Frontiers in Education Technology
Vol. 5, No.3, 2022
www.scholink.org/ojs/index.php/fet
ISSN 2576-1846 (Print) ISSN 2576-1854 (Online)

Original Paper

Pre-recorded Lectures—Is Anyone Watching?

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Received: July 21, 2022 Accepted: August 16, 2022 Online Published: August 29, 2022

doi:10.22158/fet.v5n3p43 URL: http://dx.doi.org/10.22158/fet.v5n3p43

Abstract

Pre-recorded lectures for students to watch at their own convenience appears attractive, but little evidence supports the notion that if recordings are available, they will be watched. A lack of engagement with pre-recordings may be exacerbated by the remote learning environments in response to population lockdowns and social isolation requirements. In this study, downloading of pre-recordings of lectures was examined in a large cohort introductory physiology course at a publicly funded university in New Zealand. Data from four semesters impacted by the COVID-19 pandemic were examined. A trend of decreasing engagement with recordings was evident in all semesters - from week 5 onwards, less than three-quarters of recorded material was downloaded, and from week 8 onwards, less than 60% of pre-recorded material was downloaded. This lack of engagement appeared to have little impact on course pass-rates, as these were consistently above 85% throughout the semesters in question. Data presented show that even when there was only the option for viewing a pre-recorded lecture, many students chose not to. Pre-recordings of lectures may seem to have value for some students, but they may be a poor substitute for attendance and physical engagement with the on-campus lecture experience.

Keywords

Lecture pre-recording, student engagement, remote learning, physiology education

1. Introduction

Before the introduction of lecture recordings in university teaching, it was assumed by most academics that student performance was closely related to class attendance. Generally, students who attended lectures more frequently obtained better grades (McKenzie & Schweitzer, 2001; Mthimunye & Daniels, 2019). However, the recording of a lecture is likely to impact on class attendance such that attendance will decrease if the option to watch a recording is made available. The advent of a global pandemic in

late 2019 and a rapid shift to online delivery of higher education in the following years, necessitated that more lecture material was delivered as recordings to be watched remotely by students.

The use of lecture recordings for university teaching is motivated by potential benefits in several areas (Morris, Swinnerton, & Coop, 2019) such as an increased flexibility of learning for students, improved access to learning resources for students studying remotely, and to cater for a growing number of students in the face of reductions in government funding (Cilesiz, 2015; O'Callaghan, Neumann, Jones, & Creed, 2017). There is also growing external pressure on universities to engage with the use of digital technologies to support student education, from both stakeholders and students (Gorissen, Van Bruggen, & Jochems, 2012). Financial investment by universities in this area have included the widespread introduction of the now ubiquitous learning management system (for example, CANVAS, MOODLE, BLACKBOARD), and the introduction of some form of lecture capture system, for example, PANOPTO (Danielson, Preast, Bender, & Hassall, 2014). A familiarity with these tools enabled university staff to rapidly create digital learning resources for students outside of the classroom (Eringfeld, 2021) which facilitated a much smoother transition to remote learning during the population lockdowns in response to the global pandemic (Quezada, Talbot, & Quezada- Parker, 2020).

Although a strong relationship between lecture attendance and grades has been reported in the US (Crede, Roch, & Kieszczynka, 2010) and for students studying human biosciences (Doggrell, 2020), there remains a paucity of data on the watching of lecture recordings by students when studying remotely during a population lockdown and forced social isolation. Therefore, the aim of this study was to examine data on the access to pre-recorded lectures by students during four university semesters affected by the restrictions imposed during the global pandemic.

2. Method

All data were obtained from the university's learning management system (BLACKBOARD®) following the end of each semester. The course was a large cohort introductory anatomy and physiology course taken by students who wanted to pursue a degree program in a health-related area, for example, nursing. The institution was a large publicly funded university in Auckland, New Zealand. The institution delivered the same course twice per year in two 12-week teaching semesters, with semester one beginning in March, and semester two beginning in July. The numbers of students enrolled in the semester 1 iteration were approximately 1500, whereas the numbers in semester two were approximately 500.

For each week of each semester, the length of the available recording (minutes) multiplied by the number of students enrolled on the course, was calculated—this was described as the total number of minutes available to download. The actual number of minutes downloaded by students was then calculated as a percentage of the total number of minutes available to download. This metric could accommodate a different length of recording available each week, and a changing number of student enrolments during the semester.

3. Results

The weekly downloaded minutes, as a percentage of the total available minutes, are shown in Figure 1. The first four weeks of semester 1 2020 were before the New Zealand government implemented a nationwide population lockdown, and during these four weeks, lectures on the course were delivered as live performances on three separate days on three different campuses. During this time, students were strongly encouraged to attend lectures in-person, and thus more likely to watch a live performance than watch a recording. Recordings of these live performances were made available 24hrs after the live delivery.

In Figure 1, values more than 100% indicate that some students accessed the recorded material numerous times, potentially re-visiting lecture recordings later in the course for revision purposes. A trend of decreasing engagement with recordings is evident in all semesters, such that from week 5 onwards, less than three-quarters of recorded material was downloaded by students. This trend persisted such that from week 8 onwards, less than 60% of recorded material was being downloaded by students enrolled on the course.

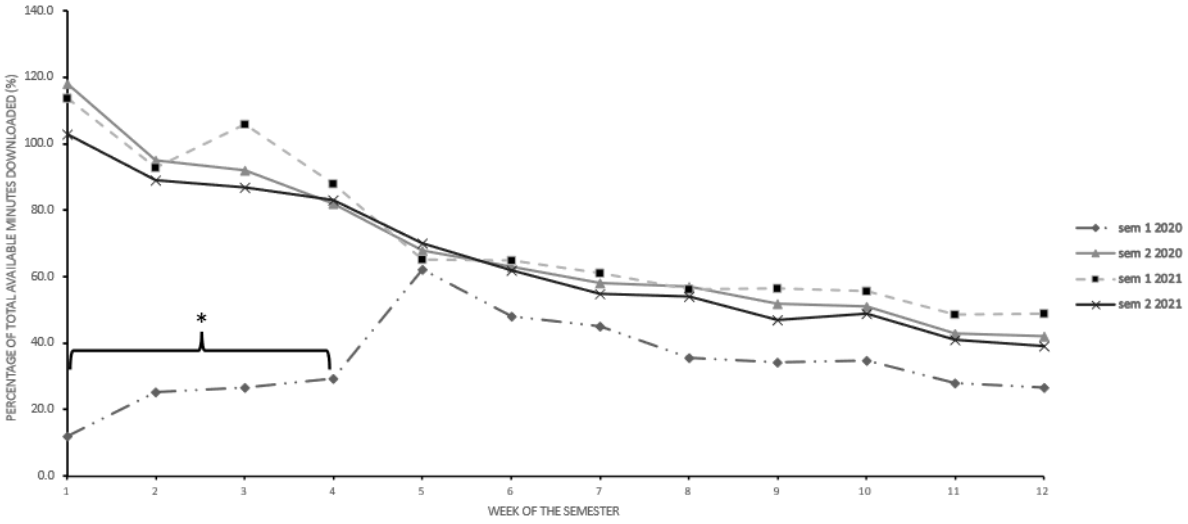

Figure 1. Total Available Minutes Downloaded (%) each Week during Four Semesters Affected by the COVID-19 Global Pandemic. * Indicates the First 4 weeks of semester 1 2020—this was delivered as on-campus live lectures with a simultaneous live stream available online, and a recording of the lecture made available 24hrs following the live performance. All other weeks were only available as recordings with no on-campus live performances.

4. Discussion

Data presented in this study show that when there was *only* the option for viewing a recording of a lecture, many students chose not to. This was disappointing given the effort required to produce pre-recorded material for the course. In previous years unaffected by COVID-19, recordings of lectures

were released following live performances, however, during these semesters, attendance diminished considerably—it was assumed that students were watching these recordings. In other physiology courses, the weekly average student attendance at the live performance was only 29% (Doggrell, 2021), which was lower than previous studies where lecture recordings were also available. In physiology courses where students had access to lecture recordings, higher attendances at the live performances have been reported: 73% (Horton, Wiederman, & Saint, 2011) and 87% of students attended 75% of live lectures (Popovic et al., 2017). Higher attendance rates have been reported in other biological sciences courses where 79% of students attended all live lectures (Fernandes, Maley, & Cruickshank, 2008), 90% of students attended more than 70% of live lectures (Davis, Hodgson, & Macaulay, 2012), and 88% of students attended more than 56% of live lectures (Hidayat et al., 2012). It remains unclear as to why lecture attendance was poor at the current institution, but providing pre-recorded lectures was not a satisfactory solution given the lack of engagement with pre-recorded material. The lack of engagement with the recorded lectures appeared to have little impact on course pass-rates, as these were consistently above 85% throughout the semesters in question. Feedback from some students at the end of each semester indicated that lecture recordings were considered a valued resource, and the flexibility of watching them when convenient suited many students. It could be speculated that the option to watch pre-recorded material offered some students an essential tool enabling them to pass, whereas for many students, the availability of pre-recordings was not necessary to pass the course.

5. Conclusion

Pre-recorded lectures are probably here to stay, but the viewing statistics of these recordings should be scrutinised to understand who is watching them, for how long, and for what educational effect. The advantage of providing convenient, accessible course content is laudable but it should support rather than replace the on-campus live lecture experience. A complete shift to online learning raises concerns around the commodification of education, emphasizing education as a consumer good rather than a humanizing undertaking (Eringfeld, 2021)—when students no longer leave their home environment to access higher education, processes of socialization and identity formation may be compromised, while societal norms may get reinforced instead of challenged through exposure to difference.

Acknowledgement

The author (SJB) received financial assistance from SPHIS, Auckland University of Technology.

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