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Staff and student views of lecture capture: A qualitative study

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Abstract

Many universities now use lecture capture. We used focus groups to investigate perceptions of lectures and their capture in staff (N=8) and students (N=17). We found that staff and students held different views of lectures and this impacted on their perceptions of lecture capture. Our

25 findings confirmed a range of previously identified uses of lecture capture and additionally
26 demonstrated its use to model expert behaviour. Furthermore, we report here that students felt
27 lecture capture reduced anxiety, particularly for those with disabilities, indicating that lecture
28 capture may be a useful tool in creating an environment that supports mental wellbeing. Despite
29 this potential value of lecture capture, it was still perceived to have some negative impact on
30 the live lecture; reducing the interaction with students and prevent staff using anecdotes and
31 humour in their teaching, which could reduce the value of the lecture capture.

32

33

Keywords

34 Lecture capture; qualitative study; student participation

35

Introduction

36 Lectures are commonly used within universities, offering a practical approach to teaching large
37 classes (Behr, 1988). Research shows that students value lectures, reporting that they feel
38 involved in learning and able to engage in independent thinking and problem solving during
39 teaching (Covill, 2011). Furthermore, lectures provide students with an opportunity to see how
40 experts approach tasks (Feldon, 2010), and can help build new knowledge into their existing
41 frameworks (Mallin, 2017) in a way that they may not managed from reading alone
42 (Kirkpatrick, 1990).

43

44 In recent years, the recording of live lectures, referred to as lecture capture, has become
45 increasingly common and has already been the focus of considerable research (Deal, 2007;
46 Evans, 2008; McGarr, 2009; Scutter, Stupans, Sawyer, & King, 2010; Traphagan, 2005; Woo
47 et al., 2008). This research consistently shows that students have positive perceptions of lecture

48 capture (Gosper et al., 2008; Heilesen, 2010; McGarr, 2009; O’Callaghan, Neumann, Jones, &
49 Creed, 2017; Pons, Walker, Hollis, & Thomas, 2012; Traphagan, Kucsera, & Kishi, 2010),
50 irrespective of age, gender, enrolment mode or attendance pattern (Gosper et al., 2010). Lecture
51 capture is so highly valued by students that its availability has been shown to improve student
52 satisfaction (Al-Nashash & Gunn, 2013; Brecht & Ogilby, 2008; Bryans Bongey, Cizadlo, &
53 Kalnbach, 2006; Greenberg & Nilssen, 2009; Secker, Bond, & Grussendorf, 2010; Toppin,
54 2011; Traphagan et al., 2010; Veeramani & Bradley, 2008; Woo et al., 2008) and influence
55 course choice (Vajoczki, Watt, Marquis, Liao, & Vine, 2011; Watt et al., 2014).

56

57 Several studies have shown that use of capture peaks during assessment and revision periods
58 (Brady, Wong, & Newton, 2013; Gosper et al., 2010; Saunders & Hutt, 2015) and
59 investigations into how lecture capture is used show that students use it to review complex
60 material, revisit sections they missed in the live lecture (Gorissen, Van Bruggen, & Jochems,
61 2012; Gosper et al., 2010; Groen, Quigley, & Herry, 2016; Watt et al., 2014), make more
62 detailed notes (Elliott & Neal, 2016; Gosper et al., 2010; Newton, Tucker, Dawson, & Currie,
63 2014; Saunders & Hutt, 2015; Watt et al., 2014) and take control over their learning,
64 particularly through self-pacing (Al-Nashash & Gunn, 2013; Gosper et al., 2010; Newton et
65 al., 2014; Watt et al., 2014). Perhaps unsurprisingly, the use of lecture capture appears most
66 beneficial where the student has English as a second language or there is otherwise a difference
67 in first language between the student and lecturer (Gosper et al., 2010; Groen et al., 2016;
68 Revell, 2013; Saunders & Hutt, 2015).

69 Given how and when lecture capture is used, studies have investigated its relationship to
70 academic performance. This research shows that whilst students believe lecture capture
71 positively impacts on performance (Al-Nashash & Gunn, 2013; Groen et al., 2016) studies

72 using actual grades give a mixed picture with some indicating a positive relationship
73 (Bollmeier, Wenger, & Forinash, 2010; Francom, Ryan, & Kariuki, 2011; Griffin, Mitchell, &
74 Thompson, 2009; Harrigan, 1995; McFarlin, 2008; McKinney, Dyck, & Luber, 2009;
75 Vajoczki, Watt, Marquis, & Holshausen, 2010; Wiese & Newton, 2013; Yu, Wang, & Su,
76 2015) and others reporting little or no relationship between the capture and performance (Abt
77 & Barry, 2007; Brotherton & Abowd, 2004; Edwards & Clinton, 2018; Hadgu, Huynh, &
78 Gopalan, 2016). These mixed findings may arise from differences in the populations sampled
79 because student characteristics are known to influence use of capture. For example, research
80 has shown impact of proficiency in the language in which one is taught (Molnar, 2011; Revell,
81 2013), gender (Williams, Aguilar-Roca, & O'Dowd, 2016) study year (Nordmann, Calder,
82 Bishop, Irwin, & Comber, 2017), academic ability and learning approach (Brady et al., 2013;
83 Newton & McCunn, 2015; Owston, Lupshenyuk, & Wideman, 2011; Vajoczki et al., 2011) on
84 use of lecture capture. It is also likely that the effect of lecture capture on performance differs
85 when students use it to supplement and substitute for attendance at the live lecture, with
86 stronger students being more likely to supplement attendance (Von Kinsky, Ivins, & Gribble,
87 2009) and weaker students more likely to substitute (Vajoczki et al., 2011). Substitution may
88 not compensate for the impact of low attendance on performance (Edwards & Clinton, 2018).
89 In addition to the factors already identified, it is possible that the perception and use of lecture
90 capture, and therefore potentially its impact on performance may be determined in part by
91 student views and experiences of lectures in general, which has not been examined alongside
92 lecture capture previously.

93

94 In contrast to research with students, there is little research into staff views of lecture capture
95 (Al-Nashash & Gunn, 2013) but what does exist suggests that staff perceive lecture capture

96 more negatively than students (Danielson, Preast, Bender, & Hassall, 2014; O’Callaghan et al.,
97 2017), although many still use it to record their live lectures (Germany, 2012) and evaluate
98 their teaching (Voort, 2013) if it is in use at their institution. For the latter, they report that
99 watching their capture back had a positive impact on their teaching, likely due to altering their
100 pedagogy or improving communication skills (Voort, 2013). Despite this relatively high usage
101 and some positive reflections, staff tend to cite negative reasons for using capture, notably
102 pressure from students and their university, which may explain the more negative perceptions
103 (O’Callaghan et al., 2017). Additionally, staff are less convinced of an impact on student
104 performance, and therefore fail to see the same potential benefits as students (Chang, 2007).

105

106 As well as being less research with staff about lecture capture there is no research considering
107 both staff and students collectively in terms of the various issues identified e.g. impact of
108 lecture capture on learning and details of how the capture is used. Furthermore, much of the
109 research considering lecture capture fails to consider how participants view lectures, meaning
110 it is hard to establish whether different views of lecture capture between staff and students are
111 driven by different views about lectures *per se*. Lecture capture has been used at our institution
112 since September 2015 and most staff and students now have direct experience of it, making it
113 a sensible time to examine how they feel about lecture capture and what impact, if any, they
114 feel it has had. Improved understanding of how lecture capture is perceived by both staff and
115 students, and the impact it has had will allow us to identify opportunities for optimising
116 effective use of lecture capture. Furthermore, any differences in the views of staff and students
117 may inform the support and guidance provided to these two groups and enable effective
118 communication about capture for and between the two groups. On this basis, we conducted a

119 series of focus groups to answer the following research question ‘How do staff and students
120 perceive lectures and lecture capture?’.

121 **Methods**

122 *Research context*

123 This research took place at a large U.K. university, with nine faculties, located across four
124 different sites. The university offers undergraduate and taught postgraduate programmes
125 utilising lecture capture using the Echo360 platform. Presently, any teaching session labelled
126 as a lecture and taking place in a room with a capacity of 21 or more, is captured unless the
127 staff member chooses to opt-out in advance of the session and approval to do so is granted by
128 a senior member of faculty staff. All three formats of capture (audio only, audio and slides,
129 audio, slides and video) are available and the exact type used depends on the facilities in
130 individual teaching rooms and staff requests. Ethical approval was obtained for this study in
131 advance of the research being conducted from the Institutional Ethical Review Committee (ref:
132 MR 1617 1286).

133

134 *Participants*

135 Participant recruitment was via the institution Research Recruitment mailing list, which is sent
136 to all staff and students every two weeks, and via the landing page of the institutional virtual
137 learning environment. In both cases, prospective participants were directed to an online survey
138 where they were able to express interest in participating and select their chosen campus
139 location. The final sample consisted of staff (N=8) and students (N=17) from six different
140 faculties. The staff focus groups were held at three of the four campuses, whilst the student
141 sessions were held at all four. The maximum size of any one focus group was six. All
142 participants confirmed that they were currently giving or receiving lectures, and all had

143 experience (current or previous) of captured lectures at the institution. They also all provided
144 written informed consent prior to the start of focus groups.

145

146 *Procedure*

147 The focus groups for staff and students were held separately and conducted by the same
148 researcher (author ED), who as an academic member of staff has experience using lecture
149 capture to record their lectures over several years and experience researching educational
150 technologies. The focus groups for both staff and students centred around two key discussion
151 topics i) how they felt about lecture capture ii) the impact of capture on the live lecture and
152 student learning. Each focus group was audio recorded, transcribed and analysed using
153 Thematic Analysis procedures (Braun & Clarke, 2006). The six-stage analysis process involved
154 data familiarisation, coding, thematic extraction, and review and naming of themes, before
155 finally completing a narrative analysis (Clarke & Braun, 2013). Qualitative analysis was
156 initially completed by the researcher who conducted the focus groups and then reviewed
157 independently by author BG who has extensive qualitative research experience within
158 psychology. Quotes identified by group (e.g. Staff or Student) are provided as evidence (Mays
159 & Pope, 1995) of findings.

160

Results

161

162 Two themes emerged, respectively relating to perceptions of (a) the function of lectures and
163 lecture capture, and (b) the use and impact of lecture capture.

164

165 *Perceived functions of lecture capture*

166 Students typically regarded lectures as learning events designed to provide an overview of a
167 topic and core information, and other teaching modes as opportunities for consolidation of the
168 material, or for seeking help or clarification as required:

169 *“Lectures are there for you to listen and help you with the reading so when you read a text*
170 *book, it should relate. The tutorials are for you to ask questions and be engaged.”* (Student)

171 From this perspective, although 16 of the 17 student participants indicated that they regularly
172 attend live lectures, lecture capture was seen as an adequate substitute when attendance was
173 either not possible or not seen to represent an optimal use of time. For example, many students
174 reported non-attendance when working to deadlines or attending clashing, extra-curricular
175 events (*“in the second year we have a lot of vacation scheme interviews during the day and*
176 *knowing that I’ll just miss one lecture and it’s recorded [helps]”*; Student). Some also saw
177 lecture capture as a more time-efficient and potentially lower-cost form of learning:

178 *“It would be a pain to have to travel an hour and a half here and an hour and a half back for*
179 *the sake of a 50-minute lecture, [and] it would cost me £30 in the morning or £20 in the*
180 *afternoon.”* Student

181 Yet, most students reportedly used lecture capture not as a substitute for attendance, but rather
182 to supplement their learning from the live lecture. Many used the capture to help them to write
183 notes, or to repeatedly view challenging material. The ability to vary presentation speed when
184 viewing lecture capture was valued in this respect (*“when I’m using the lecture capture I can*
185 *pause and actually think about what the lecturer is saying”*; Student), particularly where
186 English was not the first language of the student (*“I’m not from an English-speaking country*
187 *so especially the first year I just wasn’t able to listen to a lecture with that pace [...] I couldn’t*
188 *understand the lectures without being able to pause them.”*; Student). Lecture capture was thus
189 seen by students to allow greater autonomy over the learning process than does the live event:

190 *“If they give you extra information and they say this word that you haven’t heard you can*
191 *pause it, search it, find it out and then add that to your notes, which you can’t really do*
192 *[live].”* (Student)

193 Capture was particularly valued for sessions with narratives that elaborate far beyond the
194 material provided on lecture slides:

195 *“In my place a lot of the stuff they read on the slides, you can read through the slides and get*
196 *it but then the teacher will explain it or they’ll use like an anecdote, an example that you*
197 *can’t just generate by reading.”* (Student)

198 While staff agreed that it could provide a substitute for attendance in sessions that play only a
199 knowledge transfer role, they felt that lecture capture was inadequate for more experiential
200 learning events:

201 *“If [the lecture is] about me delivering, kind of conveying knowledge then this is an*
202 *appropriate tool or it could be a helpful tool [...] for the kind of teaching I’m doing right*
203 *now, for example, the knowing what was said in that hour in that room in the safe space*
204 *wouldn’t help you because you weren’t there, and if you were there something else would*
205 *have been said both by yourself and by others.”* (Staff)

206 Staff also voiced concerns that students use lecture capture as a reductive tool, to gather the
207 information required to meet learning objectives, rather than more deeply engaging with the
208 material:

209 *“They skip through it, they do a 45-minute lecture in about ten minutes and they [...] get the*
210 *facts, the factoids out of it and write them down and learn them instead of listening to the*
211 *discursive bit which is what we’re trying to [teach] and get over.”* (Staff)

212 Some staff also raised a more fundamental concern that lecture capture reinforces students’
213 perception of lectures as serving *only* an information-transfer function:

214 *“Do they realise that it’s not the same experience when you watch something at home than*
215 *when you’re actually there? I mean, it’s a different experience; the lecture’s designed as a*
216 *live event.”* (Staff)

217 Others felt that lecture capture suggested, erroneously, that lectures were standalone learning
218 events, rather than recognising their position within a carefully designed and timed narrative
219 thread throughout a module. Staff felt that better-performing students showed greater
220 recognition of the complementary role that lecture capture plays alongside attendance at the
221 live event:

222 *“If you wanted me to pick out the students that I’m going to expect to do best and most of the*
223 *time that’s right they are the ones who are there every week who are vocal who say a lot,*
224 *whether it’s right or wrong, who are there in the seminars who say a lot. They’re the ones*
225 *who are active, they are not the ones sitting at home watching lecture capture.”* (Staff)

226

227 *Use and impact of lecture capture*

228 Although some students reported using lecture capture for most lectures, others used it only to
229 review difficult topics (*“For some subjects I knew, I definitely knew I didn’t need to use lecture*
230 *capture, but for other subjects I heavily relied on lecture capture”*; Student). Some used it
231 throughout the term, and others only during revision periods, to reinforce their learning (*“even*
232 *if you do make notes in the lecture, sometimes it might be more helpful to have it just repeated*
233 *again by the lecturer instead of reading your notes”*; Student). As stated above, students with
234 English as a second language seemed to use it more frequently to adjust the pace of the lecture
235 to one they could keep up with. However, they also reported using it to model academic
236 communication skills in English (*“Through lecture capture I am able to see how scientifically*
237 *the lecturer talks about a certain topic”*; Student). Lecture capture was deemed useful by
238 students and staff alike for facilitating review of previously covered material drawn on later in

239 a programme, though some staff voiced concerns about the implications of students retaining
240 access to old lectures, especially where they felt they had not taught the content adequately, or
241 where the material might have become obsolete:

242 *“Next year, I’ll teach this differently because I hopefully learnt something between now and*
243 *next year both in terms of how I teach and the substance matter and the students are a new*
244 *group and all of this, so this is not reusable and I don’t want this to be held in eternity”*)

245 (Staff)

246 The availability of on-demand lecture recordings was felt by some students to have a positive
247 impact on their wellbeing:

248 *“I just go for classes and I was a bit stressed out about how I don’t [understand] the class*
249 *[material] [...] until I discovered lecture capture and I realised, okay, it’s so much more*
250 *helpful to actually listen and pause.”* (Student)

251 This positive impact appeared to be felt more for specific students including those with
252 disabilities:

253 *“With my dyslexia and hearing, knowing that I have the reassurance that it was recorded so*
254 *if there is a bit where I get confused or I didn’t quite hear the lecturer, I know it’s okay. I*
255 *don’t have to panic in the lecture.”* (Student).

256 Although staff could see the added benefit for disabled students (*“We also have a student with*
257 *a disability in terms of hearing so I think that could be important for that student as well.”*;
258 Staff), some felt that such students could be supported in other ways (*“Looking at the overall*
259 *impact [...] there might be other ways that things could be made inclusive.”*; Staff).

260 Most students expected lecture capture to have either a positive impact or no impact on their
261 grades. Any improvement was expected to arise from use of capture to complement other
262 sources of information, particularly when revising:

263 “Once you take away [lecture captures] all you have really is some very basic notes that you
264 are able to take during the lecture. [...] All you’ve got is a couple of A4 sheets of notes from
265 the lecture and a text book so, I think, when it comes to revision, it will be useful to be able to
266 look back on those things and I think that will have an impact.” (Student)

267 While most students felt that capture had little impact on their engagement in lectures
268 (“students don’t generally ask questions [in lectures]”; Student), some felt less able to interact
269 in a captured lecture:

270 “If I don’t understand something, if there’s not a recording I will ask a question even if it’s
271 stupid, [but] if it’s on a recording I’m not going to ask that question.” (Student)

272 This concern was shared by some staff, who felt capture could introduce inequalities in student
273 engagement:

274 “It makes certain kinds of teaching agreements impossible and it affects certain students
275 more than others. I think it would affect their willingness to participate not necessarily in the
276 sense that they wouldn’t ask questions, but they wouldn’t think as adventurously, they
277 wouldn’t put themselves out there ... [in] the way they would if they know this is said now
278 and will be forgotten in twelve hours by everyone present.” (Staff)

279 Staff and students alike recognised the potential for capture to impact on lecture material and
280 delivery. Some staff reported that capture could inhibit coverage of controversial material:

281 “There’s a part about ethics on the course and I might give anecdotes about something that
282 was a bit dodgy that had happened outside the experiment or something dodgy about another
283 paper that I wanted to highlight, I’d be a bit more reticent to do that with the lecture
284 capturing.” (Staff)

285 Others were concerned that lecture capture would offer a permanent record of any errors or
286 ambiguities within the spoken narrative, which could be misleading or misinterpreted:

287 “When we’re talking for two hours, we’re meant to make mistakes and I’m not just [talking
288 about] controversial things. [They are] treating us as documenters.” (Staff)

289 Indeed, one student reported observing “lecturers who want to tell an anecdote ... [so] they
290 turn the lecture capture off” (Student). Students understood concerns about controversial
291 topics, but questioned whether something could be “agreeable to people sitting in the lecture
292 [yet not] agreeable to authority or whoever may find that on their lecture capture” (Student),
293 especially since the students felt that the lecture capture and lecture were aimed at the exact
294 same audience:

295 “[Pausing the lecture capture] is weird ... since the lecture capture is for the students, why
296 wouldn't [the lecturer] say [what they were going to say]?” (Student)

297 Discussion

298 The current study aimed to better understand how staff and students perceive lectures and
299 lecture capture. The inclusion of perceptions of lectures, alongside lecture capture was deemed
300 necessary because studies to date have not considered the two together, even though
301 perceptions of lecture capture are likely to be influenced by perceptions of lectures. This
302 premise was supported in the current study because it was clear that when students and staff
303 shared their perceptions on lecture capture, they could not do so without sharing their views on
304 lectures as well. In doing so it became apparent that the two groups share quite different views
305 about the purpose of lectures, with students tending to see them as an opportunity to gain
306 information with little active engagement on their behalf, whilst staff cautioned against seeing
307 the lecture in this way. This information in itself is of value. Indeed, it may be helpful to ensure
308 that any discussions around lecture capture acknowledge the purpose of lectures, as agreed by
309 a programme or institution. In our own experience, whilst no two lectures will be the same,
310 there may be characteristics which differentiate lectures from, for example, seminars, which

311 are not communicated to students, meaning expectations of the event upon which the recording
312 is based, are not explicit.

313

314 These different views of lectures also seemed to underpin different approaches to using lecture
315 capture. For example, staff were very clear that it was not an ideal substitution for attendance,
316 whilst students tended to feel that it was, in line with a significant body of research suggesting
317 attendance drops when lecture capture is introduced (Bryans Bongey et al., 2006; Copley,
318 2007; Deal, 2007; Edwards & Clinton, 2018; Harley et al., 2003; Traphagan et al., 2010).
319 Although most students in the focus groups stated that they normally attended their lectures,
320 varied reasons were given for missing them, including other academic (e.g. assessment
321 deadline) or academic-related (e.g. placement interview) reasons. These findings are in keeping
322 with previous research which shows that attendance is likely to be impacted by several factors
323 including academic and employment responsibilities may make it harder for them to attend
324 (Cooke et al., 2012; Newton et al., 2014). Interestingly, the cost of travel was also raised with
325 the students intimating a cost-benefit analysis depending on how much teaching they had and
326 travel time and cost. This has not been identified in previous research and may reflect the
327 central London location of the university where the research was conducted. However, this
328 may also relate to wider changes in Higher Education, which has seen increases in the cost of
329 university study and student populations becoming more diverse (O'Callaghan et al., 2017).
330 Based on these findings it is important for both staff and students to recognise that where
331 lectures are missed, there may be no single, avoidable reason for this. Moreover, it is helpful
332 to recognise that whilst some students may use capture to substitute for attendance, others will
333 be using it to supplement attendance.

334

335 Despite recognising that lecture capture can substitute for attendance, most students in the
336 current study described how they used lecture capture to supplement learning from live
337 lectures. The uses reported confirmed previous research, notably using it to make detailed notes
338 (Elliott & Neal, 2016; Gosper et al., 2010; Newton et al., 2014; Saunders & Hutt, 2015; Watt
339 et al., 2014) and reviewing difficult material (Gorissen et al., 2012; Gosper et al., 2010; Groen
340 et al., 2016; Watt et al., 2014). They also reported that the pace-adjustment allowed them to set
341 the pace of their learning, something that has been raised previously (Al-Nashash & Gunn,
342 2013; Gosper et al., 2010; Newton et al., 2014; Watt et al., 2014). Pace setting was especially
343 important for students without English as a first language, but this group also reported using
344 lecture capture to help them model discipline-specific communication in English. This use has
345 not been identified previously, although modelling behaviour is a recognised feature of live
346 lectures (Feldon, 2010). The range of approaches used by students could inform future
347 guidance made available to them, for example, adjusting pace was valued by students in the
348 current study and previous work, suggesting it is a useful function. Therefore, ensuring students
349 know how to adjust pace may be one step towards encouraging effective use of lecture capture.
350 It is also possible that by communicating the diverse approaches students take to using capture
351 to staff members, there will be a reduction in those that believe students only use capture to
352 extract specific factoids, which contravenes typical staff beliefs about the value of lectures.

353

354 To date we are not aware of any research linking lecture capture to student anxiety. The present
355 study found that students felt the lecture capture reduced their feelings of being “stressed out”
356 when they could not understand something in the live lecture. This appeared to be even more
357 important for students with disabilities who may struggle to keep up in the lecture itself. The
358 safety net of lecture capture appeared to be important to students. Staff also recognised that
359 lecture capture could support inclusive learning although this is perhaps unsurprising given that

360 many institutions give this as a reason for implementing it (Phillips, 2005). Another area of
361 positive impact for students was on performance. As with previous studies (Al-Nashash &
362 Gunn, 2013; Groen et al., 2016), students in the current study believed that lecture capture
363 could improve their performance, because they have the opportunity to go back and revisit the
364 capture during revision.

365

366 In terms of impact on the live event, some students believed that lecture capture did not impact
367 on their likelihood of asking questions because this was unlikely anyway. Others did feel that
368 it put them off slightly. The latter view was shared by staff. The staff opinion here is at odds
369 with previous research showing staff did not believe lecture capture impacted participation and
370 interaction (Voort, 2013). However, this is likely to depend on what level of interaction
371 individual staff expect and invite during lectures. Given there are several different styles of
372 lecturing reported in the literature (Behr, 1988), it is likely that variation in impact will exist.
373 One approach to supporting effective use of capture in this regard may be to remind staff that
374 the capture can be paused for question and answer sections of the lecture, thus allowing the
375 core content students value to be captured but reducing inhibition around asking questions.
376 Previous work with staff has shown that lecture capture can impact on teaching style (Voort,
377 2013), however, in the present study we have found that lecture capture can also impact on
378 content, with both staff and students noting that more controversial points or anecdotes are
379 normally only given once the capture is paused. Given that the use of anecdotes and humour
380 have been found to be extremely effective in Higher Education teaching (Atkins & Brown,
381 2002; Torok, McMorris, & Lin, 2004), avoiding recording of these elements is unfortunate.

382

383 In summary, the current study demonstrated that the views of staff and students about lectures
384 cannot easily be separated from their views of lecture capture. Indeed, the view held by students

385 that lectures are an opportunity to receive transmitted knowledge from staff appeared to
386 underpin the differences in opinion on how capture could be used. This study confirmed
387 previous findings that students use lecture capture in a range of ways to supplement and
388 substitute attendance at live lectures. However, building on previous research, we found that
389 lecture capture can be used to model expert behaviour and that a wide range of factors including
390 financial cost impacting on attendance and therefore how capture is used. Additionally, we
391 discovered that lecture capture offers a way for students to reduce anxiety about learning in
392 live lectures, especially for those with disabilities. This reduction in anxiety is extremely
393 important given student mental health is an increasing focus of concern in the literature, the
394 media and universities in general (Hughes, Panjawni, Tulcidas, & Byrom, 2018) with the latest
395 data from the England and Wales showing increases in students experiencing problems with
396 anxiety and stress and an increase in the number of students in taking their own lives (Office
397 of National Statistics, 2016). The present study therefore indicates that lecture capture may be
398 a useful tool in creating an environment that supports mental wellbeing. Despite this potential
399 value of lecture capture, it was still perceived to have some negative impact on the live lecture.
400 For example, staff, and to a lesser extent students, felt that the presence of capture reduced the
401 likelihood of students asking questions. In addition, we found for the first time that both staff
402 and students feel the content of sessions is altered by the presence of lecture capture,
403 particularly where anecdotes are used, with staff reluctant to have these captured. It is unclear
404 how to overcome this issue and it will no doubt be impacted by how 'open' captured lectures
405 are, but given the values of this content, consideration should be given to how to overcome
406 this.

407

408 It is important to note that there are limitations to the current study. Most notably, the sample
409 size for the staff focus group was low, around half that for the student group. Additionally, not

410 all faculties were represented in the focus groups for either staff or students and it is therefore
411 possible that some discipline specific views may not have been revealed in the present study.
412 Research to date on lecture capture has not identified any discipline specific differences in key
413 perceptions, although, as noted in the introduction, there is very limited research with staff at
414 present. Therefore, it is possible that improved representation, at least in the staff sample, could
415 result in different findings. Finally, as alluded above, the central London location of the
416 university under study may have impacted on the discussion around attendance given the
417 considerable time and cost of travel in the city. Therefore, this finding in particular may be
418 less generalisable than others presented.

419

420 **Declarations**

421 *Availability of data and material*

422 The datasets used and/or analysed during the current study are available from the corresponding
423 author on reasonable request.

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