particularly, they focus on the importance of detection and activation as key features of a resilient organisation, building the ability to have 'positive adjustment' to disruption and adversity (Pratt, 2000), in contrast to previous notions of a more rigid response (Staw et al., 1981) in a bid to maintain stability. This was later labelled as a 'negative adjustment' (Pratt, 2000) because, ultimately, it restricts the organisation's opportunity for development and can consequently threaten its survival, even having withstood the initial disruption (Chadwick & Raver, 2020).

Nkwunonwo & Mafimisebi (2015) extend the definition of organisational resilience to include transformation of the organisation as a result of adaptive capacity and subsequent application of learning.

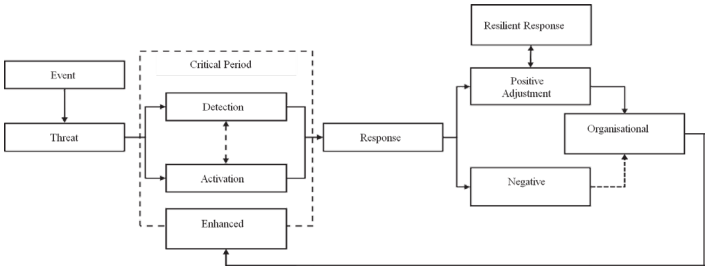

Figure 2. Resilience response framework (Burnard & Bhumra, 2011).

The model (Figure 2) outlines this conceptual model of resilience specifically relating to adverse and disruptive events and Burnard and Bhumra's (2011) critical period, where the response to the event is determined. Here, they emphasise the importance of the detection and activation of the response, which determines whether the organisation will have a negative adjustment (rigid response) or a resilient positive adjustment (flexible approach). Either way, there is opportunity for organisational learning, which should then feed back into the enhanced monitoring of the organisation for detection and activation of future potential similar events.

This framework, combined with DIMoR, gives us a greater understanding of the way in which an organisation can not only capitalise on its inherent features but also respond to adversity and disruption proactively to shape its own resilience. Also useful is the recent work by Dohaney et al. (2020), which specifically explored the characteristics of a resilient university from the perspective of academics. Academics identified the benefits, barriers, and incentives to building resilience in a university at three distinct levels (individual, school, institution), offering insights into resilience-building strategies, which could help move an organisation from possible negative adjustment to positive adjustment (resilience).

These characteristics of resilient academics and institutions contained major themes of communication, community, support, strategic planning, preparedness and leadership that ran across their data. To conclude, Dohaney et al. (2020) argue that leadership is able to create and foster the conditions needed for a resilient organisation, echoing the emphasis placed by DIMoR on how educational settings can play a pivotal role in developing resilience in their learners by being a resilient system themselves.

This current study focused on one university as a case study to explore how as a system it responded to the disruption of the Covid-19 pandemic. We focused on the key elements of

Table 1. Characteristics of resilient academic and resilient institutions (Dohaney et al., 2020).

Resilient academics	Resilient institutions
Are flexible, adaptable, emotionally-resilient, collaborative, empathetic, open-minded individuals (attributes)	Effective communication channels
Respond quickly during a disruption, are digitally literate, organised, prepared and creative-thinkers (capabilities)	A coherent crisis communication strategy
Have a sound awareness of their courses, learner-centred approaches, Learning and Teaching delivery options during disruptions, emergency protocols, and the wider institutional system (knowledge)	An established, coherent, Learning and Teaching disruption plan across all levels of the institution
	Strong resilience-building leadership
	Existing emergency response plans and management
	Existing flexible, blended, and digital learning strategies
	Support for staff to undertake resilience-building initiatives
	Support for staff to develop digital literacy with an effective and easy-to-use digital infrastructure
	A strong sense of staff and learner community

the university system namely, the students, the staff and the systems and processes put in place by university leadership to respond to the impact of the pandemic. The overarching research question was: *How resilient has university been in the wake of the Covid-19 pandemic?* The sub-questions were (i) how has a case study university responded to the disruptor event (Covid-19 pandemic) to maintain academic continuity, rigour and student experience? (ii) How do university staff perceive the university to have responded to the pandemic in terms of student and staff support to maintain academic continuity and student experience? (iii) How do students in a case study university feel it has maintained academic continuity and student experience?

Methodology

A single case-study design of a post-1992 university in England, with a student cohort of c. 7,950 and staff body of c. 1,500 was employed. The case-study approach enables the blending of description, analysis and the understanding of perceptions (Hitchcock & Hughes, 1995, p. 376), through in-depth analysis and high internal validity (Gagnon, 2010, p. 2). This approach, which focuses on a single unit of analysis (Hammond & Wellington, 2021, p. 20), with an emphasis on context, enables specific contextual factors to be unpicked (Grix, 2018, p. 39) and readers to understand how these ideas fit together (Yin, 2009, pp. 72-73). A pragmatic approach (Biesta, 2020) was adopted to decide what data would best inform understanding without being tied to philosophical dualisms, enabling us to use qualitative and quantitative primary and secondary data.

Primary data were collected from staff and students as part of the data collection for the trilogy of papers on this topic. The development and structure of these surveys are outlined in the first two papers in this trilogy (Ahmed Shafi et al., 2023; Millican et al., 2023). Items that were specifically related to the university responses were extracted, while the full surveys were analysed in the other papers. The student survey had 434 responses across undergraduate and postgraduate cohorts, whilst the staff survey provided 159 responses across academic and other staff. This primary data provided the opportunity to assess, from the perspectives of students and staff, how successful the university's response was.

The (publicly available) secondary data was supplied by the university but are also available on the UK Higher Education Statistics Agency (HESA), and identified the changes implemented by the university in response to Covid-19 restrictions, referring to retention, progression and achievement rates. The hypothesis was that if student outcomes, student experiences and university finances remained relatively stable despite the pandemic, then it would be reasonable to conclude that the university had made a positive adjustment to the adversity/disruption. Ethical approval for this research was provided by the researchers' university Research Ethics Panel (approval code EDU20209).

University responses to the restrictions (data point 1)

Like many other universities across the country, the case study university rapidly introduced a number of measures to maintain academic continuity for students whilst seeking to uphold academic rigour and quality of student experience. These included the setting up of a Covid-19 Response Working Group of senior university personnel; moving all teaching and learning online; developing alternative assessments; a new no-detriment policy; relaxing rules for extensions, and a revision of the academic calendar. A number of additional measures designed to support students were also introduced and included support for those in halls during lockdown, early release from contracts, food and provisions support, support for international students to either return home or stay, moving all student support services online, setting up asymptomatic testing centres, as well as increased chaplaincy service and opportunities for people to remain in touch with one another during lockdowns. Each of these measures required a range of system and process adjustments to enable them to happen. The measures described below are included because of their direct impact on academic continuity, rigour and student experience.

Covid-19 Response Working Group

This group drew membership from senior University colleagues and met weekly. However, it sat outside the university's existing Major Incident Plan and the reasoning for this was because of the fast-moving situation of the pandemic.

Moving all teaching and learning online

Moving all teaching and learning online required the relevant IT systems and procedures to adjust to accommodate this. It required rapid training and development for all academic staff to be able to teach and interact with students online, as well as rapid (IT) infrastructure development to support these changes.

Alternative assessments

This involved the creation of a temporary framework within which module tutors could gain approval for an alternative assessment where the existing assessment type was anything other than coursework (individual) submitted online. To maintain rigour Professional and Statutory Regulatory Bodies were consulted and external examiners were integrated into a newly-designed in-semester assessment scrutiny process.

Extensions

The extension of the self-certified period of an extension to assessment deadlines from 7 days to 14 days was introduced in order to mitigate the detrimental effects of the ongoing Covid-19 pandemic and provide additional support to students. It also relieved pressure on local doctors/professionals from having to provide evidence to support extensions.

A no-detriment policy

The development of a no-detriment policy included variations to the Academic Regulations for Taught Provision, whereby counting only the best credit would feature in award classification calculations. This was so that students' final degree classification had no detriment due to the pandemic.

The revision of the academic assessment calendar

The assessment calendar was revised to accommodate the delays caused by the submission of assessments, which resulted in exam board delays with a potential impact on progression and awards.

Support for staff

An Agile Working framework was put into place to support staff working through the pandemic. Additional training, guidance and communication were provided for staff in order to implement the changes.

Survey data (data point 2)

Staff survey

This survey was conducted online across academic and professional staff and was designed to understand the impact of the pandemic on staff and how they had coped with the restrictions and the swift changes they had to make in order to support teaching and learning. Items relevant to how staff felt with regards to how the university responded to the pandemic were extracted from the overall survey, which was responded to by 159 members of staff.

Student survey

The student survey was designed to understand how students were coping with the impact of the pandemic on their lives and how they got on with their studies during this time. The survey was administered online, and participants were reached via the university homepage as well as through their course leaders and other staff. Items relevant to how students felt with regard to how the university responded and supported them through the pandemic were extracted from the full survey. A total of 436 students responded.

Wider organisational impacts (data point 3)

Financial

In addition to data from the university responses to the pandemic, the staff and the student survey data, it was important to assess the impact of the pandemic on the university's finances. The hypothesis here is that if the university's finances had the ability to cope with the additional costs associated with the pandemic with no direct long-term impact, then the university could be considered to have made positive adaptations to the implications of the pandemic.

Recruitment, retention and awards

University finances are also connected to the impact on student recruitment, retention and awards and so this too was examined. The hypothesis was that if the university managed to maintain student recruitment, retain students and enable students to exit with awards that did not negatively reflect the impact of the pandemic, then it could be argued that the organisation had made positive adaptations to continue its core business through the measures it took.

Analysis of data

To understand the university responses to the impact of the pandemic, they were categorised into whether they were designed to maintain academic continuity, academic rigour or student experience (Table 2).

These responses were then analysed in two stages (Table 3). At Stage 1, the university's responses to the restrictions (data point 1) were compared against Dohaney et al.'s (2020) Characteristics of Resilient Institutions to explore areas where they mapped onto these characteristics and identify any gaps (research question (i)).

For Stage 2, the staff and student data (data point 2) were used to assess the impact of the changes on academic continuity and student experience (research questions (ii) and (iii)). Stage 3 assessed the wider impacts (data point 3) on student outcomes to assess academic rigour and the extent of positive adjustment (overarching research question).

Table 2. The case study university responses were categorised into academic continuity, academic rigour or student experience.

Academic Continuity	Academic Rigour	Student Experience
All teaching and learning moved online.	No detriment policy introduced	Self-certified extensions to assessment deadlines extended from 7 to 14 days
COVID-19 Deferral Process introduced to allow those with extreme circumstances to defer their studies mid-semester	Alternative assessments to retain learning outcomes	Maintenance of physical support/visits for halls students (wellbeing / mental health / practical issues)
Support with IT equipment for academic staff	Revision of academic assessment calendar (to accommodate delays caused by extensions, impacting on exam boards	Delivery of facilities and maintenance solutions for halls' students during lockdowns
Guidance and communication to academic and professional staff on changes	Additional subscriptions to electronic resources	Immediate switch to virtual appointments so that support for students could continue (Counselling, Disability, Employability, Helpzones, Mental Health, Money Advice, Student Achievement, Wellbeing)
Agile working framework for staff		Range of Chaplaincy events with a variety of virtual and in-person across all sites
Covid-19 Working Group		Setting up asymptomatic testing centres for all students to enable them to return home during the government 'travel window'
		Specific support for international students
		Early release from halls' contracts
		Library and IT changes to support remote studying and access to materials

The data

This section presents the findings of the three data points relevant to the impact of the changes introduced to ensure academic continuity, rigour and student experience. Data from the university that was available on the number of extensions under the new CV19 scheme, interruptions or withdrawals from the study formed data point 1. The staff and student data that was extracted from the surveys, relevant to how staff or students perceived the changes made by the university, was data point 2. Degree outcomes data, types of exit awards, recruitment data and financial data as data point 3 were examined to assess the impact Covid-19 may have had on these areas.

Data Point 1: University responses to Covid-19 restrictions

Use of extensions

The Extenuating Circumstance 1 (EC1) is a self-certified 7-day extension self-applied by the student via the student account with no external evidence required. The EC2 is a university-applied extension which requires independent verifiable evidence to support an extension of up to four weeks and more in exceptional circumstances. The CV19 replaced the EC1, extending self-certification from 7 days to 14 days during the pandemic. The WA3 is a well-being-based extension and approved by the University with independent verifiable evidence for a time ascertained by senior tutors and other relevant staff at the University based on the student's needs and welfare.

Table 3. Use of extensions.

Year	EC1	EC2	CV19	WA3
2019/20	6755	2163	13252	34895
2020/21	452	6699	26343	40168
2021/22	9584	2994	0	15135

Table 3 shows that extensions were well used by students to support them during Covid-19. The EC1 dropped considerably in 2020/21 because they were replaced by the CV19. In 2021/22 the CV19 was reverted to the EC1.

Interruption of studies/withdrawals

The number of interruptions of studies increased during the pandemic but began to come down in 2021/22, suggesting that these interruptions were due to the pandemic and began to reduce as the pandemic eased.

Table 4. Number of interruptions.

Year		UK Home students	International students
2018/19	Interruption of Studies	33	1
2019/20	Interruption of Studies	180	17
2020/21	Interruption of Studies	197	13
2021/22	Interruption of Studies	168	12

Exit awards

Table 5 lists the number of exits per year that left with the intended award, lesser award or no award.

Table 5. Exit awards data.

Year	All Exits	Intended Award	Lesser Award	Exit No Award	% Exit No Award
2015/16	3191	2291	333	567	18%
2016/17	3558	2549	479	530	15%
2017/18	3739	2723	465	551	15%
2018/19	3626	2736	420	470	13%
2019/20	3620	2729	394	497	14%
2020/21	3522	2659	304	559	16%

The data shows that on the whole, the exit award status of students has not changed significantly during the pandemic. It suggests that impacts of the pandemic on students were managed and supported.

Data Point 2: Survey data

Student survey data

Table 6 shows responses from relevant questions in the survey to understand what had helped students in 'maintaining academic continuity'.

Table 6. Student survey on Covid 19 and their studies.

Student survey	
Thinking more specifically about University, who or what has helped you to get on with your studies during the pandemic?	
Having lectures online	236 (54.1%) stated that this helped a lot or a bit although there were a number of students (166) (36.3%) say it did not help much or did not help at all.
The lecturers	324 (74%) students saying they helped a lot or a helped a bit.
Being able to get extensions	266 (61.0%) believe this is helpful though a number of students felt this to be non-applicable (98) (22.5%), which is quite a large proportion and could be due to the nature of their course.
Having some face-to-face teaching where possible	309 (70.8%) found this to be helpful though for a small proportion (40) (9.2%) it was not applicable. It is possible some courses may not have offered any face-to-face teaching in the period before the survey.
My personal tutor	287 (66.1%) found this to be helpful, though for 139 (32.1%) students, they made no difference or did not help at all.
University IT services	For 148 (34.8%), these made no difference, though for 135 (31.2%) they were helpful. For 77 (17.8%) students, they did not help much or at all.
University welfare services	156 (35.9%) said they made no difference and 113 (26%) did not think the service was applicable.
As a result of the pandemic, what things have made studying harder or easier?	
Online learning	290 (66.7%) students found online learning made studying a bit harder or harder which, when taken with Question 4.2 suggests that while the availability of online learning was good, it was hard for students.
Informal contact with lecturers	220 (50.5%) found it harder, though for 94 (21.6%) it made no difference. For 99 (22.8%) it was easier, perhaps because they felt the lecturers were online a lot more, and therefore perhaps more accessible.
Access to resources e.g. library, studios, labs, IT etc	128 (27.2%) students in the sample indicated that access to university resources made no difference to them in terms of studying. 149 (34.4%) said limited access made studying harder.
When things did not go very well, what did you do? Students had to tick all that applied.	
Contact my lecturer	209 (49.9%)
Asky my personal tutor	174 (41.5%)
Ask other students	289 (69%)
Ask family	142 (33.9%)
Contact university welfare	33 (7.9%)
Wait till it happens again	30 (7.2%)
Ignore it	107 (25.5%)
Get anxious	229 (54.7%)
Feel low	173 (41.3%)
Get angry	87 (20.8%)
Do nothing	69 (16.5%)

These data show that having lectures online, contact and support from lecturers and personal tutors were helpful. However, University welfare or IT services were not considered significant. Many found online learning and contacting lecturers harder, although a number did find it easier to contact staff. Further, while many students felt anxious, low or even angry, many consulted other students, housemates, lecturers or personal tutors. It was also clear that some students did not do very much when things did not go well, such as ignoring it or waiting to see if it happened again. These data suggest that overall the pandemic made studying much harder and there are a number of (vulnerable) students who have not done much to seek support despite feeling anxious. Still, where students had a relationship with lecturers or tutors, they felt supported.

Staff largely felt supported by colleagues to carry out their work during the pandemic, though this was patchier when it came to equipment and resources. They also felt less supported with regard to balancing screen time or overall work-life balance (see Millican et al., 2023). Staff did indicate, however, that the University communicated well with staff and with students, with good leadership visibility, provided good IT support as well as positively supporting student well-being. Staff felt students would have found the use of extensions most helpful in supporting their learning.

Staff survey data

Table 7. Staff survey responses.

Staff Survey	
How did you find the IT or equipment support from the university?	
IT support or equipment from the University	17 (10.8%) found this very challenging though 43 (27.4%) found it a bit difficult. 37 (23.6%) found it manageable and 30 (19.1%) said it made a positive impact (30).
Which of the following helped you to manage the change of moving your work and/or teaching and assessments online? Tick all that apply.	
Course team/colleagues	107 (68.25)
IT support	62 (29.5%)
Online platform guides	65 (41.4%)
Manager	19 (12.1%)
Professional services staff	82 (52.2%)
Working it out myself	121 (77.1%)
How well do you think the University supported you in terms of the following?	
Using the technology	110 (69.3%) felt supported.
Health and well-being	86 (54.1%) felt it to be well supported, though 59 (37.1%) did not.
Working from home	92 (56.3%) felt supported whereas 33 (20.9%) felt somewhat supported.
Learning new ways of doing things	96 (60.4%) felt supported and 33 (20.8%) felt somewhat supported.
Screen time balance	76 (47.8%) did not feel well supported.
Work life balance	60 (37.3%) did not feel this was well supported, though 50 (31.4%) felt it was ok.
How well do you think the University did in the following areas overall? 1= Not very well and 5= Very well	
Communication with staff	111 (69.8%) responded 4 and 5.
Communication with students	107 (67.7%) responded 4 and 5.
IT support	109 (62.7%) responded 4 and 5.
Supporting student well-being	95 (59.7%) responded 4 and 5.
Adopting systems	106 (66.7%) responded 4 and 5.
Senior leadership visibility	78 (49%) responded 4 and 5 with 40 (25.2%) at 1 and 2.
What do you think students will have found the most helpful in terms of supporting their learning during the pandemic? 1= Least helpful and 5= Most helpful	
Extensions, deferral policy, interruption of studies	109 (79.9%) responded 4 and 5.

Stage 1 and 2 analysis

For stage 1, university responses (data point 1) were mapped against Dohaney's (2020) characteristics of a resilient institution (columns A and B in Table 8 below). For stage 2, data extracted from the student and staff surveys (data point 2) (column C) were used in order to ascertain if there was an indication that the university had that resilient characteristic.

Table 8 identifies that the university demonstrated a number of resilient characteristics as illustrated by the measures introduced to maintain academic continuity, rigour and student experience. The data in Columns C shows that, on the whole, students and staff acknowledged and felt supported by a number of these initiatives. It should be noted that on a few of the characteristics, no specific data were collected.

Data point 3: Wider impacts

This data point sought to assess the impact of the pandemic on the university's finances. The data was extracted from the HESA data at the University level. Degree outcomes were obtained from the university as the latest data on that would not yet have been published at the time of writing. Recruitment data was obtained from the university and is also publicly available.

Financial data

The tables below list the key financial indicators of the university taken from the HESA website.

Table 8. University responses (Column B, data point 1) mapped against Dohaney et al.'s (2020) characteristics (Column A) of resilient institutions and assessed using staff and student data (Column C, data point 2).

A. Characteristic of Resilient institutions (Dohaney et al., 2020)	B. Data Analysis Stage 1: University Responses mapped against A.	C. Data Analysis Stage 2: Staff Responses	C. Data Analysis Stage 2: Student Responses	D. Staff and student survey questions
a) Effective communication channels	Guidance and communication to academic and professional staff on changes. (Academic Continuity)	Positive view of communication with staff – 69% Positive view of communication with students - 67%	A small number of negative comments from the qualitative data	Q12.1 Q12.2
b) A coherent crisis communication strategy	Covid-19 Steering Group Major Incident Plan	There was no data on this in the surveys.	There was no data on this in the surveys.	
c) An established, coherent, Learning and Teaching disruption plan across all levels of the institution	All teaching and learning moved online. (Academic Continuity) No detriment policy introduced (Academic Rigour) Alternative assessments to retain learning outcomes. Revision of academic assessment calendar (Academic Rigour) Self-certified extensions to assessment deadlines extended from 7 to 14 days (Student Experience)	Students: 54% stated online learning helped to continue their studies. Staff: 35% perceived staff received positive support for teaching online. One qualitative comment about this area. Changes to assessment formats and the calendar were not commented on. 68% saw university changes to extension policies had been handled well and 70% stated these changes had been helpful to students.	Very small number of positive comments from the qualitative data about the No Detriment policy Just one comment from staff about this area. Changes to assessment formats and the calendar were not commented on. 61% found ability to get extensions helpful.	Q4.2 Q11.6 Q4.4 Q12.6 Q13.7
d) Strong resilience-building leadership	Maintenance of physical support/visits for halls' students (Student Experience) Delivery of facilities and maintenance solutions for halls' students during lockdowns Immediate switch to virtual appointments so that support for students could continue	Staff did not make comments about the support provided for students in halls. 55% of staff had a positive perception of how the provision of support services had been handled and 49% thought that the maintenance of this provision had been positively handled.	Students did not make comments about the support provided for students in halls. 17% students perceived that access to university support services had made studying easier during the pandemic, with 38% stating that this opportunity made no difference. 19% stated that university welfare services had been of help. 8% identified university welfare services as a source of support when things didn't go well.	Q12.5 Q13.6 Q5.10 Q4.13 Q6b
	Range of Chaplaincy events with a variety of virtual and in-person across all sites Setting up asymptomatic testing centres for all students to enable them to return home during the government 'travel window' Early release from halls contracts	The chaplaincy was mentioned by 1 member of staff as a positive source of support in the qualitative survey data. This aspect of the university response received no mention from staff. This aspect of the university response received no comment from staff.	The chaplaincy was mentioned by 1 member of staff as a positive source of support in the qualitative survey data. This aspect of the university response received no mention from students. This aspect of the university response received no comment from students.	
e) Existing emergency response plans and management		There was no survey data on this.	There was no survey data on this.	
f) Existing flexible, blended, and digital learning strategies	All teaching and learning moved online. (Academic Continuity) Additional subscriptions to electronic resources (Academic Rigour)	See section C. Specific changes to library services were not directly commented on by staff. 60% of staff identified that the university positively supported them to learn new ways of doing things, whilst 36% stated that they were positively supported to teach online.	45% of students identified that access to library and other resources had been harder. Within the qualitative responses, continuing library access was identified a number of times. Students: 71% identified the opportunity of having some face-to-face teaching as supporting them with their studies and 66% identified their Personal Tutor as a support.	Q5.8 Q11.4 Q11.6 Q4.7 Q4.9
g) Support for staff to undertake resilience-building initiatives		Staff: 54% identified that their own health and well-being was positively supported by the university. 48% identified that the university did not do well to support screen-time balance and 38% that work/life balance was not well supported.		Q11.2 Q11.2 Q11.13
h) Support for staff to develop digital literacy with an effective and easy-to-use digital infrastructure	Support with IT equipment for academic staff (Academic Continuity)	Staff: 19% identified that IT equipment support made a positive impact, whilst 38% identified that this as a negative.		Q7.7
i) A strong sense of staff and learner community		Staff: 43% identified positive support from the university to deal with student difficulties.	Students: 75% identified individual lecturers as a help to get on with their studies. 69% looked to other students or housemates when things were not going well, in comparison to 50% who would contact a lecturer and 7.9% who would go to	Q11.11 Q4.3 Q6.b

			university welfare services.	
j) University responses without the Dohaney et al (2020) model	Agile working framework for staff (Academic Continuity)	Staff did not identify this as an issue.	Students did not identify this as an issue.	

Table 9. Financial data from the case study university.

	2015/16	1016/17	2017/18	2018/19	2019/20	2020/22
Tuition fee income	5,245	5,828	3,479	2,063	-1.404	967
Total income and education contracts	55,842	60,931	64,791	62,530	60,550	63,971
Total income	76,787	83,000	84,967	83,764	77,834	80,525
Total expenditure	76,010	79,042	82,156	81,086	79,684	80,333
Net cash inflow from operating activities as a % sum of income	8.37	16.18	8.85	7.67	10.95	11.83
Surplus/deficit (as a % of total income)	0.88	4.77	3.31	3.2	-2.38	1.1
Staff costs as a % of total income	55.15	53.82	56.79	58.2	61.97	58.8
Net liquidity days	119.07	130.31	124.17	109.28	128.65	138

This data show that whilst there is a small level of negative variation in the financial position of the university, given the necessary adjustments as a result of the pandemic, the financial footing of the university has remained relatively steady.

Degree outcomes data

The case study university, like other universities, responded at pace showing support for students and demonstrating an understanding of their anxieties. The temporary 'no detriment' version of the case study university's standard approach to degree classification was approved by the Academic Board of the university. The intention was to ensure that the degree classifications of students graduating at the end of 2019/20 and in 2020/21 were not adversely affected by lower results in assessments completed during lockdown. Table 10 shows the degree classifications awarded at the university in 2017/18 and 2018/19 according to the rules in force for those years (the 'legacy algorithm') and the classifications which would have been awarded in 2019/20 had the planned algorithm been used (the '2017/18 algorithm').

Table 10. Degree outcomes had there been no 'no-detriment' policy.

Class	2017/18		2018/19		2019/20	
1	465	26.9%	465	27.2%	284	18.8%
2:1	881	51.0%	858	50.2%	756	50.1%
2:2	353	20.4%	345	20.2%	423	28.1%
3	28	1.6%	41	2.4%	45	3.0%
TOTALS	**1,727**	**100.0%**	**1,710**	**100.0%**	**1,508**	**100.0%**

Table 10 shows that degree classifications would have been negatively affected if the original planned algorithm had been used for 2019/20. Table 11 shows the actual degree classifications as awarded with the 'no-detriment' policy for 2019/20 and the legacy algorithm for 2017/18 and 2018/19.

Table 11. Degree outcomes with the 'no-detriment' policy for 2019/20.

Class	2017/18		2018/19		2019/20	
1	465	26.9%	465	27.2%	547	36.3%
2:1	881	51.0%	858	50.2%	741	49.1%
2:2	353	20.4%	345	20.2%	214	14.2%
3	28	1.6%	41	2.4%	6	0.4%
TOTALS	**1,727**	**100.0%**	**1,710**	**100.0%**	**1,508**	**100.0%**

The figures from Tables 10 and 11 reveal that there was in fact a significant increase in the number of upper degrees awarded in 2019/20 compared to previous years. The actual increase was from 77.4% in 2018/19 to 85.4% in 2019/20, an increase of 8.0 percentage points. So, in terms of achieving its aim, the 'no-detriment' policy had worked to a greater extent than with the 'legacy algorithm'.

Recruitment data

Table 12 shows that applications, offers, conversions and enrolment remained stable throughout the pandemic at the case study university. This is in spite of the landscape of higher A-Level grades following the use of teacher assessment and the consequent increased entry of students to Russel Group/red-brick universities.

Table 12. Undergraduate recruitment data from the case study university.

Year		Applications	Unconditional Firm Offers	Enrolments	Applications to enrolment	UF to enrolment
2017/18	UG	9900	2672	2620	26%	98%
2018/19	UG	8937	2437	2368	26%	97%
2019/20	UG	8266	2324	2245	27%	97%
2020/21	UG	9487	2721	2621	28%	96%
2021/22	UG	9596	2479	2353	25%	95%

Stage 3 analysis

This stage of analysis explored the wider university data (data point 3) to understand the extent to which academic rigour and student experience were maintained through the pandemic. In summary, the data show that whilst the university did experience challenges during the pandemic, the measures introduced and how the university responded meant that it did not suffer in terms of financial difficulty, degree outcomes, or overall undergraduate recruitment.

Discussion

The findings from this study demonstrate that the case study university's responses to the pandemic to maintain academic continuity (SchWeber, 2013), rigour (Gamage et al., 2020a), and student experience were largely successful when explored through the Resilient Organisations Framework of Dohaney et al. (2020) and the Burnard and Bhumra (2011) model. This was evidenced through wider impacts such as the financial position of the university, undergraduate

recruitment data and degree outcomes, all of which could be considered indicators of university success and 'academic continuity' (SchWeber, 2008, 2013). It suggests that the university had made a positive adjustment (Pratt, 2000) to its usual business in the face of adversities caused by the pandemic.

Connecting this to the DIMoR model (Ahmed Shafi et al., 2020), it could be argued that the case study university, as the overall system, effectively managed the various components of its system. This included students and staff as key actors within it and the impact of the pandemic on them both as individuals of part of the system and also in recognition of the wider systems (family and community) of which they were a part. The data from the Staff and Student surveys support the view that the university's approach fostered a resilience-promoting environment in the context of the pandemic. Further, wider measures such as finances, degree outcomes and recruitment data also support this. The range of adaptations made by this and many other UK universities reflect the acceptance of the inter-connected, interactive and dynamic nature of systems (Ahmed Shafi et al., 2020) where innovative strategies can contribute to academic continuity (Grafton et al., 2021). Such a 'systems-based' approach could explain why the university made a 'positive adjustment' (Pratt, 2000) and an emergent resilience indicated by the findings presented in data points 2 and 3 and assessed using Dohaney et al.'s (2020) framework.

Drawing on the Burnard and Bhumra (2011) model (Figure 2), the findings from this study show that the university did demonstrate a positive adjustment and a resilient response. However, it should be noted that the organisational learning element that then feeds into the enhanced monitoring stage of the framework was not evident, except perhaps in the Agile Working Framework, which was adopted even after the pandemic. All other aspects of the Covid-19 specific responses have reverted, including the CV19 extension, No-Detriment Policy, Interruption of Studies, and face-to-face teaching and learning has resumed, even after a period of hybrid teaching and learning. Perhaps this is because some elements of the temporary changes are not supported by the systems and structures for it to be an ongoing feature. Interestingly, this was also reflected in how the specially formed Covid-19 Working Group sat outside the university's Major Incident Plan, thereby positioning the pandemic as outside the existing plans to address unexpected issues. In this way, it could be argued that the university may be displaying what Straw et al. (1981) described as a rigid response in that the idea is to return to 'normal' or a 'negative adjustment' (Pratt, 2000) after the adversity rather than necessarily moving forward into a new and improved place by 'detecting and scanning' for opportunities the adversity presents.

The current data do not show whether the university demonstrated resilience in the way argued as being key in the recent resilient literature with regard to positive adjustment where an organisation not only survives the adversity but also seeks opportunities for doing things better as a result of that adversity (Burnard & Bhumra, 2011; Sutcliffe et al., 2016; Ahmed Shafi et al., 2020). Firstly, this data is difficult to ascertain because it is perhaps still too soon after the height of the pandemic. Secondly, it would require a different level and measure of analysis (Kapuca & Khosa, 2013). Thus, though a conclusion can be drawn of positive adjustment, whether this materialises into resilience where the transformation of the organisation occurs as a result of adaptive capacity and subsequent application of learning (Nkwunonwo & Mafimisebi, 2015) is not possible to ascertain with the currently available data.

Disease with the extent of impact as seen in the recent Covid-19 pandemic is a high-impact, low-probability event (Sheffi, 2005), particularly for a country like the UK, and so it could be argued that it would be less prepared. Sutcliffe et al. (2015) posit organisations need to develop mechanisms to ensure that they not only cope and manage in the face of disruption but also learn from them, where they end up in a better position than before the disruption. Identifying opportunity through disruption is an important feature of organisational resilience, and the literature (Rehak, 2020; Bouaziz & Smaoui Hachicha, 2018; Nkwunonwo & Mafimisebi, 2015) points to this as a core feature of a dyadic relationship with wider systems (Sabatino et al., 2016). Whilst this is not necessarily evident from the available data, what is available is that the university, whilst retaining some of the practices from the adjustments made for the pandemic, is more focused on returning largely to the position it was in before the pandemic. This suggests that universities (at least the case study university) in the UK could consider how they use this opportunity for growth and innovative ways for teaching and learning, which could indeed change the face of higher education and address, for example, issues of wider participation and the government levelling up agenda or other ways which could improve the access and quality of higher education.

Conclusion

It could be argued that one of the reasons that a university was able to operate in the Covid-19 conditions was because (institutional and physical) infrastructures generally remained intact. Universities in higher-risk geopolitical locations (e.g. Fillmore et al., 2011; Kachali et al., 2012; Han et al., 2020) are more likely to be overall resilient than a UK university which enjoys relative political and social stability (Blythe & Mallett, 2020). Perhaps this has enabled the resilience (or positive adjustment). What is less clear are the longer-term impacts with regard to resilience as an opportunity to learn and land in an overall better place after adversity rather than return to a 'business as before' place.

In light of these findings, it is suggested that universities would benefit from not only analysing their own immediate responses to major disruption and the subsequent outcomes in terms of student achievement, retention and recruitment in the short-term but also considering longer-term resilience. Through using the resilience models employed in this research (Ahmed Shafi et al., 2020; Burnard & Bhamra, 2011; Dohaney et al., 2020) universities can begin to understand whether they have 'weathered the storm' simply to return to their pre-pandemic positions or have learnt from and through the challenges presented to reach a forward-looking position of greater resilience.

Major disruptions should not be seen as a storm to weather but also an opportunity to create better higher education institutions. Integrating and embedding characteristics of agile, resilient organisations will not only ensure longevity and resilience but contribute to developing resilient communities going forwards into the future. A better understanding of organisational resilience in higher education institutions would be an important future endeavour in order to enable them to plan for other such disruptions that are part of a modern, connected and global world.

Acknowledgements

We would like to acknowledge colleagues Richard Millican, Sian Templeton and Jenny Hill for their contributions in collecting the data which this paper draws upon.

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