

Student experiences of online learning due to Covid-19: The social and educational role of the on-campus learning experience

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Background: Five weeks into the start of a new academic year, the University of Canterbury (UC) in Christchurch, New Zealand experienced a rapid transition from traditional on-campus education to online distance learning. On-campus lectures were replaced by a combination of interactive live-streamed Zoom sessions, pre-recorded classes, compiled videos and laboratory sessions, and other activities. It was unknown how students' learning was impacted by this sudden change to an online environment. **Purpose:** Our research sought to explore the main challenges perceived by students in the transition to an online learning environment in order to gain an understanding of how teaching staff can best address student needs in future emergency situations. **Methods:** A two part survey was electronically distributed to students enrolled in a 4-year engineering programme and a 3-year sport coaching programme at the University of Canterbury. **Results:** Student responses indicated a clear desire for structured, in-person delivery of tertiary education. The ability to gain rapid feedback from lecturers was missed, as was social interaction and informal learning among peers. The use of timetabled tutorials and small-stakes assessment items helped facilitate regular contact with the course material and interaction among students and between students and teaching staff. Assessment practices which constrained time to respond to questions, although useful in limiting opportunities for cheating, was unpopular with students and was associated with increased anxiety. Students preferred untimed assessments, such as written assignments and take-home tests. In addition, it was found to be important to provide practise opportunities for modified-for-online assessments prior to formal testing to help reduce stress in an already stressful environment.

Keywords: Covid-19, emergency teaching, distance learning, student experience, student transition

Introduction

In recent years there has been a growing discourse around the place of formal in-person lectures in an increasingly online and self-paced world (Rabin, Kalman & Kalz, 2020). Online tertiary education institutes are rising in popularity due to their flexibility, niche degree offerings, and self-paced structure (Koksal, 2020). Traditional tertiary education largely consists of formally-timetabled, lecture-based delivery of course material, with a variety of support materials and activities, including tutorials, practical sessions, online resources, course websites, recorded lectures, and made-for-purpose videos. Assessment and opportunities to gain feedback occur through in-class discussions, quizzes, and assignments that are graded offline. Attending live lectures also gives students the ability to interact with the lecturer and peers to receive immediate responses to questions and to clarify understanding of course material. With today's online resources, however, the vast majority of this "in-person experience" can hypothetically be replicated in a virtual environment, and when an emergency occurs, learning is not interrupted. Online

educational institutes recognise this, and thus the online education market is estimated to exceed US\$350 billion by 2025 (Koksal, 2020).

This begs the question: Given our current and growing electronic delivery capability, if an emergency event forced university education to be delivered online, is there any need to return to traditional delivery when the emergency is over? The Covid-19 pandemic provided us an opportunity to explore this question.

On 25 March 2020 New Zealand instituted a country-wide lockdown to combat the spread of Covid-19. The lockdown started in the middle of a teaching semester, and necessitated New Zealand tertiary institutions to move all education off-campus and use remote teaching pedagogies. Our research explores how students were affected by changing from on-campus education among their peers (Term 1 of the semester) to a distance learning environment (Term 2 of the semester). In particular, we examined the effect of changes to teaching and communication of information related to course material and the impact on expectations, social experiences of learning, and student satisfaction with online learning during the lockdown.

University campuses around the world were closed to in-person learning due to the pandemic, but how universities responded to the abrupt change in delivery varied (Hodges et al., 2020). Technologies such as video conferencing tools, email, and web-based learning management systems enabled delivery of the majority of course curricula; however, research from the national Māori University Student Association (Akuhata-Huntington, 2020) as well as feedback from other universities' student associations (Lenihan-Ikin, 2020) indicates students' experiences were adversely affected due to poor internet access, inadequate technology, social factors in the home, lack of community, closing of labs, cancellation of activities such as field trips, and lack of preparedness for online distance learning.

Previous research has demonstrated a preference from tertiary students for live lectures over recorded presentations as well as stronger academic performance from in-person lecture attendees (Simcock et al., 2017). Students have also been found to access online resources only as a supplement to normal lecture attendance, with the use of online resources having little to no influence on a student's decision to attend timetabled sessions (Billings-Gagliardi & Mazor, 2007; Nast et al., 2009; Traphagan, Kucsera & Kishi, 2010).

Morrone and Young (2021) have explored a number of issues and institutional responses in the context of the Covid-19 pandemic. Similarly, our research sought to explore the experience of students during the Covid-19 lockdown in New Zealand. We specifically sought to answer:

- 1) What were the main challenges perceived by students in the transition to an online learning environment?
- 2) How can teaching staff best address student needs to support learners transitioned to distance learning in emergency situations?

Methods

UC divides the calendar-based academic year into two semesters and divides each semester into two distinct terms of six weeks each, separated by a two-week break. Semester 1 from mid-February to the end of May thus has Term 1 and Term 2, and Semester 2 from mid-July to the end of October has Term 3 and Term 4. The aim of the first survey (n=78 respondents), distributed shortly after the announcement of the New

Zealand lockdown four weeks into Semester 1, was to gain information about students' experiences of predominantly on-campus delivery in Term 1 of 2020. The second survey (n=258 respondents) was opened immediately after Semester 1 finished, capturing responses to distance learning that occurred in Term 2.

In both surveys, the students were asked a combination of Likert-style questions about their perceptions of various technologies, communication methods, and assessment strategies used in their courses. Several open text questions were used to gather more detailed information about their experiences of learning in an unplanned distance environment.

Likert-style questions asked students to rate their agreement with statements regarding aspects of their learning experiences, including; communication methods, assessment, and practical activities. All such statements were framed in a positive manner, with seven available response options: Strongly Agree, Agree, Slightly Agree, Neither Agree nor Disagree, Slightly Disagree, Disagree, Strongly Disagree. Thematic analysis (Clarke & Braun, 2017) was used to analyse open text questions by reading through comments and then categorising into emergent themes.

We received ethics approval for both surveys and adjusted the time frames as well as the cohorts surveyed based on the Human Ethics Committee's recommendations. Students were given full disclosure on how the results would be used prior to their participation, and they were advised where they could seek support if they found any of the questions triggering. We took care to frame all questions in a positive manner, asking for their agreement with the effectiveness of a statement rather than asking what went wrong.

Results

There was a significant difference in student experiences of on-campus and distance learning, with 86% of students stating they felt their on-campus learning experience was positive or strongly positive, but only 19% stating the same for distance learning. The seven available response options were: Strongly Agree, Agree, Slightly Agree, Neither Agree nor Disagree, Slightly Disagree, Disagree, Strongly Disagree. Figure 1 shows the full distribution of student responses.

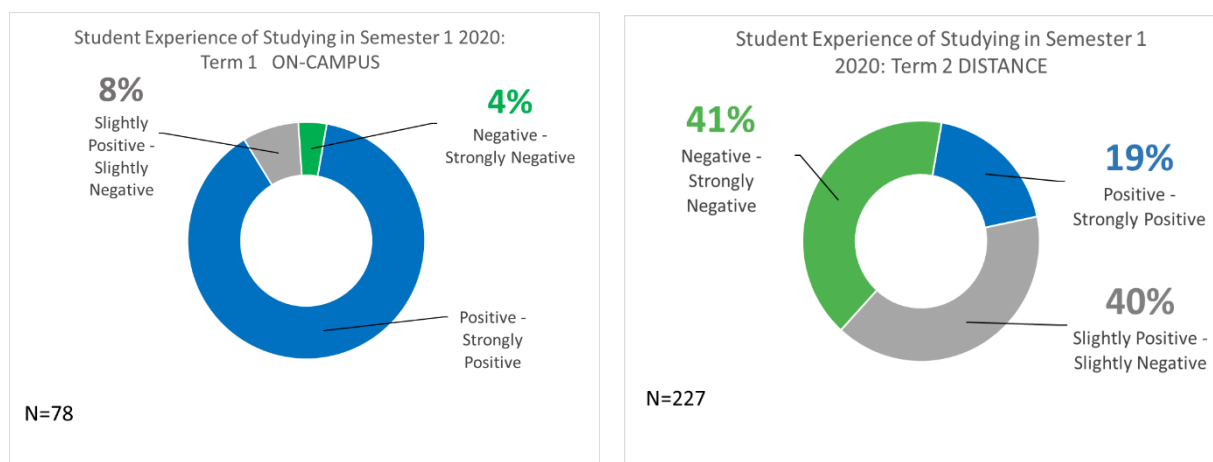


Figure 1. Student experiences of study on-campus and by distance in Semester 1 2020

Several themes emerged as to the reasons Term 2 of the semester (distance learning) was perceived as negative or strongly negative by 41% of the students. The challenges to students included time management, self-motivation, study environment, internet difficulties, loss of community, lack of communication and ability to access support, loss of practical experiences, and frustration with assessment methods.

Two open questions in Survey 2 explored both the positive and challenging aspects of distance learning:

1. What were the best aspects of Term 2 distance learning for you?
2. What were the most challenging, or least positive, aspects of Term 2 distance learning for you?

Thematic analysis of responses to these questions revealed the most positive and most challenging aspects of online learning during the lockdown. Emergent themes and frequency of reference to each theme are shown in Table 1 (positive aspects), and Table 2 (negative aspects).

Positive aspects of distance learning

There were far fewer responses to queries about the positive aspects of distance learning; however, some clear themes around effectiveness of provided resources, support from caring lecturers, and flexibility to organise one's own time emerged as can be seen in Table 1 and Figure 2.

Table 1

Emergent themes in student responses to survey question: "What were the best aspects of Term 2 distance learning for you?"

Theme	Response frequency
Flexibility with organising one's own time. Included 6 responses regarding sleeping in and avoiding 8am lectures.	26
Ability to slow down/pause/speed up recorded sessions and watch at own pace.	23
Use of Zoom for live lectures and group discussions.	14
Assessment practices: online and open book exams, changes to assessment types.	14
General provision of pre-recorded lectures and tutorials.	13
Lecturer factors: positive approaches, clear communication, course design.	12
Ability to work from home in a positive environment around family.	9
Less time/money spent travelling to university.	7

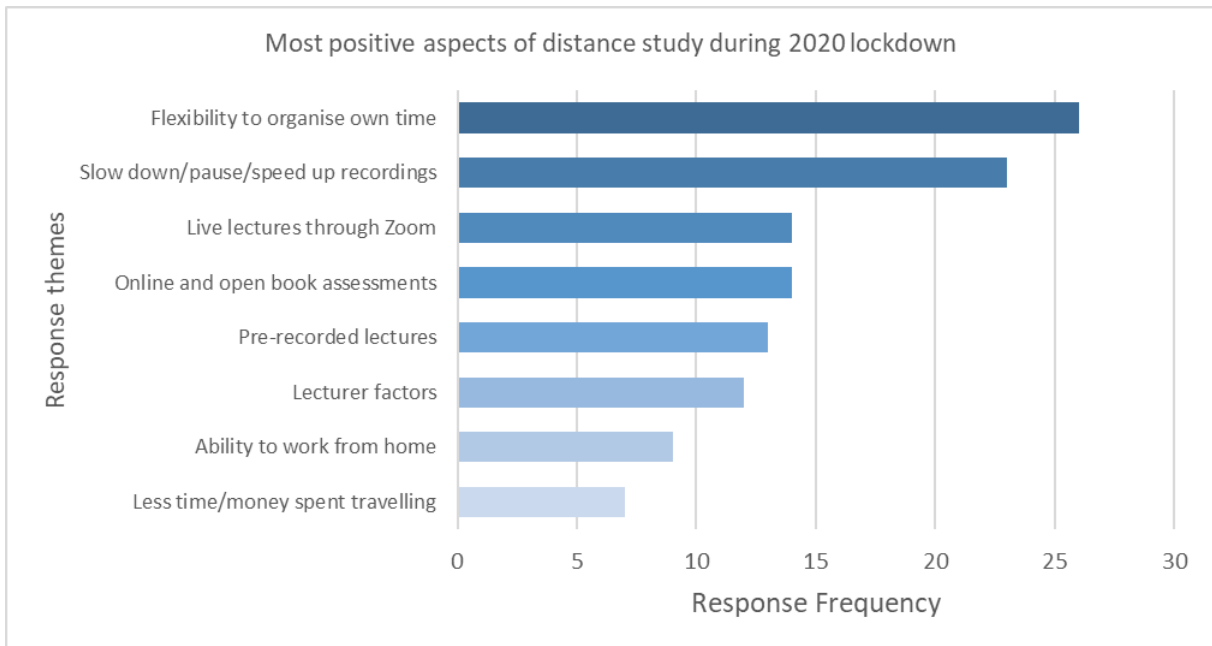


Figure 2. Frequency of responses to emergent themes in student responses to survey question: “What were the best aspects of Term 2 distance learning for you?” (Note: see Table 1 for expanded description of each theme)

Students appreciated efforts of lecturers who communicated frequently and clearly and those who provided made-for-purpose lectures and/or modified assessment opportunities. They also appreciated the flexibility to watch – even binge-watch – pause, and replay recorded lectures. One representative comment covered several aspects of positive lecturer behaviour:

I liked learning from home in the way that I didn't have to drive in to uni every day. Other aspects of our lecturers supporting us by either extending dates and giving extra resources and supporting us was also nice to see that the lecturers continued to support us from home. (Lecturer factors theme, Sport Coaching student #4)

A further comment explored the costs and benefits of online lectures:

“Watching lectures online – while it takes a lot longer than going to class, I've found I've picked up more and been able to write more detailed notes than when I go to class.” (Ability to slow down/pause/speed up lectures theme, Engineering student #52)

Challenging/negative aspects of distance learning

We divided the negative aspects of distance learning into themes to better understand the ways in which students were impacted. As can be seen in Table 2 and Figure 3, time management and motivation emerged as difficult challenges for many students. Without formally timetabled lectures, practical experiences and tutorials, their peers, informal study sessions, and access to campus resources, students expressed difficulty with

avoiding procrastination, working through the material on their own, and getting assistance.

Online assessments which gave negative marks or prevented students backtracking to edit earlier answers created significant anxiety, as did an increased number of and/or a shortened timetable for assessment submissions. Social isolation negatively affected many students, who missed the fun of interacting with peers, as well as opportunities to discuss lecture material, check in about due dates for assessments, and work collaboratively. Use of previous years' lectures, rather than purpose-made lectures for the current year, were also cited as challenging for distance learning.

Table 2

Emergent themes in student responses to survey question: "What were the most challenging, or least positive, aspects of Term 2 distance learning for you?"

Theme	Response frequency
Motivation/disengagement. Difficulty with engagement, motivation and ability to stay focussed.	52
Assessment methods. Included online practices to avoid dishonesty, use of negative marks for incorrect answers, amount and bunching of assessments.	40
Inability to get help. Loss of physical tutoring and inability to get help and feedback. Includes 9 responses related to inadequacy of email to communicate directly with lecturers compared to face-to-face.	33
Time management. Struggles to manage one's time.	31
Isolation from peers. Isolation and loss of social interaction with peers.	28
Previous years' presentations. Online lectures – use of previous years' presentations, relevance, ease of viewing.	19
Internet difficulties. Includes poor or zero internet access, particularly for people living remotely, and loss of access to department computing resources.	11
Inadequate general communications from lecturer.	9
Difficulty of undertaking group work online.	8
Loss of practical experiences.	6

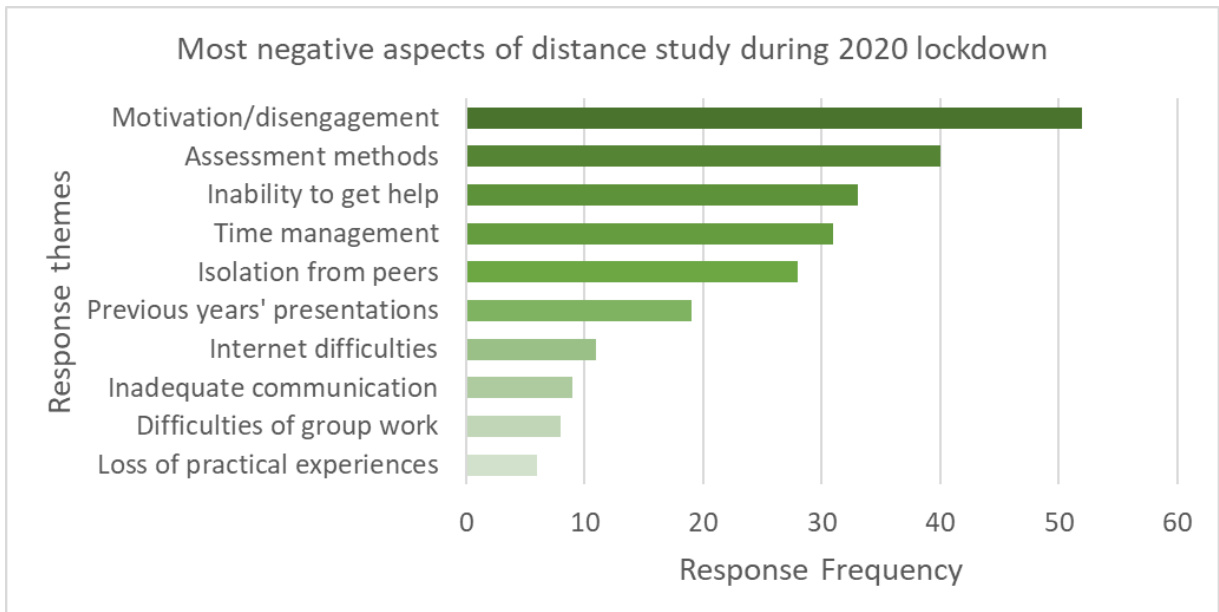


Figure 2. Frequency of responses to emergent themes in student responses to survey question: “What were the most challenging, or least positive, aspects of Term 2 distance learning for you?” (Note: see Table 2 for expanded description of each theme)

Representative comments related to several identified themes:

“It did feel like free time, so it was hard to become motivated a lot. Distractions at home were massive too, as home is small and I didn't have a stable study space at all times.” (Motivation/disengagement theme, Engineering student #71)

“Having to physically remove myself from bed, have a shower, eat food, and then walk over to Uni, my workplace, has a significant [positive] mental impact. I get to see friends, tutors, and lecturers in real life. Doing work at home is isolating.” (Motivation/disengagement and Isolation from peers themes, Engineering student #58)

“not having the easiness of talking in a conversational way to lecturers and teachers. If you didn't understand a lecture you had to write on the forum or email the lecturer which is different from having someone explain a concept in person to you.” (Inability to get help theme, Engineering student #213)

“Some lecturers...relied heavily on pre-recorded material which was hard to follow as it was either poor sound quality or had references to things which weren't relevant for this year.” (Previous years' lectures theme, Sport Coaching student #13)

“Not having ... practical learning. I'm a learner where I physically have to do something to get the full understanding as I can see where I've made mistakes so I can improve.” (Loss of practical experiences theme, Sport Coaching student #12)

Discussion

The main finding from our research is that distance learning environments implemented during emergency situations will need to be carefully planned in advance to mediate the factors students found most challenging, especially time management, motivation, and a sense of community.

Emergent themes from our research demonstrated a strong desire from students to have a structured learning environment, as provided by a timetabled, in-person, delivery style. A very strong preference existed for students to physically attend lectures with their peers and to have the opportunity to interact face-to-face with their lecturers. These themes have also been observed as important by other institutions in this shift to teaching in response to a crisis (Dabner, 2020).

Students found it difficult to self-regulate their time without the superimposed structure of timetabled activities, tutorials, and peer study groups. To encourage engagement and provide structured learning opportunities, we recommend providing purpose-made, pre-recorded lectures which introduce content, and then using regularly timetabled sessions to offer live discussion of course material, question and answer opportunities, and content-specific tutorials. This was one of the most popular styles of distance learning that some lecturers employed.

It is critical to provide a safe and comfortable environment to engage students in synchronous online learning. This can be facilitated by allowing students to participate passively, including having their audio and video feeds disabled, and allowing students who wish to contribute with limited interaction to communicate during the session through text chat features. Students should be advised clearly if any session is to be recorded, and of any “rules of engagement” for online interaction.

To further facilitate the creation of structure for online learning, small-stakes assessments, such as quizzes and forum posts, allow students to work through course material in a systematic and well-timed manner, as well as providing opportunities for group learning and engagement.

Students also felt a loss of community. This was particularly true of first professional year engineering students who had yet to establish friends among their discipline-specific classmates. The creation of learning communities can be facilitated prior to a lockdown by assigning tasks which encourage groups of students to meet regularly and work together. In the online environment of the 2020 Covid-19 lockdown, students reflected positively on the use of breakout rooms – smaller virtual rooms where groups of students could interact. In addition to using breakout rooms for discussion in formally timetabled lectures, continuing to provide small-group tasks can be effectively used to encourage students to schedule their own regular meeting times for collaborative discussions.

The knowledge gained from the impact of the 2020 Covid-19 lockdown on tertiary student experience will enable institutions to plan for future emergencies that require online delivery. They will need to prioritise key areas to support students, and develop communications strategies for day-to-day operation of courses. Institutions will need to leverage rapidly-developing capabilities to provide a higher number of flexible learning options than previously offered in campus-only courses.

The abrupt transition to distance learning provided a pertinent reminder of the role played by tertiary institutions in providing a transition from the often closeted adolescent experience of home and primary/secondary school, where activities are organised and facilitated and much attention is paid to the learner and their progress, to the self-directed world of full adulthood. A key finding from this study was the loss of direction, motivation

and efficacy experienced by students when timetabled sessions and face-to-face interaction were replaced by a more asynchronous, independent learning experience.

Limitations to our research include a small number of responses in Survey 1, which we attribute to a number of factors. Students were in a chaotic state of mind, having just been told to leave campus with almost zero notice, and they were trying to regroup. Students were also generally satisfied with their on-campus learning experience and felt no compelling need to respond. This also contributed to a lack of open text-field responses about positive aspects of their on-campus and during distance learning experiences. Survey 2 had many more responses, and some students used the survey as an opportunity to express grievances about a particular class or assessment method they felt was unjust. To eliminate bias in our evaluation of the results, we employed a neutral third party to redact all identifying information from the comments. In our analysis of the results, we chose not to report on the theme of assessment methods, as most of the negative comments were from just two courses. In general, assessment was perceived as fair and equitable in the majority of classes.

To prepare students for a transition to distance learning, we believe it is important to project confidence that this situation is well prepared for and that staff are ready to support students' learning online. Students should be advised pre-emptively that online learning has been planned for, and that plan should be outlined to them in advance of the change in delivery mode. Having a designated place students can go online to look for course information with instructions on how to engage in a distance learning environment is a must, and this place should be shown to the students at the beginning of their courses.

Conclusions

The Covid-19 pandemic has led to development of new online learning practices and provided opportunities to engage in new areas of research into online course delivery to improve student experiences.

Overall, our results showed a strong desire for in-person lectures and a community environment for learning. Although distance learning through online methodologies can deliver nearly the same content as traditional, on-campus learning, students found it significantly more challenging. Even with the convenience and cost savings of distance learning, it is unlikely there will be a decrease in students wanting to pursue an on-campus educational experience.

To mitigate the loss of face to face timetabled sessions in the event of another emergency, we recommend academic staff prepare now to deliver online learning. This includes designing courses which are able to be delivered fully online, as well as testing all aspects the new environment while there is technical support available. Students should be advised in advance how the online learning environment works, including having the opportunity to practise using any new assessment or required learning modalities to be able to address their own technical challenges. In preparing students for online learning, the lecturer should project confidence, and provide clear advice about the plan for the transition. Points of contact and course information should be provided in an easily accessible online document. Providing this information will also be appreciated by on-campus students, who are often overwhelmed details presented on the first day of a course.

For our own practice, the authors intend to pre-record all lecture material and make this available well in advance of timetabled activities. This will be utilised for distance teaching and will also provide a fully flexible learning environment to all students.

Workshop data will be collected in advance of teaching sessions, with the data collection activities recorded for use with learners who are unable to physically attend sessions. On-campus learners will be able to conduct their own tests and also use lecturer-provided data sets to create a larger samples. Assessment items in several of our courses incorporate small-stakes quizzes to encourage continuing engagement, and we are working towards creating assessments which can be used for both online and on-campus teaching. In New Zealand, the disruption from Covid-19, and earlier from the Canterbury earthquakes, has shown the need to be prepared for an emergency change to online teaching, and we are now working to change our practice to be able to support on-campus, flexible, and fully online learners.

Our next steps are to also create guidelines and contribute to policies regarding distance learning. We hope that by providing a framework for teaching staff, students will have a better distance learning experience should a future emergency occur.

References

Akuhata-Huntington, Z. (2020). *Impacts of the Covid-19 Lockdown on Māori University Students*. Te Mana Ākonga. <https://www.temanaakonga.org.nz/nga-puka>

Billings-Gagliardi, S., & Mazor, K. M. (2007). Student decisions about lecture attendance: Do electronic course materials matter? *Acad Med*, 82(10 Suppl), S73-6.
<https://doi.org/10.1097/ACM.0b013e31813e651e>

Dabner, N. (2020). *I 'C' you ... communication, community, connectedness and co-construction within the context of tertiary education responses to Covid-19*. Ascilite TELall blog. <http://blog.ascilite.org/i-c-you-communication-community-connectedness-and-co-construction-within-the-context-of-tertiary-education-responses-to-covid-19/>

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). *The Difference Between Emergency Remote Teaching and Online Learning*. Educause review.
<https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>

Koksal, I. (2020). *The Rise of Online Learning*. Forbes Online.
<https://www.forbes.com/sites/ilkerkoksal/2020/05/02/the-rise-of-online-learning/?sh=68e6d71672f3>

Lenihan-Ikin, I. (2020, July 20). *As universities go ever more online, students are getting left out in the cold*. The Spinoff. <https://thespinoff.co.nz/politics/28-06-2020/as-universities-go-ever-more-online-students-are-getting-left-out-in-the-cold/>

Morrone, M., & Young, C. J. (Eds.). (2021). Transitioning to remote and online teaching in a time of urgency [Special issue]. *Journal of Teaching and Learning*, 10(1).

Nast, A., Schäfer-Hesterberg, G., Zielke, H., Sterry, W., & Rzany, B. (2009). Online lectures for students in dermatology: a replacement for traditional teaching or a valuable addition? *J. Eur. Acad. Dermatol. Venereol.*, 23(9), 1039-1043.
<https://doi.org/10.1111/j.1468-3083.2009.03246.x>

Rabin, E., Kalman, Y. M., & Kalz, M. (2020). The cathedral's ivory tower and the open education bazaar – catalyzing innovation in the higher education sector. *Open Learning: The Journal of Open, Distance and e-Learning*, 35(1), 82-99.
<https://doi.org/10.1080/02680513.2019.1662285>

Simcock, D. C., Chua, W. H., Hekman, M., Levin, M. T., & Brown, S. (2017). A survey of first-year biology student opinions regarding live lectures and recorded lectures as learning tools. *Adv. Physiol. Educ.*, 41(1), 69-76.
<https://doi.org/10.1152/advan.00117.2016>

Traphagan, T., Kucsera, J. V., & Kishi, K. (2010). Impact of class lecture webcasting on attendance and learning. *Education Tech. Research Dev.*, 58, 19–37.
<https://doi.org/10.1007/s11423-009-9128-7>

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