Lecture Capture Usage in ES386

Presentation of Survey Results – by Peter Brommer*

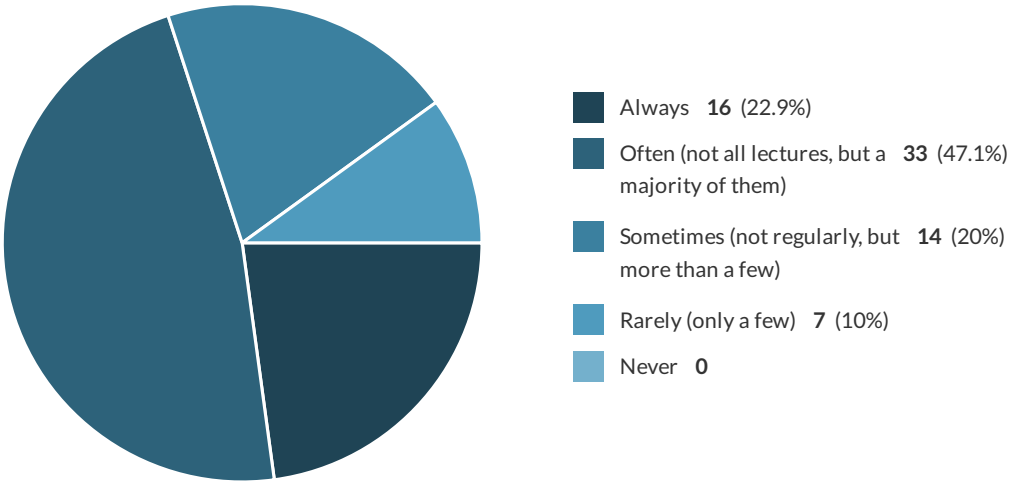
1 Introduction

In order to investigate the usage of the Lecture Capture (LC) service and ResponseWare (RW) in the 3rd year Engineering module "Dynamics of Vibrating Systems", we conducted an online survey from 28 April to 18 May 2016. The survey was open to all students enrolled in the module (127), of which 70 gave a response (55% response rate). The vast majority of the enrolled students come from the BEng and MEng degrees in Mechanical Engineering and Systems Engineering. The survey data was complemented with usage data from lecture capture collected at various times between 30 March and 20 June 2016, as well as the ResponseWare session data from 22 of 30 lectures. Module feedback comments from two separate surveys for the first and second half of the module were also used.

2 Analysis

Of the 70 respondents to the survey, all but four students stated they were between 20 and 22 years of age. Two further students gave an age of 23 and 25, respectively. Fourteen (20%) students self-identified as female and 56 (80%) as male. According to the Engineering Student Office, 17% of the students in the degree programmes attending this module are registered as female. Regarding nationality, 59 of the respondents were from the UK, three were EU students, and eight were from overseas. ES386 is mandatory for Mechanical Engineering (108 registered students) and Systems Engineering (12 registered students), and optional for General Engineering. The answers came to 84% (59 answers) from MechEng, with the remainder (11 answers) from SysEng, indicating a significantly higher response rate for Systems Engineering students. Around three quarters of the respondents are on a four-year MEng degree, whereas only around 60% of the registered students are on the four-year programme. An analysis of the responses along the main dichotomies (male/female, MEng/BEng, Mechanical/Systems) showed that most answers did not show significant differences between the groups.

Figure 1 - Lecture Attendance: How often did you attend lectures for ES386?

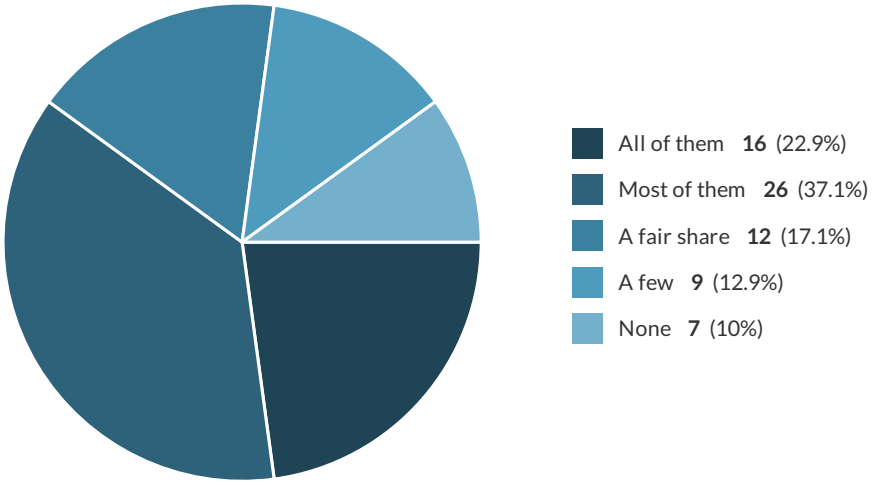


2.1 Lecture Capture

The first question asked was how often respondents attended lectures for ES386. As can be seen in Figure 1, more than two thirds of the respondents attended lectures often to always. The remaining 21 respondents said that they did not attended lectures regularly. As the typical attendance in ES386 appeared to be around fifty (evidenced by the number of module evaluation forms filled during twice over the course of the module), it appears that either respondents overstate their attendance record or that there is a significant group of students not attending the lectures which is not at all represented in the survey. This question showed a marked difference between genders: More than half of the 14 female respondents stated that they attended all lectures, which is a significantly larger fraction than among their male counterparts (eight of 56, p=0.01).

Most of the students participating in the survey (90%) stated they at least watched part of a lecture capture video, with a healthy majority (42 out of 70) watching most or all of them (cf. Figure 2). This data can be contrasted with usage data from the lecture capture system.[1] On the day before the survey closed, 95 of 127 students (75%) had viewed at least parts of a lecture capture video. This seems to reinforce that the survey is not sampling "disengaged students" that neither come to lectures nor use lecture capture. However, at this point only 20 students had watched more than 22 of 30 videos, less than half the number of students that claimed to have watched most or all of the videos. This seems to indicate that either the usage data is incomplete, the students watched videos in a group or the respondents overstated their lecture capture usage.

Figure 2 - Usage of LC: How many lecture capture videos for ES386 have you watched (at least partly)?



2.1.1 General LC Usage

In the following we asked the 63 lecture capture users about their motivation to use this system. Participants were able to choose multiple answers from a list of reasons why they use LC, plus give an "Other" answer as an opportunity to provide free text. As can be seen in Figure 3, almost all respondents used lecture capture in revision, while more than two thirds also used it to catch up on missed lectures. Two students declared they use LC also to help with the assignment, in addition to the two other motivations.

[1] There is a small caveat with regards to this data: Due to a misconfiguration of the lecture capture system, students could download videos for some of the lectures, thus bypassing the usage count. However, the viewing counts between downloadable and non-downloadable videos is small (less than 5% deviation between the classes), so this does not seem to be an issue.

Figure 3 - Personal purpose of LC (LC users): For what purpose(s) did you use lecture capture in ES386? (Tick as many as apply)

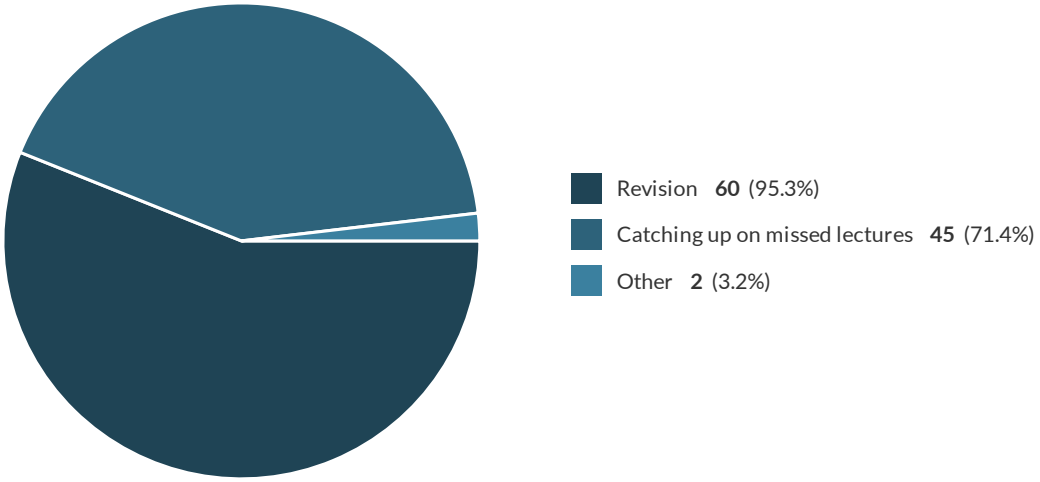
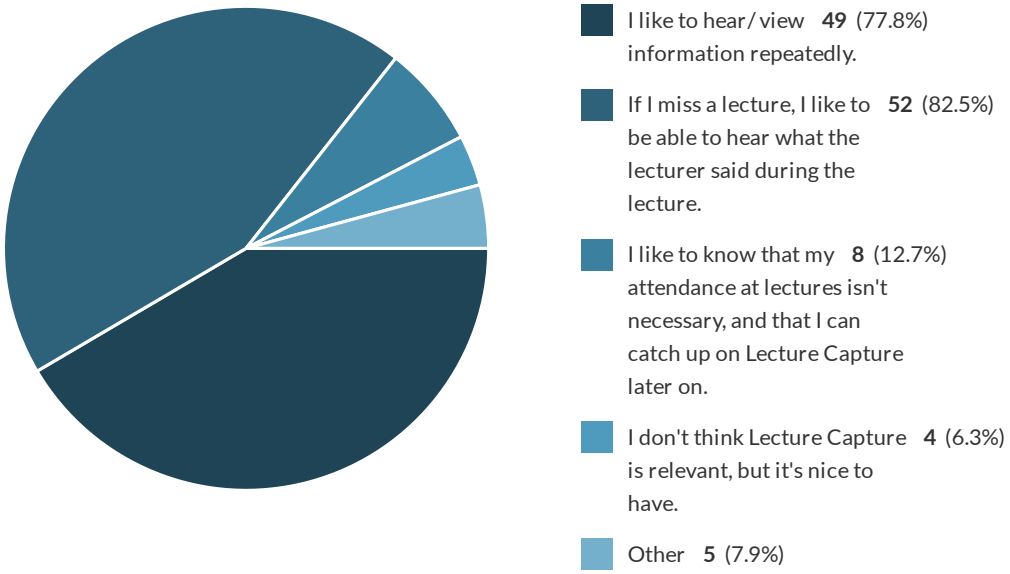


Figure 4 shows the reasons for why respondents chose to use LC. The responses reflect usage patterns established above: Most students like the repetition that lecture capture makes possible. The vast majority also value the backup provided by a lecture capture stream for unplanned or intentional absences. Among the five free text answers, two students mentioned the benefits of LC in handling competing demands (note-taking and following along) during lectures. Two other participants reinforced that lecture capture helps them moving through a lecture at their own pace. The final answer described the advantages of LC in the busy third year of an engineering degree: They can risk missing lectures due to prioritising other tasks and still be up to date, as the videos are typically available the same day.

Figure 4 - Personal relevance of LC (LC users): Why is the use of Lecture Capture relevant to you? (Tick as many as apply)



2.1.2 Non-Users

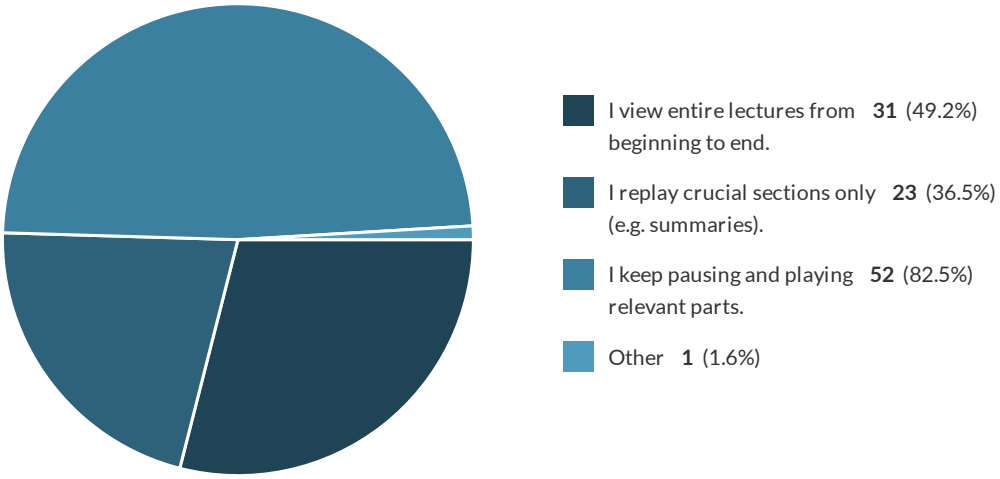
When asked for their reasons for not using LC, four of the seven declared they had up to now not felt the need to watch the videos, with two more saying they had not reached that stage of revision yet. The remaining respondent was unaware of its existence. In future, four intend to use lecture

capture for ES386 revision (one of them also for other modules, where available), two were unsure and one was not planning on doing that.

2.1.3 Breakdown of LC Usage

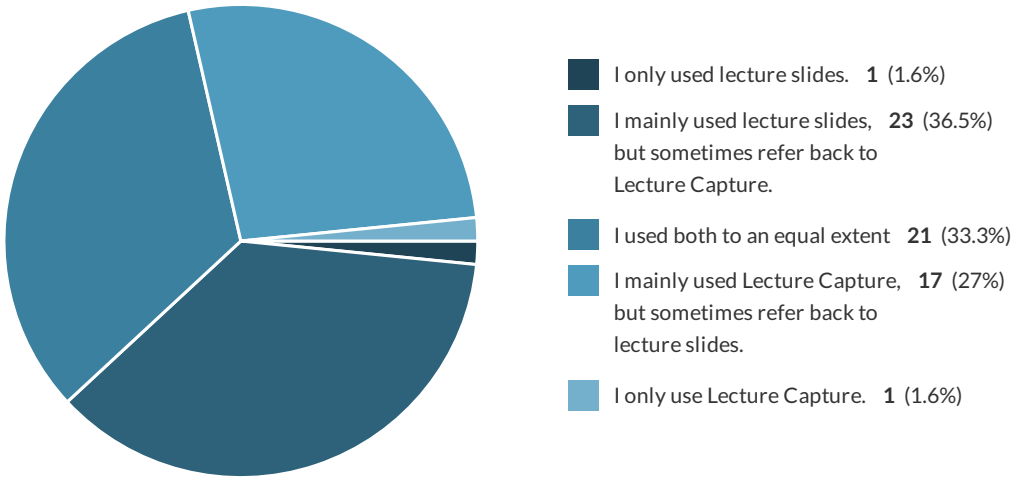
Students were also asked how they used lecture capture (multiple responses allowed). More than four fifths answered that they were playing and pausing relevant parts (see Figure 5). Half of the respondents answered that they view entire lectures from beginning to end, while roughly a third answered that they were replaying crucial sections only. This shows that, while students make different use of the resource lecture capture (re-watching entire lectures vs. highlights only), a vast majority seem to benefit from the ability to repeat the most relevant segments frequently.

Figure 5 – LC usage mode (LC users): How did you use Lecture Capture for ES386? (Tick as many as apply)



When comparing their use of LC and the lecture slides (which are available for download), the lecture capture viewers mainly used a combination of the two resources for revision, with a slim majority (24 to 18) preferring the slides, and only occasionally referring back to LC (and not the other way around). The remaining 21 respondents used both to equal extent, as shown in Figure 6. Only one respondent each used only one of the resources in revision. This indicates that lecture capture videos complement other teaching materials.

Figure 6 - LC and lecture slides usage (LC users): Between Lecture Capture videos and the lecture slides for download, what did you use more in revising the lectures?



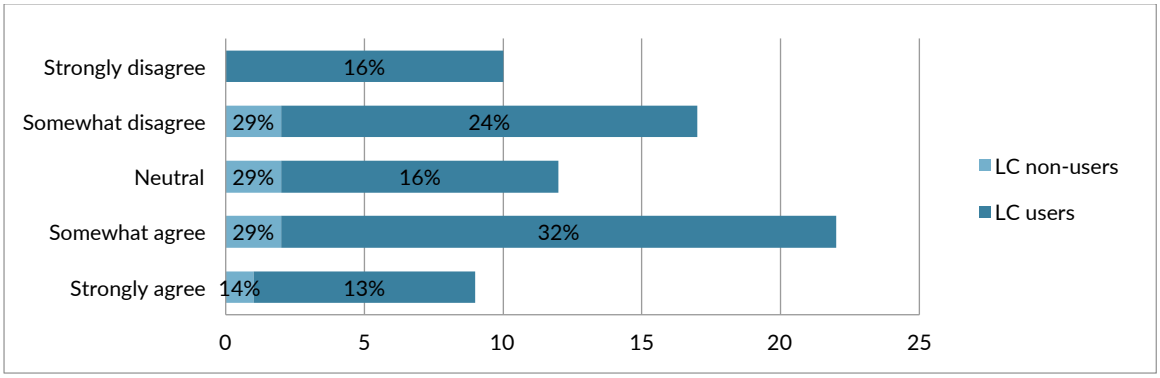
2.1.4 Lecture Capture Opinions

The survey asked participants for their agreement with four statements about lecture capture, with five possible answers on a Likert scale (strongly agree – somewhat agree – neutral – somewhat disagree – strongly disagree). In the following we tracked whether the answers came from users or non-users of lecture capture. The percentages given in the bar charts refer to share in the respective subgroup.

2.1.4.1 LC/video as replacement for lecture attendance

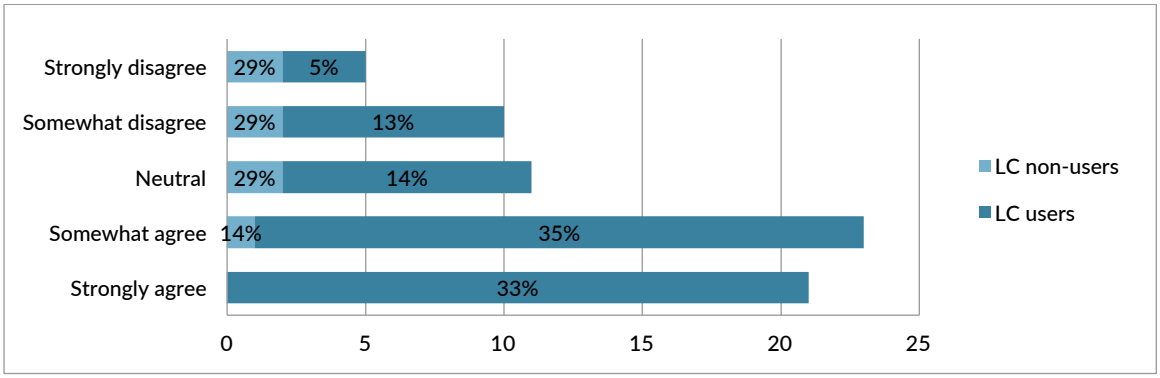
The survey participants gave a mixed response when asked whether watching lecture capture (or a video of a lecture in general) can replace physical attendance, with almost equal parts agreeing and disagreeing with the statement, with only a slight tendency towards agreeing (cf. Figure 7). Surprisingly, there is no significant difference in stance on this question between LC users and non-users.

Figure 7 – Substitute LC for lecture: Do you think that Lecture Capture can replace attending a lecture?[2]



2.1.4.2 LC as an essential course element

Figure 8 - LC as a course requirement: Do you think that the use of Lecture Capture is a course requirement/crucial to the understanding of course contents?



Next, we asked the students whether they would consider LC as essential to understanding the module contents. More than two thirds of the lecture capture users would overall agree with this (cf. Figure 8), with a higher level of agreement among the more frequent users of LC (33 of 42 compared to 10 of 21, $p<0.001$). Non-users obviously do not consider LC as essential – if they did, most of them would have used it as well. The implications of these results are curious. The module was designed in a way that does not require lecture capture to understand (but may require use of textbooks). It

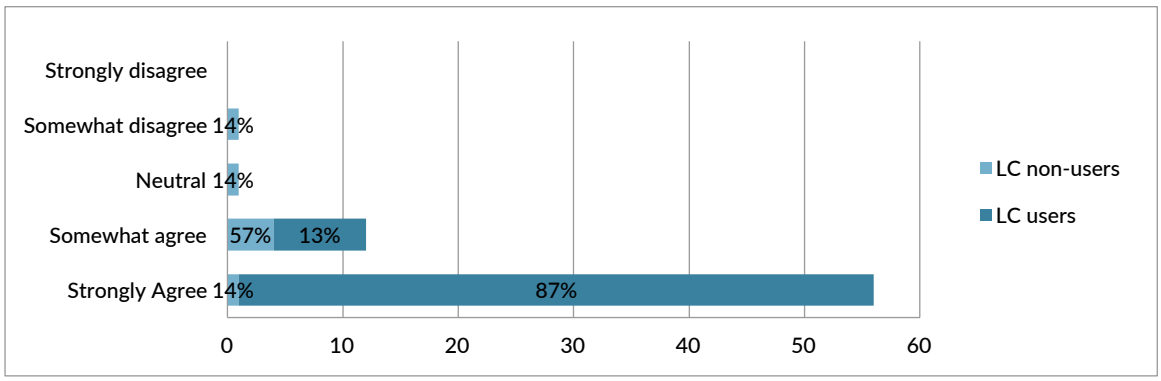
[2] The non-users were asked a slightly different question: Do you think that watching a video of a lecture can replace attending a lecture?

appears that most students that use lecture capture at least occasionally found some help in understanding the lectures, maybe pre-empting a recourse to textbooks.

2.1.4.3 Usefulness of LC

There is a strong consensus among the participants that lecture capture is useful, even among non-users. While this in itself may not be surprising, the level of agreement shown in Figure 9 is astonishing. Not a single user disagreed with the statement, whereas usually one would expect a few that take issue, if not with the idea, then at least with the implementation.

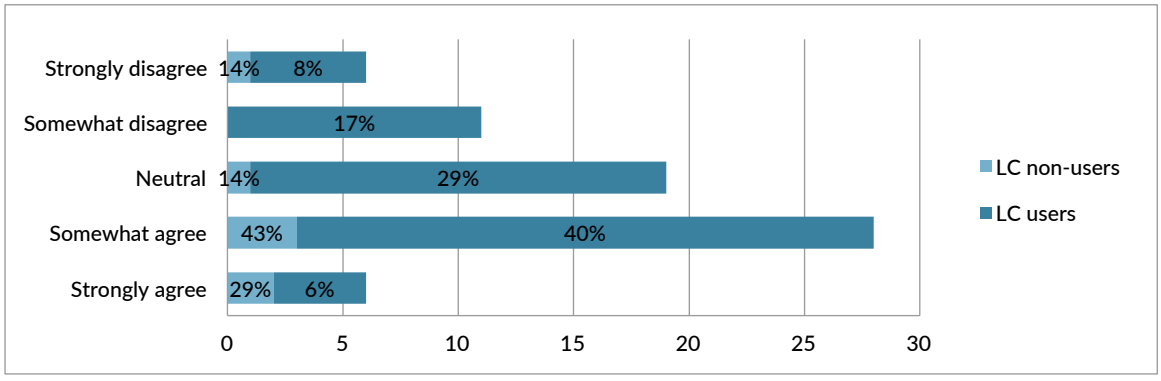
Figure 9 – Usefulness of LC: Do you think that Lecture Capture is a useful tool?



2.1.4.4 Attendance Decrease due to lecture capture

As the most contentious issue in this project, we also asked the students on their opinion of the impact of lecture capture on classroom attendance. Almost half of the users and more than two-thirds of the non-users (see Figure 9) would agree that there is a decrease in attendance. The fact that non-users fear more of a negative impact on attendance could be explained in several ways. Either non-users overestimate the effect of lecture capture availability on the attendance in those using it, or users intentionally understate an impact out of a fear that their true answer could be used to justify restricting the availability of lecture capture.

Figure 10 - Decrease in attendance because of LC: Do you think that Lecture Capture decreases attendance at lectures?



2.1.4.5 Qualitative comments on Lecture Capture

Students were given an opportunity to comment on Lecture Capture. 22 of 63 users and four of seven non-users of LC left comments. One from each group was uninformative, which leaves 24 responses. Twelve of the comments of the users conveyed an outright positive opinion ("Amazing, revolutionized my study at university", "Lecture capture is without a doubt an asset to student learning"), whereas two of the non-users' comments were more reservedly optimistic ("Can be useful, …"). Three students highlighted the importance of lecture capture in revision, and three further ap-

preciated LC as a fall-back in case of inability to attend a lecture. One student specifically explained how LC has helped him[3] cope with absences due to family issues. Twelve respondents requested that LC be available in more or all modules (one student particularly suggested its use in those modules with "a large amount of mathematical theory").

The most remarkable comments deal with the potential impact of lecture capture on lecture attendance. Even though it was not directly mentioned in the communications with the students or the questionnaire, nine students (among them one non-user) left comments about the connection between the two. This demonstrates that student are aware that this may play a role in an instructor's choice whether or not to offer lecture capture for their modules. One of the more negative comments from a LC user emphasises its usefulness but contrasts it with the negative impact on university life if students can do all their work from home. A non-user wonders how one could "use [lecture capture in revision] without decreasing attendance at lectures." Two further users discount a negative impact as ES386 has had "the highest attendance for the whole of the mechanical stream because it was interesting, interactive and the lecturers made it easily understandable" and "[l]ecture capture does not replace the lecture itself." Another student commented on his own attendance pattern ("so so"), but that it was not affected by lecture capture. Two students made one of the most compelling arguments for lecture capture in a similar way: Lecture capture caters to people learning in certain ways ("auditory learners … will benefit greatly", "[some students] find it easier to learn in different environments"), and offers those a more suitable approach to the subject matter. One of these two also comments that it is "down to [the students] whether to turn up to lectures," while the other suggests that lecturers "should focus on making lectures interactive and interesting" if they are worried about decreasing attendance. Another student makes the suggestion that lecturers worried about decreasing attendance could at least offer an audio only stream, which would make it "unlikely that someone who did not attend the lecture [would] easily be able to follow the lecture," while still benefiting those who actually attended.

One participant suggests taking the lecture capture concept further to "putting up worked examples as a recorded video explaining the methodology for key areas." This is echoed by a comment from a non-user who would like to see "short clip videos," as the hour-long lectures are "boring" and would need "some form of navigation [such as] 'tags'" to avoid searching for "the one part you need". This user also comments that to him, LC "adds nothing to lectures" and "won't ever provide more than a lecture does, unlike other TEL [technology-enhanced learning] practices (like responseware)". This may also reflect personal learning strategy, as another non-user comments that to him "looking for another way to explain the concept (i.e. youtube lecture, webpage, book) will be more effective than lecture capture."

Finally, one user took the opportunity to complain about the video player ("glitchy, […] uses lots of CPU and sometimes fails to load").

2.2 ResponseWare use in ES386

ResponseWare (RW) is a web-based audience response system (ARS) as part of the Turningpoint software in use at the University of Warwick. Audience members can answer a variety of questions (multiple choice/numeric/text based) via a web site or an app. Typically, the instructor presents a question, and then opens this question for answers. After some time, the instructor then closes the poll, and the frequency of the answers and, optionally, the correct answers are displayed. Audience members can also send messages to the presenter. Participation requires both access to a web

[3] All pronouns referring to survey participants reflect the self-declared gender of the person.

browser (via laptop/tablet/mobile) and a session ID to identify the polling session, which is usually dynamically assigned during the lecture. Thus, students wishing to participate must be present in the classroom.

2.2.1 ResponseWare uptake

In the Spring term 2016, the ES386 instructors tracked the ResponseWare use in the classroom. The session data is fully anonymous and contains both the number of individual connections and the number of responses given during a session. The number of individual connections typically overestimates the number of students – they are counted multiple times if they have to log back into a session, e.g. if their device disconnects. The maximal number of responses to a single question during a session on the other hand may underestimate the number of students involved (not all students answer all questions), so the true number of RW is somewhere in between. Figure 11 shows the latter number over time, but gives the number of connections as an upper limit.

Figure 11 - Maximal number of ResponseWare answers in each lecture over time

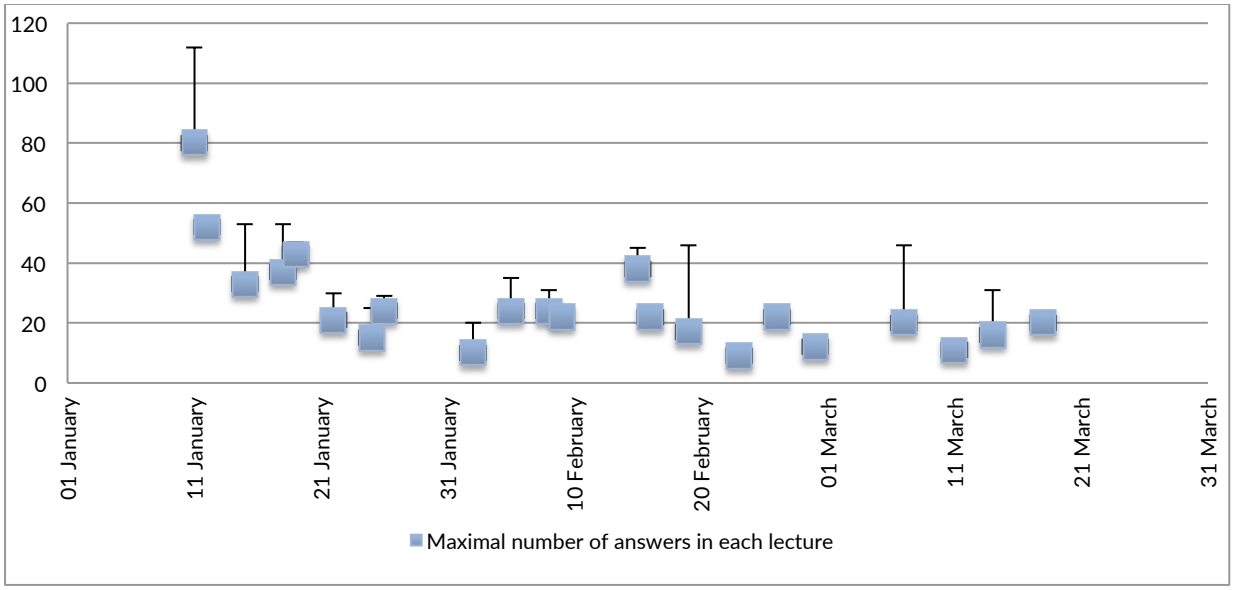
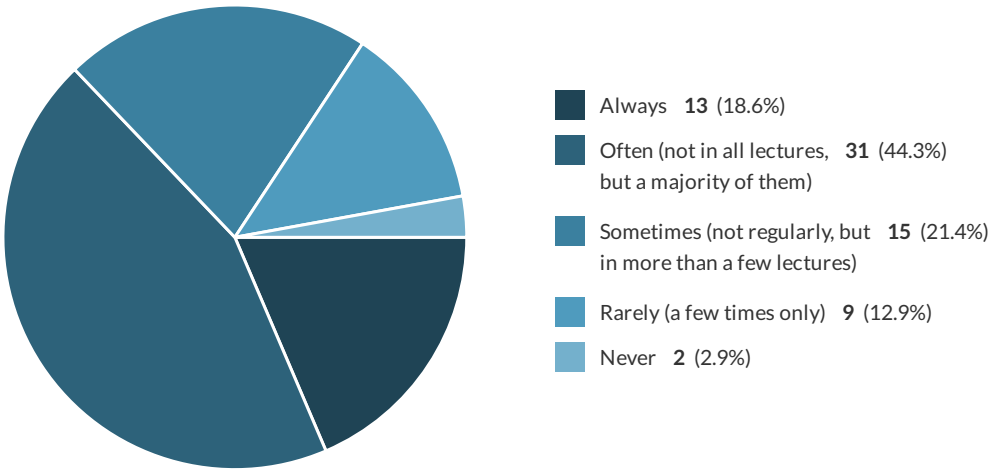


Figure 12 - ResponseWare use: How often did you answer the ResponseWare questions during the course of this module?

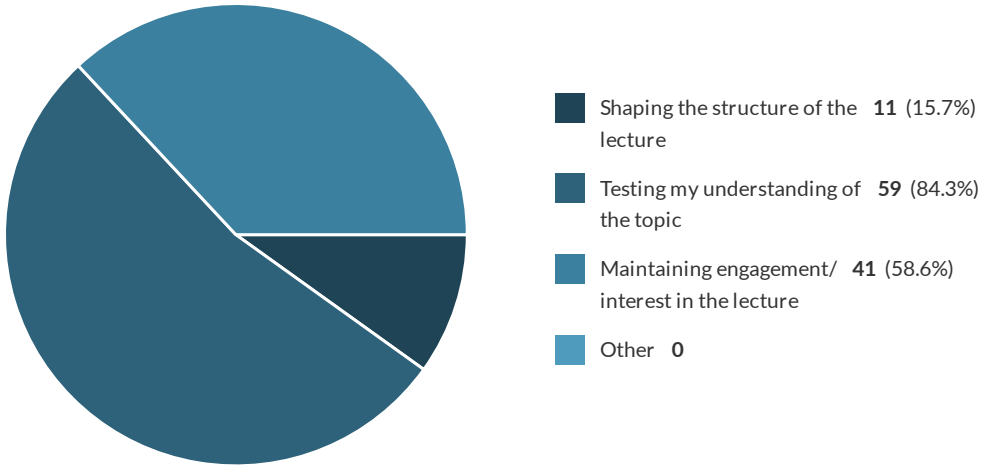


We then asked the survey participants how often they used RW in ES386. The results are shown in Figure 12. More than three out of five (or 44 students) responded that they contributed via RW always or often. This suggests that either the survey respondents overestimate their ResponseWare

usage or that once more the survey sample is highly biased towards those that interact more with the module, given that the number of RW users rarely reaches 40 after the first week of term.

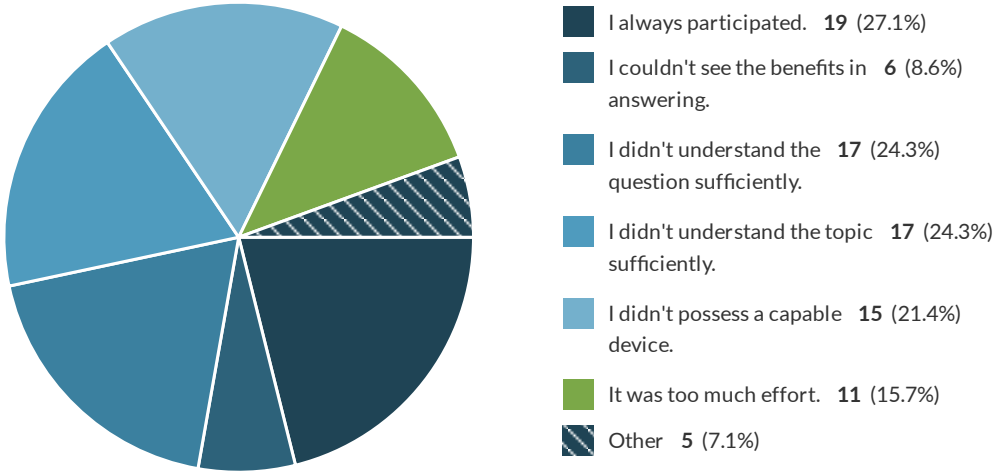
2.2.2 ResponseWare motivations

Figure 13 – RW motivation: What were your main motivations behind answering ResponseWare questions? (Tick as many as apply)



In the following we asked the students why they used ResponseWare during the lectures (multiple answers possible). As shown in Figure 13, more than five out of six used it to self-assess their learning, and more than half used it to keep interested in the lecture. The ability to influence the lecture via RW only factors into the decisions of a minority (and, as a detailed analysis shows, for all but one of them it is not the only goal – they also want to test themselves).

Figure 14 - Reasons for abstaining: If there were times during which you did not participate in answering ResponseWare questions, what were the reasons behind this? (Tick as many as apply)

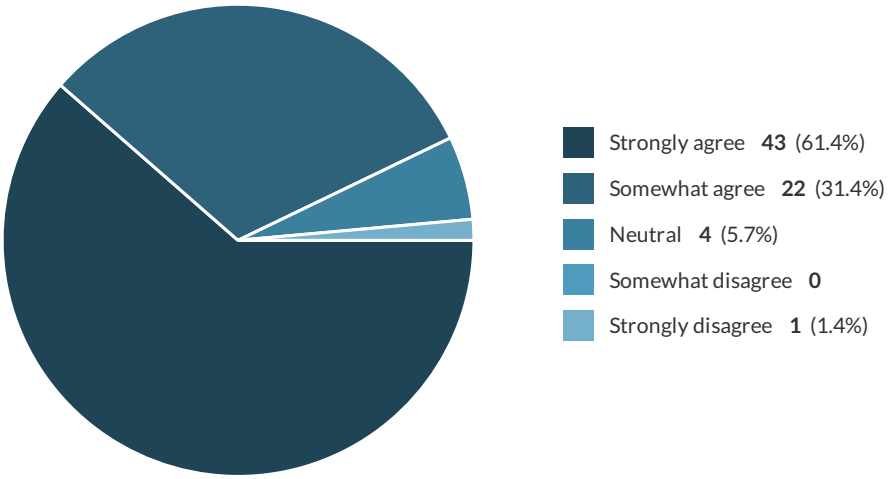


Next, we asked why people were not using RW in certain situations (cf. Figure 14), where people could select one or more of several reasons, and/or give their own justification. More than one in four respondents claimed to have always participated (an increase of six students compared to the earlier question). The main reason for not answering seems to be a perceived lack of understanding of either the question or the topic as a whole: 27 students selected one or both causes, and two more respondents gave similar responses under the “Other” label. Technical reasons (no device, device too slow, missed session ID) were cited by 17 people – for 13 this was the sole reason for abstaining. Four students refrained from answering just because it was too much effort (for seven

more this was one of several reasons). Finally, one student did not participate because he “did not attend many lectures.”

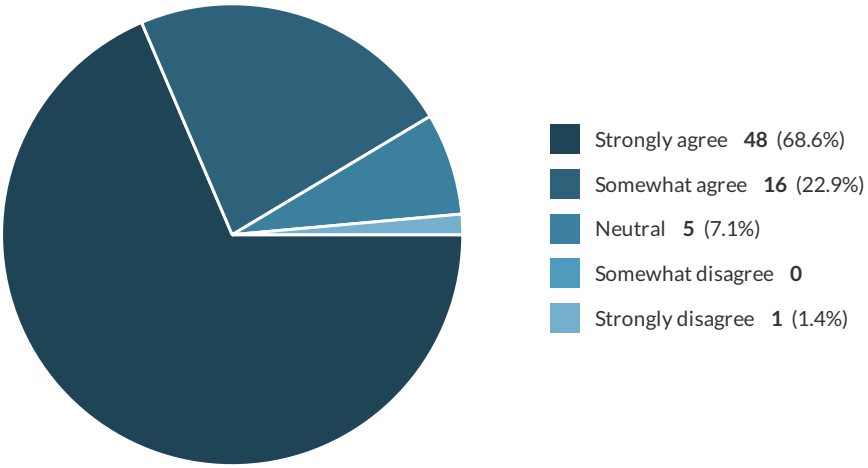
2.2.3 ResponseWare Opinions

Figure 15 - Usefulness of RW: Do you think that ResponseWare is a useful tool?



More than 90% of survey participants think that ResponseWare is a useful tool. Only a single student strongly disagrees with this sentiment (cf. Figure 15). Consequently, a similar fraction would like to see ResponseWare used in other modules – with the same respondent strongly dissenting (see Figure 16).

Figure 16 - More RW: Would you like to see ResponseWare questions in other modules?



We then gave the students an opportunity to comment on ResponseWare. Of the 15 comments, two were uninformative. Six comments emphasised the usefulness of RW, with two of them coming from non-users, who found the questions “useful and testing”, and said it was “helpful when going through the lecture capture to pause and try the question.” This behaviour was indirectly criticised by another participant, who complained about the lack of participation. Six comments mentioned the feedback opportunities in both directions. On the one hand RW “should give [the lecturer] a good idea […] of what the class has understood and what needs extra explanation” and it is “a good way […] to quickly see what students are struggling with” which can then “immediately be addressed.” Two students particularly mentioned the ability to anonymously message the lecturer which would “allow students to voice questions if they do not have the consequence to verbally raise” them or are “shy/quiet”, but one of them admitted that “not many people were aware of this

feature". On the other hand, the immediate feedback helped one participant to "break down understanding, showing which areas [he] needed to concentrate on." Another student saw this as well, but added that "the correct answers don't always get translated to the lecture slides" and RW thus benefits from lecture capture. A further student commented that RW helped him "keep [his] attention focused on the lecture" and "asks [students] to think in lectures, which is something that does not happen enough…"

Two students used the opportunity to refer to technical issues with ResponseWare ("buggy", "not compatible on all devices"), but one of them still liked it, even though "it can sometimes break the pacing" of a lecture. This may become less of an issue if RW is used more frequently and people will "respond quicker."

The student disagreeing with the usefulness of ResponseWare left the longest and most detailed comment. He considers ResponseWare a "waste of time" and asks the lecturer to demand a show of hands instead. While admitting that this "isn't anonymous", in his opinion the limited participation in ResponseWare, which he estimates as "a third of the group", gives an inflated view of understanding as "ResponseWare will tell you that 70% of people got it right, when, in reality, 80% of people did not." However, ResponseWare does offer a lower threshold to audience participation due to its anonymity.[4] The student also cites the requirement to handle a mobile phone as a disadvantage; RW gives the impression "that having your phone out during lectures is a good thing." In his opinion students suffer from "over-stimulation from looking at screens all day and expecting an answer straight away." In contrast, a show of hands would put them "into the habit of raising a hand to ask questions generally" and use a "simple but physical action to demonstrate their point." He goes on to lament that "students are told not to be confrontational about academic ideas and to just accept what is told to them" and deplores the consequences this might have on the engineers of the future. He fears that by not using hands-up, "students have retreated into [their] devices" and will "soon […] be completely pacified and disenfranchised by the real world." While it should be worrying that a student got the impression that vocal disagreement is discouraged in lectures, the defeatist outlook is unmerited. In fact, ResponseWare should not and does not replace other forms of feedback between instructors and students; it just opens a novel path for information to flow. As another commenter put it, it is "very useful having a method where people don't have to shout out answers," particularly as some of the students don't seem to "like answer questions vocally [sic] very much." For ES386, students asked questions during and after lectures, they sent e-mails, used office hours or scheduled appointments. Of course having an online device available during a lecture can serve as a temptation and distraction, but one should expect sufficient impulse control from people in their early twenties to be able to decide whether or not to follow the lecture. One could argue that filtering out distractions is an equally important skill to have, as future engineers will spend significant amounts of time in front of screens. In summary, it would indeed be disconcerting, if students felt that RW was the only way for them to interact, and asking questions should be more encouraged, but RW does offer a mode of interaction with a low psychological entry barrier, as the anonymity removes the fear of being scrutinised for incorrect responses.

[4] From my personal experience in years before using RW regularly, response rates in shows of hands were far inferior to those achieved with RW; it was rare that more than five people voted on any question at all.

3 Discussion of ES386 results

3.1 Lecture Capture and Classroom Attendance

Low classroom attendance is an ongoing worry in the Mechanical Engineering discipline stream, which is responsible for the delivery of ES386 Dynamics of Vibrating Systems. Attendances as low as 30% of the cohort are not atypical, and the module under discussion here does not seem to be too far off with usually 40 to 50 out of 127 students present after week one. However, it appears that the students persistently not coming to class are not necessarily the ones using lecture capture. By comparing the survey answers with head counts and LC and RW usage, it can be concluded that the 70 survey respondents include almost all people coming to lectures regularly or using lecture capture – even when accounting for generous reporting of attendance and participation. In reverse, there seems to be a core of students that neither went to class nor used lecture capture nor responded to the survey. Also, there can be only few lecture capture users that did not fill out the survey.

Seven students admitted to attending lectures only rarely. They all reported to be regular LC users, who all watched videos to catch up on missed lectures (five of them also used it in revision). Five of them agree that LC can replace going to class, and they unsurprisingly all find LC a useful tool. However, only two of them believe that LC decreases attendance, whereas four do not think there is causation. This might suggest that not all of those students would have improved their attendance record, if LC were not available.

Among those that reportedly do go to class more than just a few times, the main reasons for using LC seems to fall into two broad categories: revision at own pace and fallback for missed lectures. Most LC users use lecture capture to “slow down” the presentation the instructor gave in class in a way that would not be feasible in reality. It is debatable whether it was better if the students sought alternative sources such as textbooks to achieve the intended learning outcomes of a lecture. Some students in fact did leave comments that LC does not help them in revision, just because it adds nothing to the presentation, particularly not any new approach to the subject matter. However, it does seem to benefit a share of the students who then appreciate this teaching aid. The other main motivation to use LC is as a fallback in case a student does not attend a lecture for whatever reason. In this way, LC empowers the students and permits them to prioritise their time by mitigating the risk of missing crucial information. The survey results suggest that the students make use of this responsibly: Even among the 45 students that listed this motivation, more than 60% also claimed to attend class often or always (compared to 70% in the entire dataset).

The positive impact of lecture capture on student opinion is also reflected in the module feedback for ES386. Four and six students commented positively on the availability of lecture capture in the first and second half of the module, respectively. The only reservation some students mentioned with regards to lecture capture is a feared loss of student life, if everybody just watched the lectures from home. As discussed above, this fear seems to be largely unfounded.

The survey thus possibly suggests that lecture capture did reduce attendance in ES386 in a very minor way. While a majority of students believe that LC can replace lecture attendance, most of them do not seem to use it in this way. But simultaneously, the availability of lecture capture videos provides students with more opportunities, both for achieving learning outcomes and for organising their studies. This positively influences the student satisfaction ratings. Of course those should not

be made the benchmark of all academic decisions, but in this case this improvement comes at a rather low cost.

3.2 ResponseWare and Classroom Attendance

The use of ResponseWare provides students with a low-threshold way to interact with the instructor, even though it requires several steps on a mobile device (in contrast to just lifting one's arm when asked for a show of hands). However its anonymity removes psychological barriers, as the students need not fear adverse reactions from lecturers or peers for incorrect responses and thus encourages responses that come at a lower level of confidence in the result. It should be noted, that even with ResponseWare, more than a third of the survey participants sometimes refrained from answering because they did not *know* the answer and did not dare to guess.

It is difficult to derive any direct connection between ResponseWare and lecture attendance from the survey results. Some students described the attendance in ES386 as high (one student particularly referred to the interactive elements in this context), and one indeed needs to be present to take part in ResponseWare or any other form of interaction. In contrast, other comments praised the values of RW even when not taking part or when watching time-shifted on lecture capture, which would indicate that some of the benefits are not restricted to those in attendance. The most compelling reason to actively take part in ResponseWare sessions, namely to influence the course of the lecture through feedback to the instructor, seems only a minor factor in a student's decision whether to contribute. It is unclear, if this is really not as important to the students, or if they just have not made the connection yet that ResponseWare feedback works both ways. For example, in one lecture I as a lecturer of ES386 asked the students which part of a derivation needs more explanation, and adjusted my presentation accordingly, but it is unclear how much the students were aware of that when they filled the survey four months later. In retrospect, it might also have been interesting to ask students to compare their attendance behaviour to that in other modules (without lecture capture and without ResponseWare).

As an aside, any form of audience engagement (ResponseWare or show of hands) can also be used to encourage peer interaction in the classroom, by asking students to discuss a question with their neighbours. This of course would be lost to those watching a lecture remotely.

In summary, more interactive elements such as ResponseWare that provide students with some kind of influence on the course of a lecture may be a way to increase attendance. However, students may need to be made aware of this opportunity. Also, this involves considerably more work than just switching on Lecture Capture.

4 Comparison with SO242

We sent out a similar questionnaire to the 87 students of the 2nd year sociology module SO242 "Practice of Qualitative Research." Unfortunately, with only 24 students filling out the survey, the response rate was rather low, and the survey is thus not representative. For a full report on this survey, please see the project web site at https://www.warwick.ac.uk/pbrommer/stayorgo.

Even with the limited number of responses, some general trends can be compared. The sociology participants declared to attend class less frequently than their engineering counterparts, however the observed attendance seemed significantly higher in SO242. This suggests that the small sample of sociology respondents is less biased than the ES386 sample, where the latter seems to exclude

hard-core non-attenders. Also, the usage of LC seems to be less prevalent, with only half the group having watched more than a few videos. The reasons to use LC are comparable, but reflect the different requirements of the degrees: Sociology students do not revise for an exam, but rather seek information about written assignments.

A marked difference is in the relevance of LC to the two groups. Whereas less than a fifth of engineering LC users say that they like to know that they can skip a lecture and catch up later, this is a reason given by almost half of the sociology respondents. This is reflected in a slightly higher agreement among sociology students, that LC can replace attendance. Together, this may be a cautious indication that more sociology students see LC as a genuine lecture replacement, not just as a back-up.

Another difference is in the relative use of slides and captures, where the balanced use of engineering respondents contrasts with only a single sociology user relying more on lecture capture than on the slides. Still, in both groups, a strong majority sees LC as a useful tool, which indicates that they see added value compared to the written notes or lecture slides alone.

One sociology respondent raised an interesting point in a free text comment, stating that LC helped them immensely due to their dyslexia. This brings a new aspect into the value of lecture capture: as support for disabled students.

5 Conclusion and Summary

We surveyed the students of two modules about lecture capture: 127 students in ES368 “Dynamics of Vibrating Systems”, a third year module for Mechanical and Systems Engineering degrees, and 87 students in SO242 “Practice of Qualitative Research,” a second year sociology module. Our aim was to find out how the availability of recorded lectures (so called lecture captures) and, for the engineering students, the use of an audience response system, impacted classroom attendance. Our results indicate that lecture capture may be a minor factor in decreasing lecture attendance, particularly in engineering. Only a few students use lecture capture as a full replacement to attending a lecture, whereas most see it as a fall-back in particular situations and, more importantly, as a revision tool to enable them to listen to a presentation at their own pace, thus complementing rather than replacing attendance.

Engineering students generally liked the use of an ARS, mostly seeing it as a feedback tool for them to test their knowledge, and less as a way to interact and influence the presentation by the lecturer. This suggests that emphasising this aspect explicitly may be a way to increase attendance by giving the students increased power to influence a lecture. However, this requires considerable effort in preparation, and may not always be feasible.

Overall, both lecture capture and ResponseWare are highly valued by the students as they support specific learning modes and requirements. Lecture capture in particular helps auditory learners and those requiring more time to digest the presentation, whereas ResponseWare keeps the students engaged in the progress of a lecture.

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Further information about the project can be found on the project web site:
https://www.warwick.ac.uk/pbrommer/stayorgo

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