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Recommendations for equitable student support during disruptions to the higher education sector: Lessons from COVID-19

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Recommendations for equitable student support during disruptions to the higher education sector: Lessons from COVID-19

2022

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Abbreviations

BAME	Black, Asian, and Minoritised Ethnic
CI	Chief Investigator
DVC	Deputy Vice-Chancellor
FiF	First in Family to attend university
Go8	Group of Eight universities in Australia
LGBTQIA+	Acronym encompassing people of diverse genders, sexual orientations and/or intersex status, including but not limited to lesbian, gay, genderqueer, gender non-binary, bisexual, trans*, transgender, intersex, queer, questioning, asexual, agender, aromantic, and more.
NCSEHE	National Centre for Student Equity in Higher Education
PVC	Pro Vice-Chancellor
R1	Doctoral Universities in the USA with very high research activity
SES	Socioeconomic status
TEQSA	Tertiary Education Quality and Standards Agency
UDL	Universal Design for Learning
US	United States of America
UK	United Kingdom
VC	Vice-Chancellor

Executive summary

Disasters disproportionately impact marginalised groups. The COVID-19 pandemic has caused unprecedented disruption in higher education students' experiences. We sought to understand how twelve universities across three countries endeavoured to support students to retain access to learning through COVID-19, particularly those from minoritised and intersectional backgrounds.

We were guided by the following overarching questions: What strategies did universities employ to support students during COVID-19 and what was the uptake of these strategies by students?; How did students perceive the usefulness of institutional COVID-19 support initiatives?; and How did students experience the impacts of COVID-19 in 2020? To deepen our learning, points of comparison were made between countries, institution types, and student cohorts from minoritised, intersectional, and non-minoritised backgrounds.

Methods and analyses

Twelve universities participated in the research, with ten located in Australia, one in the United States of America (US) and one in the United Kingdom (UK) as international comparison points. Institutions were classified as being research-intensive, regional/remote, or innovative. To guide our research, we developed a conceptual framework. This framework integrated perspectives from three distinct fields of knowledge and theory—intersectionality, crisis intervention, and ecological perspectives. The framework attends to the micro-, meso-, and macro-level environments and interactions of our sector, across two temporal stages of the pandemic—acute and chronic crises periods. We identified learning, wellbeing, and finances as the three main foci of our investigation of student support and experiences in our analytic framework.

A mixed-methods approach was used to address the research questions through two data collection processes at each participating institution: an analysis of institutional communication artefacts (emails and websites) detailing university responses to student support during COVID-19; and a survey of over 2500 students regarding their perceptions of the impacts of the pandemic on university experiences and the adequacy and use of institutional support during COVID-19. The artefact analysis focused on the intended student demographics, type of support, accessibility of support, timing of support, and user experience of support access. The student experience survey collected data on: student demographics and self-identified minoritised status; sense of belonging at university; change in student experience resulting from COVID-19; uptake and usefulness of university support services.

Key findings

The artefact analysis considered 164 artefacts referring to 865 individual support mechanisms across 12 institutions. Most institutions equally split resources between learning (40%) and wellbeing (39%) support, with less support offered for students' financial needs (21%). Across all three areas, how students could access support was often unclear, suggesting that communications and websites could be more specific. Overall, few supports were targeted specifically for students from minoritised backgrounds (16% across all universities). In Australian universities, most of the tailored support was for Aboriginal and Torres Strait Islander students. Regional/remote universities offered the highest proportion of tailored support relative to other type of universities.

Students in their survey responses reported strong preferences for how universities communicated during COVID-19. Mass communications which were impersonal made students feel unseen and undervalued. Asset-oriented communication was more positively received than deficit-orientated communication. Notably, many students longed

for more specific communications based on student demographics, tailored to their individual circumstances.

Of the 2524 students surveyed, 77% belonged to at least one minoritised group, with 45% having intersectional identities (identifying as belonging to more than one minoritised group and experiencing the resulting compounding effects of multiple oppressions). Students from non-minoritised backgrounds reported slightly higher levels of **feeling supported** than students from minoritised backgrounds. Almost three quarters of all students indicated their **learning** experience got a little or a lot worse during the pandemic. There was no significant difference between how students from minoritised (72.5%) and non-minoritised (74.2%) backgrounds perceived the impact of COVID-19 on their learning experience. However, students with intersectional identities were statistically more likely to indicate that their learning experience got a lot worse than their peers from a single minoritised background (31.9% vs 27.5%).

Students from minoritised backgrounds were significantly more likely to report their **financial** situation got a lot worse (29.5%) compared to students from non-minoritised backgrounds (16.2%). A significantly larger proportion of students with intersectional identities reported that their financial situation became a lot worse (34.3%). Despite being more likely to access financial support offered by their university, groups from minoritised backgrounds were less likely to be aware of these supports. Overall, 33.3% of students from minoritised backgrounds reported that their **wellbeing** got significantly worse due to the pandemic compared to 25.4% of students from non-minoritised backgrounds. A greater proportion of students with intersectional identities reported that their wellbeing got a lot worse (36.7%). Students from minoritised groups also indicated that their **sense of belonging** was lower than students from non-minoritised backgrounds and that this got a lot worse during the pandemic. These students were also less likely to be aware of wellbeing support offered by their university.

Students at UK and US universities indicated that both the learning experience and general wellbeing was worse during the pandemic than students from Australia. Fewer students at international universities indicated that their financial situation worsened due to the pandemic when compared with students at Australian universities.

Students shared stories in their open responses which revealed an unequal divide between students from minoritised and non-minoritised backgrounds across all categories. For example, students who could not afford the technology required for learning or who did not have private study spaces at home suffered in learning experiences. Students who had carer responsibilities at home experienced declines in mental health. Students who self-identified in the survey as being from low socioeconomic status (SES) backgrounds who lost their jobs also could not afford essentials like housing or food.

A key benefit that students gained during the pandemic was that the shift to learning online/blended learning for previously face-to-face students opened up a level of flexibility which made learning more accessible, particularly for students from minoritised backgrounds. This accessibility and flexibility prompted ripple benefits which enhanced students' wellbeing and financial situations.

Learning online was described as both one of the best and one of the worst aspects of students' experiences during the pandemic. Where learning online was a positive experience, it facilitated better grades, greater enjoyment and wellbeing, and deeper connections among students and staff. Where learning was a negative experience, it resulted in decreased grades, poor mental health, and feelings of isolation. Whether the experience of learning online was positive or negative was predominantly shaped by the capacity of the institution to provide access to high quality learning resources and the individual capability of teachers to create engaging online environments.

One resounding message across our findings was that, despite the awful circumstances, our sector's response to supporting students during the pandemic offered unforeseen opportunities. While acknowledging the immense challenges and losses people faced, there were also many students who found new ways of studying which enhanced their experiences and outcomes. These benefits were articulated most strongly by students from minoritised backgrounds for some of whom access barriers to studying were removed by the shift to online learning. On the flip side, where students from minoritised backgrounds were not adequately supported in this way, the divide deepened. These are two sides of the same coin which we must keep in mind as we take our next steps.

Recommendations

Recommendations have been structured according to the levels of focus in our conceptual framework—the micro-, meso- and macro-environments which shape the higher education sector. Recommendations at each of these levels speak to different levels of practice within our institutions, such that all practitioners across levels in higher education can learn from our findings.

Micro-level recommendations

At the micro-level, for individual educators and staff who impact the lives of students, the following is recommended:

1. Respond to disparate feelings of belonging and wellbeing.
2. Maintain face-to-face learning for essential activities where possible.
3. Transition new and expanded hybrid/hyflex/blended learning approaches to 'business as usual' to retain accessibility and flexibility in learning opportunities.
4. Support the ongoing professional development of educators to continue to improve new ways of teaching and learning.

Meso-level recommendations

The following recommendations inform practice at the meso-level of institutions—for middle and senior managers and those in roles who speak to whole-of-institution strategy:

5. Create tailored and accessible support mechanisms for students from minoritised and intersectional backgrounds that holistically consider learning, wellbeing, and financial situations.
6. Ensure central communications are concise, personalised for segmented target cohorts, and conveyed through multiple communication modalities.
7. Explore adapted approaches to decision-making and governance structures to meet the needs of different crisis stages.

Macro-level recommendations

The following macro-level recommendations are targeted at the entire higher education sector:

8. Embed structures to facilitate cross-sector practice sharing and opportunities for sector level evaluation, reflection, and revision of protocols established during the pandemic to better prepare for future crises.
9. Centre intersectionality as both a concept and method for engaging with and supporting students.
10. Sustain student support changes made during the pandemic to (re)build our sector with an explicit focus on equity as core business for identity conscious higher education institutions.

Introduction

The COVID-19 pandemic forced Australia to close international borders leading to rolling economic shutdowns. During 2020 alone, the Australian higher education sector which is usually worth 40 billion Australian dollars per annum, lost an estimated 1.8 billion in revenue and shed 17,300 jobs (Thatcher et al., 2020; Universities Australia, 2020). With international borders closed and through successive waves of COVID-19, universities pivoted learning to online and hybrid delivery. At the same time, universities endeavoured to support students during a time of great uncertainty (Crawford et al., 2020; Mercado, 2020; Mok et al., 2020; Rapanta et al., 2020).

The pandemic heightened global consciousness of student health and wellbeing and equity of access to learning (Goodwin & Truebridge, 2021). While in some states in Australia universities remained open, other states such as New South Wales and Victoria adopted more flexible approaches across a continuum from face-to-face teaching, where possible, to fully online learning and teaching strategies. The combined impact on students of the pandemic was multifaceted. Some students with paid work experienced unemployment or underemployment while also trying to ensure sustained motivation for studying and degree progression (Thatcher et al., 2020). Despite financial constraints, Australian universities sought to further strengthen student support through medical, mental health, and wellbeing programs. Universities also sought to ensure student equity of access to learning. However, the effectiveness of that support and the scale of the uptake of support was unknown. This project therefore sought to describe the diversity of support provided to students and explore whether the support offered by universities was effective. Overall, we sought to understand how Australian universities have endeavoured to support students to retain equitable access to learning during the COVID-19 pandemic in 2020.

A crisis such as the COVID-19 pandemic does not impact students equally. There are many identities and circumstances which influence students' access to and experiences of higher education including students who are First-in-Family (FiF), students from low socioeconomic status (SES) backgrounds, students with disabilities, Indigenous students, Women in Non-Traditional Areas, Regional students, Remote students, Culturally and Linguistically Diverse students, students that identify as LGBTQIA+, students with caring responsibilities, students with different religious beliefs, who are older, veterans, and/or migrants and refugees. The challenges these students face during the COVID-19 pandemic are simultaneously idiosyncratic and shared which may include increased financial hardship, barriers to access support systems, and extended feelings of marginalisation.

We employ the language of people, students, groups, or cohorts 'from minoritised backgrounds' specifically to adopt people-first language and to emphasise that minoritisation is a process of values, beliefs, systems, and institutions that (re)enforce certain circumstances on groups of people by society and is not an inherent part of an individual person as might be implied by language such as 'minoritised student'.

This report evaluates the strategies used by universities to support students and equity during COVID-19 using data collected from 10 Australian and two international universities. The universities represented the three common tertiary institution types in Australia including research-intensive, regional and remote, and innovative across four states. Insights from the study will enable higher education institutions more broadly to develop access to learning and support that is equitable during current and future crises.

Background and context

Disasters of any scale, whether natural, economic, or societal, have disproportionately negative impacts on people from minoritised backgrounds. In Australia, people from low SES and Indigenous communities are significantly more vulnerable to losses and most at risk

from natural disasters (Ellemor, 2005; Masozera et al., 2007; Davis et al., 2013; Rentschler, 2013). In the US, racial and ethnic minoritised groups are physically and psychologically more vulnerable to natural disasters, because of factors such as housing, language, community isolation, and cultural insensitivities (Fothergill et al., 1999). In all countries, women disproportionately bear the effects of disasters globally due to gendered biological, sexual, and socio-cultural factors (Aryiabandu, 2009; True, 2016).

People with disabilities disproportionately experience impacts from disasters, often because of exclusion from decision making, inaccessibility of physical environments such as shelters, and other forms of stigma arising from exclusionary decision making of policy makers (Smith et al., 2012). LGBTQIA+ populations' needs are also often unacknowledged in disaster responses despite being an at-risk group (Dominey-Howes et al., 2014).

The significance of this body of research is that it highlights how people experiencing minoritisation are impacted by the compounding effect of crisis because of pre-existing inequities and vulnerabilities (Jacobs & Harville, 2015). Repeated and more frequent crises and disasters have cumulative effects on minoritised groups in local, national, and international populations and scales of suffering (Rentschler, 2013; IPCC, 2012). Repeated disasters will only continue in their frequency as climate change escalates.

The COVID-19 pandemic has been an unprecedented crisis and has caused global disruption. Predictions and early analyses already show that minoritised groups are at considerable disadvantage. As indicated by Friel and Demaio (2020) at the start of the pandemic, the "negative social and economic impacts will be felt most among people who are socially [politically, economically and geographically] disadvantaged" (para. 1). In the early stages of the pandemic in Australia, employment saw a gendered decrease with 8.1% of women losing jobs compared to 6.2% of men between mid-March to mid-April 2020 (Taylor, 2020). There is also evidence that lock downs have disproportionately increased the absolute workload of women, as in heterosexual relationships they (are expected to) take on more home-schooling and domestic work compared to men. Low SES regions have been hardest hit economically during the pandemic given that the occupations most vulnerable "are customer-facing and linked to the sale of goods and/or services; ... operate within heavily casualised sectors; and are relatively poorly paid" (Atkinson 2020). These regions also include many FiF or migrant university students.

The closure of international borders has led to a rapid decline in international student revenue to Australian higher education (Hurley, 2020; van Onselen, 2020). While the economic impact on universities has received much attention, Jayasuriya (2020) argues that more attention should be paid to the cost to students in the lack of employment and in the inequality experienced in the access to study, both geographical and virtual. There has been a significant effort of higher education institutions to maintain students' access and avoid attrition and stay in operation. This can be seen through efforts to shift teaching online, altered admission timelines, adapted assessment procedures, and changed financial support policies.

University decisions on how to support students were made in step with evolving government responses and directives and the pandemic itself. Given the need for rapid response, decisions were made without widespread student consultation (Schwartz & Pisacreta, 2020). Research tells us that the exclusion of stakeholders from key decision-making processes which affect them can result in outcomes less suited to those groups (Potter, 2006). Schwartz and Pisacreta (2020) argued that students from minoritised backgrounds face the greatest challenges in higher education during this pandemic and are those most likely to be excluded from having a voice. While we understand capturing multiple voices during this time was complicated and near impossible, the pre-existing disparities are likely to have impacted students from minoritised backgrounds disproportionately. Students from minoritised backgrounds are most systemically at risk and

more likely to make up a larger proportion of people losing jobs due to precarious work (Jayasuriya, 2020). Systemic barriers such as racism, sexism, ableism, classism, and homophobia are replicated within higher education (e.g., Bhopal, 2018). These oppressive barriers result in alienation, marginalisation, and differential outcomes (Abou El Magd, 2016).

For example, 'Black, Asian, and Minoritised Ethnic' (BAME) students in the UK have an attainment gap, where BAME students are 13% less likely to graduate with a 2:1 or 1st degree compared to White students (UK & NUS, 2019). In the US, racially minoritised (Black/African American, Native American, Latinx, Asian American) students have been more likely to experience academic obstacles, financial hardships, food insecurity, anxiety, and depression during the pandemic than white students (Soria et al., 2020). Racially minoritised students uniformly report deflated optimism about their work prospects and the future of higher education in the US (Gallup, 2020; Lundquist et al., 2021). Critical Race Theorist Kimberlé Crenshaw (1989) further directs us to explore the intersectional space where racially minoritised students experience compounding oppression, for example for Black women, as illuminating patterns of inequity and oppression. Related, significant gaps in graduation rates for racially minoritised students existed before the pandemic (Banks & Dohy, 2019) and are likely to have been extended for all minoritised populations.

In Australia, Aboriginal and Torres Strait Islander students represent only 1.6% of enrolments despite constituting 3% of the national population (Cunninghame et al., 2016b). These students experience poorer outcomes including differential degree completion rates, also experienced by low-SES students and regional/remote students (Edwards & McMillan, 2015). Minoritised cohorts also report lower levels of academic satisfaction and a higher likelihood of having considered leaving university early (Mountford-Zimdars, 2015; Edwards & McMillan, 2015).

A key aim of this project was to understand how Australian universities have endeavoured to support students from minoritised backgrounds to retain equitable access to learning throughout the COVID-19 pandemic during 2020 and to understand students' experiences of those responses. We explored this from two perspectives:

1. **Institutional perspectives**: the mechanisms higher education institutions have put in place to support students from minoritised backgrounds; and
2. **Students' perspectives**: experiences and perceptions of the adequacy of institutional support with a focus on the experiences of students from minoritised backgrounds.

We collected and compared data from 10 Australian universities and, for potential robust application, sought one institution in the US and the UK respectively which are similar in size and character to research-intensive Australian universities. These two international comparison points also highlight an 'out group' lens on how international sociocultural contexts influence findings. Importantly, we have compared institutional data across three types of Australian universities:

- Research-intensive: those with strong research activity in the Group of Eight (Go8).
- Innovative: newer comprehensive institutions within either the Innovative Research Universities group or the Australian Technology Network of Universities.
- Regional/remote: located in or serve substantial cohorts from regional/remote areas.

Universities in each category enrol different cohorts with proportional differences in minoritised student numbers. So, while overall enrolment numbers differ, universities also enrol different numbers of minoritised students with some having a much higher proportion of these groups than others. It was anticipated that these universities may take different approaches to student support during COVID-19 based on differing understandings of students' needs. These differences can inform how we, as a sector, learn from each other and grow to support all students at all times, whether in crisis or not.

Taking a mixed-methods approach we addressed the following research questions:

1. What strategies have research-intensive, innovative, and regional/remote universities employed to respond and support students from minoritised backgrounds during COVID-19?
    a. How do strategies differ among institution types and locations?
    b. How do strategies differ among student cohorts?
2. How are students across research-intensive, innovative, and regional/remote universities experiencing the impacts of COVID-19 on their access to learning?
    a. How are these impacts experienced differently by students from minoritised backgrounds?
    b. How do students' experiences differ among institution types and locations?
3. How do students from research-intensive, innovative, and regional/remote universities perceive institutional COVID-19 support initiatives?
    a. How do students perceive the usefulness of these initiatives?
    b. What additional support do students recommend?
    c. To what extent do students report accessing initiatives?
    d. How do students' perceptions of support initiatives differ among institution types and locations?
    e. How do students' perceptions of support initiatives differ among students from minoritised and non-minoritised backgrounds?

Seeking answers to these questions will be critical to the future success of higher education institutions in taking an evidence-based approach to appropriately ensuring that access to learning remains equitable during times of crisis.

We have applied a conceptual framework which integrates theoretical lenses from intersectionality (Crenshaw, 1989; Crenshaw, 1991), crisis intervention (Ell, 1996; Regehr, 2011) and ecological perspectives (Germain, 1973; Germain & Gitterman, 1996) to this research as outlined below under 'Conceptual framework.' Given the above evidence indicates that impacts of COVID-19 on students are likely to be complex (Cunninghame et al., 2016a) and previous research from Edwards and McMillan (2015) found that belonging to more than one minoritised group leads to lower likelihood of degree completion, our methods aimed to account for such intersectional effects. Therefore, we collected data from a broad cross-section of students at each institution to highlight the diverse array of experiences for minoritised and students from non-minoritised backgrounds, and among students from different minoritised groups. This approach was deemed appropriate given that research on COVID-19 impacts is in its infancy and to start out too narrow may prevent the discovery of important trends *across* student groups.

Conceptual framework

We developed a conceptual framework which integrates three distinct lenses. Each lens provides a different level of insight into the micro-, meso-, and macro-level factors which interrelate to influence how students experienced and were supported in higher education through COVID-19. Figure 1 provides a diagrammatic representation of how this conceptual framework fits together. Our integrated lenses include the following.

- **Intersectionality** from feminist literature, particularly authors who are Women of Colour. We sought to understand the ways students with multiple and intersecting marginalised identities experience oppression and exclusion from higher education systems based on sociocultural norms, stereotypes, and biases and specifically, how this may have been exacerbated during the pandemic crisis.

- **Crisis intervention** from social work literature to frame how we understand the different stages of the COVID-19 pandemic in 2020 as 'acute' and 'chronic', with each stage having different associated impacts and responses.
- **Ecological perspectives** from social work literature (originally adapted from the biological sciences) to provide insight into how students interact, influence, and are influenced by both their specific higher education institutional environment and the broader ecosystem of society's response to the pandemic, noting that each of these environments present different pressures or enablers which drive how students are able to cope through crisis.

The sections below explain how each lens interacts and then integrates into this research. This paints an 'ecosystem' view of students' institutional and localised connections during the pandemic, taking into account temporal and geo-sociocultural contexts. This conceptual framework may be a valuable contribution to the higher education literature in understanding and responding to major disasters and disruptions in future, with the potential to uncover and identify practices to influence and change students' experiences during 'normal' higher education operations.

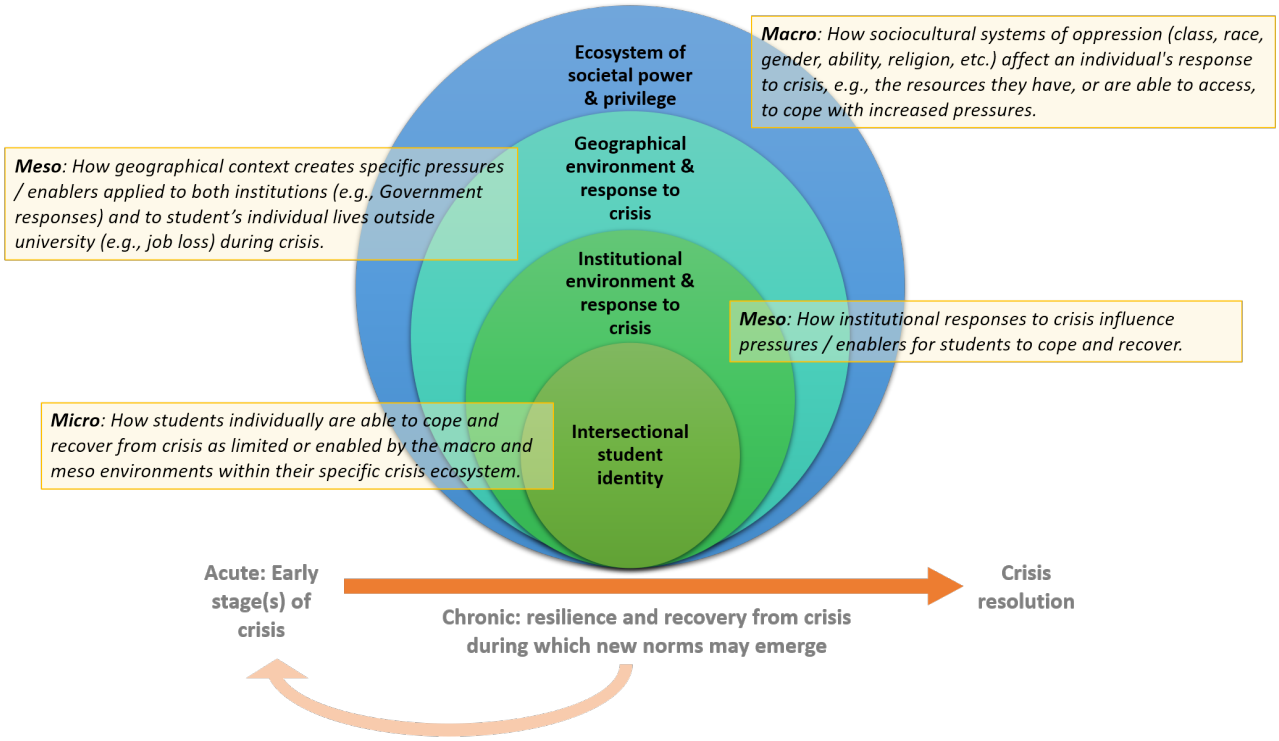

Figure 1. Conceptual Framework

Intersectionality (Crenshaw, 1989) is a theory used to map and understand how individuals can belong to multiple minoritised identity groups and the unique experience of the interaction of two of more minoritised identities (for example, race and gender). The theory interrogates societal systems of power as seen by Crenshaw and articulated the unique position Women of Colour face in the US legal systems based on their race and gender. They experience a unique intersection of racism and sexism which is compounding in terms of oppression and differs from, for example, White women's experiences of sexism or Black men's experiences of racism.

Intersectionality was born out of feminist perspectives to disrupt, challenge, and change power through making salient how people within systems exist, legitimising their experiences

as unique and compounding. It recognises the significance of political, economic, legal, and educational structures of power, how individual/group experiences reflect those structural intersections, and how margins are, in part, responsible for organising our sense of subjectivity (Crenshaw, 1989).

Intersectionality has been used previously in higher education research to interrogate "how tertiary institutions manage, cater for, include, exclude and are experienced in ways that produce advantage and disadvantage" (Nichols & Stahl, 2019, p. 1225). Such research has most frequently used gender as the identity of focus in intersecting with additional dimensions of identity, such as race, class, or ability. For example, Johnson and colleagues (2019) used an intersectional lens to understand Black women's sense of belonging in Science Technology Engineering and Maths (STEM), finding that "having Black women and Black men role models, and perceiving role models who lacked a common racial identity as allies, positively related to belonging in the institution." Such research results in clear and actionable implications for higher education institutions.

Nichols and Stahl (2019) in their systematic review of intersectional research in higher education argued that despite being a common theory in use, "there is considerable work to be done to actively address the workings of intersecting systems of inequity impacting on participation and outcomes of students" (p. 1225). This research also tells us that caution must be taken when trying to understand the experiences of minoritised groups. Grouping by experience based on any single group (e.g., *only* gender *or* race) because the likely diversity inherent within individual groups will mean that certain people experience those processes of minoritisation differently from others should they also belong to other minoritised groups.

In the context of our research, this intersectional lens helps us to bring nuance and complexity to understanding the certain pressures or enablers students experience during crisis. For example, as discussed in the introduction, the impacts of the pandemic and disasters in general are often felt more acutely by those already experiencing disadvantage. As a hypothetical example:

> *During the pandemic, undergraduate student Fatima may be more likely to lose her job because she is casually employed. She may also be more likely, within her individual workplace, to be laid off first because she is a woman. Relative to other women in her workplace, she may again be more likely to lose her job because she is a Woman of Colour, in addition to which she wears a hijab because she is Muslim. In these ways, Fatima potentially experiences increased pressures during the economic downturn associated with the pandemic because she comes from a low SES region and because she is at the intersection of racism, classism, sexism, and religious discrimination.*

Thus, the pressures exerted on Fatima at the individual (micro) level based on her intersectional identity are both pre-existing and exacerbated by the macro-level ecosystem of societal power and privilege/oppression, as depicted in Figure 1. The nuance of how those macro-level pressures manifest is determined within the meso-level environments as systems of power determine how societies and institutions respond in terms of support and impacts—acknowledging that supports will be available to and accessible for students differently and impacts will be felt differently.

We aim to draw attention to this complexity by exploring the impacts of and support offered during COVID-19 for student populations. For example, what did different student groups *need* to cope with during the crisis and when, and how did this differ according to individual students' intersecting identities?

Ecological Perspectives

Here, we stitch together a social work ecological perspective (Germain, 1973; Gitterman, 1996; Gitterman & Germain, 2008; Gitterman, 2009; Teater, 2014) to capture a more holistic view of the ecosystem of interrelated factors which influence students' experiences during a crisis. Ecological perspectives stem from systems theory, which aims to map systems at work and, when boundaries are breached within each system, how they communicate with one another. This theory is based on the ecology of the physical world; for example, what do plants need to thrive and survive? How does their environment affect their growth? The same principles can be applied to people; do they have food, shelter and water? How much of each do they need to *survive* and is this different from the resources they need to *thrive*?

Cook (2012) explains ecological perspectives as mapping biologically determined characteristics and the wider sociocultural context structuring human interactions. This is related to the fundamental 'person in environment' social work perspective which moves beyond the physical to the social, economic, political, spiritual, and temporal environments (Kondrat, 2017). This perspective analyses the intersections between social, physical, and political environments and human interactions which constitute an individual's complex ecosystem. It complements intersectionality by linking an individual's identity at the micro-level to the meso-level geographical environments within which they live (country, city) and study (institutional), within broader sociocultural and political contexts, as shown in Figure 1.

By conceptualising universities as unique institutional environments within a broader social and political environment structured by certain cultural ecosystems, we can more clearly delineate the pressures which a disruption like COVID-19 poses as a threat to 'normal' existence and the impacts those pressures cause for the diverse range of people within that environment. When viewed through this ecological perspective, students experience pressures differently and can be framed as more 'at risk' than others, meaning they will require different support approaches. For example:

> *Gabriel is a non-binary student who entered their university through an alternate entry pathway for low-SES students designed to acknowledge the disproportionate barriers this group of students face in undertaking education. During COVID-19, Gabriel's already higher-than-average level of financial stress increased when they lost their job at their local corner store when it shut down. This meant they faced increased barriers accessing learning for their degree when it went online because they couldn't pay their family's internet bill. Gabriel also had to choose between affording repairs to their laptop to be able to continue studying and their medical bills. Therefore, Gabriel faced higher levels of environmental pressure and their access to learning was at risk compared to their peers who are financially stable. Gabriel thus needs a different level of support during the pandemic.*

This systems-based ecological perspective helps us to more deeply understand pressures resulting from changes to the university environment in response to COVID-19 and how differently students' wellbeing and learning are impacted according to pre-existing risks determined by their identities. This perspective complements a crisis intervention lens by providing a view through which to analyse what support is needed at acute or the chronic stages of crisis.

Crisis Theory

Crisis theory and intervention (Ell, 1996Regehr, 2011) focuses on addressing crisis situations which require intervention to support individual, family, and community longer-term recovery. A "crisis" from a social work perspective is defined as a stressful event "wherein people experience temporary feelings of severe acute distress, being

overwhelmed or unable to cope in ways that reduce the discomfort or the hazardous circumstances" (Ell, 1996, p. 168). While people respond differently to crises or stressful events, a key factor in their experience is the "perceived adequacy of personal and environmental resources to meet the demands posed by the event" (Ell, 1996, p. 168). This idea is strongly linked with work on resilience which suggests that institutions and individuals learn and adapt from stressful events and in doing so develop resilience (Tousignant & Sioui, 2009; Walker, 2019).

This lens provides us with a positive frame for our research by understanding that stress occurs every day and that resilience can be considered as a human adaptation and an "ordinary" part of human life rather than "extraordinary" (Masten, 2001). While resilience can be an asset, lauding this tenacity devoid of critiquing the systemic oppression which makes resilience necessary would be short sighted. While resilience is appropriately framed in the literature as an asset, "it is in danger of running too close to contemporary neo-liberal notions of self-help and self-responsibility and glossing over the structural inequalities that hamper personal and social development" (Gray, 2011, p. 10).

Crisis intervention responds to the stress caused by crises by designing responses based on whether an individual or community is in an active "acute" crisis or in the more stable "chronic" stage of crisis (Ell, 1996). In the former, the response focus is on support mechanisms which shift individuals out of acute crisis. In the latter, individuals are still managing crisis-related events while working towards a resolution. Importantly, the timeline can be non-linear: if circumstances change within this chronic stage, the individual could move back into a state of acute crisis, as indicated in the temporal feedback loop in Figure 1. As a hypothetical example:

> *During the pandemic, international student Li Wei has been prevented from returning to his home country after the official crisis announcement and borders closed. Under these circumstances, he experienced financial strain in forced lockdown. He secured a loan from their university which shifted him into a stable but stressful state until borders reopened. Once home, however, Li Wei had little access to the internet to continue his studies online. The support he needed to face this new crisis was different from the initial financial crisis.*

In this way, our research pays attention to what different support mechanisms were offered by institutions and needed by students at two different stages of the COVID-19 crisis in 2020—the acute stage of crisis in the early months (approximately February-March 2020) and the chronic stage during the remainder of the year (~May - December 2020). Geographical context is taken into account as recurring clusters occurred throughout the year, shifting various locations between the two stages. This lens provides insight into what supports were available and appropriate for whom at these different times.

The crisis intervention model does not directly work towards confronting social oppression or other external *causes* of crisis but is useful to provide a temporal bedrock to our framework which also recognises the importance of the broader institutional environments' role in coping and recovery. The other lenses provide insight into the different micro-, meso- and macro-level driving factors which enable or limit students' coping and survival throughout the different stages of crisis.

Methods and analyses

The 10 Australian institutions participating in this study represent a matrix (Appendix 1) of three common tertiary institution types in Australia—research-intensive (*n*=2), regional/remote (*n*=3), and innovative (*n*=3) (types outlined above) across four states (New South Wales [NSW], Queensland [Qld], South Australia [SA], Victoria [Vic]). Our sample also included two international comparisons to highlight an 'out group' lens on how different socio-geocultural contexts influence the strategic responses taken to and student experiences of COVID-19. These two international universities were selected because they are large, public universities R1 (US) and Russell Group (UK) institutions which are comparable to Australia's research-intensive Go8 universities.

We adopted a mixed-methods approach to address the research questions, using two data collection processes at each participating institution:

1. an analysis of institutional communication artefacts (emails and websites) detailing university responses to student support during COVID-19
2. a survey of students at participant institutions regarding their perceptions of the impacts of the pandemic, and the adequacy and use of institutionally-offered support during COVID-19.

The artefact analysis focused on the intended audience demographics, type of support offered, accessibility of support and user experience of support access. The student experience survey collected data on student demographics and self-identified minoritised status; sense of belonging to institution; change in student experience resulting from COVID-19; uptake and usefulness of institutional support services.

This research was undertaken by a team of 19 researchers across 12 universities in three countries. This team was coordinated by the CI (Mercer-Mapstone) based at the University of Sydney. Researchers at each university were responsible for the collection of data at their own institution according to shared frameworks and methods. Smaller sub-teams of researchers were responsible for each aspect of the research based on their expertise—for example, the quantitative analyses were undertaken by one sub-team and the qualitative analyses by another. Rigour and coherence across teams was ensured by shared analytic and conceptual frameworks, and ongoing discussions among teams for consistency. A student partner was engaged throughout the project to engage her reflections on the research through the lens of having relevant lived experience of being a student from a minoritised background during the pandemic. She worked closely on the analysis with the CI and sub-teams as relevant.

Artefact analysis of institutional COVID-19 student support

Artefacts from each institution were collected and analysed. Artefacts included documentation from email communication and web content which outlined what institutions offered for student support during 2020. An analytic framework was developed to extract information rigorously and consistently from diverse artefacts across contexts (see 'Artefact analysis' below). Steps were taken to ensure a rigorous and transferrable approach: an initial test of the analytic framework was conducted on two universities after which minor changes were made to the framework. Those two universities were reanalysed following these changes and results remained the same. The same researcher conducted all artefact analyses to ensure consistent interpretation of artefacts.

Data sources and criteria for inclusion

Both email and institutional websites were collected as artefacts from participating institutions for analysis using an analytic framework (see "Artefact analysis" below). Email

communications were used to identify and compare support mechanisms offered to students. Being timestamped, they allowed for a temporal analysis of institutional responses in the early “acute” phase of the pandemic and the later, prolonged “chronic” phase where no other data source could speak to such temporal changes. In contrast, institutional websites gave a current (at time of analysis) and holistic view of support mechanisms offered by each university. As websites were usually updated to replace prior information, this data source could not speak to the temporal aspects of the pandemic. Institutional websites allowed for analysis of specific support responses based on location, visibility, and accessibility.

Criteria were used to filter artefacts included in our analysis to make the study targeted and feasible. These included:

- The artefact formed part of institutional communication to students of that institution about COVID-19 and student activities and institutional-offered support relating to COVID -19.
- The artefact was published/sent to students during the period of focus for this study—January to December 2020.
- Emails were sent from the top four levels of institutional leadership (Provost, Vice-Chancellor, Deputy Vice-Chancellor, Pro Vice-Chancellor) to ensure that the supports analysed were those available university-wide, rather than to include ad hoc faculty-based initiatives which were beyond the scope of this study.

We note that students may have received a significant number of additional COVID-19-related communications from degree directors, subject/unit co-ordinators, teaching staff, student groups, and others during this time. We also acknowledge that students may have had access to specific subject/unit, degree, or faculty mechanisms of support. These were not considered in the artefact analysis of this study. The reason for this is that they were considered to be: beyond the scope of the study, which focussed on whole-of-institution approaches; too large in scale to be feasible within study timeframes; and because they could not be systematically collected in a way which ensured rigour or repeatability across participating institutions.

Artefact analysis

The analytic framework in Appendix 2 was used to collect data from the artefacts: details (e.g., institution, source, date, location); intended audience demographics (e.g., for international/domestic, undergraduate/postgraduate students); type of support offered (within categories of learning, wellbeing, and financial); access to support (Openly accessible, Need to apply/get permission, Offered but access is unclear); and user experience. These foci aligned with the student survey (below) allowing for direct comparisons of institutionally offered support services and students’ experiences of those services. The analytic framework was administered through Qualtrics. Every artefact (individual email and website) was entered into this tool as a single entry ensuring that each data point was analysed consistently.

Analysis of websites used clickstream behaviour (Lakshminarayan et al., 2016). Only information located within a two-click radius was analysed. Content which required navigation away from the primary source was not included in the analysis, such as government resources. This allowed for repeatable, consistent analytic processes for websites while also keeping the scope of the analysis feasible. A clickstream analysis was also used for emails. This was based on a one-click radius from the primary document. A smaller click radius was necessary due to the reduced size of the documents in comparison to websites. Unattributed and “inactive” links to community or government sources or referrals to public websites were not included.

Once the dataset was complete in Qualtrics and all artefacts had been analysed as data points, that raw dataset then went through a further analysis in Excel which produced summary statistics highlighting trends across artefacts.

Student Experiences

Student perspectives were sought on the impact of COVID-19 on access to learning and uptake of and perspectives on institutional COVID-19 support. The questionnaire collected qualitative and quantitative data using Qualtrics and had overarching human ethics approval at the lead institution (University of Sydney Human Research Ethics Committee Project Number 2020/709) with local ethics approval received as required by each study institution.

Participant recruitment and sample

Student survey participants were recruited at 11 of the 12 institutions involved in this study. One institution faced institutional barriers to data collection and no responses were collected. At the remaining 11 universities, recruitment efforts were focussed on ensuring that we had a large proportion of the sample representing students from minoritised backgrounds. Institutions recruited students through various methods depending on their local ethics approval and included the following recruitment methods, in order of prevalence: emails sent to students in minoritised cohorts (usually identified through institutional groupings such as alternate entry pathways) and all students; institutional or faculty newsletters; social media; through societies and clubs; in person through classrooms and word of mouth.

Survey Instrument

Appendix 3 includes the full questionnaire sent to students (wording was slightly adjusted for international universities). Students were asked to respond to both qualitative and quantitative items which collected data on: student demographics (e.g., for international/domestic, undergraduate/postgraduate students) and self-identified minoritised status; sense of belonging to institution; change in student experience resulting from COVID-19 (within categories of learning, wellbeing, and financial); and uptake and usefulness of institutional support services (within categories of learning, wellbeing, and financial). Within self-identified minoritised status we explicitly asked about three groups—FiF, low SES, or English as an additional language. These three groups we explicitly posed in addition to self-identified categories as they are groups of particular interest/focus to the grant funding body and to the Australian Government. Given the novelty of the COVID-19 pandemic and associated research, the majority of items were created specifically for this study. The sense of belonging items were adapted from the Psychological Sense of School Membership scale (Goodenow, 1993).

Analysis

Initial data cleaning was conducted prior to analyses. This included categorising the open responses from the question "*Please specify what minoritised group(s) you belong to*" into categories for analysis. This item was asked as an open response to allow students to self-identify without risking exclusion of certain identities in box-ticking responses. Open responses were then thematically grouped into overarching categories derived from the language students used to describe their identities. For resulting categories with examples please see Appendix 4.

Qualitative data analysis

Qualitative data for the five open response questions (see Appendix 3) were analysed using NVivo 12 Plus. Each open response was attributed anonymously to an individual participant, linking to their demographic information. Inductive thematic analysis was used according to the three *a priori* themes of wellbeing, financial, and learning support, attributing passages of

text to themes as individual text references. An additional ‘Other’ theme was used for responses which did not align with those themes. Following inductive analysis, deductive analysis was used to derive any subthemes according to emergent trends in the data within the *a priori* codes. Responses such as “N/A” or indications of not being enrolled in one of these semesters were not coded. The number of text references coded to themes and subthemes was used to generate quasi-quantitative count data (where qualitative data are transformed to produce quantitative data by counting the numbers of text references recorded in each theme or subtheme) to allow for proportional comparisons of prevalence of themes and subthemes.

Quantitative data analysis

Quantitative questionnaire data were analysed using chi-squared tests, t-tests and/or Mann-Whitney-Wilcoxon tests with statistical software R and RStudio. We set statistical significance level a priori at $p<0.05$. After describing the demographics of the sample, differences between responses from students from minoritised and non-minoritised backgrounds were analysed. Within the sample of students from minoritised backgrounds an intersectional lens was applied, analysing differences between students who identified as belonging to a single minoritised group versus those from multiple minoritised groups. The second angle of the analysis focused on differences in outcomes between students from different institution types using the three *a priori* themes to structure the outcomes (wellbeing, financial, and learning support).

Responses given on Likert-type scales were analysed in two ways. First, the responses were treated as categorical variables, and we analysed how many students responded to each question in a particular way, and whether this differed depending on minoritised background or institution type using chi-squared analysis. Where scales to questions were ordinal (e.g., from Strongly Disagree to Strongly Agree), we also recoded the responses into numeric values and performed a Mann-Whitney-Wilcoxon Test to check whether responses tended to be more positive in a particular group of students. Second, where answers to multiple questions were averaged to form a score (e.g., in the measurement of belonging), responses were coded into numerical values and means calculated for different groups of students—in many cases, this made a comparison between groups and outcomes easier and more meaningful and allowed t-test analysis.

Findings

Institutional COVID-19 student support

Overall trends

Artefacts including emails, websites, and other documentation pertaining to COVID-19 student support were collected from each of the twelve universities; 146 artefacts met our inclusion criteria. Overall, 83% (*n*=122) of artefacts were emails, 15% (*n*=22) were institutional websites, and 3% (*n*=4) fell into "Other" namely, overview documents supplied by institutions. Across institution types, 35% (*n*=51) of artefacts were from innovative universities, 19% (*n*=28) from international universities, 12% (*n*=17) from regional/remote universities, and 34% (*n*=50) from research-intensive universities.

A total of 865 individual supports were recorded. According to our three main support categories (Appendix 2), 40% of these were learning supports (*n*=349), 39% were wellbeing supports (*n*=337), and 21% were financial supports (*n*=179). Variations by institution type are shown in Table 1. In terms of accessibility, 50% (*n*=429) were "Openly accessible" 16% (*n*=142) were by application, and 34% (*n*=294) were offered but access was unclear at the level of artefact analysis. The proportion of access types for each support category is shown in Figure 2.

Table 1. Variation in types of support across institution types in the artefact analysis

Institution type	Type of support		
	Learning	Wellbeing	Financial
All institutions	40.0%	39.0%	21.0%
Research	43.2%	34.4%	22.4%
International	39.9%	40.5%	19.6%
Innovative	35.0%	43.5%	21.5%
Regional/Remote	49.2%	34.4%	16.4%

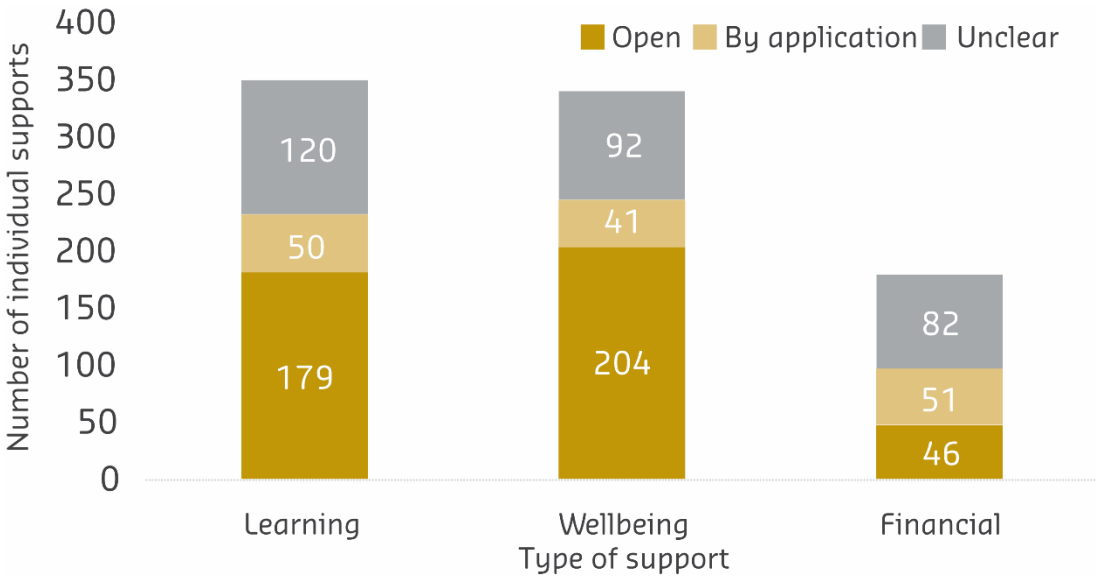

Figure 2. Proportions of access type for each type of COVID-19 support offered by universities

Timing of communications across stages of the pandemic

The various Australian states and countries of institutions in this study responded differently to COVID-19 outbreaks and fluctuated in terms of lockdowns. Analysis of the timestamps of the institutional emails indicated that the peak period of general student communication occurred between mid-March and July 2020. This aligns with the semester one of the Australian academic year and semester two overseas, and with the acute period of the pandemic. Email communication decreased across all universities in the second half of 2020. This likely represents that, while going in and out of emergency responses as outbreaks fluctuated, universities had moved from an acute crisis response to a chronic crisis stage where the procedures put in place during the acute stage of COVID-19 were normalised and offered a semblance of stability by those responsible for communication to students and did not warrant the same level of regular and sustained communication as earlier in the year—regardless of whether they continued to be in lockdown or not.

Specific support for minoritised and other student cohorts

Most supporting mechanisms communicated by universities did not target any specific student cohorts such as part-time or deferred students, with a large majority of emails being directed to all students regardless of enrolment type or demographic. This is potentially a result of the nature of this study focussing on high-level communications, but tells us that very little tailoring of communications occurred at this level. In a minority of cases, communications were aimed at specific cohorts as follows: 8% to part-time students; 25% to online degree students; 9% and 12% to undergraduate and postgraduate students respectively; 11% specified a year level; 20% and 25% to domestic or international cohorts respectively; and 37% and 14% to onshore and offshore students respectively.

Overall, few supports were targeted specifically for minoritised student cohorts: 16% across all institutions (Table 2; “Other” groups for whom tailored support was offered included women, LGBTQIA+, carers, and mature-age students.). Ten of the twelve universities provided at least one support initiative to students in a particular minoritised group. The fact that no minoritised-specific supports were recorded for international universities raises questions as to whether those supports likely did exist but were communicated from parts of those universities which were not captured by the high-level focus of this study.

Table 2. Proportions of supports which were specific to minoritised cohorts offered by different institution types in the artefact analysis

Institution Type	Total specific to minoritised cohort	Minoritised cohort				
		FiF	Low SES	English as an additional language	Aboriginal and Torres Strait Islander	Other (Please specify)
All institutions	16.4%	0.6%	3.1%	3.8%	5.7%	3.1%
Research-intensive	25.0%	1.7%	6.7%	5.0%	6.7%	5.0%
International	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Innovative	9.8%	0.0%	0.0%	3.9%	3.9%	2.0%
Remote/ remote	30.0%	0.0%	5.0%	5.0%	15.0%	5.0%

It seemed that instead of initiatives and support being defined by minoritised group status, they were often defined by relevant needs. For example, “*including those of you who may be isolated from your families and missing their physical, financial and emotional support, and have also lost the part-time work you rely on* ….” (Innovative University 02/04/20). This suggests students from minoritised backgrounds appeared to be required to spend more time searching for such information or follow up themselves to access the support initiative.

Types of support

Learning Support

Learning support was offered by all universities across 349 (40%) individual items. Seven categories of learning support were used to analyse artefacts according to the predetermined analytic framework (see Appendix 2 and Figure legend below). The accessibility of each category was assessed as well as the frequency of each type of support (Figure 3, see Appendix 5A for more detailed data). Overall, for learning support, 51.3% were openly accessible, 14.3% were by application, while access for 34.4% was unclear. The most common forms of learning support were 'Provision of additional/alternate physical or online study spaces' followed by 'Online learning support'.

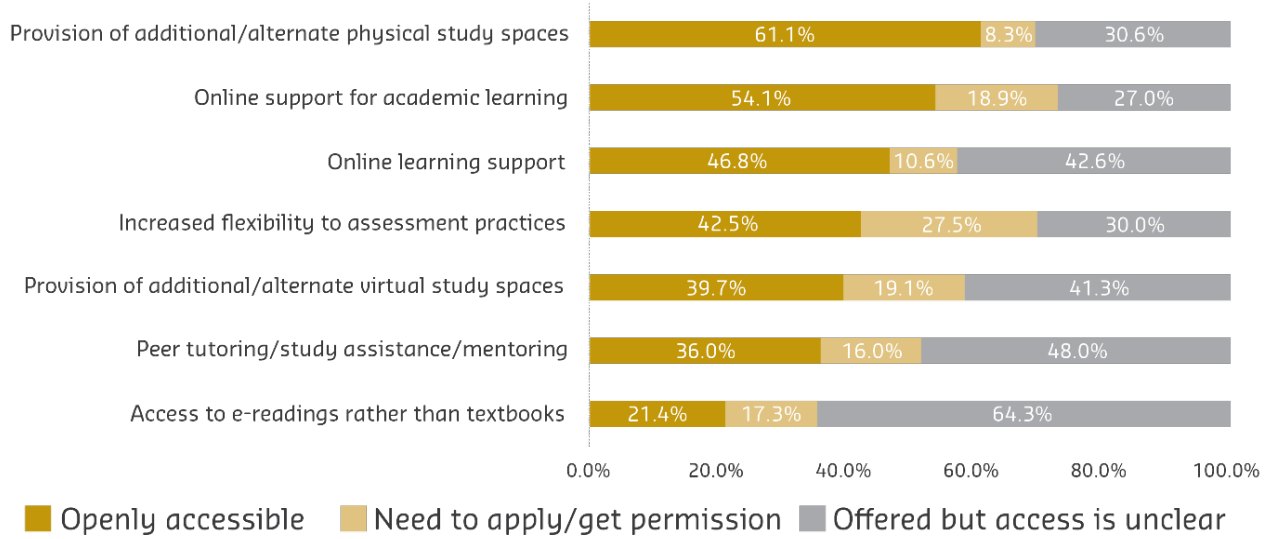

Figure 3. Accessibility of learning support initiatives offered to students by universities

The artefact analysis also revealed that the majority of universities in this study prioritised face-to-face teaching for areas such as laboratory work, first years, and students needing practical hands-on competency tests such as nursing and health related courses when permitted by Government policy.

For students experiencing difficulties with internet or IT equipment, several universities offered access to and loans of equipment and internet support such as wifi dongles. Again, there was no indication that specialist initiatives in relation to equipment and IT were introduced for minoritised student groups specifically.

All universities offered some form of university-wide assessment consideration during COVID-19. Some universities adopted an entirely new policy (for example, 'No Disadvantage' or 'No Detriment ') whilst others adapted existing policy and provided partial support addressing future disadvantage (for example, non-recording of FAIL grades on transcripts). All universities had to manage exams online at some stage due to government restrictions.

There was evidence that flexibility in assessment was also specific to a faculty or degree, as several universities recommended contact with programme or course coordinators to overcome COVID-related difficulties in assessment tasks. International students were often directed to support mechanisms associated with legal advice and university or state-wide international student support services. Two universities stated their primary communication platform with international students was a platform other than their student email (e.g., Weebo).

Deeper analysis of the qualitative data arising from the artefacts classified as “Other” in the learning support category indicated several key initiatives to address learning support may have existed for minoritised cohorts outside of our *a priori* sub-categories, illustrated by use of targeted phrases such as “*students experiencing difficulty”*, or “*students who receive on-going support*” or “*make alternative arrangements for students in extenuating circumstances*”. These initiatives were thematically grouped under three key areas:

- **targeted learning** which included more hands-on support for learning during COVID-19 such as the ‘Mentoring Our Brothers and Sisters (MOBS)’ program;
- **targeted spaces** such as ‘Assistive technology rooms’; and
- **targeted support people** such as dedicated faculty student advisors or a Disability Liaison team.

The latter suggests some universities in this study set up support for students from minoritised backgrounds across a range of existing and new initiatives, but the extent to which they were set up were not systematically communicated through the artefacts included in this level of analysis.

All institutions directed students to defer/withdraw/suspend studies if they did not feel confident continuing study, particularly those overseas or courses with major practical assessment who had no confirmed placement. In this situation, students were encouraged to continue their studies and placements only if it was safe to do so. Australian universities promoted blended learning to continue study more often in comparison to international universities.

Wellbeing support

Wellbeing support for students was offered by all universities in 337 individual items (39%) of across all artefacts. Eight predetermined categories of wellbeing support were used to analyse artefacts (see Appendix 2 and Figure legend below). The accessibility of each category was assessed as well as the frequency of each type of support (Figure 4, see Appendix 5B for more detailed data). Overall, 60.5% were openly accessible, 12.2% were by application, while access for 27.3% were unclear. Counselling online and online wellbeing services in addition to counselling (e.g., peer group chats) were the two most common types of wellbeing support mechanisms offered.

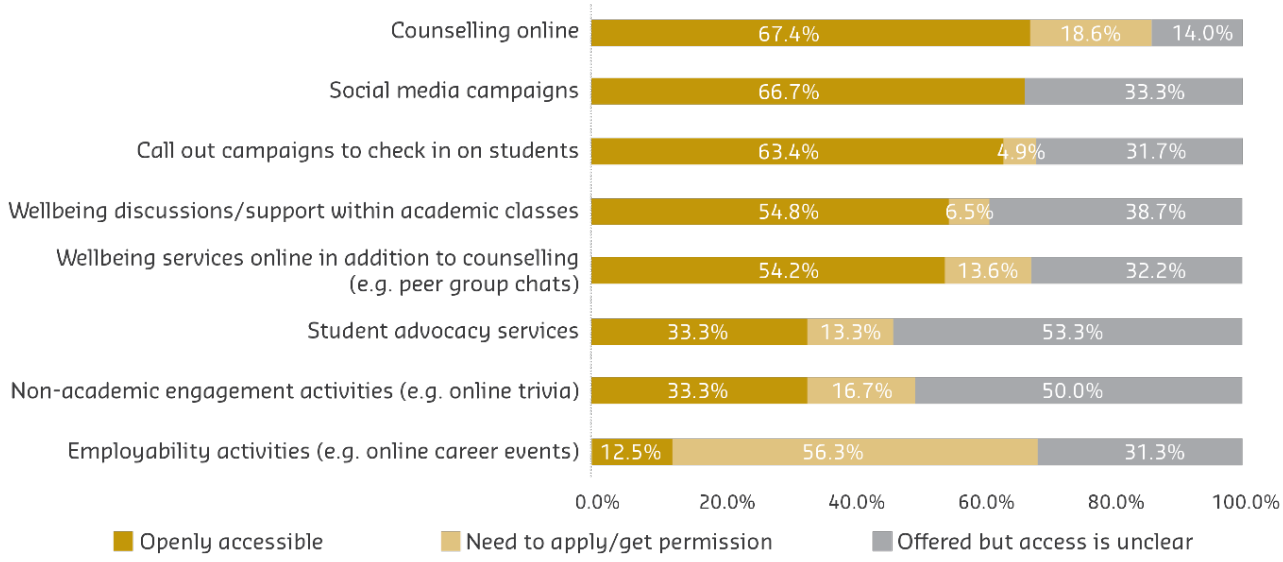

Figure 4. Accessibility of wellbeing support initiatives offered to students by universities

Universities seemed to prioritise mental health and emergency requirements such as food and housing during the acute stage of the pandemic with social and non-academic supports featuring in the chronic stage.

Deeper analysis of the qualitative data showed a number of key initiatives that potentially addressed wellbeing support for minoritised cohorts, signalled by the use of specific words such as '*international students*' or '*students with housing-related concerns'*. These services are not clearly for students from minoritised backgrounds per se; however, there may be some overlap given that previous studies show minoritised groups are most at risk during the crises. These initiatives fit into three key categories:

- **targeted health initiatives** such as accommodation-specialist online appointments or other online drop-in sessions such as interpersonal violence response and safety;
- **targeted social initiatives** such as Online College Fairs and student chat hubs; and
- **targeted external sites** for referrals to support such as care packages available from government/charities or grief and loss support agencies.

Financial support

Financial support for students was offered by all universities with variation across the 179 individual items (21%) of financial support recorded across all artefacts. Seven categories of financial support plus an "Other" option were used to analyse artefacts (see Appendix 2 and Figure legend below). The accessibility of each category was evaluated as well as the frequency of each type of support (Figure 5, see Appendix 5C for more detailed data).

Overall, 25.7% of financial supports were openly accessible, 28.5% were by application, while access for 45.8% was unclear. The higher rates of restricted access for supports such as loans or grants may have been an institutional approach to prioritise in a limited supply of this support by those students who needed it most. Financial support in the form of loans, schemes, or grants followed by emergency fund provision such as no-interest loans were the two most common types of financial supports offered (Figure 5).

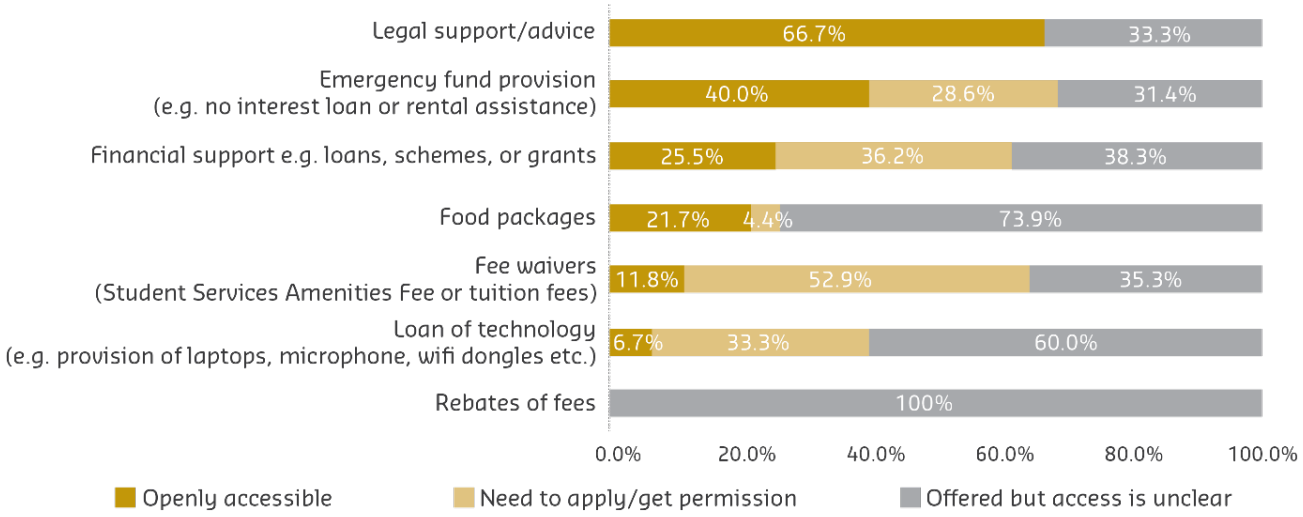

Figure 5. Accessibility of financial Support initiatives offered to students by universities

Ten of the twelve universities reduced their fees in some way and made available deductions for international students where studies were greatly impacted by COVID-19. Two universities did not change their semester fees with the rationale that their online education and learning options available during this time were still of a high standard. One university suspended and cancelled university fines and late fees. All institutions provided alternative financial support/aid for international students. All universities with on-campus accommodation provided rent relief and all but one advertised food packages.

The “Other” category showed a range of one-off university specific initiatives such as: donations; fundraising events; childcare support; financial planning workshops; and referrals to external agencies who were able to provide financial relief. These initiatives were made available towards the latter half of 2020 in the chronic stage of the pandemic. This signals that as the pandemic progressed the financial needs of students deepened and new avenues of support were developed.

The deeper analysis of these qualitative data showed several key initiatives were potentially targeted for minoritised cohorts, as signalled by use of targeted phrases such as “*financial assistance to low-income students*”. These initiatives fit into three key areas:

- **Grant or Income initiatives** such as bursaries and donations and interest-free loans;
- **Fee initiatives** such as freezing of tuition fees for 2020 and reduced student services fees; and
- **Housing initiatives** such as rent assistance.

For an analysis of support website useability, see Appendix 5D.

Summary of key findings from artefact analysis

- Universities placed highest priority on support which enabled students to retain access to learning: 40% of all supports (*n*=349), followed by support for students’ wellbeing (39%, *n*=337), with less support offered for students’ financial needs (21%, *n*=179).
- **Learning support**: 51.3% were openly accessible, 14.3% were by application, while access for 34.4% was unclear. The most common forms of learning support were ‘Provision of additional/alternate physical or online study spaces’ followed by ‘Online learning support’.
- **Wellbeing support**: 60.5% were openly accessible, 12.2% were by application, while access for 27.3% was unclear. Counselling online and online wellbeing services in addition to counselling (e.g., peer group chats) were the two most common types of wellbeing supports offered.
- **Financial support**: 25.7% were openly accessible, 28.5% were by application, while access for 45.8% was unclear. Financial support in the form of loans, schemes, or grants followed by emergency fund provision such as no-interest loans were the two most common types of financial supports offered.
- Overall, 16% across all institutions were targeted specifically for student cohorts from minoritised backgrounds. This varied by institution type with regional/remote institutions providing the higher proportion of support for student cohorts from minoritised backgrounds. For Australian universities, most of the tailored support was for Aboriginal and Torres Strait Islander students.
- Emails to students were more frequent in the acute stage of the pandemic compared to the chronic stage.
- The nature of support differed according to stage of pandemic with emergency requirements, such as food and housing needs, of higher priority during the acute stage of the pandemic and social and non-academic supports featuring in the chronic stage.
- Whilst remote teaching and learning was undertaken on advice from governments, wherever possible universities also prioritised face-to-face teaching for critical areas when permitted by authorities.

Student Experiences: Quantitative data

Student demographics

In total, 2524 students from 11 institutions responded to the survey. See Appendix 6 for full student demographics of this sample (Appendix 6A), including proportions of each minoritised group students identified as belonging to (Appendix 6B). Our key variable of interest was whether or not students came from a minoritised background. We measured this in two ways. First, we asked "*Do you belong to a minoritised group?*" (see Appendix 3 for full question). Of the 2524 respondents, 40.0% (*n*=1008) answered "yes," indicating that they belong to a minoritised group, 5.0% (*n*=126) were unsure if they belonged to a minoritised group, while 3.5% preferred not to disclose or they did not answer the question.

Second, we included separate questions about whether or not students were FiF, came from a low SES background, or spoke English as an additional language. Once we extended the minoritised background definition to include all students who responded "yes" to the question about belonging to a minoritised group, and those who responded "yes" to any of the three specific questions, the number of students categorised as coming from a minoritised background increased to 1936 (76.7%). This indicated that over 900 students in our sample did come from a minoritised background according to these criteria, but they chose not to identify themselves in this way when responding to the open question, or perhaps were not sure what the term "minoritised" meant.

A higher proportion of respondents were women (67.9%), with 29.4% identifying as men, 1.3% non-binary, and 1.2% who preferred not to disclose their gender. Most students (82.9%) studied full time, with 15.4% studying part-time, 0.8% deferred, and 0.7% other. Most students were enrolled in undergraduate degrees (69.7%), with the remainder (31.1%) enrolled in a variety of postgraduate degrees. Most students were classified as domestic to the country location of their university (70.7%) and 28.7% were international students.

Of the 1936 students who came from a minoritised background, a small majority spoke English as a second language (50.7%, *n*=981), a substantial minority were the FiF to attend university (45.9%, *n*=889), and a similar proportion came from a low SES background (42.3%, *n*=819). The high proportion of students reporting belonging to these categories may be a reflection of the fact that the survey asked about these three categories in specific questions, and there were no dedicated questions about other minoritised categories. Outside of these three categories, students identified as belonging to a wide range of minoritised groups including, in order of most to least frequent, Racial or ethnic minoritised, LGBTQIA+, Disability, Religious minoritised, Carer, Aboriginal Australian, Having health condition(s), Refugee, Neurodiverse, Native American, Mature student, Care leaver, Domestic violence survivor, Veteran (see Appendix 6B for proportions). For a comparison of demographics of students from minoritised and non-minoritised backgrounds, see Appendix 6C.

Students' perceived feelings of support and belonging

Level of support

When asked to rate how supported they felt (on a 5-point scale), the majority of students felt moderately (39%), or very (27%) supported, with the most common response of "Moderately supported" (Figure 6). When responses of students from minoritised backgrounds were compared with those from non-minoritised backgrounds, the distribution of responses was not significantly different between these two cohorts ($\chi^2(4) = 4.23$, $p = 0.38$). Given the ordinal nature of the response scale to this question, we also recoded the responses into numeric values (from 1 = Not at all supported, to 5 = Extremely supported) and performed a Mann-Whitney-Wilcoxon Test to check whether responses tended to be more positive in

either group of students. The result of the test was not significant (W = 474176, p = 0.23), indicating no evidence of a difference between the two groups.

Within the minoritised group, we compared students who belonged to a single minoritised group with those reporting intersectional identities, and again there was no significant difference in the distribution (χ^2 (4) = 3.91, p = 0.42). Using numerical values of responses to the scale, the Mann-Whitney-Wilcoxon Test indicated there was no evidence of a difference between the two groups (W = 471771, p = 0.14).

Usefulness of support

When asked whether the support offered by universities was useful (on a 5-point scale), the majority of students found it moderately (39%) or very (24%) useful (Figure 7). When responses of students from minoritised backgrounds were compared with those from non-minoritised backgrounds, we found that the distribution of responses was not significantly different between these two cohorts (χ^2 (4) = 6.04, p = 0.20). Using numerical values of responses to the scale (from 1 = Not at all useful, to 5 = Extremely useful), the Mann-Whitney-Wilcoxon Test indicated there was no evidence of a difference between the two groups (W = 493428, p = 0.74).

Within the minoritised group, we compared students who belonged to a single minoritised group with those reporting intersectional identities, and there was a significant difference in the distribution (χ^2 (4) = 9.78, p = 0.04). Students from a single minoritised background appeared to be less likely to rate the level of support as ‘Very useful’ or ‘Extremely useful’. Using numerical values of responses to the scale, the Mann-Whitney-Wilcoxon Test indicated that the students with an intersectional background gave significantly more positive responses than students with a single minoritized background (W = 483793, p = 0.005).

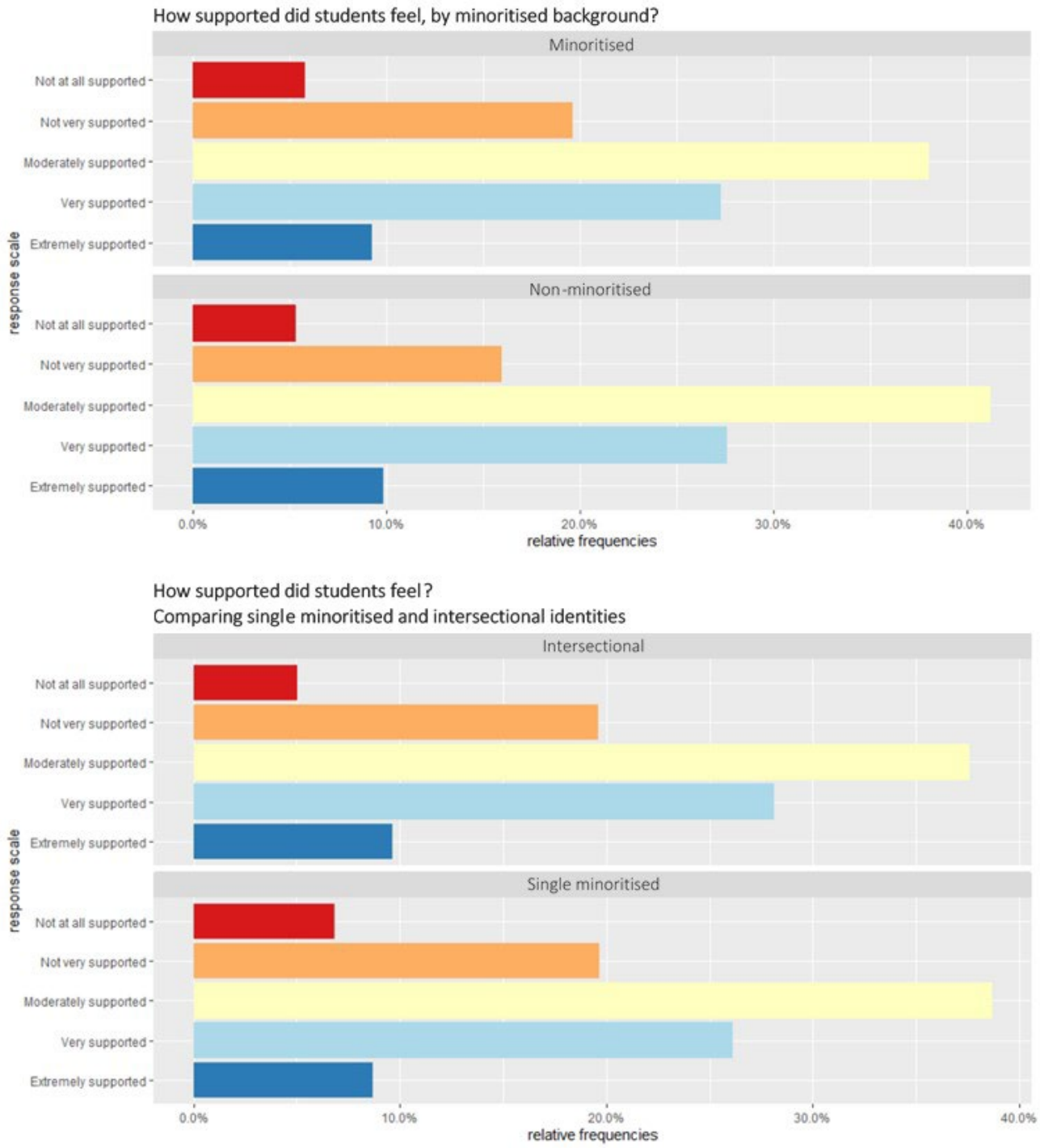

Figure 6. Relative frequencies of responses by students from a minoritised background (intersectional, *n*=1131, and single minoritised, *n*=805) and non-minoritised background (*n*=507) to *How well supported by your University have you felt during COVID-19?*

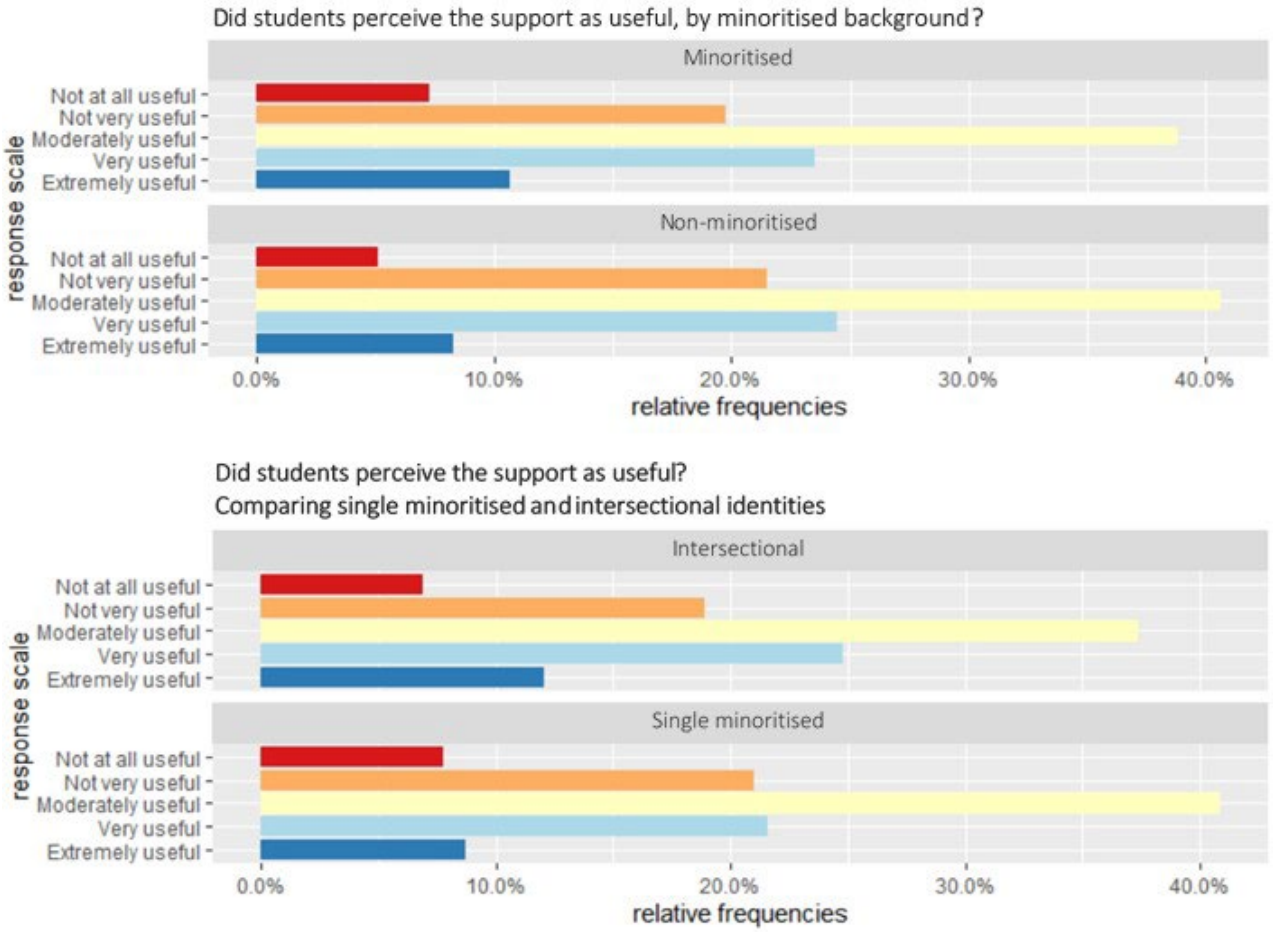

Figure 7. Relative frequencies of responses by students from a minoritised background (intersectional, *n*=1131, and single minoritised, *n*=805) and non-minoritised background (*n*=507) to *OVERALL, how USEFUL to you was the support offered by your university during COVID-19?*

Belonging

We measured students' belonging using four questions adapted from the Psychological Sense of School Membership scale (Goodenow, 1993; see Appendix 7A for a list of questions) using an established scale for comparative purposes and to provide insight into how aspects of belonging are manifesting for participating students. Students responded to each question by selecting one statement from a 5-point Likert scale ranging from 'Strongly disagree' to 'Strongly agree.'

The most frequent response to most questions was 'Somewhat agree', with the exception of Q2, posed in the negative direction, where the most frequent responses were 'Strongly disagree' and 'Somewhat disagree' (Figure 8). Responses were also transformed into numeric values between 1 and 5, and means were calculated (Appendix 7A). Means ranged from 3.44 to 4.07, indicating all student groups reported a moderately high level of belonging. Means among students from minoritised backgrounds tended to be slightly lower than for students from non-minoritised backgrounds, indicating a slightly lower feeling of belonging at university. A t-test indicated that the overall mean of responses to the four questions was significantly lower in the group of students from minoritised backgrounds (M = 3.59) than in the group of students from non-minoritised backgrounds (M = 3.83) [$t(843.64)$ = -6.59, $p < .001$].

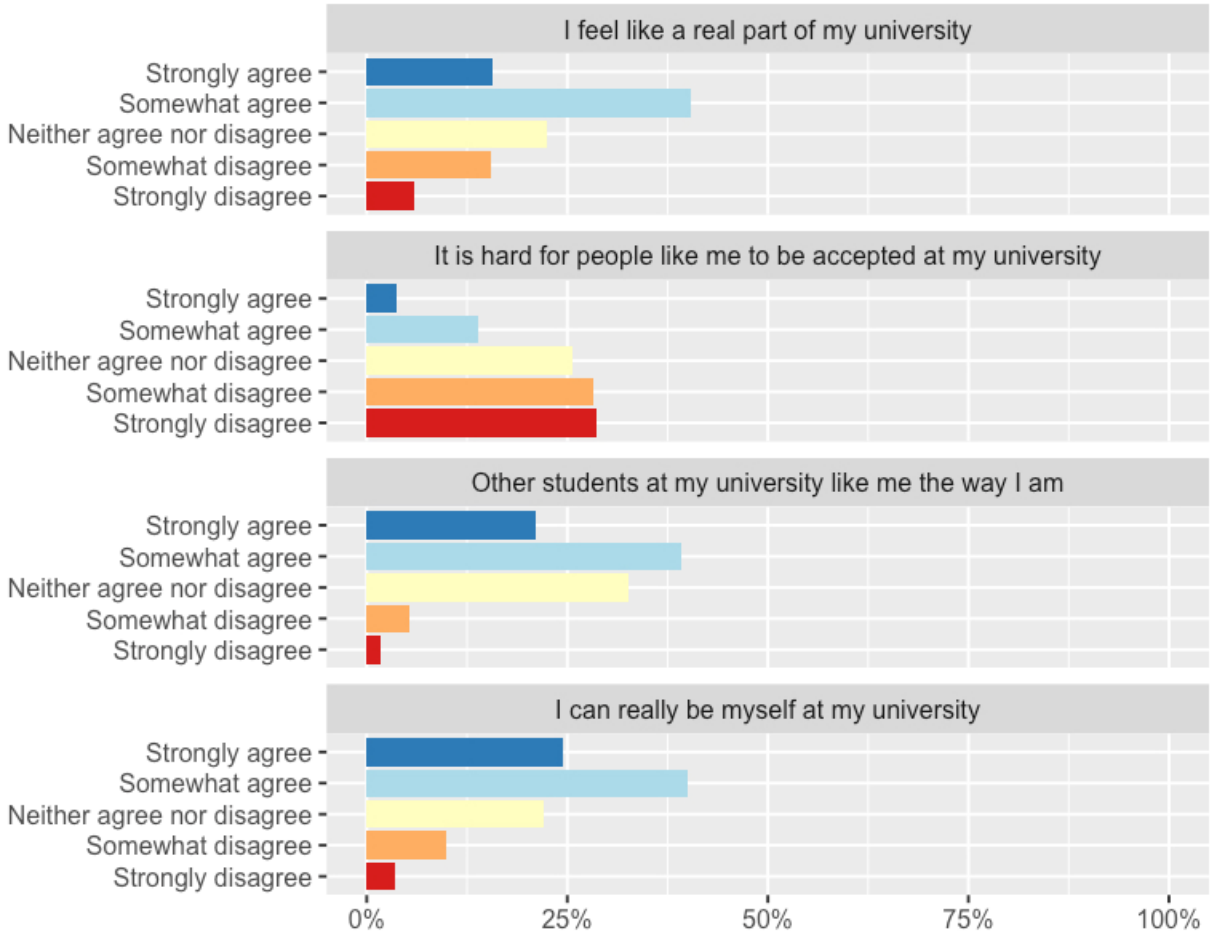

Figure 8. Distribution of student responses to questions about belonging

Overall impact of COVID-19 on students' experiences

When students were asked about the effect of COVID-19 on their learning experience, financial situation, and wellbeing, these generally worsened for all students. However, they worsened to a greater extent for the students from minoritised backgrounds (Figure 9). The below section expands on results by the *a priori* themes in the analytic framework.

Learning experience

Looking at learning experience, there was no significant difference in how the impact of COVID-19 was perceived by students from minoritised backgrounds compared to non-minoritised background ($\chi^2(4) = 6.82$, $p = 0.15$; Figure 9A). We also recoded the scale to numeric values (with 1 = "It got a lot worse" and 5 = "It got a lot better") and performed the Mann-Whitney-Wilcoxon test, which did not show evidence for a significant difference between the two groups in the change to learning experience that they went through (W = 475022, p = 0.80). A large majority of students reported that their learning experience got worse due to the pandemic: 72.5% of students from minoritised backgrounds reported that their learning experience got a little or a lot worse, compared with 74.2% of students from non-minoritised backgrounds.

However, there was a difference between students who reported belonging to a single minoritised group and those with intersectional identities (χ^2 (4) = 17.10, $p = 0.002$). Students with intersectional identities were more likely to indicate that their learning experience got a lot worse (31.9% vs 27.5%), and they were less likely to indicate that their

experience had not changed or that it got a lot better. The Mann-Whitney-Wilcoxon test indicated that students with intersectional identities reported worse learning experiences than students with a single minoritised background (W = 417349, p = 0.03).

Financial situation

The distribution of responses to the question about financial situation was significantly different among students from minoritised backgrounds compared to students from non-minoritised backgrounds (χ^2 (4) = 49.49, p < 0.001) with 29.5% indicating a declining financial situation compared with 16.2% for students from non-minoritised backgrounds (Figure 9B). After recoding the responses to numeric values, we performed the Mann-Whitney-Wilcoxon test, which indicated that students from minoritised backgrounds experienced a more negative change to their finances than students from non-minoritised backgrouds (W = 396717, p < 0.001). Results also showed that 34.3% of students with intersectional identities categorised their financial situation was a lot worse due to the pandemic, compared to 22.8% of students with single minoritised identities (the overall distributions were significantly different, with χ^2 (4) = 32.50, p < 0.001). After recoding the responses to numeric values, we performed the Mann-Whitney-Wilcoxon test, which indicated that students from intersectional backgrounds experienced a more negative change to their finances than students from single minoritised backgrouds (W = 400486, p < 0.001).

Wellbeing

When asked about how their wellbeing changed because of COVID-19, 33.3% of students from minoritised backgrounds categorised their wellbeing as a lot worse due to the pandemic, a significant difference compared to 25.4% of students from non-minoritised backgrounds. The overall distribution of responses was significantly different in the two groups (χ^2 (4) = 13.2, p = 0.01; Figure 9C). After recoding the responses to numeric values, we performed the Mann-Whitney-Wilcoxon test, which indicated that students from minoritised backgrounds experienced a more negative change to their wellbeing than students from non-minoritised backgrounds (W = 451210, p = 0.003).

The overall distribution of responses was different among students who belonged to a single minoritised group, compared to those with intersectional identities (χ^2 (4) = 21.31, p < 0.001). For example, 36.7% students with intersectional identities reported that their wellbeing got a lot worse, compared to 28.6% of students with single minoritised identities. After recoding the responses to numeric values, we performed the Mann-Whitney-Wilcoxon test, which indicated that students from intersectional backgrounds experienced a more negative change to their wellbeing than students from single minoritised backgrouds (W = 408178, p < 0.001).

Impact by institution type

Learning

Students at international universities (one each in the UK and US) were more likely to report that their learning experience and wellbeing was worse owing to the pandemic than students from universities in Australia (Table 3). Learning experiences declined for 86.7% of students at international universities compared with 75.2% at research-intensive universities, 71.9% at innovative universities and 66.7% at the regional/remote universities (Table 3).

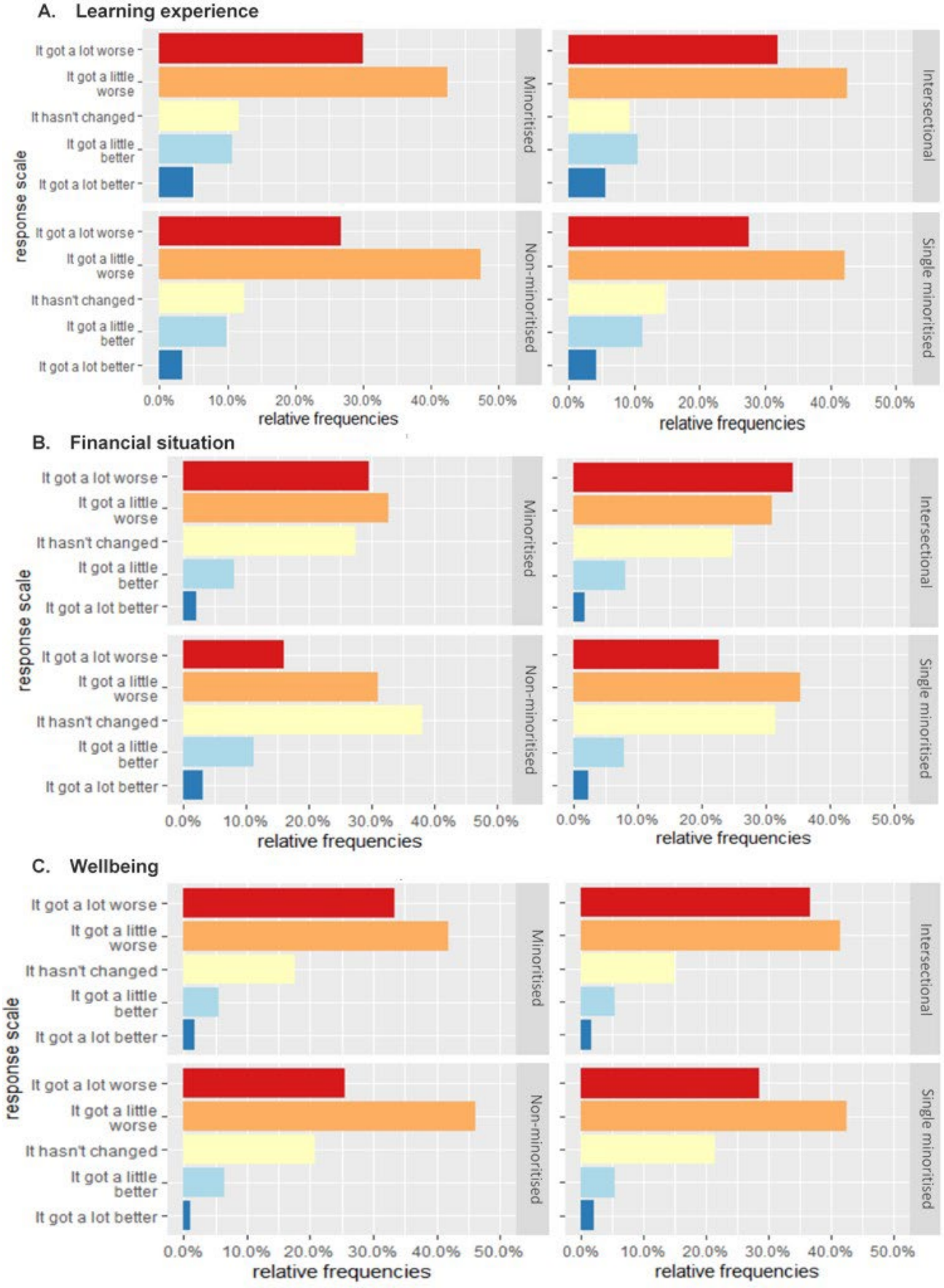

Figure 9. Distribution of responses to questions about changes in the quality of student learning (A), financial (B), and wellbeing (C) experiences because of COVID-19

Finance

Not as many students at international universities indicated that their finances got a lot worse due to the pandemic (20.8%) when compared with regional/remote university students (24.5%), innovative university students (26.9%) and research-intensive university students (28.4%) (Table 3). Although the total proportion of students from innovative universities reported their finances worsened at 56.2% (followed by 58.9% for international university students, 60.3% for regional/remote university students and 63.5% for students from research-intensive universities), a greater proportion of international university students reported less change to their finances during the pandemic than their Australian counterparts (35.7% compared with 28.9 to 30.0% respectively).

Wellbeing

Regardless of institution-type, the majority of students reported that their wellbeing got worse during the pandemic. There was a significantly greater proportion of students (44.1%) that reported it got a lot worse in international universities (Table 3) compared to the each of the Australian university types where 33.3% of the students from innovative universities indicated it got a lot worse, 29.5% at research-intensive universities and 26.1% at regional/remote universities. A similar pattern is observed if the total proportion of students that reported worsened wellbeing is compared: 88.7% of international university students, 76.3% for students from innovative universities, 69.8% at regional/remote universities and 69.5% at research-intensive type institutions.

Table 3. Relative frequencies of student responses by type of institution when asked how COVID-19 affected their learning experience, finances and wellbeing.

		Research-intensive (*n*=*n*=578)	Innovative (*n*=1219)	Regional/Remote (*n*=526)	International (*n*=165)
Learning experience	It got a lot worse	31.8%	30.4%	22.6%	36.4%
	It got a little worse	43.4%	41.5%	44.1%	50.3%
	It hasn't changed	9.7%	10.8%	19.0%	6.7%
	It got a little better	11.4%	11.2%	10.8%	4.2%
	It got a lot better	3.6%	6.1%	3.4%	2.4%
Finance	It got a lot worse	28.4%	26.9%	24.5%	20.8%
	It got a little worse	35.1%	29.3%	35.8%	38.1%
	It hasn't changed	29.1%	30.0%	28.9%	35.7%
	It got a little better	6.0%	11.1%	8.4%	4.2%
	It got a lot better	1.4%	2.7%	2.4%	1.2%
Wellbeing	It got a lot worse	29.5%	33.3%	26.2%	44.1%
	It got a little worse	39.9%	43.1%	43.6%	44.6%
	It hasn't changed	22.7%	16.3%	22.5%	6.0%
	It got a little better	6.3%	5.8%	5.8%	4.2%
	It got a lot better	1.5%	1.5%	2.0%	1.2%

Note: There were 2488 valid responses to these questions.

Awareness and uptake of institutional COVID-19 support

For each of the sub-categories of support under learning, wellbeing, and financial support (see Appendix 3), students were asked about their awareness, use, and the helpfulness of each support type. The majority of students indicated that they used learning support services, such as E-readings (72%) and the increased flexibility to assessment practices (54%) (Figure 10). A substantial minority of students also indicated that they used wellbeing related support services, such as counselling (18%) or online support in addition to counselling (14%). However, many students also indicated that even though it was available they did not use peer support, call outs (45%), counselling (72%), employability (57%) and non-academic support (50%) (Figure 11 and Figure 12). Financial support was also not used by the majority of students (74%) although many (31%) appeared to believe it was not available (Figure 12).

Learning support

Students were asked about the following types of learning support:

- Access to e-readings rather than textbooks
- Provision of additional/alternate physical study spaces
- Provision of additional/alternate virtual study spaces
- Online learning support (e.g., Resources to develop the skills needed to learn online)
- Online support for academic learning (e.g., Additional help with course work, assignments)
- Increased flexibility to assessment practices (e.g., Alterations to special considerations, extensions, 'no count' fails etc.)
- Peer tutoring/study assistance/mentoring

When considering all sources of learning support, the distribution of responses was similar among students from minoritised and non-minoritised backgrounds regarding their use of E-readings ($\chi^2(3) = 6.72$, $p = 0.08$, Figure 10A). In both groups, most students reported that they used E-readings and found them useful. There were significant differences in how responses were distributed in the minoritised and non-minoritised groups for study spaces ($\chi^2(3) = 14.12$, $p = 0.003$, Figure 10B), with more students from the non-minoritised group reporting that they knew it was available but did not use them (36.3%) compared to the minoritised group (27.9%).

There was also a significant difference in the distribution of responses related to online support for academic learning (overall $\chi^2(3) = 10.77$, p=0.01, Figure 10C). Although a similar percentage of students from minoritised and non-minoritised backgrounds used the online support and considered it helpful (38.2% compared with 37.9% respectively), fewer students from minoritised backgrounds indicated that online support was available, but they did not use it (32.4%) when compared with students from non-minoritised backgrounds (37.3%).

A significant difference in the distribution of responses related to the following resources was also evident: flexible assessment practices (e.g., alterations to special considerations, extensions, 'no count' fails, etc.) ($\chi^2(3) = 12.8$, $p = 0.006$, Figure 10E), peer support ($\chi^2(3) = 27.1$, $p < 0.001$, Figure 10F), and online support for academic learning (e.g. additional help with course work, assignments) ($\chi^2(3) = 13.13$, p=0.004, Figure 10D). There appeared to be no difference between these cohorts regarding the helpfulness of the support service. Overall, it appears that students from minoritised groups accessed support for the learning experience to a greater extent than non-minoritised groups but both groups found them helpful to a similar extent. This suggests that the learning experience support provided may not have been specifically tailored to minoritised groups but they were more inclined to avail themselves of the support.

Wellbeing support

Students were asked about the following types of wellbeing support:

- Counselling online
- Wellbeing services online in addition to counselling (e.g., Peer group chats)
- Call out campaigns to check in on students
- Non-academic engagement activities (e.g., Online trivia)Employability activities (e.g., Online career events)
- Non-academic engagement activities (e.g., Online trivia)
- Employability activities (e.g., Online career events)

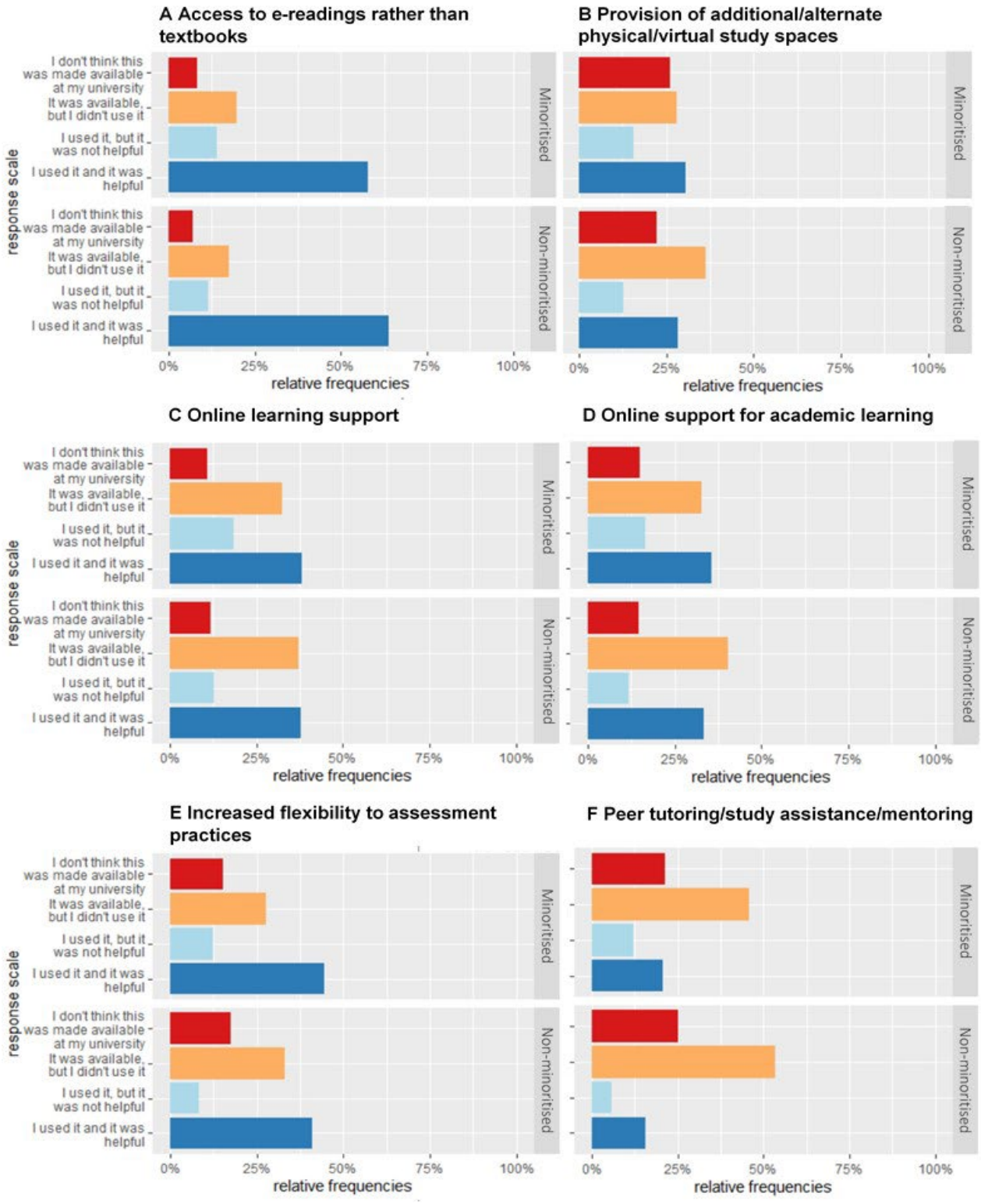

Figure 10. Relative frequencies of responses by students from a minoritised background (*n*=1936) and students from a non-minoritised background (*n*=507) when asked about the availability of learning support during the pandemic.

When considering sources of wellbeing support, the distribution of responses regarding online counselling was significantly different between students from minoritised backgrounds and students from non-minoritised backgrounds ($\chi^2(3) = 14.97$, $p = 0.001$, Figure 11A). It seemed that more students from minoritised backgrounds used online counselling and found it helpful (12.3% compared to 9.34%). Significant differences in the distributions of responses were also observed for the use and perceived usefulness of wellbeing services online in addition to counselling (e.g., peer group chats) ($\chi^2(3) = 22.79$, $p < 0.001$, Figure 11D) and employability activities, such as online career events ($\chi^2(3) = 9.42$, $p = 0.02$, Figure 11E). Students from minoritised and non-minoritised backgrounds did not differ in their answers to the questions about the use and usefulness of wellbeing discussions/support within academic classes ($\chi^2(3) = 4.55$, $p = 0.21$, Figure 11F).

Fewer students from minoritised backgrounds indicated that while online wellbeing services and counselling were available, they did not use them (62.8%). More students from minoritised backgrounds reported that they thought it was not available (21.3%) when compared with students from non-minoritised backgrounds (73.5% and 16.7% respectively) (Figure 11B). Similarly, 45.1% of students from minoritised backgrounds reported that callouts were available but that they did not use them compared with 49.7% of students from non-minoritised backgrounds while 40.6% of students from minoritised backgrounds thought call-outs were not available compared with 40.1% of students from non-minoritised backgrounds (overall $\chi^2(3) = 13.1$, $p = 0.004$, Figure 11C). Overall, this indicates that students from minoritised backgrounds were less likely to be aware of some wellbeing support services. It might therefore be useful to target communications about these services to students from minoritised backgrounds, to ensure these students are aware of and can use the support available.

Financial support

Students were asked about the following types of financial support:

- Financial support through bursaries
- Fee waivers (Student Services Amenities Fee or tuition fees)
- Emergency fund provision (e.g., No interest loan or rental assistance)
- Loan of technology (e.g., Provision of laptops, microphone, wifi dongles etc.)
- Food packages

When considering financial support, the distribution of responses was significantly different between minoritised and non-minoritised students (overall $\chi^2(3) = 51.31$, $p < 0.001$, Figure 12A). Fewer students from minoritised backgrounds reported that financial support was available and that they did not use it (41.5%) when compared with students from non-minoritised backgrounds (52.9%). Students from minoritised backgrounds were more likely to believe that fee waivers were not available than students from non-minoritised backgrounds (44.8% compared with 43.9%) (overall $\chi^2(3) = 13.5$, $p = 0.003$, Figure 12B). Indeed, more students from non-minoritised backgrounds also indicated that they accessed the fee waiver than students from minoritised backgrounds (28.1% compared with 25%). Minoritised backgrounds were also more likely to believe that an emergency fund was not available at their university (41.4%) when compared with students from non-minoritised backgrounds (36.9%) (overall $\chi^2(3) = 29.45$, $p < 0.001$, Figure 12C).

A higher percentage of students from minoritised backgrounds reported borrowing technological equipment (9.7%) compared to students from non-minoritised backgrounds (5.6%) (overall $\chi^2(3) = 10.16$, $p = 0.001$, Figure 12D). A greater proportion of students from minoritised backgrounds accessed food packages (16.6%) when compared with students from non-minoritised backgrounds (4.4%) (overall $\chi^2(3) = 49.05$, $p < 0.001$, Figure 12E).

Furthermore, more students from non-minoritised backgrounds (51.4%) did not believe their university made food packages available than students from minoritised backgrounds (43%).

Overall, this indicates that students from minoritised backgrounds were less likely to be aware of the financial support offered by their universities and, where they were aware that these financial supports were offered, they were less likely to use those supports. However, more students from minoritised backgrounds reported using financial support when they were aware of it compared to students from non-minoritised backgrounds.

Figure 11. Relative frequencies of responses by students from a minoritised background (*n*=1936) and students from a non-minoritised background (*n*=507) when asked about the availability of wellbeing support during the pandemic.

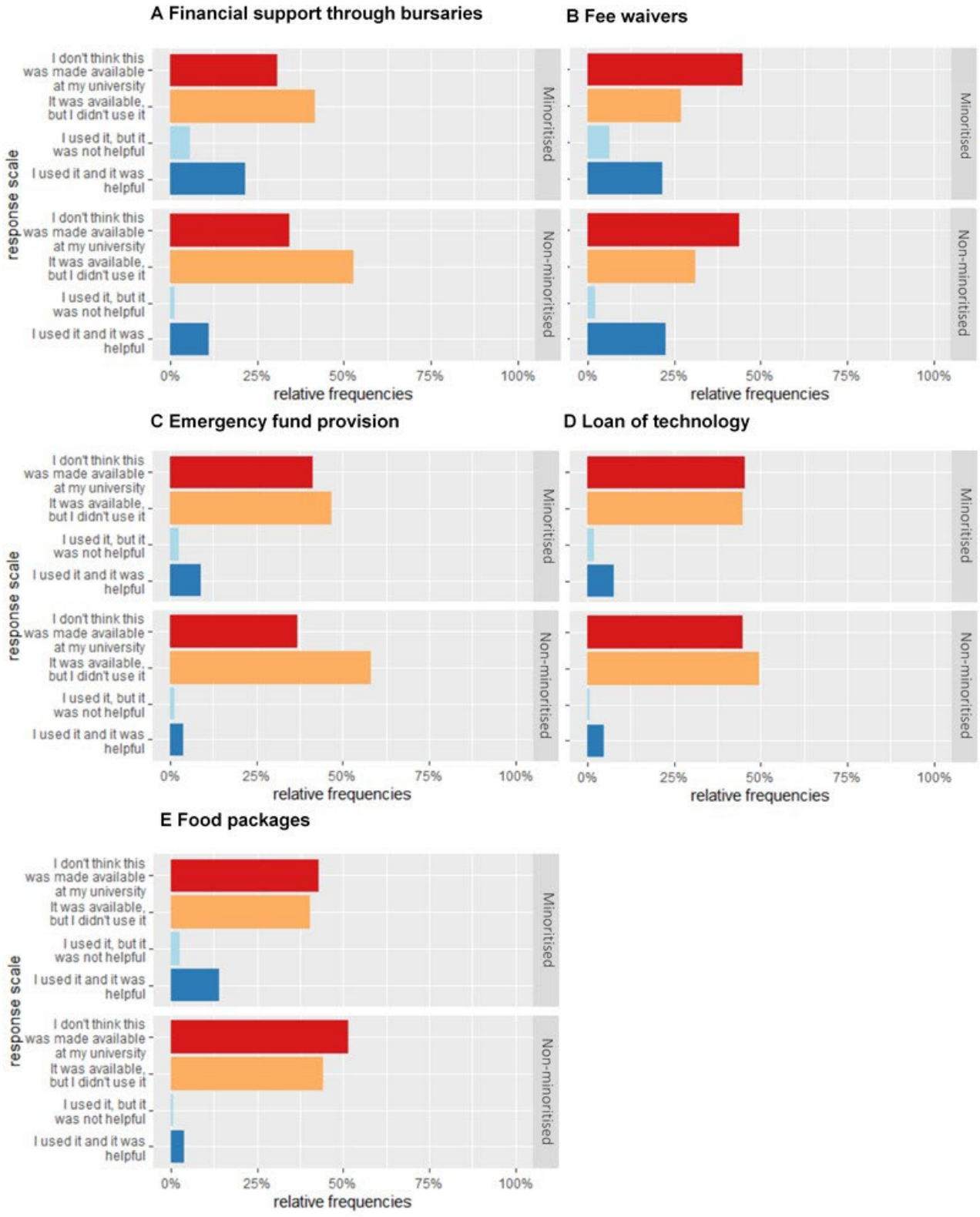

Figure 12. Relative frequencies of responses by students from a minoritised background (*n*=1936) and students from a non-minoritised background (*n*=507) when asked about the availability of financial support during the pandemic

Impact by minoritised group

Comparisons were made in responses between the main minoritised student categories to determine whether there were any differences in perceptions of the usefulness of the support measures (Table 4). Groups included students who identified as speaking English as an additional language, low SES, FiF to attend university, LGBTQIA+ and/or as a racial or ethnic minoritised (where n>150 from Appendix 6B). The responses to questions about belonging (overall, Table 4), how well supported students felt, and how useful supports were converted into numbers between 1 (corresponding to “Strongly disagree”, “Not at all supported” and “Not at all useful” respectively) and 5 (“Strongly agree”, “Extremely well supported” and “Extremely useful” respectively). A similar approach was also used for responses to questions about the usefulness of learning support, financial support, and wellbeing support. Whether the perceptions of students differed significantly across these questions was determined using t-tests. The objective was to detect which minoritised groups had statistically significant different perceptions of the different aspects of the support.

Looking at the perception of how well supported students felt, differences between minoritised groups were evident (Table 4). Students who were FiF in general reported feeling significantly better supported (M = 3.21, SD = 1.04) than students who were not FiF (M = 3.12, SD = 1.01; $t(2519) = -2.17$, $p = 0.03$). This pattern was reversed for students who identified as LGBTQIA+ or belonging to a racial or ethnic minoritised groups. Students in these minoritised groups reported feeling significantly less supported than students from non-minoritised backgrounds (for LGBTQIA+ students: M = 2.93 (0.99) vs M = 3.17 (1.02); $t(2520) = 3.01$, $p = 0.003$; for racial and ethnic minoritised students: M = 3.01 (0.91) vs M = 3.18 (1.04); $t(671.6) = 3.38$, $p = 0.0008$).

When looking at differences in whether or not the support was perceived as useful, students who speak English as an additional language saw the support as significantly more useful (M = 3.21, SD = 1.05) than students who speak English as their first language (M = 3.02, SD = 1.05; $t(2513) = -4.43$, $p < 0.001$). Students who were FiF also saw the support as significantly more useful (M = 3.16, SD = 3.06) than those who were not FiF (M = 3.06, SD = 1.04; $t(2513) = -2.28$, p = 0.02). Among LGBTQIA+ students, this pattern was reversed: those who identified as LGBTQIA+ saw the support as significantly less useful (M = 2.86, SD = 1.03) than students who did not identify this way (M = 3.11, SD = 1.05; $t(2514) = 3.10$, p = 0.002).

Students coming from a low SES background and those identifying as members of a racial or ethnic minoritised group reported significantly lower feelings of belonging than those from non-minoritised backgrounds (for low SES students: M = 3.54 (0.81) vs M = 3.68 (0.75); $t(1511) = 4.32$, $p < 0.001$; for racial or ethnic minoritised students: M = 3.53 (0.75) vs M = 3.66 (0.77); $t(2520) = 3.13$, $p = 0.002$). For learning experiences, the responses indicated that on average, students from all backgrounds felt that their learning experience became worse with no significant differences between groups.

With regards to the financial situations, students from minoritised groups generally felt that their finances deteriorated more during the pandemic than students from non-minoritised backgrounds. In particular, those who speak English as an additional language suffered from significantly worse financial experience (M = 2.04, SD = 0.95) than students who speak English as their first language (M = 2.43, SD = 1.03; $t(2517) = 9.36$, $p < 0.001$). Similarly, students from low SES backgrounds suffered from significantly worse financial experience (M = 2.08, SD = 1.05) than students not from low SES backgrounds (M = 2.38, SD = 0.99; $t(1520) = 6.84$, $p < 0.001$). Finally, students from racial or ethnic minoritised backgrounds suffered from significantly worse financial experience (M = 2.14, SD = 0.96) than students from non-minoritised backgrounds (M = 2.31, SD = 1.03; $t(2518) = 3.03$, $p = 0.002$).

Table 4. Means (standard deviations) of the responses to questions about support, belonging and student experience for the main minoritised backgrounds (where n>150).

Minoritised group		How well supported by your University have you felt during COVID-19?	How useful to you was the support offered by your University during COVID-19?	Overall belonging	Change in student experience		
					Learning	Financial	Wellbeing
Speaks English as additional language	Yes	3.20 (1.00)	**3.21 (1.05)**	3.62 (0.74)	2.16 (1.08)	**2.04 (0.95)**	2.05 (0.92)
	No	3.12 (1.03)	**3.02 (1.05)**	3.64 (0.79)	2.19 (1.13)	**2.43 (1.03)**	2.02 (0.95)
	t-test	*t*(2519)=-1.74, *p*=0.08	*t*(2513)=-4.43, p<0.001	*t*(2519)=0.37, *p*=0.71	*t*(2485)=0.61, *p*=0.54	*t*(2517) = 9.36, p<0.001	*t*(2520)=-0.84, *p*=0.40
Low SES	Yes	3.15 (1.08)	3.09 (1.11)	**3.54 (0.81)**	2.12 (1.17)	**2.08 (1.05)**	**1.87 (0.93)**
	No	3.16 (0.99)	3.10 (1.02)	**3.68 (0.75)**	2.21 (1.08)	**2.38 (0.99)**	**2.11 (0.93)**
	t-test	*t*(1500.9)=0.25, *p*=0.81	*t*(1494)=0.06, *p*=0.95	*t*(1511)=4.32, p<0.001	*t*(1485)=1.76, *p*=0.08	*t*(1520)=6.84, p<0.001	*t*(2520)=6.12, p<0.001
FiF to attend university	Yes	**3.21 (1.04)**	**3.16 (1.07)**	3.62 (0.77)	2.22 (1.14)	2.24 (1.06)	2.00 (0.94)
	No	**3.12 (1.01)**	**3.06 (1.04)**	3.64 (0.77)	2.16 (1.1)	2.30 (1.00)	2.05 (0.93)
	t-test	*t*(2519)=-2.17, *p*=0.03	*t*(2513)=-2.28, *p*=0.02	*t*(2519)=0.83, *p*=0.41	*t*(2485) =-1.45, *p*=0.15	*t*(1732.2)=1.36, *p*=0.17	*t*(2520)=1.26, *p*=0.21
LGBTQIA+	Yes	**2.93 (0.99)**	**2.86 (1.03)**	3.59 (0.82)	2.03 (1.18)	2.31 (1.10)	**1.75 (0.92)**
	No	**3.17 (1.02)**	**3.11 (1.05)**	3.64 (0.77)	2.19 (1.11)	2.28 (1.01)	**2.05 (0.93)**
	t-test	*t*(2520)=3.01, *p*=0.003	*t*(2514)=3.10, *p*=0.002	*t*(2520)=0.87, *p*=0.38	*t*(2486)=1.90, *p*=0.06	*t*(2518)=-0.36, *p*=0.72	*t*(2521) = 4.20, p<0.001
Racial or ethnic minoritised	Yes	**3.01 (0.91)**	3.04 (1.00)	**3.53 (0.75)**	2.13 (1.08)	**2.14 (0.96)**	**1.94 (0.88)**
	No	**3.18 (1.04)**	3.11 (1.06)	**3.66 (0.77)**	2.19 (1.12)	**2.31 (1.03)**	**2.05 (0.95)**
	t-test	*t*(671.6)=3.38, *p*=0.0008	*t*(2514)=1.29, *p*=0.20	*t*(2520)=3.13, *p*=0.002	*t*(2486)=0.99, *p*=0.32	*t*(2518)=3.03, *p*=0.002	*t*(640.5)=2.27, *p*=0.02

Note. Where a pair of means is printed in bold, it indicates a significant difference between those two means.

For the wellbeing dimension of the student experience, students from minoritised backgrounds were particularly negatively affected. Notably, students from low SES backgrounds felt that their wellbeing deteriorated significantly more (M = 1.87, SD = 0.93) than students not from low SES backgrounds (M = 2.11, SD = 0.93; $t(2520) = 6.12$, $p < 0.001$). Similarly, LGBTQIA+ students reported significantly poorer wellbeing than students from non-minoritised backgrounds (M = 1.75 (0.92) vs M = 2.05 (0.93); $t(2521) = 4.20$, $p < 0.001$) and students from ethnic or racial minoritised groups reported significantly poorer wellbeing than students from non-minoritised backgrounds (M = 1.94 (0.88) vs M = 2.05 (0.95); $t(640.5) = 2.27$, $p = 0.02$).

Overall, these results indicate that students from different minoritised backgrounds had different experiences and perceptions of the usefulness and extent of support available whilst also having different impacts of the pandemic on their sense of belonging, finances, and wellbeing. This suggests that institutions need to consider the differences between minoritised groups and their unique needs in the design of support during crisis situations to ensure all minoritised backgrounds are catered for.

Summary of key findings from quantitative student data

- ***Demographics:*** Of the 2524 students surveyed, 77% belonged to at least one minoritised group, with 45% of the total number of respondents having intersectional identities (belonging to more than one minoritised group).
- ***International/institution type:*** Students at international universities (in the UK and in the US) were more likely to report that their learning experience and wellbeing was worse due to the pandemic than students from universities in Australia. However, not as many students at international universities indicated that their finances got a lot worse due to the pandemic when compared with students at an Australian university.
- ***General support from the university:*** There were no differences between groups on the perceived level of support provided by the university. Within the minoritised cohort, students who reported belonging to a single minoritised group reported lower usefulness of support than students with intersectional identities. Students who speak English as an additional language and those from low SES backgrounds were identified as those whose financial situation deteriorated the most as a result of the pandemic. Trends and differences in uptake and usefulness of support for different cohorts, particularly for students from minoritised backgrounds, usefully indicate where future support resources should most effectively be directed.
- ***Learning experience:*** There was no difference between how students from minoritised backgrounds and students from non-minoritised backgrounds perceived the impact of COVID-19 on their learning experience. However, within minoritised groups, students with intersectional identities were worse off, being more likely to indicate that their learning experience got a lot worse, and they were less likely to indicate that their experience had not changed, or that it got a lot better. Students from minoritised groups accessed support for their learning experience to a greater extent than students from non-minoritised groups, but both groups found them helpful to a similar extent. This suggests that the learning experience support provided may not have been specifically tailored to minoritised groups, but they were more inclined to avail themselves of the support. Measures to support learning were the ones perceived more homogeneously across four of the five minoritised groups explored: speak English as an additional language, FiF to attend university, LGBTQIA+ and those in a racial or ethnic minoritised group.
- ***Financial situation:*** The financial situation of students from minoritised backgrounds was a lot worse compared to students from non-minoritised backgrounds. Students with intersectional identities reported that their financial situation got a lot worse compared to students with single minoritised identities. Students from minoritised backgrounds were less likely to be aware of the financial support offered by their

universities and, where they were aware of their availability, they were less likely to use those supports. However, there were more students from minoritised backgrounds who reported using financial support compared to students from non-minoritised backgrounds.

- ***Wellbeing:*** Students from minoritised backgrounds reported slightly lower feelings of belonging at university than for students from non-minoritised backgrounds. When asked about how their wellbeing changed as a result of COVID-19, more students from minoritised backgrounds reported that their wellbeing got a lot worse due to the pandemic compared to students from non-minoritised backgrounds. Students with intersectional identities were worse off with more students with intersectional identities reporting that their wellbeing got a lot worse compared to students with single minoritised identities. Students from minoritised backgrounds were less likely to be aware of the wellbeing services offered online in addition to counselling (e.g., peer group chats).

Student Experiences: Qualitative data

The sections below present qualitative results from open response questions where students gave feedback on "what worked?" and "what didn't work?" regarding their experiences and the institutional support they received during COVID-19. Under these broad sections, results are presented according to the three *a priori* categories of experiences and support (learning, wellbeing, and financial), with "Other" sections for responses which fell outside of these. Illustrative quotes are attributed to the demographics of students who said them with students coming from Australian universities, studying full-time, being domestic and enrolled in a face-to-face degree unless stated otherwise.

What worked

Students were asked about the best aspects of their COVID-19 higher education experiences in the open response question, "*What were the three best aspects of your university experiences during COVID-19?"* (from here, "best aspects". Learning was the most frequently mentioned theme in these responses, followed by Wellbeing, then Other, with Financial being the least frequent.

Overall, 1585 students provided a written response to this question. Percentages of students are calculated using this sample size unless stated otherwise. For each individual response, each best aspect was coded into a theme meaning the number of text references exceeds the sample size. The total number of text references coded to a theme for this question was 3241. Coding percentages are calculated using this total unless stated otherwise.

Learning

This theme was the most frequently mentioned theme and included 2022 individual text references (62% of coding for this question) from 1034 students (65% of students who answered this question) indicating that most students who mentioned learning in their top three best aspects of their university experiences during COVID-19 mentioned multiple different aspects of learning.

Of the total text references in this theme, 1015 were categorised into subthemes with each of these references associated with a unique student (that is, the sample size for student responses is also 1015). Table 5 shows the frequencies and percentage of these subthemes, with subtheme descriptions and indicative quotes. Note that the percentages in this table are calculated using the subtotal number of references in subthemes (1015) not the total references in the learning theme.

The overwhelming nature of these best aspects was that students were able to choose from more options to access learning with a wider range of support, making it more flexible and accessible. The increased accessibility and flexibility was framed as having ripple effects,

precipitating most of the other benefits discussed in the Wellbeing and Financial themes. For example, greater flexibility and choice in learning helped alleviate numerous other stresses in students' lives such as anxiety associated with attending class or undertaking in-person exams, promoted healthier study-life balance, and freed up more time for healthy eating habits, self-care, medical needs, and earning money.

Table 5. Learning subthemes from student open comments regarding what worked (numbers represent individual student responses, *n*=1015)

Subtheme	Count	%	Description	Quote
Online resources	584	58	The increase in useful online resources to support learning including both static resources (e.g., eBooks) and new teaching material (class recordings)	*Online resources available such as e-books so no need to visit library.* (First year online part-time undergraduate student who speaks English as an additional language at a regional university) *Able to access recordings of workshops as well as lectures after the class. Great if you happened to be sick - much easier to catch up.* (First year postgraduate student at an innovative university)
Accessibility	263	26	Accessing learning became easier through the removal of barriers such as commuting, work, or social anxiety	*…remote learning has allowed me to avoid travelling to and from campus which has made a very positive impact, reducing fatigue, allowing more time to study and relax. I was able to attend university full time for the first time as it was online, and it mostly supported my accessibility challenges. The benefits definitely outweighed the challenging aspects of studying online and I chose to continue with remote education in 2021.* (Middle year undergraduate student from an intersectional minoritised background—gender non-binary with a disability—at a research-intensive university)
Flexibility	249	25	How students learned became more flexible with more choices for accessing and engaging with study	*The flexibility offered by remote work and study felt as though the burden on work-life balance was lessened for me* (Middle year postgraduate student from a minoritised background—English as an additional language—at a regional university)
Learn from home	221	22	The convenience of learning from their home/off campus environment	*Being home and having the time to eat healthy food options/ not stressing about preparing lunches as I can't afford anything at the single cafe we have.* (First year undergraduate student from an intersectional minoritised background—Aboriginal Australian, low SES, and FiF who speaks English as an additional language—at a research-intensive university) *I get to spend more time with my dog in my home and study in a very relaxing and peaceful environment while still keeping in touch with teachers and students.* (Middle year undergraduate student at an innovative university)
Technology	215	21	Being able to learn to use different technology and the affordances that offered for enhancing learning and engagement	*As an online distance student, the additional focus on online learning meant the academics were up-skilling. I could see positive changes in their teaching practices with the use of technology for better student-teacher and peer interactions during online classes as well as in their commitment to respond to the discussion forums online and to provide more scope for discussion forum interactions. I hope this continues.* (Middle year undergraduate student from a low-SES background at a regional university)

Subtheme	Count	%	Description	Quote
Assessment	210	21	The benefits of changes to assessment such as more time to complete assignments or online exams and changes to assessment policies	*Doing the exam from home took away a lot of the usual anxiety I experience with exams.* (Part-time first year postgraduate student from a low SES background at an innovative university)
Study online	144	14	The ability to study online	*Online study: I find it easier to study at home with a young child to look after.* (First year undergraduate student from an intersectional minoritised background—low SES and FiF—at a regional university) *Online study, connecting with others online & online access to academic supports including tutor, subject coordinator and more.* (First year part-time undergraduate student from an intersectional minoritised background—speaks English as an additional language and has a disability—at an innovative university)

Wellbeing

This theme was the second most frequently mentioned theme and included 699 individual text references (22% of coding for this question) from 558 students (35% of students who answered this question) indicating that most students only mentioned it once in their top three best aspects of their university experiences during COVID-19.

Of the total text references in this theme, 544 were categorised into subthemes. Table 6 shows the frequencies and percentage of these subthemes, with subtheme descriptions and indicative quotes. Note that the percentages in this table are calculated using the subtotal number of references in subthemes (544) not the total references in the Wellbeing theme.

The dominant subtheme was that the flexibility offered by remote learning freed up more time for wellbeing activities such as spending time with family or pets, self-care, and promoting healthier work-life balance. Interestingly, many felt that studying online promoted connectedness with others—both family at home and their teachers and peers through online engagement which allowed them to make friends and feel connected to their university community.

Table 6. Wellbeing subthemes from student open comments regarding what worked (numbers represent individual student responses, *n*=544)

Subtheme	Count	%	Description	Quote
More time	308	57	Learning flexibility freed up more time for other activities and benefits	*More time and less stress. Even though I was studying and working from home, I felt I had way more time to complete tasks as time wasn't wasted rushing from one place to the other.* (Middle year undergraduate student at an innovative university)
Connectedness	238	44	Increased connection both in-person at home and online with the university community	*I have pretty great roommates that I met last year and so having the chance to really get to know them has been great and the extra time I got to spend with my family.* (Middle year undergraduate student at an overseas university) *It has been good to meet people from other campuses through zoom classes that I wouldn't orderly meet.* (Middle year undergraduate student from a low SES background at an innovative university)
Food support	48	9	University-provided food support in various forms	*The food package supports from the university are very helpful.* (First year postgraduate student from a low SES background at an innovative university)
Counselling, mental health support	36	7	Increased access to mental health support from universities as well as the additional time to take part in selfcare activities which promoted good mental health	*Counselling support: literally a life changing situation through continuity and supportive conversations.* (Middle year undergraduate student from a low SES background at a research-intensive university)

Financial

This theme was the least frequently mentioned theme and included 116 individual text references (4% of coding for this question) from 115 students (7% of students who answered this question) indicating that most students only mentioned it once in their top three best aspects of their university experiences during COVID-19. Students often did not include much detail in these responses—simply stating “scholarships” or similar, meaning data were not substantial enough to warrant subthemes.

The financial benefits for students manifested in many ways. For some, the benefits of flexible study meant they were “*Able to stay home and earn more money*” or save money on the costs of commuting, parking, public transport, or buying food on campus as they were able to study from home. As above, these were often linked to other benefits: “*I have saved so much money and been less fatigued by not having to commute to campus and as a result get less migraines”.*

More direct financial support was mentioned through university fee waivers, scholarships, grants, loans, or bursaries. For example, multiple students mentioned that a $500 rental assistance package was excellent, though not always enough.

Other

This theme constituted responses which did not fit into the a priori themes. It was the third most frequently mentioned theme and included 404 individual text references (13% of coding

for this question) from 385 students (24% of students who answered this question) indicating that most students only mentioned it once in their top three best aspects of their university experiences during COVID-19.

Of the total text references in this theme, 378 were categorised into subthemes. Appendix 8A shows the frequencies and percentage of these subthemes, with subtheme descriptions and indicative quotes. The most commonly mentioned subtheme was about the compassion, support, and extra effort put in by university staff to support students throughout 2020. Students were surprised and grateful for these efforts, some saying they made the difference between dropping out or staying enrolled in university: "*Teachers seeing value in someone who is at 1%, literally wits end, has kept me enrolled and progressing towards my dreams."* (Online, part-time middle year postgraduate student from a minoritised background—English as an additional language—at an innovative university). This was followed by the subthemes that there were "No 'best aspects'" and comments about "General institutional support".

What didn't work

Students were asked about the worst aspects of their COVID-19 higher education experiences in the two open response question: "*What were the three worst aspects of your university experiences during COVID-19?"* (from here, "worst aspects". Regarding their worst aspects**,** 1630 students provided a written response to this question. Percentages of students are calculated using this sample size unless stated otherwise. Across all these individual responses, each individual worst aspect was coded into a theme, meaning the number of text references exceeds the number of responses/students. The total number of text references coded to themes for this question was 2740. Coding percentages are calculated using this total unless stated otherwise. Learning was the most frequently mentioned theme, followed by wellbeing, then financial, with other being the least frequent.

Students were also asked "*How could your university improve the support it offered you during COVID-19?"* Results for this question were varied and while generally not substantial, some student did make insightful suggestions on how support could have been improved. These results are detailed in Appendix 8D.

Learning

Learning was the most frequently mentioned theme in response to students' worst aspects and included 1390 individual text references (51% of coded text for this question) from 1006 students (48% of students who answered this question). This indicates that most students who mentioned learning in their top three worst aspects of their university experiences during COVID-19 mentioned multiple different aspects of difficulty relating to their learning.

Of the total text references in this theme, 1390 were categorised into subthemes. Table 7 shows the frequencies and percentage of these subthemes, with subtheme descriptions and illustrative quotes. Note that the percentages in this table are calculated using the subtotal number of references in subthemes (1390) not the total references of the coded texts for all the themes.

The primary nature of these worst aspects regarding learning was that students reported widespread difficulties with studying online, issues with accessing online resources, technology-related challenges, completing assessments and exams online remotely, and difficulties studying from home. These issues were more commonly described by students from minoritised backgrounds who faced challenges such as poor internet quality in remote regions, time zone differences for international students, no private study spaces in their home, or caring responsibilities. Increased difficulties with learning exacerbated financial and wellbeing-related issues experienced by students during the pandemic.

Table 7. Learning subthemes from student open comments regarding what didn't work (numbers represent individual student responses, *n*=1390)

Subtheme	Count	%	Description	Quote
Study online	771	55	Widespread difficulties with studying online	*Study was all online and that didn't work for me because I don't have a study space in my house. I usually stay in the library at uni to study instead of having to do it at home. Studying in the place where I relax was not okay for me.* (Part-time first year undergraduate student who is FiF at an innovative university) *A lecturer who was technologically challenged and didn't want to create online content so just talked at a webcam with no visuals whatsoever (whiteboard, etc). It was hard to learn how to draw molecules in organic chemistry verbally, when there is also a language barrier.* (Middle year undergraduate student with caring responsibilities at an innovative university)
Technology-related digital divide	215	21	The introduction of new technologies to facilitate online learning meant many students struggled with learning them while also creating equity issues in a digital divide where some students were unable to afford high speed internet or did not have access to working computer at home.	*I don't have Wi-Fi at home and I relied on my phone hotspot which made uploading assignments and attending zooms extremely difficult.* (First year undergraduate student from an intersectional minoritised background—FiF and low SES with a mental health condition—at a regional university)
Home learning environment	172	12	Challenges learning from home in an environment that did not facilitate learning	*Juggling working/studying at home logistics. I was sharing an office at home with my husband who was also working from home during lockdown which made it difficult to concentrate. I was trying to undertake study at home and support our teenager completing year 11 study where he was struggling massively with the lack of support through the state education system and disengagement with teachers. Also supporting our other teenage son undertaking first year of a double degree at university completely remotely and supporting our young adult daughter's mental health when her work closed down due to lockdown. Trying to juggle all these aspects was exceptionally challenging, emotionally draining, and was difficult to focus.* (Part-time final year postgraduate student from an intersectional minoritised background—carer with a disability—at an innovative university)
Online resources	104	7	The shift to online learning presented challenges for students to use online resources to support their learning.	*Inability to use campus computers for software that is necessary to complete coursework tasks and understand content; the software is meant to be made available for us to download on personal computers, but they haven't made that happen.* (First year undergraduate student from an intersectional minoritised background—Low SES with a disability—at an innovative university)

Subtheme	Count	%	Description	Quote
Inaccessible on-campus resources	101	7	Learning remotely presented difficulties to students using on-campus resources to facilitate their learning during the pandemic	*Gaining access to learning materials, such as textbooks, which some were only physical copies found at the on-campus library which was now three hours away.* (Final year undergraduate student from a low SES background at a regional university)
Lack of flexibility and difficulties engaging	23	2	Online learning presented challenges for students to engage effectively during the pandemic	*I don't think I was learning as much as I wanted to overall. Zoom classes doesn't allow the same flexibility as real life to just ask a question - you have more pressure to not want to interrupt the class.* (Middle year undergraduate student who speaks English as an additional language at a research-intensive university)
Exams and assessment	91	7	Changes to assessments because of the shift to online learning meant that some students experienced difficulties completing them and or writing their exams from home	*Assessments changing at such short notice - I understand this was out of the control of everyone but particularly in Outdoor Education where most assessments are skills based and involve placements, it's hard to then suddenly be forced to write academic essays to get a grade and be able to convey my knowledge yet not get the experience or the chance to demonstrate and practice my skills in the real world. I feel I missed out on key opportunities to demonstrate my learning and skills.* (Final year undergraduate student a regional university)

Wellbeing

Regarding worst aspects, wellbeing was the second most frequently mentioned theme and included 969 individual text references (35% of coded texts for this question) from 695 students (43% of students who answered this question) indicating that most students only mentioned once in their top three worst aspects of their university experiences during COVID-19.

The overwhelming nature of this theme was marked by feelings of unimaginable social isolation experienced by students in their learning during the pandemic. Lack of connections with peers precipitated and or exacerbated mental health issues. For example, one of the respondents noted that "s*ocial isolation and the effect on mental health and the requirement for self-direction is leading to falling behind in work causing stress"* (Middle year undergraduate student from a FiF background at an innovative university.)

Students reported challenges with accessing mental health support services such as counselling and peer support. Lack of motivation was a significant concern among students. One of the respondents expressed that "*I had little motivation to attend online lectures and workshops. I fell very behind in the work and my grades dropped significantly"* (Final year undergraduate student from a minoritised background—LGBTQIA+, FiF, low SES, gender non-binary—at an overseas university).

Lack of support for food and shelter was also common, especially among international students, for example: *I currently eat one meal a day—a smaller helping at dinner with the family so that my kids have breakfast and lunch for school (and are sheltered from seeing me skip meals)* (Middle year postgraduate student at an innovative university).

Of the total text references in this theme, 969 were categorised into subthemes. Table 8 shows the frequencies and percentage of these subthemes, with subtheme descriptions and

indicative quotes. Note that the percentages in this table are calculated using the subtotal number of references in subthemes (969) not the total references in the wellbeing theme.

Table 8. Wellbeing subthemes from student open comments regarding what didn't work (numbers represent individual student responses, *n*=969)

Subtheme	Count	%	Description	Quote
Social isolation (lack of connectedness)	427	44	Decreased connection to both peers and educators during remote learning	*I felt quite isolated and missed the social interaction with my peers. I also missed the in-person classes, labs in particular. I missed the campus and the study spaces.* (Middle year undergraduate student from an intersectional minoritised background—LGBTQIA+, gender non-binary with a disability—at a research-intensive university)
Mental health	237	25	Remote learning has led to social isolation which has a ripple effect on students' mental health and the ability to use counselling services and peer support during the pandemic	*I have felt very physically and mentally unhealthy for the first time in my life which I feel has impacted my ability to engage with coursework … Not having social access to my peers. I find contact with peers to be an extremely valuable tool for learning, motivation, and stress relief. It's been dramatically reduced and I feel disconnect from my course as a result* (First year undergraduate student from a low SES background at an overseas university)
Time	87	9	Shift to online learning created a diverse nature of time issues, e.g., different time zones or unrealistic time being given to students for assessments	*A 10 hour time zone difference and the fact that I have group work and face-to-face tutorials has meant that I have needed to convert to a nocturnal life, meaning I have very little face-to-face social interaction and often cannot get groceries before stores close* (First year postgraduate student at an overseas university) *Changes to assessments made for the cohort that negatively impacted my Accessibility Plan e.g. length of exam extended for 'normal' students which meant that with my added time allowances my exam was 5 hours long.* (Online part-time final year undergraduate student from an intersectional minoritised background—immigrant background with a disability—at a research-intensive university)
Lack of emergency support	40	4	Lack of support with necessities like food in some institutions for their students in need during the pandemic	*Food shortage. No assistance with food while isolating in dorm room* (First year undergraduate student from an LGBTQIA+ background at a regional university)

Financial

Financial was the third most frequently mentioned theme and included 201 individual text references (7% of coded text) from 201 students (12% of students who answered this question) indicating that some students mentioned it once in their top three worst aspects of their university experiences during COVID-19. Students did not often include much detail in these responses—simply stating “financial hardship” or “financial problems” or similar, meaning data were not substantial enough to warrant subthemes.

The primary concern reported in this theme is that universities did not discount tuition or fees during the time of COVID-19 at a time when students perceived the quality of their educational experience deteriorated. Students who were forced to move away from campuses were particularly upset that they were compelled to pay the same student fees for on-campus resources they could not use. Students voiced frustration with the lack of scholarships or support for financial distress. Others reported food insecurity or even homelessness stemming from COVID-19 impacts, and that their universities did not provide them adequate financial support.

Although there were incentives given to students during the pandemic to lessen their financial hardship, for example, by allowing international students to reduce course load, some students felt this was done too late at the stage when they could not withdraw without losing their money.

> *Announcing the international students could drop the semester after census day and the international flights had closed on March 25. For their (Universities’) own financial benefit, they didn't share much information with students until they knew the money was in their pocket.* (Final year postgraduate international student from a minoritised background at a research-intensive university.)

Other

This theme constituted responses which did not fit into the *a priori* themes and was the least theme mentioned. For worst aspects, this included 183 individual coded text references (7% of coding for this question) from 183 students (11% of students who answered this question).

Of the total text references in this theme, 182 were categorised into subthemes: Difficulties accessing general institutional support; Inadequate support from staff; and Specific challenges for students from minoritised backgrounds. Appendix 8B shows the frequencies and percentage of these subthemes, with subtheme descriptions and illustrative quotes. Note that the percentages in this table are calculated using the subtotal number of references in subthemes (182) not the total references in the Other theme.

Change in support over time

Students were asked: “*Thinking about 2020, how did the support you needed or used change between Semester 1 and Semester 2?”* Most responses were categorised outside of the *a priori* themes, in a theme which described the *nature* of change in support overtime in terms of the *type* and *direction* of changes, as described in the sections below. Within the *a priori* themes, learning was the most frequently mentioned theme in these responses, followed by wellbeing, then financial. Findings within these *a priori* themes are detailed in Appendix 8C.

Overall, 1182 students responded which is the number used to calculate the percentages of students in the below sections. Each change mentioned was coded into a theme meaning the number of text references doesn’t match the number of responses/students. The total text references analysed into themes was 1224 and this is the number used to calculate percentages of references.

Responses to this question either addressed personal changes or university provisions. In total, there were 339 individual text references (28% of coding for this question) indicating support *improved* between semester 1 (S1) and semester 2 (S2) compared with 279 individual text references (23% of coding for this question) indicating support got *worse* over time. The remainder did not provide a clear indication of whether the changes described were either beneficial or detrimental.

Nature of changes in support

This section describes how students described the *nature* of support change across 1187 individual text references (97% of coding for this question) from 1160 unique students (98% of students who provided evidence of changes). Coding was separated into two areas—*direction* and *type* of changes in support needs and provisions.

Direction of temporal support changes

Table 9 describes how students articulated the direction in which supports changed between the first semester in 2020 and the second. The majority saw minimal or no changes. For those who saw change, more saw that support improved over time or were positive about changes than those who felt it declined or described the changes as negative. However, students articulated a general trend in declining support across the year. There was also a large proportion who felt support in general was insufficient.

Table 9. Direction of support changes over time from student open comments (numbers represent individual student responses, *n*=1160)

Subtheme	Count	%	Description	Quote
No or Minimal Change	388	33	Where minimal or no change between S1 an S2 occurred, this was either because support remained good or was consistently ineffective	*It didn't change all that much. Although I do feel as if the University gave up a little in regard to the support they were providing, it felt like we were kind of left to fend for ourselves.* (First year undergraduate student from a low SES background at an innovative university)
Improved	156	13	Students identified that there had been improvements made in support or experience	*The interface of student portal has been improved. Easier to use.* (Middle year undergraduate international student who speaks English as an additional language and remained overseas whilst studying at an innovative university)
Declined	54	5	Students identified that there had been a decline in support or experience	*Worsened (experience) with the withdrawal of key supports.* (Part time final year undergraduate student from an and background—Aboriginal Australian from low SES—at an innovative university)
More	106	9	Students identified that there had been more support provided in some form over time	*More flexibility, understanding of circumstances* (First year postgraduate FiF student at an innovative university)
Less	151	13	Students identified that there had been less support provided in some form over time	*There were hardly any considerations or support in Semester 2, in comparison to Semester 1 except for COVID-19 safety on campus* (Middle year undergraduate student who speaks English as an additional language at a research-intensive university)
Positive	339	29	Positive impact on lived experience of support	*Support needed was similar, but I felt that the university was better able to support students in semester two.* (Full time middle year undergraduate who identified as LGBTQIA+at an innovative university)
Negative	279	24	Negative impact on lived experience of support	*HAHAHAHAHAHHAHAHAHA SORRY I FOUND THAT FUNNY. WHAT SUPPORT? WHAT IS THAT? PLEASE TELL ME? UNLESS YOU'RE ABLE TO DECODE EVERYTHING YOURSELF THEN SUPPORT IS NOT AN OPTION.* (Middle year FiF undergraduate at a regional university)
Insufficient	130	11	Supports not meeting either expectations or needs	*The support level slightly increased in trimester 2 as the university got the hang of things. Still not nearly enough.* (Middle year undergraduate student from a low SES background at an innovative university)

Types of temporal support changes

One of the most striking findings of this question was the variation to student needs across the academic year. In the acute phase of the pandemic, during S1, where many universities were forced into extended periods of lockdown and virtual experience only, there was a high need to support accessibility to technology, development of online learning capabilities and addressing personal crisis issues such as financial hardship due to loss of income, food shortages, and issues associated with wellbeing.

As the pandemic continued into a more chronic state, during S2, the changes to support requirements and provisions became more variable. For those students who remained in locked down situations it shifted to a large increase in mental health challenges caused by isolation. For those students who were able to continue even some part of learning in person, this was not the case. Thus, how the support that students needed or used changed between S1 and S2 was also highly contextualised based on their situation and how their university had addressed lockdown challenges. This temporal change in individual support needs was summarised by a student as follows:

> *Online learning got quite difficult during the lockdown in semester 1, causing stress due to the lack of facilities in my hometown that would be beneficial for university students, such as computer repair stores, libraries with up-to-date computers, etc. I was able to gain support from my course facilitators for assignments. In semester 2, the stress and lack of motivation to study became a big problem and led to mental breakdowns and depressive episodes. During this time, support was essential for me to continue studying and becoming mentally stable again. Tutors were able to help by giving me advice and ideas on how to cope during this eventful time of at-home learning.* (Online middle year undergraduate from an intersectional background [FiF and low SES]) at a regional university)

Many students indicated that the support offered in S2 was improved but was still insufficient as people struggled particularly with mental health, financial hardship, and engagement with online learning.

Table 10. Types of changes from student open comments (numbers represent individual student responses, *n*=1160)

Subtheme	Count	%	Description	Quote
Personal needs	226	19	The type of support students required changed between semesters	*During Semester 1 we needed support transitioning from face-to-face to online. However, in Semester 2 we needed assistance staying motivated as we had been online for longer than anticipated and many members of my cohort were struggling.* (Middle year undergraduate student from a FiF background at an innovative university)
Location	128	11	Student access to campus shifted from remote to more f2f	*Semester 1 support for academic needs was very good as all students had to study from home. In semester 2, as students returned to university for physical classes, many international students offshore were facing difficulties with academic / international student support.* (Middle year international student from an ethnic minoritised background who had to defer studies in S2 due to lack of support at a regional university)
Mechanism of support	98	8	The nature of support accessibility changed	*The availability and support online from university or health professionals (virtually access) is actually better than going on campus.* (First year postgraduate student from a minoritised background—FiF, low SES, and English as an additional language—at an innovative university)
Access to support	54	5	Changed access to support was highly variable with support implemented in S1 being removed in S2 whereas for others support became more accessible in S2	*Much of the support offered in semester 1 was not available to students in semester 2, however the level of stress, mental health issues etc. was still the same.* (Middle year student with a disability at an innovative university)
University understood needs better	54	5	The university developed a better understanding of what students needed and how to address those needs overtime	*The university becoming more accommodating*. (First year undergraduate student from a FiF background at an innovative university)
Communication	46	4	The mechanisms use to disseminate information were modified and clarity around available support improved	*The support was advertised more frequently.* (Middle year undergraduate student from a low SES background at a research-intensive university)
Streamlined	36	3	Consolidation and improvement of mechanisms to provide and receive support changed between the two semesters	*The online delivery of studies during semester 2 was much more organized compared to that of semester 1. In semester 1 the online studies were quite haphazard.* (First year international undergraduate student who remained overseas from an intersectional minoritised background—religious, racial, and health challenges—at a research-intensive university)

Summary of key findings from qualitative student data

- One of the key benefits students gained during the pandemic was that the shift to online/blended learning for previously face-to-face students opened up a level of flexibility which made learning more accessible, particularly for students from minoritised backgrounds. This accessibility and flexibility prompted ripple benefits which enhanced wellbeing and students' financial situations.
- Learning online was described as both one of the best and one of the worst aspects of students' experiences during the pandemic. Where learning online was a positive experience, it facilitated better grades, greater enjoyment and wellbeing, and deeper connections among students and staff. Where learning was a negative experience, it resulted in decreased grades, increased stress and poor mental health, and feelings of isolation and alienation.
- Whether the experience of learning online was positive or negative was predominantly shaped by the capacity of the institution to provide access to high quality learning resources and the individual capacity of educators to create engaging online environments. Where staff upskilled in terms of teaching and support, students benefited.
- Many students reported appreciating the expanded use of academic technologies and online engagement, which both deepened and enriched learning, while also making learning more accessible through, for example, functional improvements such as closed or live/open captioning.
- Students' responses overwhelmingly described a deepening equity divide between students from minoritised and non-minoritised backgrounds. This applied in all categories. Students who could not afford the technology required for learning or who did not have private study spaces at home suffered in learning experiences. Students who had carer responsibilities experienced declines in mental health. Students from low SES backgrounds who lost their jobs also could not afford basic essentials like housing or food.
- Students reported strong preferences for how universities communicated during times of crisis such as COVID-19. In general, redundant and over-communication was disliked. Mass communications were impersonal and made students feel unseen and undervalued. Length, tone, and modality were essential considerations. For example, students reported not reading long mass emails. In terms of communication tone, asset-oriented communication appears to be more positively received than deficit-oriented communication such as threats of punitive action for students who didn't comply with safety guidelines. Notably, many students longed for more specific communications based on student demographics, tailored to their individual circumstances.
- Students detailed that support offered at any stage of the pandemic should be continued, not withdrawn. When support was withdrawn, students felt this meant universities did not recognise, appreciate, or support continued adversity associated with the ongoing pandemic.
- In the early stages of the pandemic, students mostly required practical and instructional support to shift to unexpected delivery formats for their courses. This included loans and financial bursaries to support computer and internet accessibility. Where stricter lockdowns continued, this support continued to be required. Early on, there were also challenges associated with upskilling to be able to continue learning in the online space. As the pandemic continued, students' needs changed as isolation caused mental health issues and decreases in study motivation. There was an escalation in the need for support for mental health support and connectedness strategies. Where restrictions were eased and access to campus became more available, this was beneficial for student wellbeing and access to a variety of other support.

Discussion

To identify and share common threads across thousands of data points, we offer a discussion centred on the significant student (micro-), institution (meso-) and sectorial (macro-) levels in alignment with our conceptual framework. These sections cannot, given the breadth of our findings, offer a comprehensive discussion of all possible avenues but we hope they instead offer targeted insights which are useful to readers' own practices.

Micro-level

Our conceptual framework's micro analysis seeks to capture how students were supported during the COVID-19 pandemic in 2020 through an intersectional lens. Students' experiences were seen to be both limited and enabled by macro- and meso-environments within the crisis ecosystem across the three key impact areas of our analytic framework: learning, wellbeing, and financial experiences.

Learning

Students' lived experiences were highly impacted, both positively and negatively, during the 2020 pandemic, influenced by students' personal circumstances and external changes. The shift to online/remote learning to ensure physical wellbeing provided greater flexibility and accessibility to learning such as time flexibility that allowed for wellbeing activities or better study. However, this proved challenging for many students, particularly those in time zones different than their institution. Accessibility to online academic support from peers and additional learning assistance was more likely to be utilised by students from minoritised backgrounds. Yet it became a point of concern and inequity where internet speeds lagged or were unstable, quality of technology resources was limited (either due to availability or financial constraints), and the environment a student was forced to undertake learning in was less than optimal. These examples are just some of the many learning-associated challenges which, across cohorts, were greatest for students from minoritised backgrounds.

Accessibility and flexibility were pre-existing barriers or enablers to participation in higher education. A lack of accommodation of diverse students' needs combined with systems of oppression manifesting within higher education institutions has left a long legacy of differential learning outcomes for students from minoritised backgrounds (Mercer-Mapstone et al., 2019 and references within; Singh, 2011). In the UK, for example, BAME students face an attainment gap, being 13% less likely to graduate with a 2:1 or 1st degree classification relative to white students (UK & NUS, 2019). Similar trends are faced elsewhere, including Australia and the US (as outlined in the introduction) and there has been deliberate Government policy action (Bradley, 2008) such as completion targets and increased financial support for over a decade, as well as institutional initiatives, to support diversity through widening participation.

Accessibility and flexibility in learning shifted in nature during the pandemic and amplified existing barriers. For students from minoritised backgrounds, this became particularly problematic where adequately tailored support was absent. The impact of these obstructions was particularly critical during the acute phase of the crisis, though different but similarly problematic challenges associated with wellbeing presented in the chronic phase—discussed below. This gap in learning access was described by students from minoritised backgrounds as deepening during the pandemic, indicating this major disruption to higher education may be taking our institutions on a backward trajectory, rather than progressing efforts towards equitable student outcomes. Recent reports in the US (Clabaugh et al., 2021) and in Australia (O'Shea et al., 2021) confirm the presence of widening gaps in retention and attrition.

Where staff and educators could provide an effective, supportive, and compassionate learning environment this enhanced learning outcomes, and thus must be a focus of continued development and resources. Where educators were able to cultivate connections between students, curriculum, and learning resources, and highlight support opportunities directly to students, this also contributed to students' learning. Equally, where educators were unable or unwilling to do so (perhaps due to pandemic fatigue, see Cordaro, 2020), evidence indicated that students perceived this to be detrimental to their wellbeing and learning. In addition, whilst we have excellent evidence of best practice approaches to online and remote learning (Baldwin & Trespalacio, 2017; Redmond et al., 2018; Stone, 2019), it is likely that many of those responsible for supporting learning were neither aware nor capable of implementing these recommendations at short notice during the acute crisis phase. Further academic development for educators would be a useful response to this gap to prepare institutions for future crises as well as the trend toward increasingly digitised learning.

Our findings indicated a direct interdependence between students' learning and their wellbeing and financial situation—indicating that learning cannot be appropriately supported in isolation. This interrelationship concurs with other recent reports (Dodd et al., 2021; Martin, 2020) and is further described below.

Wellbeing

Unsurprisingly, student wellbeing during 2020 was significantly and negatively impacted across the majority of students in this sample, though this was worst for students from minoritised and intersectional backgrounds. Even before the pandemic, the impact of student belonging and mental wellbeing in university experiences has been an escalating concern. Several large Australian studies provide strong evidence of a disproportionately high percentage of university students reporting extreme levels of psychological distress and mental disorders compared to peers (Larcombe et al., 2016; Stallmann, 2010). Studies also indicated that these findings are similar in the UK and US (Baik et al., 2019; Eisenberg et al., 2013).

Factors driving decreased wellbeing in the acute stage included immediate threats to survival such as accommodation or food shortages, and the extra effort and time needed to rapidly adjust to very different ways of learning that often were unfamiliar and less supported or accessible. Significantly, classroom climate is central to this development (van Gijn-Grosvenor & Huisman, 2020). A sense of belonging is central to students feeling both connected and supported (Meehan & Howells, 2019) and an increased sense of belonging has been correlated with improved student wellbeing (Karaman & Tarim, 2018), particularly for students from minoritised backgrounds (Ahn & Davis, 2020). Our findings raise concerns then that sense of belonging was significantly lower for students from minoritised backgrounds compared to their non-minoritised peers. Given the critical link between belonging, wellbeing, and learning, educators might fruitfully consider how belonging can be fostered within classrooms as the pandemic continues to impact students' wellbeing.

Links between student wellbeing and student learning have been well established (Houghton & Anderson, 2017) with decreased levels of wellbeing being associated with lower self-efficacy, participation, engagement, and academic success (Lipson & Eisenberg, 2018). The nature of student wellbeing factors shifted between acute and chronic stages. Initially, there was a focus on physical needs such as food and shelter, and on factors which supported retaining immediate access to learning in alignment with crisis theory (Ell, 1996; Regehr, 2011). And, whilst universities did their best to try and support students through online mechanisms and extra provisions like expanded counselling services, it was clear this was an area in need of significantly more support for escalating student needs, particularly in the chronic stage of crisis. We identified that whilst these services were sought more often by students from minoritised backgrounds and communication regarding availability did improve

as the year continued, awareness and accessibility continued to be perceived as insufficient. As the year continued, the drain from social isolation and disconnection exacerbated mental health issues and led to declines in motivation which were highly problematic for learning.

The pressure from changes to student wellbeing also had a direct effect on student learning and students reported this contributed to grade reductions, program withdrawals, and overall dissatisfaction. Conversely, some students found the increased flexibility of remote studying allowed for more time to invest in wellbeing/self-care activities such as spending time with family or pets, eating healthier food, and having more time to rest, findings also revealed elsewhere (Lall & Singh 2020). Ecologically, where remote learning environments demonstrated consideration for and effectively supported connectivity, this was considered positive for student wellbeing by connecting the learning environment with needs within students' social environment.

The deep interrelationship between wellbeing and students' enjoyment of and outcomes from learning is well established (Bowden, 2019; Herdlein & Zurner, 2015). Educators and their teaching practices, student services, the environment, culture, and communications were recently identified as key student support areas for wellbeing (Baik et al., 2019). Our study (re)affirms that these areas experienced major challenges during the pandemic, contributing to the severe decline in student wellbeing. This indicates that, while universities are first and foremost institutions of learning, "successful" learning must include an ethical responsibility to care for students' wellbeing.

Financial

For students from minoritised backgrounds, financial limitations frequently pose both intersectional and ecological exclusion—exclusion from university and learning environments—with financial stress further recognised as significantly contributing to lower levels of mental wellbeing (Defeyter et al., 2021; Stallman, 2010). In our study, it was apparent that a higher proportion of students from minoritised backgrounds study in a part-time capacity with greater outside obligations such as work or caring responsibilities. During times of crisis, financial issues increasingly impacted students' capacity to remain studying. Many of these students (and/or family members) were employed in a highly casualised or service workforce which was impacted by business closures. Students in Australia also found themselves ineligible for the government defined casual employment criteria for crisis funding schemes such as the Australian JobKeeper (O'Neil, 2021; Churchill, 2020). This external environment likely contributed to our findings that these students subsequently experienced disproportionately severe financial pressures. These impacted both student wellbeing through elevated levels of anxiety, stress, or depression, and learning experiences. The loss of income led to both major environmental pressures experienced through food and housing insecurities. Food basket provisions and rent relief helped mitigate these to some extent. However, financial uncertainty subsequently caused knock-on effects with being able to practically continue with study during the pandemic.

Students from minoritised backgrounds indicated that their experience became worse because of these financial changes and for those with an intersectional background this was even further exacerbated. Universities were quick to recognise and prioritise support for these issues to ensure continued access to learning for students during lockdowns, though at a much lower rate than other forms of support. Financial loss and strain placed these students at higher risk of dropping out and further retention gap widening has recently been confirmed by reports in the US (Clabaugh et al., 2021) and in Australia (O'Shea et al., 2021), building on those pre-existing gaps prior to the pandemic. The implementation of numerous financial initiatives such as bursaries and loans of equipment were appreciated by students and were instrumental support mechanisms in dire situations. Financial support helped temporarily relieve some of the environmental stressors and acute crisis, yet there was a general perception that it remained insufficient in terms of both scope and availability.

However, students from the two international universities in this study indicated that this financial impact was not as severe; possibly because of various university, state, and federal provisions, which lessened the impact.

Overall, a common thread that tied all aspects of effective navigation through a pandemic for students was the effectiveness of institutional communication. For many students, communication was seen to be timely and provided direct information regarding the various support mechanisms and how to access these quickly. Unfortunately, for many others, communication of how to access support and eligibility criteria was ineffective which meant that many students, particularly those from minoritised backgrounds, were either unaware or unable to benefit from support available. Further issues arose where students had found these to be beneficial, but these supports were only offered during the acute crisis phase and were not continued as the pandemic progressed into a more chronic state. This left students feeling confused and unsupported as, from their perspective, nothing had changed and the drivers of stress persisted or escalated as the pandemic continued.

Student dissatisfaction with university communication strategies is an ongoing issue with effective, targeted, and timely communication of support availability known to enhance student wellbeing (Baik et al., 2019). Some advocate for key strategies in digital communications such as demonstrating compassion, seeking feedback, limiting message bombardment, and celebrating small victories (O'Hara, 2020), but these strategies were found to be lacking in both the artefacts analysed and in student experiences. Few supports were specifically targeted for student cohorts from minoritised backgrounds—only 16% across all institutions. Students wanted more tailored and direct communications rather than the broad and lengthy approach they received. As the pandemic continues, universities would be well set to develop and implement specifically targeted, identity conscious communications to more individually and comprehensively reach all students who need support, prior to crises.

Meso-level

A significant part of future crisis planning in higher education is to understand institutional decision making, resource allocation, and communication impacts on students. The COVID-19 pandemic arrived on the back of a period already stamped by significant stress (Crawford et al., 2020; Mercado, 2020; Mok et al., 2020; Rapanta et al., 2020). The pandemic intensified this stress with the rapid change to online learning, closures of international borders, and workforce redundancies and job losses in 2020 alone estimated to be at the scale of 17,000 in Australia (Universities Australia, 2020). The past decade's trend of institutions becoming more business-like and seeking efficiencies through centralisation in decision making (Deem et al., 2008; Deem, 2016; Krause, 2020; Marginson, 2000, 2007; Winter 2009) was amplified within the pandemic. This meso-level, institutional section describes pandemic impacts and implications according to our conceptual framework, focussing on the temporal stages of crisis—acute and chronic.

Acute crisis stage

COVID-19 is not the first disease to challenge higher education, but it is the greatest in terms of scale and magnitude of impact. Students from a wide diversity of backgrounds are part of higher education with 250 million enrolled worldwide (Calderon, 2018) feeling an immense pandemic impact. Almost two years on and the pandemic is still raging across the world. Daily rapid decision making occurred in the acute phase of the pandemic while decision makers struggled to come to terms with the unimaginable. Policies which had been unchanged for decades were radically transformed overnight.

In line with crisis theory, the acute phase of the pandemic was characterised by panic and a reliance on tight central governance for decision making. There was a real sense of uncertainty about whether institutions and the individuals within them would survive and

there was a need for immediate intervention to stabilise the environment (Roberts, 2005). In response, there was a tightening of control and command systems. Literature shows that survival-conscious institutions in these situations reduce the number of academic staff and increase the monitoring and control of those retained (Karlsen, 2013) which reflects actions taken widely across the sector in 2020. Although institutions pride themselves on ideals of shared governance, studies have found that such practice is usually a myth and rather the power of decision-making rests in the Vice Chancellor and professional managers (Lachs, 2011). This separation of decision making between the academic workforce and decision makers grew wider during the pandemic (Peters et al., 2020). The flow on effect of this uncertainty ended with impacts on academics and students, such as those described in this study. Often academics had to bridge the disconnect between central decision making and the need for learning to continue as uninterrupted as possible (Peters et al., 2020 and references within).

This centralised approach to support was necessary for the rapidity of decision-making required to maintain a safe environment for the university community and aligns with good practice in crisis intervention to reduce uncertainty, overcome any panic, and provide a central point of reference (Roberts, 2005). Our artefact analysis depicted this approach with minor variations in support across institutions. Most institutions equally split support into online learning and wellbeing, with financial support around half that of the other two categories. Although some institutions had leading initiatives on inclusivity and widening participation pre-pandemic, these appeared to be overshadowed as the full impact of the crisis emerged. Within the scope of our methodology, our findings suggest that specifically targeted support for students from minoritised backgrounds were minimal, potentially as a result of that tightening of control and winding back of shared governance. In general, regional/remote universities had most support for students from minoritised backgrounds, possibly because these universities tend to enrol a greater diversity of students and may thus be more familiar with their needs.

We found a strong interdependence among different areas of support; for example, when students' financial situations were supported so was their wellbeing and learning and vice versa. This interconnection is well established in higher education research on the relationship between wellbeing and learning (e.g., Pascoe et al., 2020; Stanton et al., 2016), but the urgency of actualising those findings has rapidly increased in the past year. Institutions need to recognise this interdependence and adopt a holistic approach to the design of support.

Our results show that a crisis such as the COVID-19 pandemic does not impact students equally, in alignment with other disaster and crisis research as described in the introduction. Our findings raise questions around the extent to which decisions made accurately reflected the needs of a diverse student cohort. The outcome of centralised decision making in this acute phase predominantly seemed to be a "one size fits all" approach to support, without sufficient integration of the diversity of students' needs. While this is reasonable given the unprecedented crisis of the pandemic, it does point to future directions of enhancement and preparation. Enabling equitable outcomes requires an identity-conscious approach to understanding students' needs, acknowledging that not all students have the same starting points when entering the university ecosystem, putting some more "at risk" than others. A centralised approach to support response may risk overlooking this nuance and offers one potential explanation for the disparities in experiences found in our results. Going forward, this gives us a point of focus for supporting students more equitably in future times of crisis.

Achieving equitable support for students needs an understanding of intersectionality and diverse perspectives feeding into the centralised structures of our institutions. One approach to bringing more nuance and inclusion to centralised decision-making in the acute stage of crisis would be to ensure that the people influencing decisions reflect a diversity of identities, institutional roles, and lived experiences. Looking to models of participatory decision-making

could be fruitful, as would putting in place pre-existing structures to work with more diverse staff and with students as partners in governance processes during times of chronic crisis. Such an approach should centre intersectionality and equity, seeking to ensure a diversity of students' identities and experiences are represented in such governance structures.

The field of students as partners or student-staff partnership has become well established in the past decade as good practice in engaging students across all levels of higher education institutions (Cook-Sather et al., 2014; Harrington et al., 2014). Emerging research indicates inclusive partnership can be meaningful in redressing, for example, gender and racial inequities by centring the lived experiences of students as core to institutional approaches (Acai et al., 2019; Cook-Sather & Agu, 2013). Cook-Sather (2018) found that partnership can also contribute to the success of students from minoritised backgrounds (including racialised, LGBTQIA+ and FiF), stating that these findings "argue for the particular promise of pedagogical partnership in addressing the ways in which higher education is currently failing" to address societal inequities. Such potential is well worth considering as we rebuild and recover from the pandemic, and as a way forward in preparing for future crises.

Insights gained in research such as this study will be critical in offering points of reflection for how to prepare our institutions to adapt to making decisions both rapidly *and inclusively*. Take, for example, assessment practices as one contentious example. We found that all institutions offered some form of accommodations in assessment during 2020 (see also Garcia-Penalvo et al., 2021; Hicks-Keeton et al., 2021) and these were appreciated by students. There were more flexible processes and commonly a policy of "no disadvantage" outcomes. There were other practices such as non-recording of fail grades or grades on transcripts. Whether these policies actually resulted in no disadvantage remains unknown. It is likely, given the speed at which they were developed with little opportunity for student input, that they may lead to consequences yet to be realised. For example, the "no disadvantage" policy of excluding all marks gained during the acute phase from the calculation of average marks disadvantages students who gained better marks during the pandemic because of successful online learning. Similarly, the non-recording of grades on transcripts has consequences for future entrance into higher degrees and scholarship rankings. These well-intended policy decisions may thus unintentionally lead to poorer student outcomes.

As a recent OECD (2021) report states: "The pandemic has also exposed the need for higher education institutions and policymakers to re-examine their established educational and policy models". We, as institutions, have the opportunity to take this up and to reflect on our responses to the pandemic to examine whether the established educational models and changes made to established policies need to be (re)evaluated to determine if they remain appropriate or will need revisions for the future crises we know our sector will face in these uncertain times.

Chronic crisis stage

In a chronic stage of crisis, individuals are still managing crisis-related events while working towards a resolution (Ell, 1996). Higher education is now in the stage of a chronic response as we deal with the ongoing and more familiar hurdles faced with surviving and sustaining our core functions as institutions of learning in a global pandemic. This necessitates discussions of both decision-making and pedagogy at the institutional level.

Regarding the former, we discussed in the previous section how structures might be put into place to make sure centralised governance happens inclusively while retaining tightly coordinated control in the acute stage of crisis. When a crisis shifts to chronic and the focus is on resilience and recovery, it becomes more appropriate for power to shift to other actors to allow the sense of control to be shared in appropriate ways (Roberts, 2005). Recognition of the scale of diversity, the limits of human information processing capabilities in times of crisis, and the diversity of human experiences within the complex higher education

ecosystem would benefit decision making in this stage. More adaptive governance such as polycentric systems with multiple centres of semi-autonomous or collaborative decision making may increase opportunities for “goodness of fit” of decisions (Blomquist, 2009; Carlisle & Gruby, 2019; Karlsen, 2013). Such flexibility may better allow universities to learn from the pandemic experience and increase adaptive capacity and resilience, in alignment with a social ecological perspective of higher education (Germain, 1973; Gitterman, 1996; Gitterman & Germain, 2008; Gitterman, 2009; Teater, 2014).

Regarding the pedagogical discussions prompted by the pandemic, a recent report stated that the pandemic has accelerated existing arguments about the obsolescence of higher education, arguing that “...the classroom is dead...universities have been with us for centuries, they are not immune to the business reinvention that is taking down giants in media, automobiles and energy. In a world of work from anywhere, people also want to learn from anywhere – and new education platforms are rising to meet these demands” (Ernst & Young, 2020 p.5, 7). Universities will need to adapt to remain relevant in such an environment, delivering learning in ways which meet the needs of learners. Indeed, institutions across the world are scrambling in this chronic phase of the pandemic to reimagine the new pedagogical possibilities for post-COVID-19 (Peters et al., 2020) with many of the responses of the past 18 months laying the foundations for such a transformation.

Digital delivery modes are a core consideration in such discussions but are not neutral across student cohorts, and our study has found that students felt isolated, and motivation and procrastination were barriers to learning in this chronic stage. Croucher and Locke (2020) stated that the perception of online and blended learning being inferior to face-to-face learning will continue and students may be unwilling to pay the high fees for an “inferior” experience. Others argue that although the wisdom is that the gold standard for learning is face-to-face and online is second best, there are arguments to never again teach face-to-face, with the online environment being superior (Peters et al., 2020). Even if the cognitive experience is equivalent to that of the face-to-face learning experiences (Croucher & Locke, 2020), there is an argument for the value of other experiences of higher education which students from minoritised backgrounds particularly can gain from such as social connections, the development of peer networks, and sporting experiences which online learning may struggle to fully replace. All these diverse perspectives and impacts of varying pedagogical models and teaching modes were felt and articulated by the wide range of students in this study, with numerous face-to-face students saying they preferred to keep their degrees online following the pandemic.

The COVID-19 pandemic offers an opportunity to structure learning experiences to be equitable, engaging, and more inclusive following the rapid revisions to centuries-old pedagogical approaches such as the standard “sage on the stage” lecture. Many have been arguing even pre-pandemic that such pedagogies are inequitable, outdated, and unethical with more active learning proving to have compensatory effects which narrow attainment gaps between cohorts and benefit all students (Theobald et al., 2020). Students in this study shared stories of finding new ways of learning during the pandemic they have not conceived possible, and a firm desire to retain those approaches which facilitated flexibility and accessibility. During this chronic stage, more discussion is required about the purpose of higher education and how this renewed vision of learning can create more democratic and just societies (Peters et al., 2020), supporting an ecological perspective (Germain, 1973; Gitterman, 1996; Gitterman & Germain, 2008; Gitterman, 2009; Teater, 2014).

One such pedagogy deserving of consideration is Universal Design for Learning (UDL). UDL is a curriculum framework with intentional planning for student diversity. UDL allows student choices in learning goals and assessments to increase engagement, representation, and expression, centring the acknowledgement that there is no one size fits all approach to learning. This is a strategy which supports all students to succeed including students from

diverse minoritised backgrounds (Rose, 2000; Capp, 2017). With the potential for such necessary and beneficial change at our fingertips, we suggest that for universities to revert back to what is familiar would not just be self-defeating in the current context but would be unethical. We urge institutions to grasp this opportunity for revitalisation and make bold decisions not only for but *with* our increasingly diverse student cohorts, providing an opportunity to emerge as places where equality and humanity can flourish (Peters et al., 2020).

Macro-level

> *The COVID-19 pandemic has disrupted education, like most aspects of our lives. It has exposed the inadequacies in our education systems, and created new conditions to which education systems, it quickly became clear, were poorly adapted. Although these inadequacies are magnified in times of crisis, it also promises the real possibility that we do not have to return to the status quo when things return to "normal". It will be the nature of our collective and systemic responses to the disruptions that will determine how we are affected by them. Drawing the right insights from the crisis is therefore key. (OECD, 2021, p.3)*

We are at a tipping point in the higher education sector. Drawing on insights learned during the pandemic to inform the future of our students, our staff, our institutions, and our sector has been the purpose of this study. The people who make up our sector undertook immense efforts to cope and adapt. Leadership made difficult decisions under extreme time pressures, staff worked around the clock trying to best support students, and students persisted and struggled to maintain motivation and undertake learning under extreme stress and uncertainty. And yet, as the OECD (2021) report highlights, our sector and our systems were not prepared or designed to thrive in such conditions. As detailed in the introduction to this report, our sector bled both money and people—students and staff alike—and the impacts were universally felt.

Our findings speak to some of these impacts. Specifically, to the extent to which students from diverse backgrounds felt adequately supported by the systems implemented to support them within their institutional environments. The previous sections of this discussion have considered the implications of these findings through the micro-lens at the individual level and the meso-lens at the institutional level. Looking to the sector level, what insights can we, as an international higher education sector, use to forge a path forward?

A flexible digitised higher education landscape

One resounding message across our findings was that, despite the awful circumstances, our sector's response to supporting students during the pandemic offered unforeseen opportunities. While acknowledging the immense challenges and losses students faced, there were also many students who found new ways of studying which enhanced their learning and wellbeing. Access to these benefits rested squarely on the ability of organizations to provide quality online learning and resources which supported accessible and flexible study. These benefits were articulated most strongly by students from minoritised backgrounds for some of whom access barriers to studying were removed by the shift to online learning. On the flip side, where students from minoritised backgrounds were not adequately supported, the digital, participation, and experience divide deepened. These are two sides of the same coin which we must keep in mind as we take our next steps.

In many countries before the pandemic, there were increasing numbers of students favouring online learning in higher education (National Center for Education Statistics, 2021). The pandemic has driven an increase in this demand (OECD, 2021) and as a sector we need to consider how we progress towards a future which continues to offer the flexibility of expanded online, blended, and hybrid study options of which we now know we are capable. There are many ways to achieve this and research has been done and models proposed for

the most effective way to approach and make sense of a digitised higher education sector (e.g., Czerniewicz et al., 2021; Lupton et al., 2017; Telukdarie & Munsamy, 2019).

We do not have to reinvent the wheel—we can leverage our pre-existing digital infrastructure from pre-pandemic offerings such as online degrees, MOOCs, micro-credentialing, and outsourcing learning to external education providers. These could be expanded to provide "new opportunities for learners to decide what to learn, when to learn, how to learn and where to learn, and to have their learning gains independently recognised" (OECD, 2021, p.4). This shift in focus for our sector would respond to a rapidly evolving external environment where interest in such alternative and flexible ways of learning are increasing, especially since the start of the pandemic as unemployment rates rose and adult learners looked to up-skill. Such a shift would also need to be characterised by close attention to ensuring they provide opportunities without deepening the equity divides we know from this research and elsewhere can occur from such changes.

This next-generation learning landscape offers potential solutions to many of the problems in inequitable learning outcomes, degree attainment, and retention faced by students from minoritised backgrounds which existed before and, as our findings indicate, were exacerbated by the pandemic. This landscape would have a ready foundation of research and knowledge for building inclusive online and blended learning environments in higher education (e.g., Hicks, 2010; Kelly & Zakrajsek, 2021; Kyei-Blankson et al., 2019). Imagining the flexibility offered by the strategic digitisation of learning *without* the uncertainty and stress of a pandemic offers great potential, including "transforming teaching and learning practices; widening access to non-traditional learners; reducing instructional costs; improving opportunities for student and teacher collaboration; and expanding individualised and adaptive instruction" (OECD, 2021, p.4). Our sector was moving towards this digital transformation prior to COVID-19 in acknowledgement of the benefits it offered and the external demand in an era of the fourth industrial revolution—the digitisation of industry (Telukdarie & Munsamy, 2019). The pandemic showed us that we are indeed capable of this shift and gave us a rapid push toward such a future.

Should we head in this direction, there are numerous considerations required to ensure that we are enhancing learning and students' experiences, not just introducing technology for no functional improvement—as has been well established previously in the field of technology in teaching and learning (e.g., Puentedura, 2014). Our findings highlighted that, done well, the shift online could be transformational; done poorly, students, particularly those from minoritised backgrounds, are left worse off. Our sector needs to ensure that significant investment is dedicated to this expansion of digital learning. This will include "large-scale investments in hardware and software, sufficient time and training for teaching staff, and adapting pedagogical and assessment approaches to the new digital environment" (OECD, 2021, p.4).

Digitisation needs to happen strategically, prioritising what we know works. First and foremost, this should prioritise the relational nature of teaching and learning (Felten & Lambert, 2020). Policies, procedures, and regulatory frameworks will need to be revised and created with equity at the heart of those revisions. This is to ensure that the deepening digital divide we have seen during COVID-19 does not continue to grow, and structures and supports are put in place to ensure that all students have access to the resources they need to engage in flexible learning that most benefits their learning (for more extensive analysis of the pandemic related digital divide, see McKenzie, 2021). We are well on our way to doing this with the multitude of supports which were rapidly revised, reallocated, and created during the pandemic. Listening to the kind of student feedback on these supports collected in this study will be critical in further enhancing offerings into the future.

Learning from each other across international borders—as we have begun to understand in both the collaborative process and findings of this study—will maximise the potential for such enhancement. For example, regional and remote Australian universities offered more

support tailored to students from minoritised backgrounds than the research-intensive and innovative universities in this study. This is likely because they have the highest enrolments of these cohorts relative to other types of universities, and thus greater familiarity with and strategies for supporting those students' specific needs. Tapping into this pre-existing knowledge network across institutions and countries will be one approach which can rapidly prepare us to put in place the strategies and protocols we need to more rapidly and adequately adapt in times of future crisis.

Intersectional equity as core business

Finally, and we cannot emphasise this enough, these discussions, implications, revisions, enhancements, investments, and transformations must take place in an identity-conscious way regarding student cohorts. One of the novel aspects of our study was the application of a framework helping to illuminate students' experiences not just theoretically but methodologically. Intersectionality, the compounding effects of oppression for individuals who occupy multiple minoritised identities (Crenshaw, 1989), plays a powerful role in students' experiences of higher education but is rarely a consideration in strategic discussions at the sectoral level (Mercer-Mapstone et al., 2019). One must take great care to not misappropriate the use of critical theory to uphold neoliberal tropes lauding equality or narrow incrementalism (Hill Collins, 2019). And, recent research has found that "there is considerable work to be done to actively address the workings of intersecting systems of inequity impacting on participation and outcomes of students" (Nichols & Stahl, 2019, p.1). It is these participation and outcomes which students in our study—across 11 institutions in three countries—reported facing disproportional barriers to, with students from intersectional backgrounds suffering the most.

As a sector, we collect extensive data on students' identities both within institutions through enrolment pathways and at national (e.g., NCSEHE, 2021) and sectoral levels (e.g., Claeys-Kulik et al., 2019). We know which students are most likely to be at risk. Many universities use this data to produce strategically compassionate policies, procedures, and programs to best ensure these students get the support they need to thrive equitably in what are historically hostile environments. But in many universities, we fall behind in these efforts; diversity is an additional consideration for segregated teams or units, separated from and secondary to the core business of teaching and research.

Our findings highlight with urgency that this needs to change. As a sector, we need to heed the advice of the students in this study and the OECD and fight the urge to revert to "normal" pre-pandemic conditions which had built within our sector a microcosm of societal systems of oppression. Our focus in the immediate future needs to be on (re)building our sector with an explicit focus on equity as *core business* for higher education institutions, putting in place identity conscious approaches to ensure all students can thrive equitably.

Limitations and directions for future research

Limitations

Several limitations from this study resulted from the data collection, sample, and other constraints including time and the constantly (de)evolving nature of the pandemic. The "click radius" used to analyse artefacts was a necessary limitation used to capture relevant information in the timeframe of the study and to filter out non-crisis related material. While this was deemed appropriate given the broad rather than deep focus of the study but may have limited the depth of analysis. Additional limitations stemming from the artefact analysis included five universities facing challenges obtaining access to emails for data analysis and consequently not all institutions contributing to the temporal dataset. Institutions within Australia and in the UK and US experienced wide variability in the impact of COVID-19 on institutional operations and periods of lockdown meaning responses varied over time. To overcome institutional data variances, results are presented using broader categories such

as institution type which aggregate data across certain institutions making the individual institutional data less limiting.

Limitations in the student experience data existed primarily related to sampling. Data set collection for the student survey was not completed at one institution due to procedural barriers. Institutions had varying response rates meaning some institutions were either over or underrepresented in the sample. This was not seen as problematic, however, as no analysis looked at results by individual institutions—rather, institutions were grouped by institution type, as detailed above. Coding of open responses was undertaken by five researchers given the copious amounts of data collected. This had the potential for differing approaches to analysis but was mitigated by extensive discussions among researchers prior to, during, and after coding to ensure a shared application of coding framework.

Directions for future research

There is a need to continue to explore issues related to equity and how individuals, institutions, and the sector respond to future disruptive crises. Future research questions following on from this study could fruitfully include:

- What systemic changes to services, learning experiences, delivery modes will we see post-pandemic?
- How will students from minoritised backgrounds experience these changes and will they have an impact on access to higher education and attainment for these cohorts?
- How will universities respond to the challenges of belonging and social connectedness with the changing nature of the campus experience? Will students from minoritised backgrounds experience further marginalisation as a result?
- As we near the point of post crisis, how will universities deepen their relationships with students to inform the experience? How will they encourage participation of minoritised voices in this process?
- How can institutions work most effectively in partnership with students from minoritised backgrounds to empower them to shape learning, teaching and support that meets their needs as institutions respond to ongoing disruptions? What structures best facilitate this in times of acute versus chronic crisis?
- How might longitudinal data illuminate additional impacts and/or inequities resulting from the pandemic in higher education?

Recommendations

Recommendations are structured according to the levels of focus in our conceptual framework—the micro-, meso- and macro-level environments which shape the higher education sector. Recommendations at each of these levels speak to different practices, such that all practitioners in higher education can learn from our findings.

Micro-level recommendations

The micro-level of the conceptual framework attends to the most human interactions in our institutions—those among the individual students and staff who make up our organisations. These occur in classrooms, on-campus, online, socially, professionally, informally, formally and they are the relational fabric that is higher education. Every one of these interactions among humans is both influenced by and shapes our individual and collective identities. The recommendations that follow at the micro-level focus on the impact that individual educators can make on the lives of students and vice versa.

1. **Respond to disparate feelings of belonging and wellbeing**

Students from minoritised backgrounds reported lower feelings of belonging, worse overall wellbeing prospects, and were less likely to be aware of wellbeing services offered compared to students from non-minoritised backgrounds. Students with intersectional identities were the most negatively impacted in this space. We recommend:

i. the provision of identity-conscious rather than identity-absent wellbeing support to close the gap in experiences between cohorts and that this support should be of utmost priority as a place where the equity divide is growing most rapidly
ii. coupling of tailored support with targeted communications about these services to students from minoritised backgrounds to ensure students are aware of the support available and use it when needed. Such identity-conscious approaches should be supported by ethical treatment of students' identity data.

2. **Maintain face-to-face learning for essential activities where possible**

While many universities were faced with government enforced restrictions that prohibited face-to-face delivery, our data suggests that, while students' experiences of remote delivery differed, they valued the opportunity to undertake face-to-face learning when possible. We recommend:

i. face-to-face teaching for critical areas such as placements and/or students needing practical hands-on competency tests, or social learning approaches should be prioritised when permitted by authorities.
ii. faculty and staff should be supported to make flexible case-by-case learning accommodations to support students in terms of modality and delivery as this may make the difference between a student staying enrolled in university or not. An individual instructor setting up a safe in-person learning experience for a small group of students with the aim of fostering their retention and success should be supported and encouraged.

3. **Transition new and expanded hybrid/hyflex/blended learning approaches to business as usual to retain accessibility and flexibility in learning opportunities.**

One of the key benefits students gained during the pandemic was that the shift to online/blended learning for previously face-to-face students opened up a level of flexibility which made learning more accessible, particularly for students from minoritised backgrounds. In those cases, this accessibility and flexibility prompted ripple benefits which enhanced wellbeing and improved student's financial situations. We recommend:

i. universities and staff resist the urge to revert “back to normal” for teaching when this becomes an option post-pandemic, instead exploring ways to enhance beneficial pedagogical changes made during the pandemic with a focus on enhancing opportunities and reducing challenges to ensure equity of access and outcomes for students.
ii. educators should offer all students, particularly students from minoritised backgrounds, the agency to engage flexibly with learning to promote broader wellbeing.

4. **Support the ongoing professional development of educators to continue to improve new ways of teaching and learning**

Learning online was described as both one of the best and one of the worst aspects of students’ experiences during the pandemic. Whether the experience of learning online was positive or negative was predominantly shaped by the capacity of educators to provide access to high-quality learning resources and engaging online environments. Going forward, if institutions maintain flexible online/blended offerings as suggested above, we recommend:

i. increased resources for academic and professional development to ensure educators are supported to teach in new ways and students have access to coherent and consistently positive online/blended learning experiences and related wellbeing benefits.
ii. pedagogical changes undergo rigorous ongoing evaluation with a particular focus on equity, tracking progress to ensure changes are resulting in intended enhancement and outcomes.

Meso-level recommendations

The meso-level of the conceptual framework attends to the environment at the individual institutional level—how a single university looks both inward to support its own students and staff at the whole-of-organisation level and outward to respond to the rapidly changing external environment during the pandemic. These recommendations are intended to inform practice at the meso-level of our institutions, for middle and senior managers and those in roles who speak to whole-of-institution strategy.

5. **Create tailored and accessible support mechanisms for students from minoritised and intersectional backgrounds that holistically consider learning, wellbeing, and financial situations.**

Students with minoritised identities were disproportionately impacted by the pandemic. This was the case particularly for students from intersectional backgrounds who were more likely to indicate that their learning experience, financial status, and wellbeing became a lot worse and felt less supported. When students’ wellbeing was well supported, their learning and financial situations also improved, and vice versa. This evidences the strong interdependence among different areas of support. There was, however, an uneven distribution of institutional support efforts across financial, wellbeing, and learning categories. We recommend:

i. institutions adopt a more holistic and evenly distributed approach to the design of student support services.
ii. tailored support designed and targeted for minoritised groups.
iii. institutions ensure access to support is clear, quick, and easy with minimal requirements.

6. **Ensure central communications are concise, personalised for segmented target cohorts, and conveyed through multiple communication modalities**

Impersonal and lengthy communications were not well received by the students sampled. The data collected identified two main elements that need to be considered by institutions

when communicating information: content of the message, and communication modalities. Blanket communications which were identity absent did not engage the nuance needed to equitably serve students. Further, only 16% of supports in our analysis were specifically targeted in communications for students from minoritised backgrounds and, for some supports, these students were less aware of their availability. We recommend:

i. At the institutional level, messages need to have a specific target audience and their context in mind. Institutional communications should consider the diversity of student experiences and needs, and work towards identity-conscious communication.
ii. Consideration should be given to the diversity of channels students use to communicate. Institutions should embrace multimodal communication to increase the effectiveness of the communication.
iii. The design of tailored communication strategies based on segmented student data to individually and comprehensively reach students who most need support.
iv. Protocols should be created to allow institutions to immediately adopt such approaches during crises such as the pandemic.

7. Explore adapted approaches to decision-making and governance structures to meet the needs of different crisis stages

Achieving equitable support for students requires an understanding of intersectionality and a representation of diversity in decision-making processes. While the acute phase response to crises often requires a small, high-level group to drive institutional consistency and agile responses, there are opportunities for universities to review and consider areas for improvement in decision-making processes to meet the different needs of acute versus chronic crisis responses. We recommend:

i. exploring more inclusive approaches to decision making and service review which includes an appropriate representation of diversity.
ii. establishing crisis-specific policies and procedures which facilitate governance that is adaptive, agile, and equitable.
iii. actively pursuing reciprocal partnerships with students, particularly those from minoritised backgrounds, to ensure students are at the heart of future responses to both the current and future crises—not just in ethos but in practice.

Macro-level recommendations

The macro level of the conceptual framework attends to the sectoral level of higher education. Individual institutions do not function in a vacuum. At both national and international levels, our organisations interact with each other—sharing and learning from practice at conferences and through publications, exchanging students across borders, and contributing to our global community of knowledge and scholars. All of this happens in an environment where we both shape and are shaped by the systems of power and privilege which play out within our walls. It would be remiss of us to ignore the opportunity we now have to come together, engage in dialogue, and take actions which (re)build a sector which, in a post-pandemic landscape, continually evolves to be more resilient, equitable, and inclusive.

8. Embed structures to facilitate cross-sector practice sharing and opportunities for sector-level evaluation, reflection, and revision of protocols established during the pandemic to better prepare for future crises

Socio-geocultural differences between institutions indicated that there is great potential for learning and support across higher education as a sector which could benefit our increasingly diverse student cohorts. All institutions in our sector are shaped by the same systems of oppression but respond in different ways to supporting students who face barriers to equitable access to learning. We recommend:

i. structures and processes, such as international collaborative research projects or communities of practice, be built to explicitly facilitate cross-sector learning such that we have a more diverse and evidence-based set of approaches to supporting students in identity conscious ways in our collective crisis-response toolkit
ii. the sector makes space for evaluation of and reflection on the adaptations rapidly made during the pandemic asking: What worked? What didn't? How, and why? How can we improve for next time?

9. Centre intersectionality as both a concept *and method* for engaging with and supporting students

Our findings found differences between student cohorts from non-minoritised, single minoritised, and intersectional identities. This highlights the very real impact that intersectionality has on how students engage in higher education across access, experiences, participation, and outcomes. We recommend:

i. our sector action these insights to ensure that any discussions, actions, policies, or processes which relate to students centre intersectionality to ensure approaches are explicitly identity-conscious, combatting the amplified barriers students from intersectional backgrounds face in our sector
ii. students from intersectional backgrounds are supported to engage in these sector level discussions.

10. Sustain student support changes made during the pandemic to (re)build our sector with an explicit focus on equity as core business for identity conscious higher education institutions

Students' responses overwhelmingly described a deepening divide in inequity between students from minoritised and non-minoritised backgrounds, with amplified inequity for those with intersectional identities. As a sector, we are at an unprecedented point in history where our institutions have been more thoroughly disrupted and deconstructed than ever before. We recommend:

i. we fight the urge to revert to "normal" pre-pandemic philosophies, policies, systems, and procedures which had built within our organisations microcosms of societal systems of oppression which resulted in identity-based disparities among student cohorts in both participation and outcomes
ii. a focus on (re)building our sector with an explicit focus on equity as "core business" putting in place approaches to ensure all students can thrive in ways which are identity conscious rather than identity absent. This is an opportunity to emerge from the pandemic as a sector of learning where equality and humanity can flourish.

Conclusion

The COVID-19 pandemic resulted in an unprecedented and largely unimaginable disruption to the higher education landscape globally. The pandemic heightened global consciousness of student health and wellbeing and equity of access to learning (Goodwin & Truebridge, 2021). The transition to remote learning, closure of borders and campuses, and pivoting of services to online delivery occurred rapidly and, for many universities, continued across 2020 and throughout 2021. Disruptions to the educational experience challenged all levels of the university community. We sought to understand how twelve universities across three countries endeavoured to support students, particularly those from minoritised backgrounds, to retain access to learning through COVID-19. Data were sourced from analysis of institutional artefacts detailing universities' support responses, over 2,500 students were surveyed, and a diverse team of almost twenty educational researchers across three continents conducted the analysis summarised here.

COVID-19 impacted the learning experience of all students. The impact was, in areas such as overall learning experience, universal with no statistically significant difference between students from minoritised and non-minoritised backgrounds. This was not the case, however, for wellbeing and financial experiences where students from minoritised backgrounds were generally worse off than their non-minoritised peers. Delving deeper, students with intersectional identities (from more than one minoritised group) fared worst of all with significantly lower perceptions almost across the board. Interestingly, students at UK and US universities identified a greater decline in their learning experience and general wellbeing than students from Australia. However, Australian students were more likely to report financial difficulties, indicating socio-geocultural differences.

Students' responses overwhelmingly described a deepening inequity divide that applied across most categories. For students from minoritised backgrounds, they experienced a deepening of the equity divide and additional challenges accessing the technology required to access learning, loss of income, and the challenges such as caring responsibilities that further inhibited their study and contributed to declining mental health.

Despite the many challenges experienced by students, the shift to online/blended learning introduced students to studying with greater flexibility, making learning more accessible, particularly for students from minoritised backgrounds. However, the experience of online/blended learning was not positively experienced by all students, with improved flexibility counterbalanced by feelings of isolation and difficulty maintaining motivation. Our study highlights the importance of access to high quality learning resources and teachers with the capability to create engaging online experiences where online learning is appropriate and feasible. Despite this being well recognised across the sector, our data emphasises the need for further investment and focus in this area during and post pandemic, particularly in the increasingly digitised higher education landscape.

All universities studied responded proactively to COVID-19 and provided learning, wellbeing, and financial support to their students both in the acute and chronic crisis phases of 2020. Artefact analysis identified a prioritisation of support in areas that would facilitate a student's continuation of learning (40% of all support) and support their wellbeing (39%), with proportionally less financial support (21%) with the majority of these services being openly accessible for students. Overall, very few supports were targeted specifically for student cohorts from minoritised backgrounds and as a result, generic services were less adequate in supporting the needs of students from minoritised backgrounds. Students from minoritised backgrounds were more likely to access learning support, though were less likely to be aware of the financial and wellbeing support available to them. They were also less likely to find some support useful to their needs. This is particularly concerning when we consider the increased negative impact of the pandemic on minoritised student wellbeing and financial situations.

Students reported strong preferences for how universities communicated during this crisis. Email was the primary channel of communication from universities during the pandemic, with core support communicated by the highest level of university leadership (Provost, VC, DVC, or PVC) and reinforced through email at cohort levels. All universities also established central webpages to support messaging. Despite significant messaging to students, very few messages were targeted to students from minoritised backgrounds which potentially explains why students from minoritised backgrounds had lower perceptions of the support available. Students frequently reported that mass communications felt impersonal and made them feel undervalued. Students offered valuable insights that encouraged universities to make communications more personal, consider tone and length, and to leverage diverse modalities to support engagement. Specifically, students were interested in “how” to access services and requested diverse communications providing this detail tailored to their context.

In a world where the effects of climate change are increasing the prevalence of fire, flood, hurricane, and other extreme events, there is much the higher education sector can and should take forward from COVID-19. Despite the challenges, our findings highlight that our sector’s response to supporting students during the pandemic offered unforeseen opportunities. We face at least two challenges now: the first, to maintain provisions and accommodations that continue to support students and recognise the ongoing impact of the pandemic; the second, to realign our policies, services, and support for educators to create a more agile, responsive, and inclusive education experience for our students with particular attention to students from minoritised backgrounds as we aspire for educational equity.

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Appendices

Appendix 1: Study institution details

Institution Type	Institution Location				
	New South Wales	Queensland	South Australia	Victoria	International
Research-intensive	University of Sydney		University of Adelaide		
Innovative	University of Technology Sydney	Griffith University	Flinders University	RMIT University Latrobe University	Colorado State University, US
Regional/Remote	Charles Sturt University	Central Queensland University	University of South Australia		University of Glasgow, UK

Appendix 2: Document analysis framework for data capture

SECTION	QUESTION	RESPONSE
Demographic questions	What is the document type?	Email, Institutional website, Overview document of support initiatives compiled internally by the institution, Other
	From which person/area of the university did the document come?	Vice Chancellor (VC), / President, Pro Vice Chancellor (PVC) / Vice President, Deputy Vice Chancellor (DVC), Unclear / unspecified, Other (please specify)
	What is the date on the document?	DD/MM
	Which university is the document from?	RMIT, University of Technology, Sydney University, University of Adelaide, Griffith University, Flinders University, Central Queensland University, Charles Sturt University, University of South Australia, University of Sydney, La Trobe University, University of Glasgow, Colorado State University
	Does the document specify a particular university campus?	Yes (Please specify), No, Unclear
	What mode of study is support initiative(s) specifically offered to?	Part time students, Full time students, Deferred students ,Not specified, Other
	Is the support initiative(s) specifically offered to a certain degree type?	Fully face-to-face / on campus degree, Fully online degree, Part face-to-face / on campus, AND part online degree, Not specified, Other
	Q8 What level of study is the support initiative(s) specifically offered to?	Undergraduate, Post-graduate, Not specified
	What year of progression is the support initiative(s) specifically offered to?	First year, Middle year(s), Final / graduating year, Not specified
	What enrolment type is the support initiative(s) specifically offered to?	Domestic, International, Not specified / Other
	What COVID-19 specific delivery is the support initiative(s) specifically offered to?	Onshore students, Offshore students, Other
	If the support initiative(s) is offered SPECIFICALLY AND ONLY to students who are in a particular minoritised group(s), which minoritised group is the support initiative offered to?	Not specified, Not specified to a minoritised group, FiF, Low SES, English as an additional language, Aboriginal and Torres Strait Islander, Other (Please specify)
Learning support	Which of the following does the document offer/detail and how is the support accessed?	
	Access to e-readings rather than textbooks	Openly accessible, Need to apply/get permission, Offered but access is unclear
	Provision of additional/alternate physical study spaces	
	Provision of additional/alternate virtual study spaces	
	Online learning support (e.g., Resources to develop the skills needed to learn online)	
	Online support for academic learning (e.g., Additional help with course work, assignments)	
	Increased flexibility to assessment practices (e.g., Alterations to special considerations, extensions, ‘no count’ fails etc.)	
	Peer tutoring/study assistance/mentoring	

SECTION	QUESTION	RESPONSE
	Please detail other learning support information which may be relevant	Free Text Box
Well-being support	Which of the following does the document offer/detail and how is the support accessed?	
	Counselling online	Openly accessible, Need to apply/get permission, Offered but access is unclear
	Wellbeing services online in addition to counselling (e.g., Peer group chats	
	Call out campaigns to check in on students	
	Engagement activities (e.g., Online trivia)	
	Employability activities (e.g., Online career events)	
	Wellbeing discussions/ support within academic classes	
	Other wellbeing support information which may be relevant	Free Text box
Financial support	Which of the following does the document offer/detail and how is the support accessed?	
	Financial support e.g., Loans, schemes, or grants	Openly accessible, Need to apply/get permission, Offered but access is unclear
	Fee waivers (Student Services Amenities Fee or tuition fees)	
	Emergency fund provision (e.g., No interest loan or rental assistance)	
	Loan of technology (e.g., Provision of laptops, microphone, Wi-Fi dongles etc.)	
	Food packages	
	Rebates of fees	
	Legal support/advice	
	Other financial support information which may be relevant	Free Text Box
Additional information	Is there any additional information provided in this document which may be relevant but not captured above?	Free Text box
	How easy to find was the information about this support?	Extremely easy, Somewhat easy, Neither easy nor difficult, Somewhat difficult, Extremely difficult
	Describe any additional comments on the navigation or usability of the website/resource in terms of issues you faced in locating and/or understanding the information provided in the document.	Free Text box

Appendix 3: Full student survey instrument

SECTION	QUESTION	RESPONSE*
Demographics	Which university do you attend?	Drop down list of universities / campuses in study
	Which [university name] campus do you attend?	
	Are you studying:	Part time, Full time, Deferred
	What discipline area(s) are you studying? (e.g., physics, psychology, education, medicine, biology etc.)	Open response
	Before COVID-19, was your degree delivered:	Fully face-to-face/on campus, Fully online, Part face-to-face/on campus AND part online
	During COVID-19, where have you been located during semester time?	The same location as my university campus, Within Australia but a different location from my university campus, Overseas
	Is your degree:	Undergraduate, Post-graduate by course work, Post-graduate by research
	In Semester 1 of 2020, what year of your degree were you in?	First year, Middle year(s), Final year
	Are you a domestic or international student?	Domestic, International, Prefer not to disclose
	Do you belong to a minoritised group? Examples of minoritised groups in Australian higher education include (but are not limited to): LGBTQIA+; religious minoritised such as Muslim; ethnic minoritised such as Japanese, Chinese, etc.; Aboriginal Australian; having a disability; having caring responsibilities; are a refugee; etc.	Yes, No, Prefer not to disclose
	If you answered yes above and feel comfortable doing so, please specify what minoritised group(s) you belong to.	Open response
	What is your gender identity?	Woman Man, Non-Binary (e.g., Gender queer, fluid, intersex), Prefer not to disclose
	How old are you?	Open response
	Are you the first in your immediate family to attend university? For example, no one (not your parents, grandparents, great grandparents etc.) As far as you know has been to university before you.	Yes, No, Prefer not to disclose
	Do you come from a low socioeconomic background? (i.e., Come from a low-income household)	Yes, No, Prefer not to disclose
	Is English an additional spoken language for you?	Yes, No, Prefer not to disclose
Belonging	To what extent do you agree with the below statements?	
	I feel like a real part of my university.	Strongly agree, Somewhat agree, Neither agree nor disagree, Somewhat disagree, Strongly disagree
	It is hard for people like me to be accepted at my university.	
	Other students at my university like me the way I am.	
	I can really be myself at my university.	
Experiences during COVID-19	How has your LEARNING EXPERIENCE changed as a result of COVID-19? For example, this could include attending classes, having suitable space to study, opportunities to actively participate in classes through discussions with peers or teachers, etc.	It got a lot worse, It got a little worse, It hasn't changed, It got a little better, It got a lot better
	How has your FINANCIAL SITUATION changed as a result of COVID-19? For example, this could be your income and employment, ability to pay rent, etc.	

SECTION	QUESTION	RESPONSE*
	How has your WELL-BEING changed as a result of COVID-19? For example, this could include caring responsibilities, access to healthcare, mental or physical health, motivation to study, etc.	
	OVERALL, how well SUPPORTED have you felt by your university during COVID-19?	Extremely supported, Very supported, Moderately supported, Not very supported, Not at all supported
	OVERALL, how USEFUL to you was the support offered by your university during COVID-19?	Extremely useful, Very useful, Moderately useful, Not very useful, Not at all useful
	Did you use the following LEARNING SUPPORT offered by your university during COVID-19 and how useful was that support?	
	Access to e-readings rather than textbooks	I used it and it was helpful, I used it, but it was not helpful, It was available, but I didn't use it, I don't think this was made available at my university
	Provision of additional/alternate physical/virtual study spaces	
	Online learning support (e.g., Resources to develop the skills needed to learn online)	
	Online support for academic learning (e.g., Additional help with course work, assignments)	
	Increased flexibility to assessment practices (e.g., Alterations to special considerations, extensions, 'no count' fails etc.)	
	Peer tutoring/study assistance/mentoring	
	Did you use the following WELL-BEING SUPPORT offered by your university during COVID-19 and how useful was that support?	
	Counselling online	I used it and it was helpful, I used it, but it was not helpful, It was available, but I didn't use it, I don't think this was made available at my university
	Wellbeing services online in addition to counselling (e.g., Peer group chats)	
	Call out campaigns to check in on students	
	Non-academic engagement activities (e.g., Online trivia)	
	Employability activities (e.g., Online career events)	
	Wellbeing discussions/ support within academic classes	
	Did you use the following FINANCIAL SUPPORT offered by your university during COVID-19 and how useful was that support?	
	Financial support through bursaries	I used it and it was helpful, I used it, but it was not helpful, It was available, but I didn't use it, I don't think this was made available at my university
	Fee waivers (Student Services Amenities Fee or tuition fees)	
	Emergency fund provision (e.g., No interest loan or rental assistance)	
	Loan of technology (e.g., Provision of laptops, microphone, Wi-Fi dongles etc.)	
	Food packages	
	What other support that was not listed above did you use and how useful was it?	Open response
	How could your university improve the support it offered you during COVID-19? (For example, was there support you needed which the university didn't offer?)	
	Thinking about 2020, how did the support you needed or used change between Semester 1 and Semester 2?	
	What were the three best aspects of your university experiences during COVID-19?	
	What were the three most challenging aspects of your university experiences during COVID-19?	
*Multiple choice questions were select one option only unless otherwise specified		

Appendix 4: Minoritised group coding in analysis

MINORITISED CATEGORY CODE	EXAMPLES OF PARTICIPANT ENTRIES CLASSIFIED WITHIN CODE
Aboriginal Australian	Indigenous, Aboriginal, Australian Aboriginal
care leaver	forgotten generation, care leaver, orphanage
carer	caring responsibilities, single parent, parent
lives with a disability	living with a disability, disability, individual with ability accommodations, disabled
speaks English as a second language	language other than English spoken at home, CALD (culturally and linguistically diverse)
health issues	mental illness, chronic illness
LGBTQIA+	LGBT (and other acronym variations), queer, asexual, bisexual, transgender, nonbinary
mature student	mature age student
Native American	Native American, Alaska Native, or Indigenous
neurodiverse	neurodiverse, neurodivergent, autistic, ASD
racial or ethnic minoritised	FiF immigrant, Asian, originated from Africa
refugee	refugee background
religious minoritised	Muslim, Sikh, Hindu

Appendix 5: Additional findings from artefact analysis

Appendix 5A: Learning support results from the artefact analysis

LEARNING SUPPORT CATEGORY	OPENLY ACCESSIBLE		BY APPLICATION / PERMISSION		OFFERED BUT ACCESS IS UNCLEAR		TOTAL	
Access to e-readings rather than textbooks	21.43%	3	14.29%	2	64.29%	9	4.01%	14
Provision of additional/alternate physical study spaces	61.11%	44	8.33%	6	30.56%	22	20.63%	72
Provision of additional/alternate virtual study spaces	39.68%	25	19.05%	12	41.27%	26	18.05%	63
Online learning support	46.81%	22	10.64%	5	42.55%	20	13.47%	47
Online support for academic learning	54.05%	20	18.92%	7	27.03%	10	10.60%	37
Increased flexibility to assessment practices	42.50%	17	27.50%	11	30.00%	12	11.46%	40
Peer tutoring/study assistance/mentoring	36.00%	9	16.00%	4	48.00%	12	7.16%	25
Other (please specify)	76.47%	39	5.88%	3	17.65%	9	14.61%	51
Total	51.29%	179	14.33%	50	34.38%	120	-	349

Appendix 5B: Wellbeing support results from the artefact analysis

WELLBEING SUPPORT CATEGORY	OPENLY ACCESSIBLE		NEED TO APPLY/GET PERMISSION		OFFERED BUT ACCESS IS UNCLEAR		TOTAL	
Counselling online	67.44%	29	18.60%	8	13.95%	6	12.76%	43
Wellbeing services online in addition to counselling (e.g., peer group chats)	54.24%	32	13.56%	8	32.20%	19	17.51%	59
Call out campaigns to check in on students	63.41%	26	4.88%	2	31.71%	13	12.17%	41
Non-academic engagement activities (e.g., online trivia)	33.33%	10	16.67%	5	50.00%	15	8.90%	30
Employability activities (e.g., online career events)	12.50%	2	56.25%	9	31.25%	5	4.75%	16
Wellbeing discussions/ support within academic classes	54.84%	17	6.45%	2	38.71%	12	9.20%	31
Student advocacy services	33.33%	5	13.33%	2	53.33%	8	4.45%	15
Social media campaigns	66.67%	12	0.00%	0	33.33%	6	5.34%	18
Other	84.52%	71	5.95%	5	9.52%	8	24.93%	84
Total	60.53%	204	12.17%	41	27.30%	92	-	337

Appendix 5C: Financial support results from the artefact analysis

FINANCIAL SUPPORT CATEGORY	OPENLY ACCESSIBLE		NEED TO APPLY/GET PERMISSION		OFFERED BUT ACCESS IS UNCLEAR		TOTAL	
Financial support e.g., loans or grants	25.53%	12	36.17%	17	38.30%	18	26.26%	47
Fee waivers	11.76%	2	52.94%	9	35.29%	6	9.50%	17
Emergency fund provision	40.00%	14	28.57%	10	31.43%	11	19.55%	35
Loan of technology	6.67%	1	33.33%	5	60.00%	9	8.38%	15
Food packages	21.74%	5	4.35%	1	73.91%	17	12.85%	23
Rebates of fees	0.00%	0	0.00%	0	100.00%	3	1.68%	3
Legal support/advice	66.67%	2	0.00%	0	33.33%	1	1.68%	3
Other	27.78%	10	25.00%	9	47.22%	17	20.11%	36
Total	25.70%	46	28.49%	51	45.81%	82	-	179

Appendix 5D: Website useability

Artefact analysis for website 'ease of access' was determined using a two-click radius. Overall, 39% provided *extremely easy access* to support initiatives for students, with a further 18% inside a two click radius being *somewhat easy* to access. Much of the analysis suggested the communication of support initiatives was timely and accessible. The key points in these communications were characterised by:

- quick and easy to read and understand information
- active links, sympathetic tone, and professional, unbiased directives
- information about government requirements alongside university responses
- links to university websites and follow-up initiatives.

The remaining 43% were categorised as *neither easy nor difficult*, with issues such as:

- lengthy or repetitive information
- a lack of follow-up links
- broken links
- links which looped students back to the same or irrelevant pages

These issues likely made it difficult for students to access information quickly in times of stress.

Appendix 6. Demographics of students surveyed

Appendix 6A: Demographics of all students surveyed

DEMOGRAPHIC	SUBCATEGORY	TOTAL		RESEARCH-INTENSIVE				INNOVATIVE								REGIONAL/REMOTE						INTERNATIONAL			
				University of Sydney (*n*=161)		University of Adelaide (*n*=425)		Griffith University (*n*=248)		Flinders University (*n*=409)		La Trobe University (*n*=414)		RMIT (*n*=160)		Central Queensland University (*n*=43)		Charles Sturt University (*n*=139)		University of South Australia (*n*=357)		Colorado State University (*n*=113)		University of Glasgow (*n*=55)	
Age	Range	16 - 78		17 - 50		18 - 78		18 - 74		18 - 72		16 - 77		18 - 53		18 - 54		17 - 68		18 - 72		18 - 58		18 - 38	
	Average	26.9		23.1		26.0		27.1		27.9		28.2		24.4		29.4		32.7		27.8		21.7		24.5	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Minoritised	Yes	1008	40%	82	51%	222	52%	106	43%	170	42%	122	29%	76	48%	11	26%	37	27%	98	27%	67	59%	17	31%
	No	1302	52%	63	39%	158	37%	119	48%	204	50%	262	63%	68	42%	28	65%	95	68%	229	64%	41	36%	35	64%
	Prefer not to disclose	86	3%	3	2%	17	4%	7	3%	19	5%	13	3%	7	4%	1	2%	5	4%	9	3%	2	2%	3	5%
	Unsure	126	5%	13	8%	28	7%	15	6%	16	4%	17	4%	8	5%	3	7%	2	1%	21	6%	3	3%	0	0%
	NA	2	0.1%					1	0%					1	1%										
Gender	Woman	1715	68%	118	73%	227	53%	174	70%	305	75%	314	76%	97	61%	35	81%	101	73%	222	62%	77	68%	45	82%
	Man	743	30%	37	23%	185	44%	68	27%	96	23%	91	22%	59	37%	8	19%	31	22%	130	36%	28	25%	10	18%
	Non-Binary	34	1%	2	1%	9	2%	4	2%	4	1%	4	1%	1	1%	0	0%	3	2%	2	1%	5	4%	0	0%
	Prefer not to disclose	29	1%	4	2%	4	1%	1	0%	4	1%	5	1%	1	1%	0	0%	4	3%	3	1%	3	3%	0	0%
	NA	3	0.1%					1	0%					2	1%										
Study mode	Full time	2093	83%	141	88%	386	91%	209	84%	347	85%	323	78%	143	89%	31	72%	70	50%	291	82%	99	87%	53	96%
	Part time	390	16%	19	12%	34	8%	35	14%	57	14%	86	21%	15	9%	11	26%	62	45%	55	15%	14	12%	2	4%
	Deferred	21	0.8%	1	1%	1	0%	2	1%	2	0%	2	0%	2	1%	1	2%	3	2%	7	2%	0	0%	0	0%
	Other	18	0.7%	0	0%	4	1%	2	1%	3	1%	3	1%	0	0%	0	0%	3	2%	3	1%	0	0%	0	0%
	NA	2	0.1%															1	1%	1	0%				
Level of study	Undergraduate	1759	70%	115	71%	240	56%	224	90%	244	60%	326	79%	124	78%	33	77%	98	71%	222	62%	108	95%	25	45%
	Graduate (US only)	5	0.2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	5	4%	0	0%
	Postgraduate taught (PGT)	552	22%	36	22%	130	31%	16	6%	129	32%	51	12%	31	19%	7	16%	27	19%	96	27%	0	0%	29	53%
	Postgraduate by research (MRes or PhD)	201	8%	9	6%	55	13%	7	3%	35	9%	37	9%	4	3%	3	7%	13	9%	37	10%	0	0%	1	2%
	NA	7	0.3%	1	1%			1	0%	1	0%			1	1%			1	1%	2	1%				
Status	Domestic	1783	71%	107	66%	103	24%	189	76%	262	64%	413	100%	154	96%	35	81%	133	96%	247	69%	108	95%	32	58%
	International	724	29%	51	32%	321	76%	57	23%	144	35%	0	0%	5	3%	8	19%	4	3%	107	30%	5	4%	22	40%
	Prefer not to disclose	14	0.6%	2	1%	1	0%	1	0%	3	1%	1	0%	1	1%	0	0%	2	1%	2	1%	0	0%	1	2%
	NA	3	0.1%	1	1%			1	0%											1	0%				
FiF	Yes	889	35%	34	21%	113	27%	99	40%	161	39%	168	41%	65	41%	24	56%	55	40%	125	35%	30	26%	15	27%
	No	1556	62%	118	73%	302	71%	141	57%	231	56%	236	57%	89	56%	19	44%	79	57%	219	61%	82	72%	40	73%

DEMOGRAPHIC	SUBCATEGORY	TOTAL		RESEARCH-INTENSIVE				INNOVATIVE								REGIONAL/REMOTE						INTERNATIONAL			
				University of Sydney (*n*=161)		University of Adelaide (*n*=425)		Griffith University (*n*=248)		Flinders University (*n*=409)		La Trobe University (*n*=414)		RMIT (*n*=160)		Central Queensland University (*n*=43)		Charles Sturt University (*n*=139)		University of South Australia (*n*=357)		Colorado State University (*n*=113)		University of Glasgow (*n*=55)	
	Prefer not to disclose	36	1%	8	5%	6	1%	1	0%	9	2%	6	1%	2	1%	0	0%	3	2%	1	0%	0	0%	0	0%
	Unsure	41	1.6%	1	1%	4	1%	6	2%	8	2%	4	1%	3	2%	0	0%	2	1%	12	3%	1	1%	0	0%
	NA	2	0.8%					1	0%					1	1%										
Low SES	Yes	818	32%	32	20%	107	25%	90	36%	146	36%	137	33%	85	53%	23	53%	41	29%	108	30%	38	33%	11	20%
	No	1330	53%	105	65%	236	56%	125	50%	192	47%	211	51%	54	34%	17	40%	84	60%	197	55%	67	59%	42	76%
	Prefer not to disclose	163	6%	11	7%	36	8%	13	5%	33	8%	27	7%	7	4%	1	2%	9	6%	22	6%	2	2%	2	4%
	Unsure	211	8%	13	8%	46	11%	19	8%	38	9%	39	9%	13	8%	2	5%	5	4%	30	8%	6	5%	0	0%
	NA	2	0.1%					1	0%					1	1%										

Appendix 6B: Frequencies of minoritised groups that the students reported belonging to.

Minoritised group	N	Percentage
Speaks English as an Additional Language	981	50.7%
FiF to attend university	889	45.9%
Low SES	819	42.3%
Racial or ethnic minoritised	425	22.0%
LGBTQIA+	183	9.5%
Disability	123	6.4%
Religious minoritised	122	6.3%
Carer	37	1.9%
Aboriginal Australian	34	1.8%
Having health condition(s)	16	0.8%
Refugee	14	0.7%
Neurodiverse	12	0.6%
Native American	8	0.4%
Mature student	7	0.4%
Care leaver	3	0.2%
Domestic violence survivor	1	0.1%
Veteran	1	0.1%

NOTE: the percentages don't add up to 100%, as many students reported belonging to more than one minoritised.

Appendix 6C: Demographics of students from minoritised vs non-minoritised backgrounds

		Minoritised background (single category, *n*=805)	Minoritised background (intersectional, *n*=1131)	Non-minoritised background (*n*=507)
Gender	Female	548	757	358
	Male	234	343	147
	Non-binary	12	22	0
	Prefer not to disclose	10	9	1
Age	Range	16 - 77	17 – 76	17 - 78
	Average	26.4	27.9	26.1
Study Proportion	Full time	687	935	406
	Part time	105	173	97
Level	Undergraduate	561	749	382
	Postgraduate	243	379	123
Status	Domestic	535	708	473
	International	266	417	32

Appendix 7. Additional findings from quantitative survey items

Appendix 7A: Means and standard deviations of the responses to questions about belonging, by minoritised background.

	Overall M(SD)	M(SD) for students from non-minoritised backgrounds	M(SD) for students from minoritised backgrounds	M(SD) for students from intersectional minoritised backgrounds
I feel like a real part of my university.	3.44 (1.11)	3.49 (1.05)	3.44 (1.12)	3.49 (1.12)
It is hard for people like me to be accepted at my university. (reverse-scored)	3.64 (1.14)	4.07 (1.01)	3.53 (1.15)	3.45 (1.15)
Other students at my university like me the way I am.	3.73 (0.91)	3.91 (0.87)	3.68 (0.92)	3.69 (0.91)
I can really be myself at my university.	3.72 (1.05)	3.85 (0.96)	3.69 (1.07)	3.70 (1.08)
Overall	3.63 (0.77)	3.83 (0.72)	3.59 (0.78)	3.58 (0.77)

Appendix 8: Additional findings from qualitative survey items

Appendix 8A: 'Other' subthemes from student open comments regarding what worked (numbers represent individual student responses, *n*=378)

Subtheme	Count	%	Description	Quote
Staff	257	68	The compassion, support, and extra effort put in by university staff to support students	*Teachers seeing value in someone who is at 1%, literally wits end, has kept me enrolled and progressing towards my dreams.* (Online, part-time middle year postgraduate student from a minoritised background—English as an additional language—at an innovative university)
No 'best aspects'	106	28	Explicitly stated that there were no good aspects of learning during COVID-19	*Literally nothing. Like I'm really trying to think of anything, but it was really just a full year of mental breakdowns, stress, and no help.* (First year undergraduate student from an intersectional minoritised background—low SES and FiF—at an innovative university) *NIL - I feel the university has stripped the regional campus of its valued teaching staff. Students no longer feel a sense of belonging.* (Middle year undergraduate student from a FiF background at an innovative university)
General institutional support	26	7	Positive feedback on the approach of their university to support students	*Students' and workers' safety were put above education which I think was an amazing act from institutions focused on education.* (First year undergraduate student from a FiF background at a regional university)

Appendix 8B: 'Other' subthemes from student open comments regarding what didn't work (numbers represent individual student responses, *n*=182)

Subtheme	Count	%	Description	Quote
Difficulties accessing general institutional support	104	57	Although some students reported positive feedback on the approach of their university to support students, there were views which also showed that student needs and views were ignored by university administration during the pandemic resulting in difficulties accessing relevant support	*Difficulty in the initial period in the uni management not listening to students, how they insisted that we were back to a new normal as quickly as they could, and the attitude that they needed to save money rather than spending it on supporting staff and students* (Part-time first year undergraduate student at a regional university).
Inadequate support from staff	51	28	While some students reported compassion, support, and extra effort put in by university staff to support students, they also reported inadequate support	*I struggled to work with some of the university staff, some are very helpful, others made my life significantly more difficult.* (Middle year, part-time undergraduate student from an intersectional minoritised background—Chinese and speaks English as an additional language—at a regional university).
Specific challenges for students from minoritised backgrounds	23	13	Moving to online learning presented diverse challenges to students from minoritised backgrounds, e.g., students with disability or students speak English as an additional language.	*Being alone - mental health worse - so many steps needed every time my severe disability got in the way of completing assessment by deadline.* (Final year undergraduate student with a disability at an innovative university).

Appendix 8C: Findings within *a priori* themes from student open comments regarding changes over time

Learning

Of the three *a priori* codes, learning was most frequently identified under the changes in support question, with 330 individual text references (27% of coding for this question) from 312 unique students (26% of the students who answered). Of these responses, 136 (11% of coding for this question) were identified as positive and 107 (8% of coding for this question) negative. Within this *a priori* code there were four major themes identified. These focused on changes to supporting study online, changes to assessment strategies, changed expectations about learning in higher education during a pandemic, and the impact of staff (Table below)

The ability to support study online had positive comments outweigh negative ones (79 to 43 coded text references). This trend to improvement over time was supported by both staff and students becoming more adept at the process of studying and teaching online. Whilst there were improvements, for those students able to return to campus the perceived benefits of accessibility to support in face-to-face situations was still preferable.

Key learning subthemes from student open comments regarding changes over time (numbers represent individual student responses, *n*=1160)

Subtheme	Count	%	Description	Quote
Supporting study online	170	14	Impact of whether studying online was supported effectively with improved efficiencies and capabilities	*The classes were better prepared as teachers got used to the new format.* (Middle year undergraduate student from a FiF background at an innovative university)
Assessment strategies	99	8	Modifications to assessment types, submission procedures, or policies changed over time	*In semester one we could get our grades to be Non-Graded Passes which wasn't an option in semester two and I could argue we needed it more at the end of semester two as SA's harshest lockdown was in the middle of my exams at that time*. (Middle year undergraduate student from an intersectional minoritised—FiF, low SES, English as an additional language and from a racially minoritised group—at a regional university)
Changed Expectations	69	6	Either student expectations of requirements or university of students	*Class/workload expectations seem to have returned to normal levels and are not reflective of more challenging learning environments.* (Final year out-of-state undergraduate student from an intersectional background—LGBTQIA+ and racially minoritised— at an overseas university)
Staff	43	4	Impact of staff either from upskilling or redundancies	*Everyone [staff] got fired at the end of S1 and all our lecturers had their workload tripled and had to pretend they had time for us but there were no longer resources to help us outside of set class times specific to our assignments unless the lecturers went WAY above and beyond anything reasonably expected of them.* (Middle year undergraduate student from a minoritised background—FiF, low SES and LGBTQIA+—at an innovative university)

Assessment strategy changes were evenly coded between positive and negative experiences. In S1, when the pandemic was in crisis stage early on, the introduction of assessment alterations, perceived academic leniency in marking, changes to policy (such as non-graded pass and no fails recorded on academic transcripts) were common support strategies that were positively received by students.

Where these strategies continued to be offered in S2, students valued this response that recognised the continuation of pandemic regardless of the stage. Students did not appreciate when universities withdrew supports in S2. The most common assessment strategy that was withdrawn in S2 was a non-graded pass or no detriment policy. In students' eyes, they were still impacted by the pandemic and they perceived removal of successful strategies to be unfair, detrimental to their progression, and an inappropriate response as the pandemic continued. This sentiment held regardless of whether students remained in lockdown in S2 or not but was especially prominent for those who remained in lockdown.

> *[my course] remained online for the entire 2020 learning year. The first semester was met with support and help for students struggling, but semester 2 was met with no support, and the services offered in semester 1 (such as Non-Graded Passes) were not offered in semester 2. It felt like the university thought that students should have just 'adjusted' to the learning environment by semester 2. However, for me, semester 2 was the hardest and this was where the most support was needed. – Middle year undergraduate student from a minoritised background (FiF, low SES) at an innovative university.*

Adjustment to the rapid changes and continued flux of higher education across the year required a need for flexibility in expectations. The changes in student expectations for learning were more frequently discussed in a negative light (28 coded responses versus 15 positive). Whilst some students were able to adapt to this change, others were not adequately supported to do so. Where student expectations were positive, this was associated with them taking a proactive approach to seeking assistance early.

Educators were highly influential in creating both positive and negative changes in learning experiences across the year. Educators were identified as key providers of highly impactful support of student learning and experience. Unfortunately, the mass redundancies and layoffs at some institutions lead to negative effects on student learning that included reduced support for assessment either through lack of resources, lack of clarity, and lack of time.

Despite these examples of negative impacts, generally staff influences were 50% more positive. The main positive aspect was educators upskilled their capabilities to teach effectively online in S2. The other particularly positive experience that educators provided was where they recognised and demonstrated empathy and compassion for students, as discussed below.

Wellbeing

The second most frequently mentioned of the *a priori* themes was wellbeing and included 123 individual text references (10% of coding for this question) from 115 students (10% of students who answered). These fell into three themes—mental health, connectedness, and physical health (Table below).

There was a general decline in mental health across the year, which was more severe for those students who remained locked down and isolated from the university campus. However, the escalation in the number of students requiring counselling and general wellbeing support was often outstripped by demand, particularly in S2 where students felt these services remained insufficient and inaccessible:

> *They were either booked out or not enough availabilities to suit the online environment. – Middle year undergraduate student from a minoritised background (low SES) at an innovative university*

Connectivity was an important element of wellbeing with educators being a key liaison point for supporting student wellbeing given they were a regular point of contact between students and the university:

> *I think lecturers were more prepared for semester 2 than semester 1. I found that they were more prepared when dealing with wellbeing and mental health issues, and it made me feel supported as a student – First year undergraduate student from a minoritised background (FiF and low SES) at an innovative university*

The impact on physical health continued across the year. Pandemic fatigue set in and students' physical wellbeing continued to be problematic with development of new issues associated with long-term online learning. International students particularly were hard hit

with food shortages though this experience and struggled when support was withdrawn in S2.

Key wellbeing subthemes from student open comments regarding changes over time (numbers represent individual student responses, *n*=1160)

Subtheme	Count	%	Description	Quote
Mental Health Support	59	5	Provisions to support mental health escalated and need was unmet	*Semester 2 required more wellbeing support as students were worn down. I needed more support from counselling, which was not available to me due to limited number of counsellors* (Middle year undergraduate from a FiF background at a research-intensive university)
Connectedness	43	4	Influence of personal connection to peers and staff	*Lecturers and tutors also provided more opportunities to ask questions, get advice and seek counselling.* (First year undergraduate student from an intersectional background—English as an additional language and religious minoritised group—at a research-intensive university)
Physical health	17	1	Support for physical health or food provision	*In Semester 1 I got money from university and food vouchers, it was very helpful. But in 2nd semester I did not get much food assistance and being a single mother, it was hard for me to manage.* (First year postgraduate international student from a minoritised background — FiF and English as an additional language—at an innovative university)

Finance

Finance was the least frequently mentioned theme with 78 individual text references (6% of coding for this question) from 77 unique students (7% of students who provided evidence of changes). Three themes arose—bursaries/scholarships, fee adjustment, and technology resources—which became problematic when withdrawn over time (Table below).

Financial support was available early in the crisis in S1 in some institutions whereas in others the financial support took until S2, but was still welcomed. Particularly for international students, access to financial supports were delayed but when they became available this removed additional stressors. However, when student situations had not changed but offerings were removed in S2 this led to confusion, disappointment, and detriment. For postgraduate students who often relied on tutoring work, the financial provisions were insufficient:

> *As a student employee, they reduced my work hours dramatically due to a limited budget with COVID-19. Then they proceeded to spend their "limited" budget on things that do nothing to improve our situation and continue to tell us they cannot give us more hours. Those hours are very much needed to be able to pay for college and living expenses. Because they got removed, I was forced to get an additional off campus job. Now I am a full-time student with two jobs and trying to balance that with COVID-19 is very stressful. – Middle year out-of-state undergraduate student from a gender non-binary background at an overseas university*

The waiving of fees for courses or student services as also an area of common but mixed experience across the year. For some students there were delays. For others, where fees for S1 that had been suspended or reduced where this was not also applied to S2 despite many of the restrictions remaining and access blocked.

> *They brought back student fees in semester 2, which was unusual because, apart from the online textbooks, we still weren't able to use many of the other student services – First year undergraduate student from a minoritised background (FiF and low SES) at an innovative university*

Finance subthemes from student open comments regarding changes over time (numbers represent individual student responses, *n*=1160)

Subtheme	Count	%	Description	Quote
Bursaries/Scholarships	32	3	Impact of funding provisions	*Financial support was non-existent. Still needed financial support after semester 1 though less options afterwards* (Middle year undergraduate student from a minoritised background—FiF, low SES and LGBTQIA+—at an innovative university)
Fee adjustment	12	1	Impact of fee adjustment schemes	*Service fee waiver did not apply after semester one* (Part-time final year undergraduate student at an innovative university)
Technology resources	11	1	Impact of technology provision	*Work from home equipment offered and supplied* (Part-time first year postgraduate student at a regional university)

Appendix 8D: Suggestions made by students as to how support mechanisms could be improved

Students were also asked '*How could your university improve the support it offered you during COVID-19?'*. Regarding their improvements, 1474 provided a written response to this question. Percentages of students are calculated using this sample size unless stated otherwise. Across all these individual responses, each improvement was coded into a theme meaning the number of text references doesn't match the number of responses/students. The total number of text references coded to a theme for this question was 1456. Coding percentages are calculated using this total. Data were less detailed for these responses and subthemes were only generated for the 'Other' theme. Learning was the most frequently mentioned theme in these responses, followed by financial, then wellbeing, with other being the least frequent.

Learning

For improvements, learning was also the most frequently mentioned theme and included 476 individual text references (33% of coding for this question) from 463 students (31% of students who answered this question). The majority of these responses, however, just reiterated what was wrong with the current support—overlapping significantly with the worst aspects response—rather than suggesting improvements. Where students did suggest improvements, most students desired greater educator flexibility related to deadlines and grading, and better use of and access to technology (software and hardware) to support learning. Students particularly struggled with educators who were either unwilling or unable to provide engaging class content due to lack of preparation or training. Students who

remained on campus were more likely to cite concerns related to adequate physical places to study. One student suggested:

> *Provide more places on campus to study. The library is full often and it is extremely difficult to study at home. Most of the study rooms are booked far in advance as well, so coming all the way to campus only to have large lines and no place to study makes me feel very unsupported by the school, especially since I pay so much money to go here. —Post-graduate student from a research-intensive university*

In some cases, students felt their universities supported their learning, however, they noticed a lack of support for the educators delivering the content. One student's balanced reflection showed empathy for educators:

> *I think support for students, at least from my experience, was quite good. However, it seemed like there was little support for teachers which reflected on our quality of learning. —First year undergraduate student from a research-intensive university*

Two groups of students described having particularly high barriers to learning—students with disabilities and international students. Students with disabilities cited a lack of learning accommodations or support resources. International students reported feeling disconnected from campus, educators, peers, and support resources. They described feeling that their unique circumstances were not considered; one specific example of how this was experienced related to synchronous instruction and times zones:

> *Keep a variety of classes to suit different time zones. It's not my fault that I'm in a time zone where I have to wake up at 4am for a class. The university should be flexible. I am considering transferring to another university. — First year international undergraduate student from a research-intensive university*

Other unique learning needs by identity which surfaced where students who are FiF and carers. One student from a FiF background expressed a desire for universities to improve: "*recognition of cultural awareness and impacts on first-gen students. We cannot be all lumped up together."* (Middle year undergraduate student from a Latinx, FiF, low SES background who speaks English as an additional language at an overseas university). Another highlights the challenges parents, and particularly single parents, felt as students during COVID-19:

> *I am a single parent with four children who were with me 24/7 during lockdown who needed either a lot of support for distance learning or constant supervision and input from me. This made it extremely difficult to sit assessments that were timed during the day. The stress from doing tests and exams while being constantly interrupted by children has had a severe ongoing impact of my ability to focus and learn. Being able to sit assessments in a more flexible timeframe, instead of during the day while parenting, would have helped me a great deal. — Middle year undergraduate student from an intersectional minoritised background (carer, gender non-binary and FiF) at a research-intensive university*

Overall, improving learning, as evidenced by this being the most frequently noted theme in this question, was the priority for student respondents.

Wellbeing

When it came to suggesting improvements, wellbeing was the third most frequently mentioned theme and included 253 individual text references (17% of coding for this question) from 242 students (16% of students who answered this question). As with the

previous theme, most responses were lamenting the problems rather than suggesting improvements.

While some students reported acute mental health crises, others reported loneliness and social isolation. One student simply wanted workshops to talk to other people and another wished the university would organize online events for remote students to socialize in a casual setting. A theme of compounding stress was noted, and tensions between holistic health and academic activities were interrelated. For example:

> *The university could have made mental health resources more available to students and staff. I found COVID-19 more taxing on my own personal and mental state than academic state. This in turn might have lowered my grades in some classes. —Final year undergraduate student from an intersectional minoritised background (gender non-binary, LGBTQIA+, racially minoritised) at a research-intensive university*

It was clear that the mounting stress and anxiety impacted many students in dramatic ways: *I was suicidal part of 2020 and homeless and relocated a few times. Hence, I didn't reach out for help because I was just keeping my head above water and felt I couldn't "tell it all to a stranger"* (First year undergraduate student from an intersectional minoritised background—FiF, mature-age student from low SES and care leaver background with chronic medical issues—at an innovative university). The point that not all students felt comfortable or actualised to reach out for help is important for institutions and educators to keep in mind.

Financial

Related to suggesting improvements, financial was the second most frequently mentioned theme and included 454 individual text references (36% of coded text for this question) from 443 students (14% of students who answered this question).

More need for meaningful financial support was commonly mentioned by universities reducing tuition fees: *"the university should provide an environment where students can study without worry by reducing university tuition fees"* (First year postgraduate international student at a research-intensive university).

Students suggested seemingly logical and unproblematic accommodations, for example, one student who asked for billing instalments: *I would very much like to have my fees paid in instalments rather than as a full amount due to losing my job. However, my university did not offer that fee option* (Online part-time first year undergraduate student who speaks English as an additional language at a regional university). Similarly, a student suggested:

> *I think the university should be more flexible with the tuition fee due dates. If the students were unable to pay their fee by the given due date, then the university should enquire with them personally and allow them an extension period to pay the fee according to their needs (First year postgraduate international student at a research-intensive university).*

Finally, one student selflessly noted that financial support allocated equally to all students is functionally inequitable: *It would have been more effective, I think, if the emergency funds that were sent to me were instead sent to someone who really needed it* (Online part-time middle year undergraduate out-of-state student at an overseas university).

These kinds of obvious policy changes would not have cost universities and would have been appreciated by students who often found universities inflexible. Strong responses were seen in this theme when it came to international students who reported acute financial stress without adequate support from institutions. Students who responded to this question articulated financial stresses as drivers of other wellbeing or learning stressors.

Other

For improvements, this theme included 375 references (26% of coding for this question) from 371 students (25% of students who answered this question). All text references in this theme were categorised into subthemes. The table below shows the frequencies and percentage of these subthemes, with subtheme descriptions and indicative quotes. Notably, no student who responded to this question felt their university communicated too much, rather these students reported frustrations with under-communication.

Improvements subthemes from student open comments (numbers represent individual student responses, *n*=429)

Subtheme	Count	%	Description	Quote
No improvement needed	217	58	Students reported universities did a good job during a challenging time	*I was mostly satisfied with the university's infrastructural and financial support and was able to carry on with my work almost immediately* (Middle year undergraduate student who speaks English as an additional language at a regional university).
Communication	136	36	Desire more communication from universities across more diverse modalities (not just mass e-mails)	*More contact (especially by phone rather than email) letting us know our options for taking leave of absence etc.* (Middle year postgraduate student from an intersectional minoritised background—low SES, Chinese, and LGBTQIA+ with a disability—at an innovative university).
Individualised communication	22	6	Desired individualised and more personal communication to help students feel seen	*I only received generalised emails about possible support. I was never contacted or aware of what was actually available to myself. As a result, I have not made any use of any of the support or services.* (Middle year postgraduate student from an intersectional minoritised background—low SES and FiF—at a regional university).