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Does Lecture Format Matter? Exploring Student Preferences in Higher Education

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ABSTRACT

This article offers a contribution to understanding students' perceptions of lectures based on different formats of lecture delivery. The growth in the use of synchronous and asynchronous learning for lecture delivery raises questions as to whether students prefer these innovative modes of delivery over the traditional face-to-face lectures, a comparison that is not explored in existing research. Furthermore, the contemporary debates over recording lectures and whether this impacts on student attendance requires further exploration by comparing recorded face-to-face lectures with other methods of lecturing. This article draws on data that explored students' preferences for lectures by comparing students' experiences on three different types of lectures. The main findings demonstrate that there is no one preferred method of lectures, with student feedback reporting positive experiences with all three. However, the strengths and limitations of each mode of delivery are provided by the students which indicate that flexibility, interaction and choice enhance participation in lectures. The data indicates that student attendance is only slightly affected by lecture recordings and that other factors need to be considered if lecturers are concerned about attendance. This paper suggests that courses ought to offer a range of different lectures to meet the needs of varied populations of learners and that ensuring the delivery is student-focused will empower students and increase their participation.

Keywords: lectures, learning preferences, digital pedagogy, participation, interactive learning

Context

The nature of higher education delivery in the UK has seen recent change in the broader context of fluctuating tuition fees, the introduction of the Office for Students (OfS) and an increased focus on 'value for money'. Within this context, wider discussions on what higher education should look like and how it should be delivered are emerging across university campuses. Part of these discussions concern how we deliver higher education and also, how this delivery is captured to create opportunities for students to participate in a variety of ways. Increasingly, universities are embracing a range of new technologies to enable students to participate in lectures beyond the campus. Distance learning, flipped learning, blended learning and lecture capture are growing in popularity across disciplines in higher education with supporters and critics alike debating their effectiveness (see Almodaires, Alayyar, Almsaud and Almutairi, 2019; Kozikoglu, 2019; Morris, Swinnerton and Coop, 2019).

It is well documented that there are different ways in which students prefer to learn that are based on individual and situational factors (see Keefe, 1979; Kolb, 1985; Dunn, 2000; Dunn, Beaudry & Klavas, 2002). Offering different mechanisms for learning can appeal to class numbers that host a variety of learning preferences (see Honey and Mumford, 1982). For instance, Fleming's VARK (visual, text, audio and kinaesthetic) model of learning indicates students have different preferences for learning (Fleming, 1995) and providing a range of delivery methods, from watching videos, sitting in lectures, group discussions and written tasks, assists with ensuring delivery styles cater for different learners (Proctor, 2003). Rennie (2003) notes that the geographical diversity of students means we ought to consider the accessibility of teaching and providing e-learning tools has been one mechanism of doing this. Blended learning has been shown to be beneficial to students, staff and educational institutions (see Graham, 2005; Gulc, 2006; Roehl, Reddy & Shannon, 2013). In particular, flipped learning has been shown to benefit students who have difficulties attending face-to-face classes due to other commitments such as paid employment (McGregor, 2015). Curry (1991) also argues that the learning environment itself plays a crucial role in motivating students to engage and help students process information effectively, therefore understanding students' preferences for learning environments (such as on or off campus) is just as important. Therefore, teaching ought to meet the needs of students and engage them in the learning process in order for them to succeed (Chen, Ko, Kinshuk and Lin, 2005), but to achieve this it is important that educators understand what student preferences are.

Traditional modes of delivery in the form of face-to-face lectures have their limitations because they don't suit all learning preferences (see Honey and Mumford, 1982) and they can be an intimidating space for students to openly discuss their ideas (Ruddick, 1978; Smith, 1996). The flexibility and sense of community offered by blended learning (see Wenger, 2000) aims

to overcome obstacles to student satisfaction and success present in traditional teaching methods. Technology enhanced teaching feeds into these wider drivers, whereby students expect to use technology in line with their non-academic lifestyles (Attwell and Hughes, 2010) and whilst digital learning is not for all students, it is about having the choice that improves student satisfaction (Beetham, McGill, and Littlejohn, 2009). One mechanism of utilizing technology to improve the accessibility and flexibility of learning is lecture recording, which has recently been a topic of debate amongst academic communities (see McGowan and Hannah, 2015; Groen, Quigley and Herry, 2016; Newland, 2017). Lecture capture technologies are being used for a range of purposes including integration with virtual learning environments, assessment and inclusivity (Newland, 2017) and facilitate a diversification of the higher education experience.

Existing research has identified that recording lectures has little negative impact on attendance at face-to-face lectures (Hall and Ivaldi, 2017; McGowan and Hannah, 2015) and that lecture recordings supplement learning from live lectures enabling students to revisit taught sessions while having control over the pace of delivery (Al-Nashash and Gunn, 2013; Dommett, Gardner and van Tilburg, 2019; Gosper et al., 2010; Newton, Tucker, Dawson and Currie, 2014; Watt et al., 2014). The increasing use of recorded lectures can be viewed as a combination of the flipped learning approach and the tradition of face-to-face interaction. This is particularly important given that lectures are used not only for helping deliver course content, but they are also a key touch point where information about assessment is transferred (Edwards and Clinton, 2018; Morris et al., 2019). While we appreciate the seemingly increasing demand for more lecture recordings from students, universities and governing bodies, further focus needs to be given to understanding students' preferences in how they like to engage with lectures. Acknowledging differences in preferred learning techniques, while also taking into account some students' additional needs, highlights the ways in which teaching and learning strategies can be diversified to create enhanced student satisfaction.

This article examines student preferences across three different forms of lecture delivery: traditional face-to-face lectures, pre-recorded online lectures, asynchronous, and live online lectures, synchronous (for further discussion on synchronous and asynchronous learning please see Khan, 2006 and Mayadas, 1997). The article offers an insight into whether students have preferences for how they like lectures delivered and what influences these preferences. Previous research has explored comparisons between face-to-face and online delivery in relation to student satisfaction (see Waha and Davis, 2014), grade outcomes (see Xu and Jagers, 2014) and social presence (see Hostetter and Busch, 2006) but no studies have compared the three modes of face-to-face, asynchronous and synchronous. The research provides some insight into the variety of ways that students choose to participate in lectures, revealing more about the diversity of student preferences in their learning experiences. This article argues that, while there are some emergent relationships between lecturing styles and student preferences, the quality of what is being delivered outweighs the mode of the delivery that is used.

Methodology

This study was undertaken using the survey method, which is beneficial for ensuring standardised questioning of all participants. Surveys are used to select a sample representing a specific population; in this study, the population was university students in their second year of study engaging in different lecture formats. The survey was cross-sectional which involves collecting data at one point in time (Gomm, 2009) to represent the students' experiences at the time of the research. The survey incorporated questions using four-point Likert scales setting out multiple indicators whereby respondents indicated their level of agreement from 'strongly agree' to 'strongly disagree' (Bryman, 2015). The decision was made to utilise four points on the Likert scales as opposed to five to ensure that participants outlined their opinion as opposed to opting for the middle value as an interpretation of neutral (Nadler, Weston, & Voyles, 2015). In addition, the survey included a range of qualitative, open questions in order for students to present answers in their own words and expand on their responses to an extent of their own choosing. The quantitative data was analysed using SPSS and the qualitative data was analysed through a process of thematic analysis. Using SPSS, Chi squared, Friedman's and Wilcoxon's tests were adopted to determine the relationship between some of the core themes of the research.

This research utilised purposive sampling to ensure that students who had undertaken modules with diverse lecture delivery were surveyed. The sample was a second-year cohort of 190 students who undertook a module delivered using the traditional face-to-face lecture, undertook a module that used pre-recorded lectures and 40 students (from the same cohort) who studied a module that delivered lectures using synchronous video conferencing software. Of the 190 students in the cohort, a large majority of approximately 95% were school leavers on entry to university in the previous year. Demographic data was not collected from the 48 students who completed the survey in order to ensure the anonymity of participants.

Lectures on all three modules were recorded and this enabled comparisons to be made when exploring attendance, participation and interaction. Following the receipt of ethical approval from the university where the research was undertaken, surveys were distributed in seminars to ensure all students who had engaged in the different formats had the opportunity to participate in the study. Out of 190 students, 48 completed the survey, giving a response rate of 25%. The level of participation in each of the three lecture types amongst the participants is listed below:

- Face-to-face lecture – Core module for 100% of participants (n=48)
- Pre-recorded online lectures (asynchronous) - Core module for 75% of participants (n=36); Option module selected by 25% of participants (n=12)
- Online live lectures (synchronous) - Option module selected by 42% of participants (n=20)

The following section details the findings according to the research questions, which were as follows:

- What factors impact on lecture attendance?
- What are students' experiences of lectures?
- Do students have a preference on how lectures are delivered?

Findings

This section presents the findings from the survey carried out. Respondents were asked to indicate their attendance and experiences of all three modes of delivery to enable comparisons to be made across the three approaches. This section commences with an analysis of self-reported attendance for the three modes of delivery. This is followed by students' experiences of lectures and their reporting of lecture experiences. This section concludes with students' overall preferences for lecture delivery.

Student Attendance at Lectures

In the survey, students' self-reported attendance level was considered for all three types of lectures. Respondents were asked to indicate whether they had participated in every lecture (100%), almost every lecture (75-99%), half of all lectures (50%) a quarter of all lectures or less (\leq 25%) or no lectures (0%). Table 1 presents the findings for each type of lecture. The findings demonstrate higher attendance for the asynchronous and synchronous lectures with 85.4% and 90% of students attending 75% or more of the lectures respectively.

Table 1 Student self-reported attendance levels

Attendance Level	Attended Face-to-face	Watched Asynchronous Pre-recorded	Joined Synchronous Online Session
100% (every lecture)	0%	52%	55%
75% (almost every lecture)	72.7%	33.4%	40%
50% (every 2 weeks)	6.8%	12.5%	5%
25% or less (every 4 weeks or less)	20.5%	2.1%	0%
0%	0%	0%	0%
	N=48	N=48	N=20

The lower attendance for face-to-face lectures was considered in more depth by exploring a series of questions relating to what factors increased students' attendance and the results are displayed in Table 2 below. The table shows that students rated the following as the most influential predictors relating to their attendance: (i) if the lecture is related to the assessment, (ii) if they are interested in the topic and (iii) if they like the lecturer. Knowing that the lecture was not recorded was not deemed as influential nor was the timing of the lecture. As a result, this table provides some important insights as to what motivates students to attend face-to-face lectures, and this will be deliberated within the discussion section.

Table 2 Factors Encouraging Attendance at Face-to-face Lectures

I am more likely to attend if...	Strongly disagree	Disagree	Agree	Strongly Agree	Total Agreement
I am interested in the topic	0.0%	10.9%	19.6%	69.6%	89.2%
I like the lecturer	0.0%	17.4%	45.7%	37.0%	82.7%
If it is in the morning	8.7%	34.8%	54.3%	2.2%	54.5%
If it is in the afternoon	2.2%	34.8%	43.5%	19.6%	63.1%
If it is directly related to the assessment	0%	8.7%	23.9%	67.4%	91.3%

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If I know it won't be recorded	2.2%	30.4%	41.3%	26.1%	67.4%
					N=46

Regarding factors that inhibited face-to-face lecture attendance, students were asked to select which factors tended to prevent them from attending. Detailed in Table 3 are the factors described by students that reduce their attendance. The most common inhibitors of attendance related to health problems, distance from campus, and paid work. Other reasons for students not attending included the prioritization of assignment work (2.2%) and students having a hangover (4.4%).

Table 3 Factors Inhibiting Attendance at Face-to-Face Lectures

Factors Inhibiting Attendance	Percentage Respondents
Paid work commitments	13.0
Voluntary work commitments	0
Family care	4.3
Health problems	17.4
Childcare	2.2
Religious	0
Distance	17.4
Other reasons	6.6
	N=48

To determine whether students' self-reported attendance levels significantly differed between traditional lectures and pre-recorded lectures, a Wilcoxon signed ranks test was carried out. No significant difference emerged between students' self-reported attendance for face-to-face lectures when compared with pre-recorded lectures $z=-1.826, P=.068$.

In addition, to determine whether students' perceptions of the purpose of lectures determined their attendance at face-to-face lectures, Pearson's Chi Square cross tabulation method was used. The results of the Pearson's Chi Square tests indicated no significant associations between students' perceptions of face-to-face lectures (statements listed in table one) and their self-reported attendance levels $P=>.05$. As a result, this indicates that students' individual understanding of the purpose of lectures has no impact on whether they make the decision to attend.

Experiences of lectures

Students were asked to state the extent to which they agreed or disagreed* with a series of statements about lectures and these findings are summarised in Table 4.

Table 4 Students' experiences of lectures

	Face-to-Face N=48				Asynchronous Pre-recorded N= 48				Synchronous Online N=20			
	SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
I find lectures enjoyable	4.3%	10.9%	69.6%	15.2%	2.2%	13%	58.7%	26.1%	0%	5%	55%	40%
Lectures motivate me to undertake reading	4.3%	30.4%	58.7%	6.5%	4.3%	23.9%	50%	21.7%	5%	30%	40%	25%
I find lectures boring	2.2%	68.9%	26.8%	2.2%	10.9%	67.4%	21.7%	0%	20%	80%	0%	0%
I find it difficult to pay attention	2.2%	60.0%	33.3%	4.4%	15.2%	58.7%	21.4%	4.3%	15%	55%	30%	0%
I am confident asking questions**	50.0%	41.3%	6.5%	2.2%	2.2%	34.8%	56.5%	6.5%	5%	25%	55%	15%

The lecture engages me	4.3%	30.4%	54.3%	10.9%	0%	26.1%	58.7%	15.2%	0%	10%	60%	30%
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*SD= strongly disagree, D= Disagree, A= Agree, SA= Strongly Agree

** Students were asked if they were confident asking questions in the seminar following viewing the pre-recorded lecture

Table 4 demonstrates that there was very little variation in the enjoyment of lectures, the impact of lectures on reading and the ability to pay attention in lectures. In terms of engagement, synchronous and asynchronous lectures were deemed as more engaging than face-to-face lectures. This indicates that the format of the lecture may have an impact on how engaging students perceive the lecture to be. Key differences were also identified between students' confidence asking questions during or after a lecture. Only 8.7% of students reported confidence asking questions during the face-to-face lecture compared to 70% of students who undertook the synchronous lectures. This indicates that lecture format does have an impact on whether students are confident to raise questions during lectures.

Students' experiences differed slightly on the questions related to enjoyment and boredom. The Friedman's repeated measures ANOVA test showed a significant difference between boredom ($p=.015$) and enjoyment ($p=.021$) for the three lecture formats. As a result, post hoc Wilcoxon analyses were run to determine where the significant differences were present. The results of the post-hoc Wilcoxon analyses indicated that the significant differences were present between online lectures (Mdn=2.0, M=1.8) and pre-recorded lectures (Mdn= 2.0, M=2.2) $z=-3.36$, $p<.001$, and online lectures (Mdn=2.0, M=1.8) and face-to-face lectures in the questions relating to boredom (Mdn=2.0, M=2.3) $z=-2.31$, $p<.021$. As a set of results, this suggests that students found live online lectures significantly less boring than the two other lecture formats. The post hoc analyses for enjoyment also revealed the same result with live online lectures being rated as significantly more enjoyable (Mdn= 3.0, M=3.35) than face-to-face lectures (Mdn=3.0, M=2.95) $z=-2.14$, $p<.033$ and more enjoyable than pre-recorded lectures (Mdn=3.0, M=2.85) $Z=-2.64$, $p<.008$.

Feedback on lecture formats

Students were asked what they particularly liked and disliked about each lecture format by providing them with open questions on the survey. This section reports on these findings according to the different modes of delivery.

Face-to Face Lectures

In face-to-face lectures, students who saw the sessions as an opportunity to engage with the lecturer particularly enjoyed the personal interaction with the ability to ask questions either during or at the end of the session:

Classroom lectures are easier for me to ask questions and engage more. It is also easier to approach the lecturers afterwards with questions when in a lecture theatre.

However, the data in Table 4 identified that 91.3% of students surveyed disagreed that they had the confidence to ask questions during face-to-face sessions. Therefore, only 8.7% of the respondents would feel confident asking questions in this format if necessary. In large face-to-face lectures some students reported they can feel intimidated to answer questions and interact or too shy to ask questions in front of a whole lecture.

The qualitative responses detailed more about what made experiences of face-to-face lectures positive for students. Some participants commented that lecturers' in-depth discussions of topics was particularly important. Other participants commented that attending face-to-face lectures gave them more structure and motivation in their learning. Some students also reported that having face-to-face lectures encouraged them to go into university and, consequently, participate in other aspects of student life, such as using the library facilities and peer networking.

More engaging than online [pre-recorded] because I can interact more with the lecturer and ask questions after and get a direct response

The qualitative data evidenced that respondents' experiences of face-to-face lectures could be negatively impacted by lack of interaction with the lecturer (12.5%), the speed of lecture delivery (20%) and in some cases, an inability to concentrate for sustained periods of time (12.5%). Factors inhibiting lecture attendance may also relate to elements of the lecture experience that students dislike. The qualitative data revealed varying reasons for respondents not always enjoying the face-to-face lecture experiences:

It can be difficult to engage with the lecturer until the end

Forget to discuss notes with groups or friends at the end

Lose concentration

Sometimes go on for too long so don't fully engage for the whole time

Sometimes it's hard to stay focused. Cannot stop the lecturer to ask a question

The face-to-face lectures were deemed as too long and sometimes boring by some of the students, but they indicated this was largely due to lecturing style of individual lecturers:

Lecturers often go too quickly through information. Hard to keep up. Some lecturers don't engage well with class. A bit boring.

Students reported the pace of the lecture can be too fast to keep up with note taking and they miss out on important information. The qualitative data indicates that, for some students, they enjoy the face-to-face interaction with lecturers but the way the lecture is delivered and the level to which students are expected to interact can hamper participation in the lecture.

Asynchronous Lectures

The asynchronous pre-recorded lectures were preferable to many students because of the flexibility they offered. Students commented that the ability to access them "wherever and whenever" was a positive feature of them. Of the respondents, 48% made positive comments on their ability to pause pre-recorded lectures. This enabled them to set the pace of the lecture in a way that was appropriate to allow for more accurate note taking. 52% of the respondents noted a positive experience in the flexibility they had when they watched the pre-recorded lectures. Moreover, further comments were made by respondents about the flexibility with which they could go back to pre-recorded lectures at any time to refresh or further develop their understanding of the subject matter.

Can watch it in the comfort of your own home and when you want. More relaxed. Can pause it to catch up on writing. Can replay if missed parts and can watch it as many times as you like.

All 48 respondents commented on the benefit of the flexible lecture format but they also noted some limitations, which was largely due to their own motivations. Students fed back that they often became distracted whilst watching the lecture or would forget to watch it meaning they have to revisit lectures at a later date. Further limitations to this format was the inability for students to raise questions or interact with the lecturer (or each other). However, this appears to be overcome with the majority (63%) of respondents confident raising questions during the face-to-face seminars. This mode of delivery was enjoyed by students who had difficulties travelling to face-to-face lectures and those who found difficulties taking notes during traditional face-to-face lectures.

Synchronous Lectures

Feedback on the synchronous live lectures indicated a positive experience for the students. Again, flexibility was deemed to be a beneficial feature of this lecture format, whereby students could join in the lecture as long as they had access to the internet. Similarly to face-to-face lectures, students enjoyed the level of optional interaction during the lectures through the use of online discussions, quizzes and polls. Students reported positively on the interaction and engagement throughout the sessions:

I like the online lectures a lot! I love being able to re-watch the lectures when I like. I like being able to interact without being shy that what I am saying might be wrong. I like doing polls and answering questions anonymously. I feel like I can learn better in a more quiet surrounding and in my own space without distractions.

Distraction was also a concern for some students during online lectures and these students preferred face-to-face lectures on campus. Another limitation for some students was ensuring they had a good internet connection, which could impact on their ability to access and interact with the lecture.

A number of participants commented in the qualitative data about the ability or lack thereof to concentrate when accessing lectures in various ways. The qualitative data revealed that live lectures, whether face-to-face or online enabled them to remain focused, whereas in some cases, participants watching pre-recorded lectures found it easy to become distracted. In the case of pre-recorded lectures, some participants stated that it was 'easier to get distracted by other things' and that they 'can get distracted at home'. Although one participant stated that it was 'hard to stay interested' during live online lectures, there was substantial evidence to show that those who engaged with this method of delivery reported back on it being enjoyable due to opportunities for interaction:

Polls make it engaging

I enjoy the interaction'

It's a fun lecture to engage in

I can still interact with the lecturer

Easier to interact with lecturer

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While it is identified that students reported on being less distracted during face-to-face lectures, distractions during these sessions were noted by participants as occurring, nonetheless. This will be further explored in the discussion of the findings later in this article. This feedback indicates that all modes of lecture delivery have their strengths and limitations. Furthermore, they demonstrate that different students have different preferences in how they like lectures to be delivered.

Preferences for lectures

Students were asked what their preference for lecture delivery would be and the results are summarised in Table 5. It is clear that the majority of respondents prefer a mixture of delivery styles.

Table 5 Lecture Delivery Preferences

Delivery Method	Response Rate (N=48)
Delivered on campus in person	13.3%
Delivered using pre-recorded lectures	13.3%
Prefer interactive online sessions	8.9%
A mix of classroom and pre-recorded	26.7%
A mix of all three	37.8%

The qualitative data provided further insight into students' preferences in lecture delivery styles explaining which methods enable them to learn in more effective ways:

Interaction is key for lecturers and students. Personally for me, online live lectures and face to face are better as I can ask questions directly

I find face to face lectures boring and I don't take much in. I usually don't even write, I just go home and write my notes back up. Online lectures are great...Online lectures always have reading resources listed/linked which is v. helpful

[I like] pre-recorded [lectures] because I learn more as I can pause it to write. Face to face lectures are too quick to write down.

Definitely agree that all lectures should be online but seminars to stay [face-to-face]. [The core] module shows how well this works.

I prefer pre-recordings. I wish this could happen for all my modules, as I love [the core module] pre-recorded lectures. Really have understood this module.

There was no one favoured method of delivery, but rather student preferences related to how they chose to participate in lectures and what they gained from those experiences. This data provides two key suggestions about some students' preferred ways of learning during lectures. In the case of live, online lectures, students appreciated the ability to have immediate access to reading and other learning materials which could be downloaded while the lecture was taking place. Further data in this study explains that this helped students to engage more frequently with learning materials as the traditional lecture format required them to search for resources following the lecture either online or via the library. This suggests that some students in this study were more likely to engage in wider reading if the materials were more immediately accessible.

It is also evident from the qualitative data that students can be distracted by the perceived expectation to take notes during face-to-face lectures. Students' feedback in the data shows that note taking during the traditional lecture format can inhibit their ability to follow the pace of a lecture. As shown in the data and noted earlier, some students report being able to gain more understanding during lecture sessions that are recorded as they are able to pause the lecture to write up notes as the lecture progresses. The findings relating to distraction caused by note taking will be discussed further in the next section of the article.

Discussion

This exploratory study aimed to understand student participation in lectures across different modes of delivery. Lecture attendance was influenced largely by the topic being covered and whether it related to the assignment of the module. Health

problems and distance from the university campus were the two factors that mostly inhibited lecture attendance, suggesting that alternative modes of delivery, such as asynchronous and synchronous lectures, would be beneficial to these students (see also Almodaires et al., 2019; Kozikoglu, 2019). Whilst there is some indication in this study that students would be more inclined to attend face-to-face lectures if they aren't recorded, the findings indicate that there was no significant difference in self-reported attendance between face-to-face and pre-recorded sessions. The synchronous interactive lectures received the highest percentage of self-reported attendance, despite these also being recorded and being available to watch at a later date. This indicates that a lecture being recorded is not the sole reason for non-attendance and that other factors such as lecture content and enjoyability of the lecture experience must also be considered. The debate regarding the relationship between lecture capture and student attendance is ongoing with a range of findings emerging (Dommett et al., 2019; Gomis-Porqueras, Meinecke, and Rodrigues-Neto, 2011; Kinash, Knight and McLean, 2015; McGowan and Hannah, 2015).

The findings highlight that the participation in lectures relates to two interconnected components. The first of these components is interaction, whereby students gave positive feedback on lectures that involved interaction with the lecturer, which supports previous research findings (see Nyamupangedengu and Khoza, 2018). Interaction was in the form of being able to respond directly to questions posed by the lecturer (either face-to-face or online), partaking in polls/quizzes, and having the opportunity to ask the lecturer questions. The second component is the choice of how to participate. All modes of lecture delivery received positive feedback, indicating that there is no one preferred method. Students liked to have control over pre-recorded lectures, whereby they could pause and rewind the lecture as it was delivered. Online lectures offered students the option to take part in the online activities or they could simply observe. In the face-to-face format, students can choose whether to respond to questions or ask questions. This highlights the importance of flexibility in the learning in relation to how lectures are accessed and the option to interact during sessions. This demonstrates that diversifying how lectures are delivered enables students to have control over how they participate and that the overarching theme emerging is the importance of students having choice in their participation.

Participation in lectures is largely inhibited when students find sessions boring or are distracted. This illustrates the importance of ensuring that lectures are as engaging as possible (see Stoeger and Krieger, 2016; Wollf et al., 2015). Students reported being easily distracted for all three modes of delivery, even in sessions designed with interactive activities. The online lectures had the highest level of interaction and 90% of students found this mode of delivery engaging, but there is still evidence of students finding it difficult to pay attention throughout. It has been identified in existing research that distraction caused by electronic devices (mobile phones, laptops) does not necessarily correlate with poor performance (Nalliah and Allareddy, 2014). This study has been unable to determine how to ensure students are not distracted, but further thought should be given to the varying causes of distraction amongst students as it has become apparent in this research that distractions are not always caused by electronic devices. The qualitative data revealed that distraction can be caused by the perceived expectation for students to take notes during lectures. This in can cause students to lose track of the flow of a face-to-face lecture and as such, recommendations can be made about how to encourage students to avoid this. By recording face-to-face lectures using lecture capture technology, students can be reminded at the beginning of a session that it will be made available as a recording and thus, if they are frequently distracted by trying to take notes, they should be encouraged to take notes from the recording during their independent study rather than during the live lecture. As a result, students may feel more engaged and able to participate in face-to-face lectures by listening to and observing information being presented, rather than trying to take notes simultaneously.

It was identified in the findings that only a small percentage (8.7%) of participants in in face-to-face lectures had the confidence to ask lecturers a question. However, a significant 70% of those taking part in online lectures felt able to do so. This suggests that students want to actively engage with lecturers, but the face-to-face format may inhibit confidence to do this. Utilising technologies to encourage greater interaction with lecturers has been evidenced as a means to empower students to have a voice (see Young and Nichols 2017), which this current study supports. It was noted on the synchronous lecture module evaluations that the initial online interaction with the lecturer enabled the student/lecturer cultural boundary (Ruddick, 1978) to be broken down, making students more confident interacting with the lecturer and their peers during the face-to-face seminars on the module. We argue that whilst we recognise disconnecting students from engaging with lecturers with the use of modern technologies can be problematic, combining the technological interaction with the face-to-face engagement can be beneficial.

Conclusion

Through the emergence of lecture recordings, blended learning, flipped learning and the broad digitisation of higher education delivery, there is some concern from the academic community that traditional lecturing methods are potentially being replaced *and* that students unanimously prefer digitised delivery due to the convenience of access. The primary conclusion from this research however is that the quality and relevance of what is being delivered in lectures is of far greater importance to students than the mode of lecture delivery.

This study has found that students still place value on face-to-face lectures, which offer engagement with the lecturer and enhance student participation with the wider university environment. Recorded face-to-face lectures have less impact on student attendance than other factors such as lecture content and the lecture experience. The flexibility offered by asynchronous and synchronous lectures was deemed beneficial by students in this study. These modes of learning are particularly valuable for students who are unable to attend face-to-face lectures due to other commitments, health issues and

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distance from campus. The findings indicate that offering students a diverse range of lectures provides them with choice of how and to what extent they participate. Students particularly liked to have control over how and where they participate and this andragogical approach to higher education is a mechanism to ensure learning is student, rather than teacher focused. Further research conducted on a wider scale may involve the inclusion of participant demographic information to draw additional conclusions between student learning preferences and student characteristics. The cohort of students who participated in the present study took part in learning that was flexible, engaging and interactive, which highlights the importance of diversifying the delivery of higher education, ensuring they feel empowered to choose how they participate in their learning.

Biographies

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References

- Almodaires, Abdullah A., Alayyar, Ghaida M., Almsaud, Tareq O. & Almutairi, Faisal M. (2019) 'The Effectiveness of Flipped Learning: A Quasi-Experimental Study of the Perceptions of Kuwaiti Pre-Service Teachers', *International Education Studies*, 12(1), pp. 10–23.
- Al-Nashash, H., & Gunn, C. (2013) Lecture capture in engineering classes: Bridging gaps and enhancing learning. *Educational Technology & Society*, 16(1), 69–78.
- Attwell, G. & Hughes, J. (2010) *Pedagogic Approaches to Using Technology for Learning: Literature Review*. Lifelong Learning UK, Publication CC/01 2011/01.
- Beetham, H., McGill, L., & Littlejohn, A. (2009) *Thriving in the 21st century: Learning Literacies for the Digital Age* (LLiDA project). Glasgow: the Caledonian Academy, Glasgow Caledonian University.
- Bryman, A. (2015) *Social Research Methods* (5th ed.), Oxford: Oxford University Press.
- Chen, N. S., Ko, H. C., Kinshuk, & Lin, T. (2005) 'A Model for Synchronous Learning Using the Internet' *Innovations in Education and Teaching International*, 42(2), 181-194.
- Curry, L. (1991) 'Patterns of Learning Style Across Selected Medical Specialties' *Educational Psychology* 11:247–77.
- Dommett, E.J., Gardner, B. & van Tilburg, W. (2019) 'Staff and student views of lecture capture: a qualitative study', *International Journal of Educational Technology in Higher Education*, 16(23).
- Dunn, R. (2000). 'Learning styles: Theory, research, and practice'. *National Forum of Applied Educational Research Journal*, 13(1), 3-22.
- Dunn, R., Beaudry, J.S., and Klavas, A. (2002) 'Survey of Research on Learning Styles' *California Journal of Science Education*, 2(2): 75-98.
- Edwards, M. & Clinton, M. (2018) A study exploring the impact of lecture capture availability and lecture capture usage on student attendance and attainment. *Higher Education*, 77(3), pp.403-421.
- Fleming, N.D. (1995) 'I'm different; not dumb. Modes of presentation (VARK) in the tertiary classroom', in Zelmer, A., (Ed.) *Research and Development in Higher Education*. Proceedings of the 1995 Annual Conference of the Higher Education and Research Development Society of Australasia (HERDSA), HERDSA, Volume 18, pp. 308 – 313.
- Gomis-Porqueras, P., Meinecke, J. & Rodrigues-Neto, J. (2011) 'New Technologies in Higher Education: Lower Attendance and Worse Learning Outcomes?'. *Agenda - A Journal of Policy Analysis and Reform*, 18(01).
- Gomm, R. (2009) *Key Concepts in Social Research Methods*, London: Palgrave Macmillan.
- Gosper, M., McNeill, M., Phillips, R., Preston, G., Woo, K., & Green, D. (2010) Web-based lecture technologies and learning and teaching: A study of change in four Australian universities. *ALT-J*, 18(3), 251–263.
- Graham, A. (2005) 'Blended learning systems: definitions, current trends and future directions'. In: Bonk, C. J. & Graham, C. R. (eds.) *Handbook of blended learning: Global Perspectives, local designs*. San Francisco, CA: Pfeiffer Publishing, pp. 3-21.
- Groen, J., F, Quigley, B. & Herry, Y. (2016) 'Examining the Use of Lecture Capture Technology: Implications for Teaching and Learning', *The Canadian Journal for the Scholarship of Teaching and Learning*. Vol. 7: Iss. 1, Article 8.
- Gulc, E. (2006) *Using Blended Learning to Accommodate Different Learning Styles*. Higher Education Academy. Accessed at <https://www.heacademy.ac.uk/system/files/2917.pdf> last access /8/09/2016
- Hall, G. & Ivaldi, A. (2017) A qualitative approach to understanding the role of lecture capture in student learning experiences, *Technology, Pedagogy and Education*, 26:4, 383-394.
- Honey, P. & Mumford, A. (1982) *Manual of Learning Styles*. London, P Honey.
- Hostetter, C. & Busch, M. (2006) 'Measuring Up Online: The Relationship between Social Presence and Student Learning Satisfaction', *Journal of Scholarship of Teaching and Learning*, 6(2): 1-12
- Kahn, B. H. (2007) *Flexible Learning in an Information Society*. Hershey, PA: Information Science Publishing.
- Keefe, J. W. (1979) *Learning style: An overview*. Reston, VA. National Association of Secondary School Principals.
- Kolb, D.A. (1985) *The Learning Styles Inventory Technical Manual*. McBer and Company. Boston MA
- Kozikoglu, I. (2019) 'Analysis of the Studies Concerning Flipped Learning Model: A Comparative Meta-Synthesis Study', *International Journal of Instruction*, 12(1), pp. 851–868.
- Kinash, S., Knight, D. & McLean, M. (2015) 'Does Digital Scholarship through Online Lectures Affect Student Learning?' *Educational Technology & Society*, 18 (2), 129–139.
- Mayadas, F. (1997) 'Asynchronous Learning Networks: A Sloan Foundation Perspective.' *Journal of Asynchronous Learning Networks*, 1(1), 1-16.
- McGowan, A. & Hanna, P. (2015) How Video Lecture Capture Affects Student Engagement in a Higher Education Computer Programming Course: A Study of Attendance, Video Viewing Behaviours and Student Attitude. IIMC International Information Management Corporation.

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- McGregor, I. (2015) 'How does Term-time Paid Work Affect Higher Education Students' Studies, and What can be Done to Minimise any Negative Effects?' *Journal of Applied Academic Practice* 3(2): 3-14.
- Morris, N.P., Swinnerton, B. & Coop, T. (2019) 'Lecture recordings to support learning: A contested space between students and teachers', *Computers & Education*, 140.
- Nadler, J. T., Weston, R., & Voyles, E. C. (2015) Stuck in the Middle: The Use and Interpretation of Mid-Points in Items on Questionnaires. *Journal of General Psychology*, 142(2), 71-89. <https://doi-org.libaccess.hud.ac.uk/10.1080/00221309.2014.994590>
- Nalliah, R.P. & Allareddy, V. (2014) 'Students distracted by electronic devices perform at the same level as those who are focused on lectures', *PeerJ*, 2: e572.
- Newland, B. (2017) *Lecture Capture in UK HE 2017: A HeLF Survey Report*. [online]. Available at: <https://cris.brighton.ac.uk/ws/portalfiles/portal/483569/HeLFLectureCapture2017.pdf> [Accessed 15 Jul. 2019].
- Newton, G., Tucker, T., Dawson, J. & Currie, E. (2014) Use of lecture capture in higher education-lessons from the trenches. *TechTrends*, 58(2), 32-45.
- Nyamupangedengu, E. & Khoza H.C. (2018) 'Prompts used by biology lecturers in large lecture group settings to promote student interaction', *African Journal of Research in Mathematics, Science and Technology Education*, (3), p. 386.
- Proctor, C. (2003) 'Blended Learning in Practice' Conference Proceedings *Education in a Changing Environment* 17th-18th September 2003.
- Rennie, F. (2003) 'The Use of Flexible Learning Resources for Geographically Distributed Rural Students', *Distance Education*, 24(1): 25-39.
- Roehl, A., Reddy, S. L., & Shannon, G. J. (2013) 'The Flipped Classroom: An Opportunity to Engage Millennial Students Through Active Learning Strategies' *Journal of Family and Consumer Sciences*, 105, 44-49.
- Rudduck, J. (1978) 'Interaction in small group work', *Studies in Higher Education*, 3(1): 37-43.
- Smith, D.H. (1996) 'Developing a More Interactive Classroom: A Continuing Odyssey', *Teaching Sociology*, 24(1): 64-75.
- Stoerger, S. & Krieger, D. (2016) 'Transforming a Large-Lecture Course into an Active, Engaging, and Collaborative Learning Environment', *Education for Information*, 32(1), pp. 11-26.
- Watt, S., Vajoczki, S., Voros, G., Vine, M., Fenton, N. & Tarkowski, J. (2014) Lecture capture: An effective tool for universal instructional design? *The Canadian Journal of Higher Education*, 44(2), 1.
- Wahu, B. & Davis, K. (2014) 'University Students' Perspective on Blended Learning', *Journal of Higher Education Policy and Management*, 36(2): 172-182.
- Wenger, E. (2000) *Communities of Practice*. Cambridge, Cambridge University Press.
- Wolff, M. Wagner, M.J. Poznanski, S. Schiller, J. & Santen, S. (2015) 'Not Another Boring Lecture: Engaging Learners with Active Learning Techniques', *Journal of Emergency Medicine*, p. 85.
- Xu, D. & Jagers, S. (2014) 'Performance Gaps between Online and Face-to-Face Courses: Differences across Types of Students and Academic Subject Areas', *The Journal of Higher Education*, 85(5): 633-659.
- Young, S. & Nichols, H. (2017) 'A Reflexive Evaluation of Technology-Enhanced Learning', *Research in Learning Technology*, Vol.25.