

# The Value of Lecture Recording at the University of Edinburgh

Interim Evaluation Report

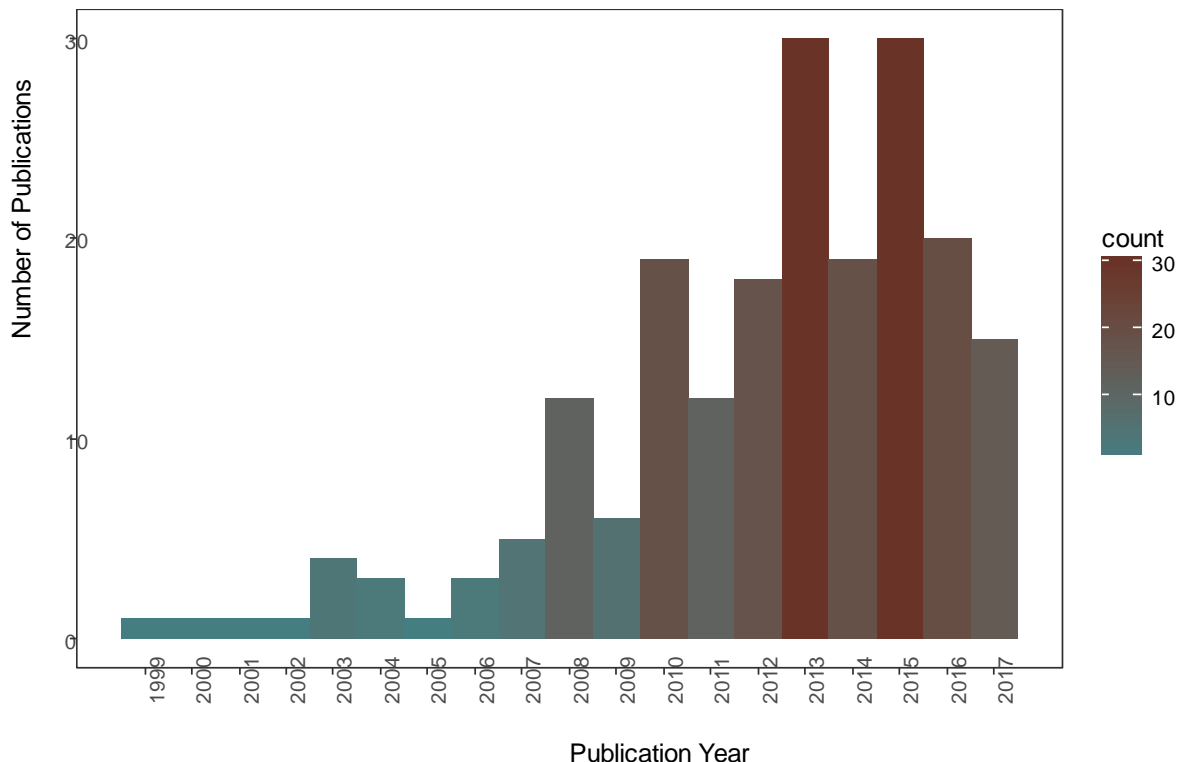
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## Appendix C - Lecture Recording in the Literature

Lecture recording is presently a topic of much study within the literature as large-scale lecture recording systems and the data storage implications become an economic possibility. While there has been an interest in recorded lectures as part of distance learning since the late sixties<sup>1</sup>, a trend of increasing interest can be observed in Web of Knowledge reports (Figure 1).

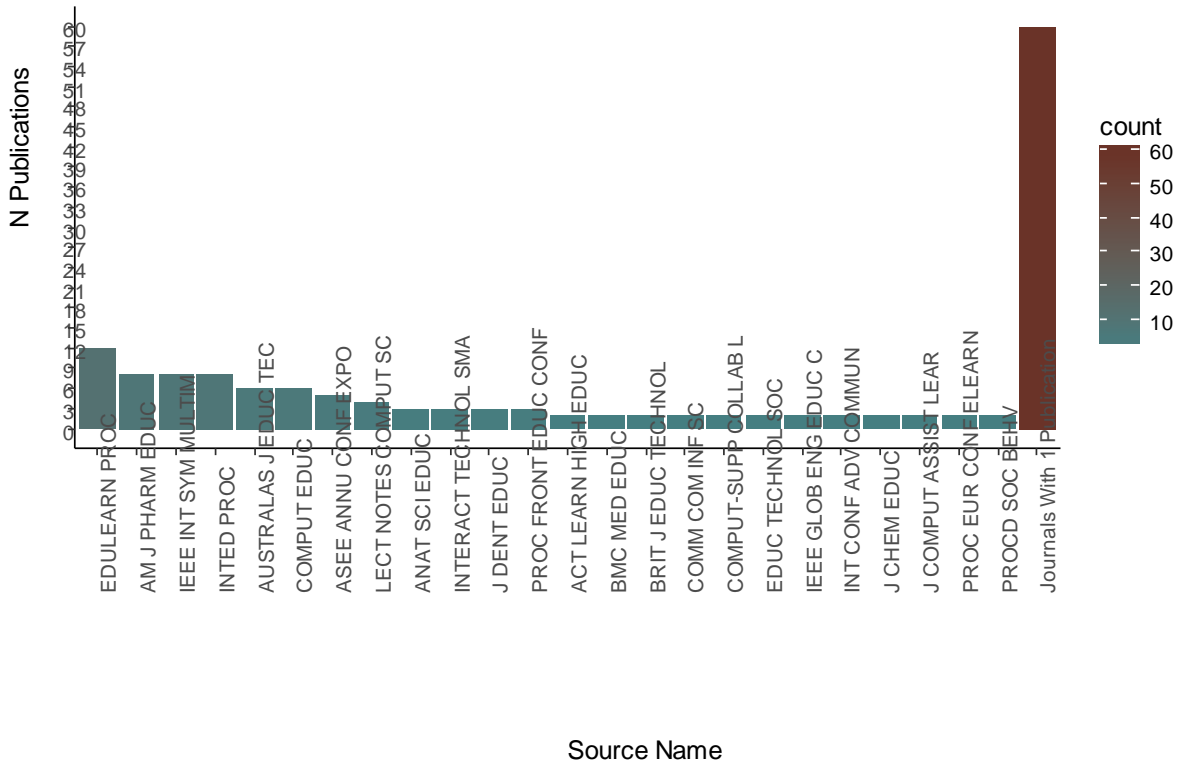
**Figure 1:** Publications by year (n = 201) in Web of Science Search, Topics = 'Lecture Recording' OR 'Lecture Capture'. Search data from 10/01/2018



Despite the increasing interest there is a high rate of dispersal across educational fields, with the majority of articles being the sole article published in a given journal on the topic of lecture recording (Figure 2). These studies often have a focus on the effect on student learning, how

pedagogies can be adapted to make best use of lecture recording, and the technological requirements to ensure smooth delivery of recorded materials (Figure 3). In general, there has been a wide range of research exploring lecture recording in different fields, and it will likely remain a popular topic as more and more universities uptake.

**Figure 2:** Publications by source title (n = 153) in Web of Science Search, Topics = 'Lecture Recording' OR 'Lecture Capture'. Search data from 10/01/2018





(depending on lecture recording type) agreeing that it could replace live attendance<sup>10</sup>, however this question was asked in the context of 'missed' lectures, rather than an active choice by the student not to attend. The confusion around the interpretation of this question has led to Gorissen et al occasionally being used to support the possibility of an effect of lecture capture on lecture attendance. Another study of 439 students found that the implementation of lecture capture resulted in 55% of students considering their attendance 'less than normal' and 10% of students said they stopped attending lectures entirely<sup>11</sup>. Curiously the grades of those who stopped attending were higher than those who attended lectures more, although this was not statistically significant, it logically followed that there was no difference in grades between those whose attendance was affected by captures. In other cases where academics were questioned about attendance after lectures they perceived no difference in their students' attendance<sup>2</sup>. Other studies have found no significant effect of lecture-capture on attendance in a variety of classroom situations<sup>12,13</sup>.

### Quality of Recordings and IT Support

Another common concern regarding the implementation of lecture capture is the use of (yet another) IT system, a lack of training for staff and also associated issues regarding the quality of the recording provided to the student<sup>3</sup>. Sometimes this issue also incorporates accessibility, for example lecturers in Australia have been concerned regarding the students' ability to access the resource when in rural areas where internet is not easily available or regular<sup>2</sup>. A small percentage (7%) of Gorissen's student cohort found the video quality in one of their participating institutes poor enough to discourage uptake. In the qualitative aspect of this study students did not mention quality as one of their concerns with lecture capture but it was noted that students rarely watched the whole lecture in a sitting, preferring to skip backwards and forwards to watch the parts that interested them thing<sup>10</sup>. Kwiatkowski and Demirbilek's study indicated that a potential challenge to the quality of a lecture could be when the student discussion element is particularly important as when there are no mics directed at the student's the audio quality of such discussions drops.

### Ethics and Intellectual Property Issues

Another oft-raised concern from lecturers surrounds the protection of intellectual property<sup>3</sup>. Lecturers may feel as though the content, style and indeed the presentation of their lecture is integral not only to student's understanding but their own delivery, and that capturing this risks others mimicking or passing off such work as their own. Broadly, this issue dovetails with open educational resources and peer-observation in learning. Some have indicated that the production of open educational resources can limit the cost of maintaining a course after set up<sup>14</sup> which has not been the experience of Edinburgh University staff working in distance-learning. However open educational resource policies often jibes with academic tradition<sup>15</sup>. D'Antoni noted that another intellectual property issue cropped up within the creation of OER and that was the lecturer's inappropriate usage of intellectual property through the use of media (e.g. images, videos or audio) that they did not own the copyright to. More locally, the University of Edinburgh, in line with many universities, retains the intellectual property rights of its employees' work products. However the Edinburgh Research & Innovation group\*, who manage these policies, consider lectures and teaching materials to be 'creative works' and therefore outwith the university's intellectual property. Widespread adoption of lecture-capture will require a more widespread understanding of IP rights among lecturers and a continued embrace of open education policies.

In Chang's (2007) study there was discussion of lecturers feeling more guarded during lecture capture. This manifested in different choices of stories to illustrate points as one lecturer stated:

*'Mmm I'm on record here and could it come back to be used against me.'*

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\* The ERI site has a number of policies: <https://www.ed.ac.uk/edinburgh-research-innovation/inventions-intellectual-property/university-ip-policies>

This may be an unintended benefit of lecture-capture. Lectures are not private spaces or 'off the record' if they are not being recorded.

### Effects on Student Learning

Ultimately lecture-capture aims to assist student learning. There are a number of possible mechanisms through which lecture-capture can aid learning. Commonly it is thought that lecture-capture allows for deeper engagement with course material<sup>13</sup>, and that students learn better through being able to control the speed of the lecture, e.g. pausing and resuming when desired<sup>16</sup>. In Toppin's study which explored student attitudes to [BLAH] 137 students (87.8% of sample) said video recordings helped to clarify concepts discussed in class, 144 said videos were convenient, 128 said helped prepare for exams, 108 helped for class discussions, 134 for overall material review<sup>12</sup>. Other studies have taken a more nuanced approach to how students utilise recorded lectures. It does not appear to be the case that the implementation of lecture-capture raises performance across the cohort. Instead students appear to use lecture-capture to further supplement their understanding. In one study, which only captured the slides and audio, low-achievers viewed the lectures more frequently than high-achievers, suggesting they were attempting to master material they found difficult<sup>11</sup>. Their methodology did not allow them to conclude whether the low-achievers benefited from the ability to review lectures however. Another study<sup>9</sup> found no observed difference in achievement across students who made use of lecture-captures, but did find that those students who were non-native English speakers or had learning adjustments made far higher use of the learning captures. Again the methodology utilised did not allow the authors to state whether the lecture-captures allowed those students to match the performance of other students, but the uptake and usage of lecture-capture suggests that this was a valuable resource for this student. Often evaluation of lecture-capture relies on retrospectively investigating how learning occurred after implementation of lecture-capture software. Future studies may benefit from students keeping a learning-log throughout a course to more accurately capture student behaviour, and longitudinal tracking to see how resource usage changes with time.

### Disruptive Technologies Concept

Lecture recording is sometimes referred to as a disruptive technology<sup>17,18</sup>. The concept of disruptive technologies primarily emerged from the field of business studies, where a common definition by<sup>19</sup> characterises it as novel technology or innovation which initially underperforms in a market prior to becoming the dominant force, displacing established technologies. In this way, a disruptive technology changes the base of competition by providing new or more detailed performance metrics. They may provide the market with a new benefits, or merely improvements over other methods, but will come to supplement traditional methods in time. Within education, students may not necessarily view technology usage as disruptive<sup>20</sup> whereas there is some evidence to suggest that staff view the incorporation of lecture technology as disruptive to the programme design<sup>21</sup>, which is not fundamentally similar to the disruptive technology concept in itself.

If we consider lecture recording to be a disruptive technology, it is important we identify what it is we expect lecture recording is going to supplant. One of the key reasons why lecture recording may be thought to be a disruptive technology is it's the oft-raised idea that e-learning pedagogies can disaggregate learning and supplant the traditional university model<sup>22,23</sup>. In this instance, lecture recording, and associated e-learning technologies, is assumed to be supplanting the entire higher education model in itself.

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