The Future of Digital Learning Resources: Students' Expectations versus Reality

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Since 2020, learning in higher education has been transformed by digitisation. Digital learning is not a new phenomenon, but its adoption by higher education institutions was accelerated during the COVID-19 pandemic.[1] By July 2020, 98.6% of learners worldwide had been affected by the pandemic, representing 1.725 billion children and youth, from pre-primary to higher education, in 200 countries.[2] The pandemic saw a surge in the use of language apps, virtual tutoring, video conferencing, eBooks and online learning software.[3] Despite this being a global phenomenon, there were huge disparities between countries and socio-economic groups. According to OECD data, 95% of students in Switzerland, Norway, and Austria had access to a computer for schoolwork compared to just 34% of pupils in Indonesia.[4] There is a clear need to support students without access to laptops and a stable internet connection, and students with learning difficulties – such as hearing impairment, visual impairment, and mobility disabilities – require additional support.[5]

The shift towards digitisation and online learning offers significant advantages. Making content available online and throughout the day can make learning more accessible for students with caring responsibilities, for example.

The future is unlikely to be either wholly in-person or wholly digital, with the need for in-person laboratory training, musical performances, and nursing practice remaining key to certain degree subjects. The balance between in-person and online learning will depend upon a range of factors and will vary between countries, institutions, and subject areas. It should also depend upon the student voice – their experiences and expectations of their higher education institutions.[6]

Given these questions over the future of digitally enhanced learning, HEPI partnered with Kortext, a digital content and student experience expert which provides access to core texts in higher education, to ask students about the digital resources currently available on their course and their expectations of how things might look in the future. The polling was undertaken by UCAS.

Our survey was split into four areas:

1. the transition from school / college to higher education;

2. comparing the digital resources currently on offer and students' expectations about what should be available;

3. ease of access to content currently available; and

4. the future of digital learning.

Methodology

The survey was sent by UCAS to a sample of current university or college students in the UK and was open from 18 October to 28 October 2022. The survey sample covered students currently studying in their first, second, and third years at university or college. In total, more than 2,000 current students took the time to tell us about their experiences with learning resources at university and college, and what they would look for when using digital learning resources.

The survey responses were weighted to be representative of the population of students currently studying in their first, second, and third years of higher education. The weighting process takes into account differences in response rates observed in different characteristic groups, including gender, age, ethnic group, country, the type of school a student attended and (for students from the UK) the region where the students are originally from. The weighted proportions have been used for this research piece to give a representative picture of the student population.

The margin of error is +/- 2% at a 95% confidence level, based on the fact that we received 2,195 responses to the survey representing a population of almost 1.7 million current first-, second- or third-year students.

Key facts and figures

- 95% of students 'agree' or 'strongly agree' that digital copies of course books should be available without waiting lists.

- 87% of students 'agree' or 'strongly agree' that digital course books should be available on one consistent reading platform.

- Lecture recordings are the most in-demand digital resource (expected by 46%; currently accessed by 79%).

1. On the transition from school / college to higher education

Some schools and colleges have invested significantly in online learning, and we began by asking students to compare their experiences of using online resources at their previous institution and their current higher education institution. The most common answer to the statement, 'the online resources at my school or college were better than the online resources at my higher education institution' was 'disagree' (29%). Thirty-eight per cent of students strongly agreed or agreed with the statement, while 45% disagreed or strongly disagreed. Eighteen per cent of students responded with 'neutral'.

Q2: How far do you agree or disagree with the following statement: 'The online resources at my school or college were better than the online resources at my higher education institution?'

Weighted Proportions of Responses
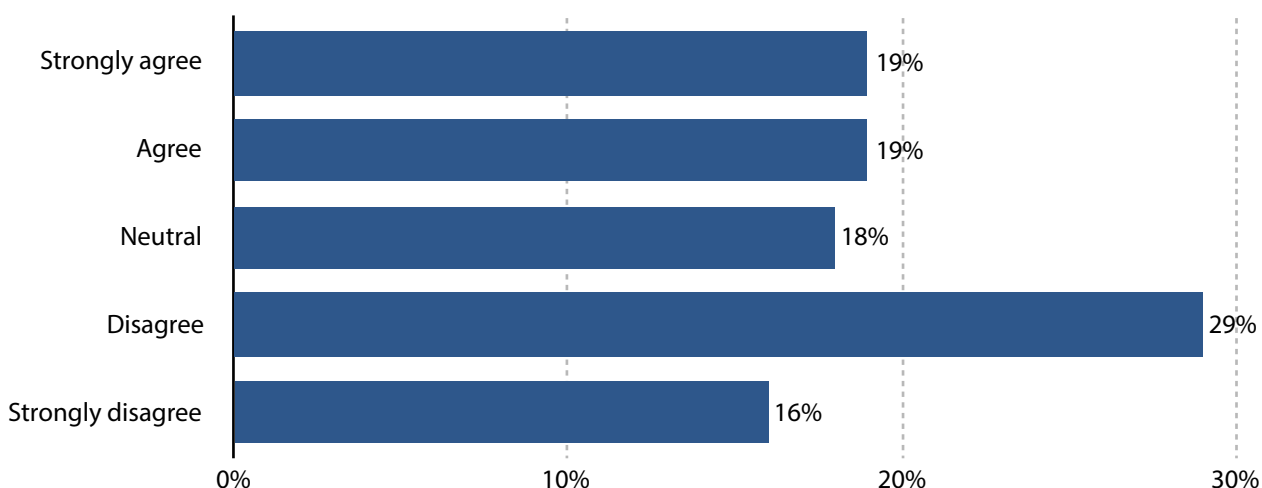
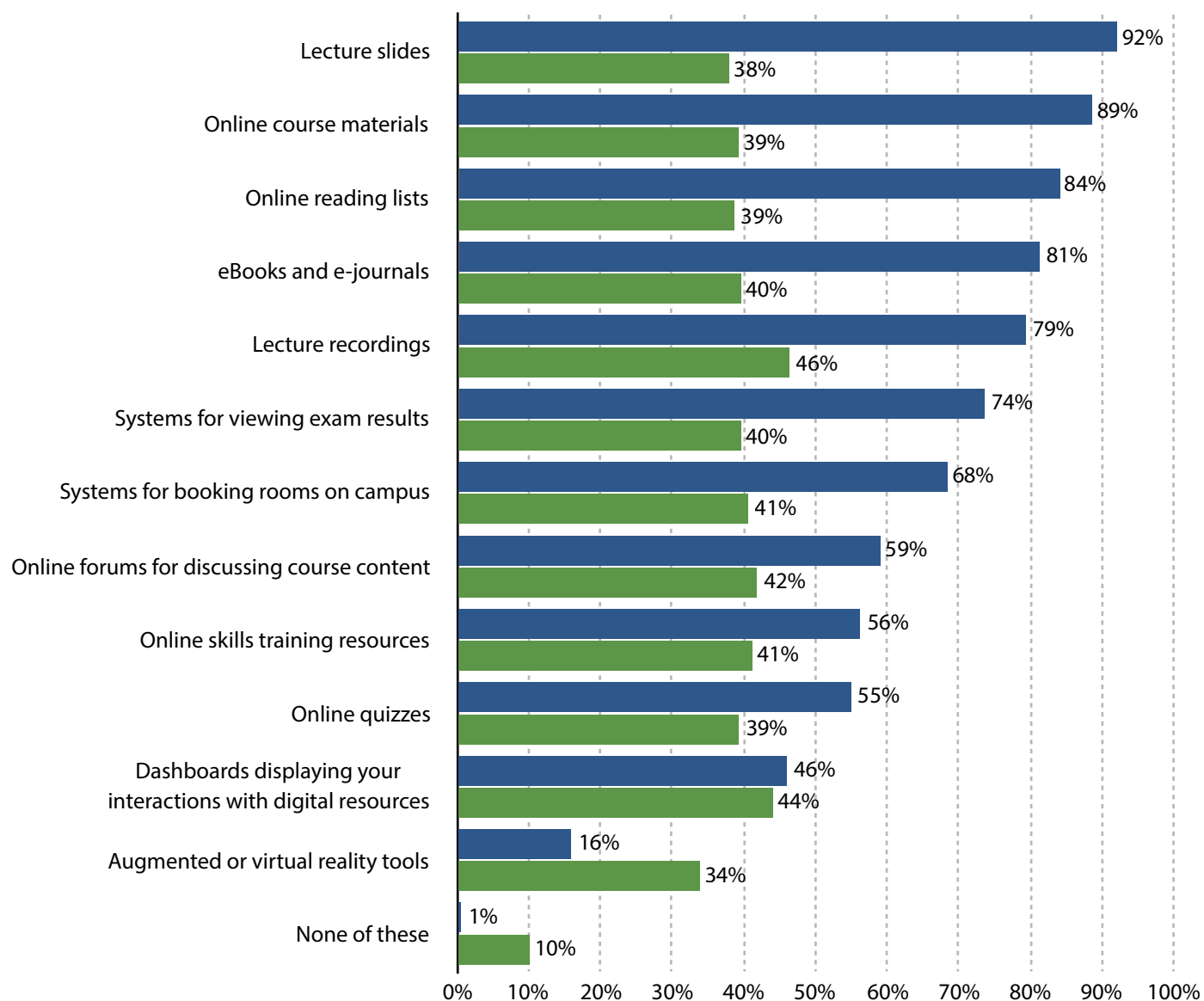## 2. Digital resources currently on offer and student expectations

We then set three questions asking students about the digital resources on offer for their current course:

i. Which, if any, of the following digital learning resources does your higher education institution currently offer to students on your programme? Please tick all that apply.

ii. Which, if any, of the following digital learning resources do you think your institution should provide to students on your programme? Please tick all that apply.

iii. Which, if any, of the followin features do you think an institution should prioritise when developing digital learning resources? Tick all that apply.

Students responded that the digital resources most widely available to them included lecture slides (92%), online reading lists (84%), and eBooks and e-journals (81%).

Q3: Which, if any, of the following digital learning resources does your higher education institution currently offer to students on your programme?

Weighted Proportions of Responses

Resource	Currently offered	Should provide
Lecture slides	92%	38%
Online course materials	89%	39%
Online reading lists	84%	39%
eBooks and e-journals	81%	40%
Lecture recordings	79%	46%
Systems for viewing exam results	74%	40%
Systems for booking rooms on campus	68%	41%
Online forums for discussing course content	59%	42%
Online skills training resources	56%	41%
Online quizzes	55%	39%
Dashboards displaying your interactions with digital resources	46%	44%
Augmented or virtual reality tools	16%	34%
None of these	1%	10%

■ Which, if any, of the following digital learning resources does your higher education institution currently offer to students on your programme?

■ Which, if any, of the following digital learning resources do you think your institution should provide for students on your programme?

There is a correlation between resources on offer to students and those they expect to be available. The single most in-demand digital learning resource is lecture recordings (expected by 46%; currently accessed by 79%) followed by dashboards displaying students' interactions with digital resources (expected by 44%, accessed by 46%), and online fora for discussing course content (expected by 42%, accessed by 59%).

Overall, augmented or virtual reality tools were available to 16% of respondents but expected by 34% of respondents. Free-text answers provided insight into the variation across subject areas. One student reported that their course offered 'interactive online 3D anatomy resources'; another wished to see provision of virtual reality tools for veterinary nurses; and a third student '[thought] that skills trainings should be hands on and in university / hospital'. The latter student continued, 'It wouldn't be effective any other way'. There was also demand for sheet music and backing tracks, presumably from a music student.

A common theme in the free-text answers was a demand for more user-friendly interfaces which allow quicker and easier access to the digital learning resource. Free-text responses to the question, 'Which, if any, of the following digital learning resources do you think your institution should provide for students on your programme?' include:

> Easy flowing structure making the resources available to you easy to find (a good layout).

> I do find that sometimes research papers are not easy to access as [they are] not always accessible through the university link.

> Improvements can be made to make thing[s] more accessible[.] I know you can book rooms on campus[;] however[,] it's difficult to do this [-] I don't know how to, [the] process is difficult.

> A clearer tab for viewing upcoming assignments as opposed to the current system of having to go into the individual module sections.

> Easy access to previous exam questions.

> A single platform (not split between Teams and Moodle) with a better U[ser] I[nterface].

> More accessible sites / options for those with disabilities.

The same concern for useability was brought out by answers to our question, 'Which, if any, of the following features do you think an institution should prioritise when developing digital learning resources?' The most common response was, 'the resource is streamlined and easy to navigate' (72%).

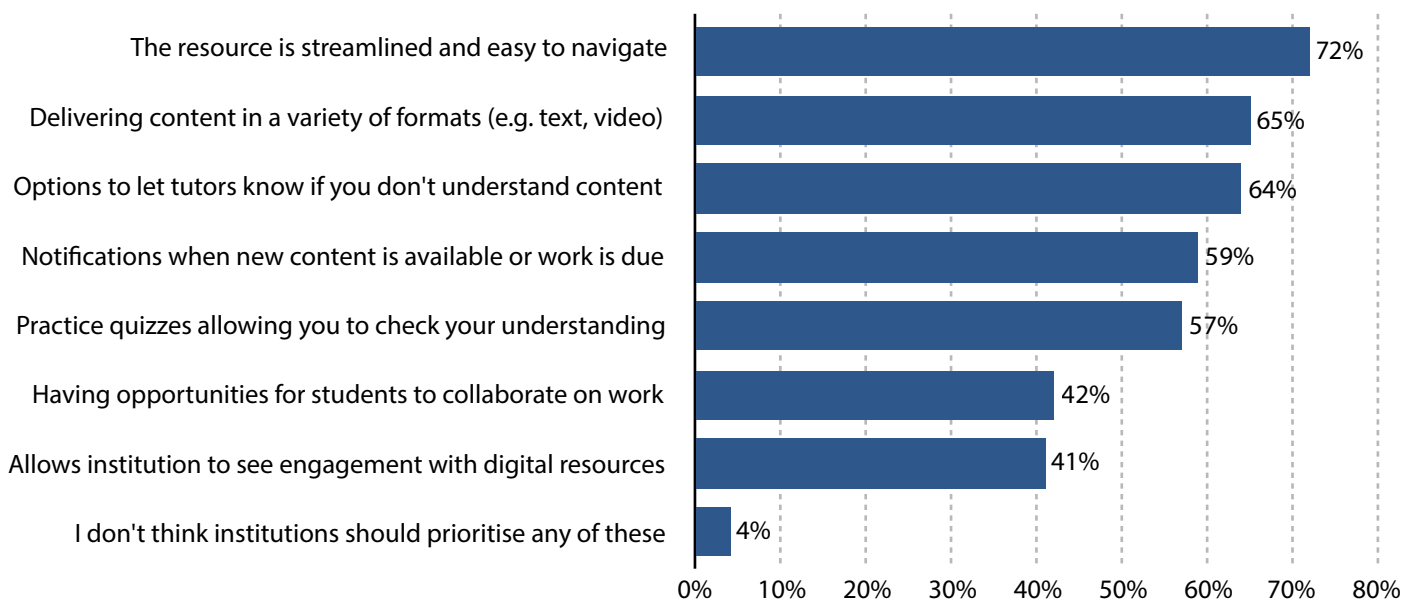One free text answer sought more consultations with students about the ease of use and navigation of online learning resources. The student wrote:

> Asking students what they want to see in terms of layout and accessibility.

In other responses, students raised concerns about the compatibility of digital learning resources with older laptops, and across different devices and computing systems, as well as accessibility.

Q5: Which, if any, of the following features do you think an institution should prioritise when developing digital learning resources?

Weighted Proportions of Responses

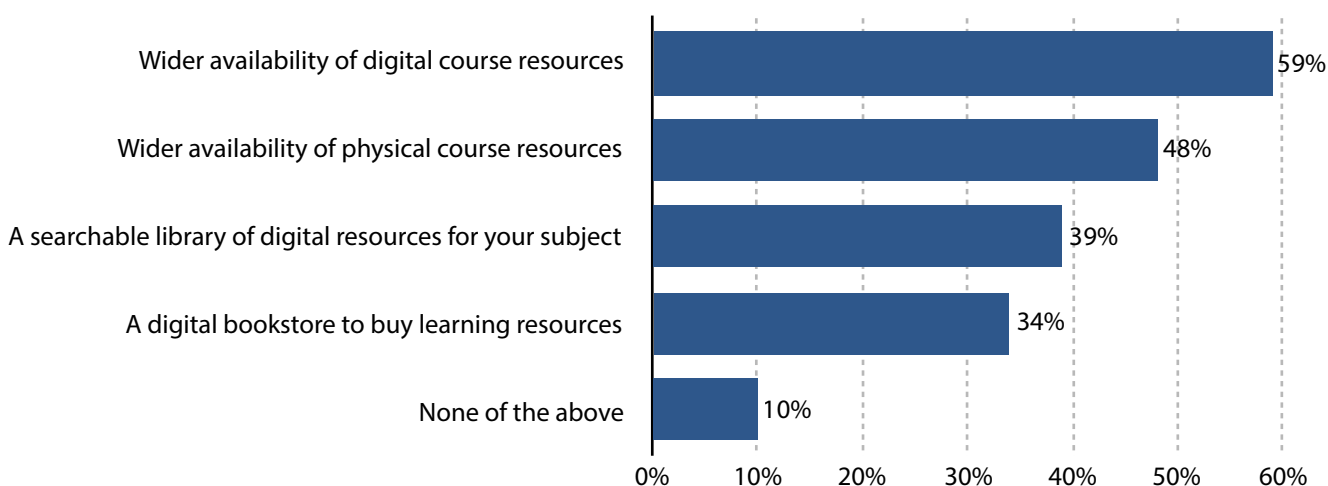| Feature	Percentage
The resource is streamlined and easy to navigate	72%
Delivering content in a variety of formats (e.g. text, video)	65%
Options to let tutors know if you don't understand content	64%
Notifications when new content is available or work is due	59%
Practice quizzes allowing you to check your understanding	57%
Having opportunities for students to collaborate on work	42%
Allows institution to see engagement with digital resources	41%
I don't think institutions should prioritise any of these	4%

3. Ease of access to content currently available

In the next section of our survey, we asked students about the ease of access to content currently available at their higher education institution. Responses to the question, 'How often do you worry about whether you'll be able to access course books from your higher education institution's library when you need them (for example, when revising for an exam, or completing an assessment)?' were almost evenly split between those who worried (49% always / often / sometimes) and rarely or never worried (52% rarely / never) about access.

Of those who said they did worry about access, 40% said it 'always' / 'often' / 'sometimes' affected their mental health, while 59% reported that it 'rarely' / 'never' affected their mental health. Although in a minority, for those students who did say it affected their mental health, access was a key cause of concern. There were a disproportionately high number of free-text answers to this question compared to others, and the most common words used in response were 'stress' and 'anxiety'.

Q9: Would any of the following help to improve your mental health?

Weighted Proportions of Responses

| Option	Percentage
Wider availability of digital course resources	59%
Wider availability of physical course resources	48%
A searchable library of digital resources for your subject	39%
A digital bookstore to buy learning resources	34%
None of the above	10%

Students were then asked which resources would help improve their mental health. The most common answer was the wider availability of digital course resources (59%), higher than the second-most common answer, the wider availability of physical course resources (48%).

Respondents were asked how valuable they think having instant access to digital course books is, or would be, to their studies. Most respondents (69%) said that having instant access to digital course books is or would be 'very valuable' to their studies. Seventy-six per cent of respondents 'strongly agree' that digital copies of their course books should be available without waiting lists.

While 35% of students purchase course books instead of borrowing them from their institution's library ('always' – 6%; 'often' – 11%; 'sometimes' – 18%), 66% of students 'rarely' or 'never' do so (26% and 40% respectively). This may help explain a significant rise in UK higher education institutions' library spending.[7]

Q10: How valuable do you think having instant access to digital course books is, or would be, to your studies?

Weighted Proportions of Responses
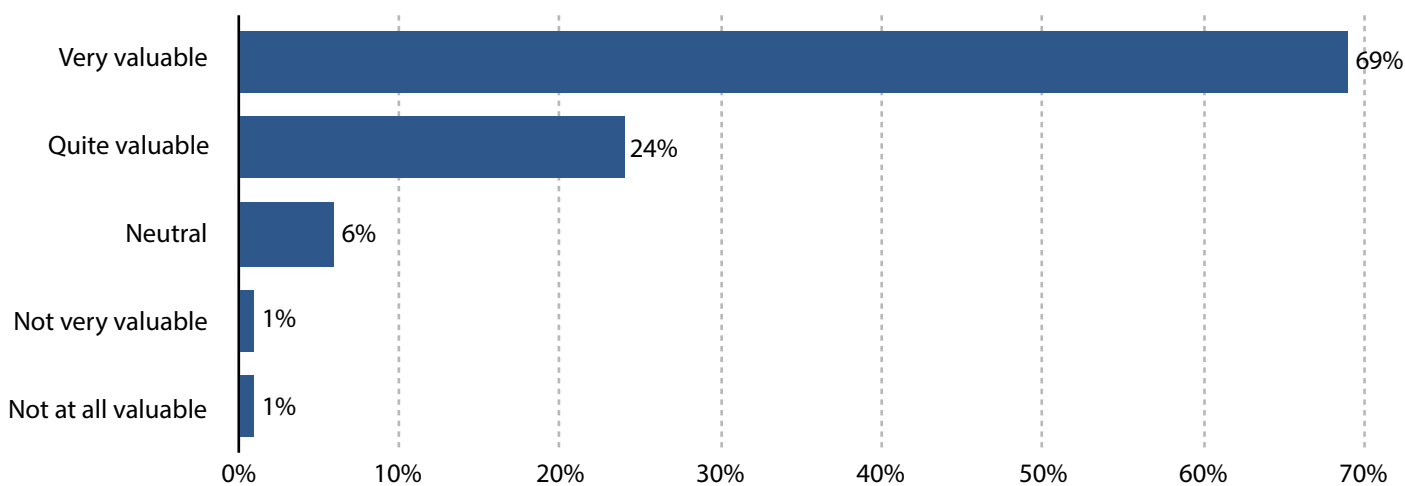
4. On the future of digital content

When asked about the future of online learning, digital copies of books were more in demand than physical ones. Most students would like to see digital copies of their course texts available without waiting lists (76% strongly agree; 19% agree). While students would also like to see physical copies of course books available without waiting lists, they were less convinced in their views (35% strongly agree; 40% agree).
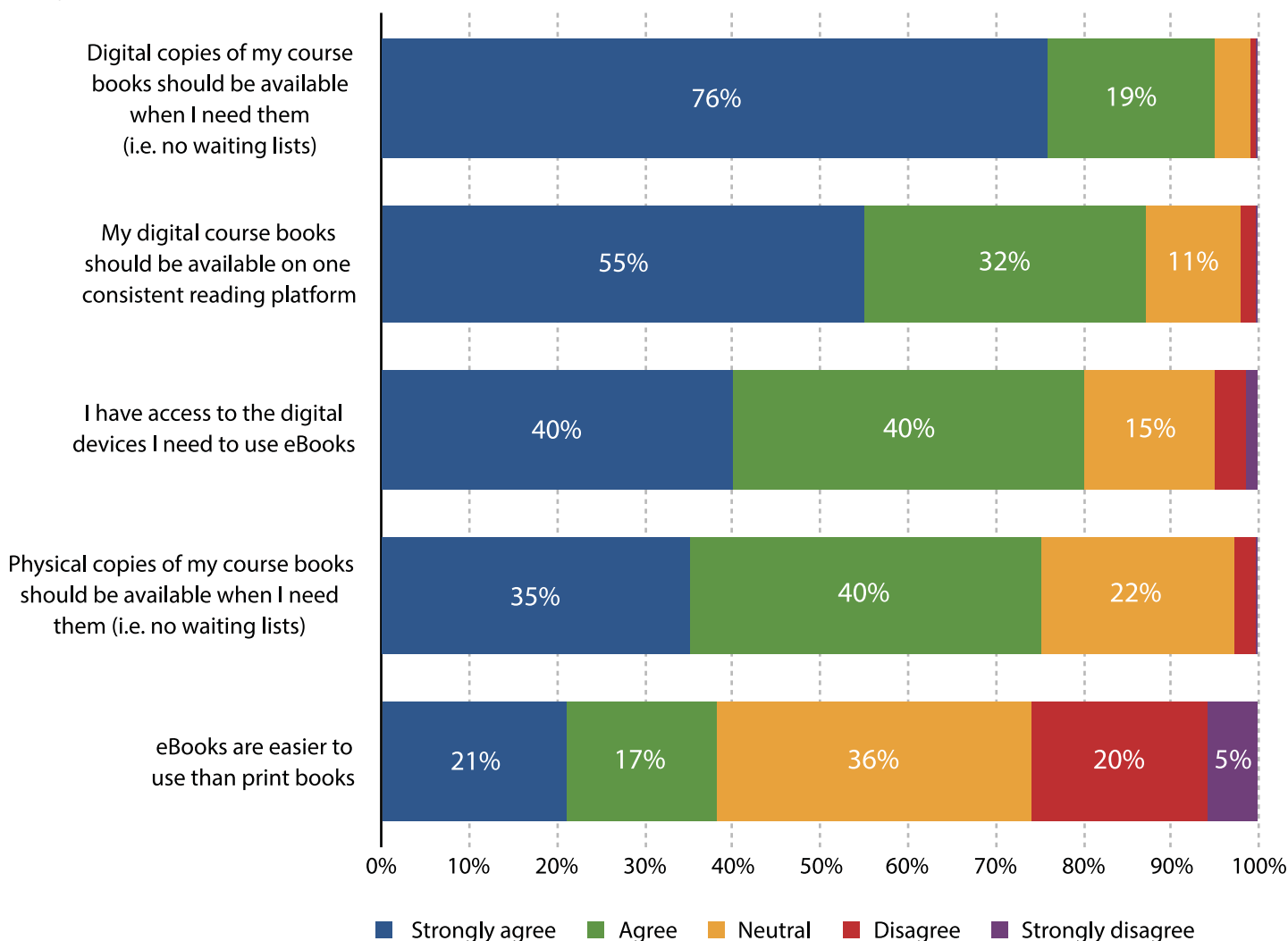
Students were asked how they would like to see course content evolve at their institution, and the most common answers were better availability of digital resources through the library (48%) and a searchable library of their subject's digital resources (48%). Physical learning resources were also in demand (44%), but slightly less so than digital tools.

Students feel positive or relatively neutral in their responses as to whether 'eBooks are easier to use than print books', with 38% strongly agreeing or agreeing with the statement. Neutral (36%) or negative (25%) responses could be because of the concerns outlined above over issues of ease of access and navigating complex interfaces. Students repeated their demand for digital course books to be available on one consistent reading platform (55% strongly agree; 32% agree).

We asked students to respond to the statement, 'I have access to the digital devices I need to use eBooks'. There was a generally positive response across groups (40% 'strongly agree' and 40% 'agree').
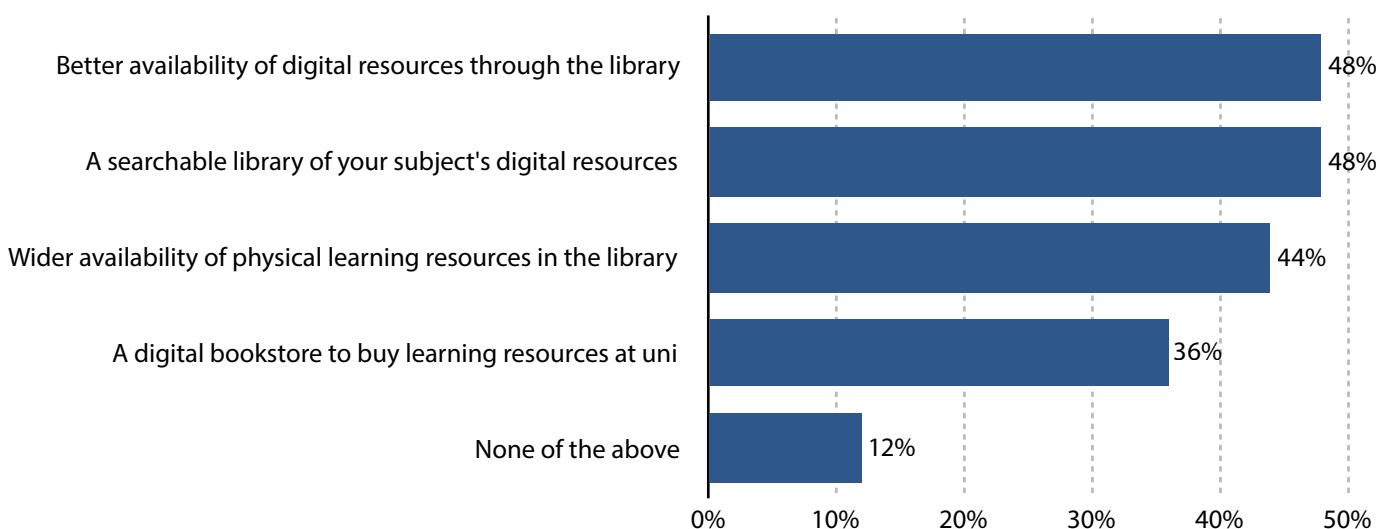
Q12: To what extent do you agree or disagree with the following statements?

Weighted Proportions of Responses

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Digital copies of my course books should be available when I need them (i.e. no waiting lists)	76%	19%			
My digital course books should be available on one consistent reading platform	55%	32%	11%		
I have access to the digital devices I need to use eBooks	40%	40%	15%		
Physical copies of my course books should be available when I need them (i.e. no waiting lists)	35%	40%	22%		
eBooks are easier to use than print books	21%	17%	36%	20%	5%

■ Strongly agree ■ Agree ■ Neutral ■ Disagree ■ Strongly disagree

Q13: In future, how would you like to see access to course content evolve at your higher education institution?

Weighted Proportions of Responses

Option	%
Better availability of digital resources through the library	48%
A searchable library of your subject's digital resources	48%
Wider availability of physical learning resources in the library	44%
A digital bookstore to buy learning resources at uni	36%
None of the above	12%

In our final question, we asked students what features would make them less willing to use a
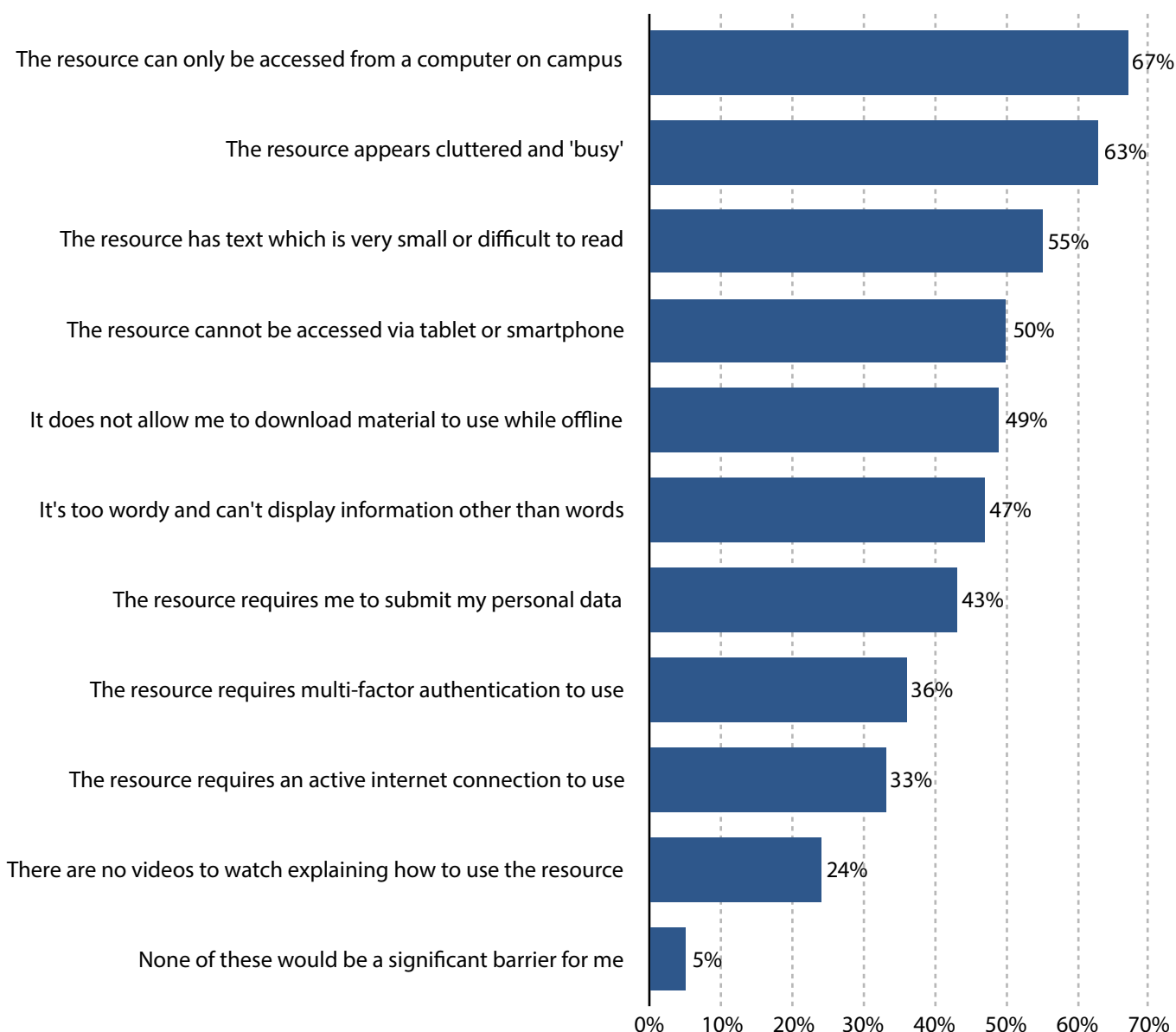
digital resource in future. Students' foremost concerns were accessibility off-campus and a user-friendly interface: 67% of students said they would be less willing to use a digital resource if it could only be accessed from a computer on campus.

Forty-three per cent of students say they would be less willing to use a digital learning resource if it required them to submit their personal data. However, there is majority support for learning more about study behaviours when using digital learning resources - which could rely on data monitoring - and the changes students can make to learn more effectively (52% said 'yes'; 6% already have access to this information).

Other factors that put students off using a digital resource are: if the interface looked cluttered and busy (63%); if the text is very small or difficult to read (55%); and if the resource seems 'too wordy and can't display information other than words' (47%). Accessibility is also key to shaping future digital learning resources: 49% want to be able to download material to use while offline and 50% want to be able to access resources from a tablet or smartphone. Thirty-eight per cent of students say they would be 'much more likely' to use a digital learning resource if there were also a smartphone or tablet version.
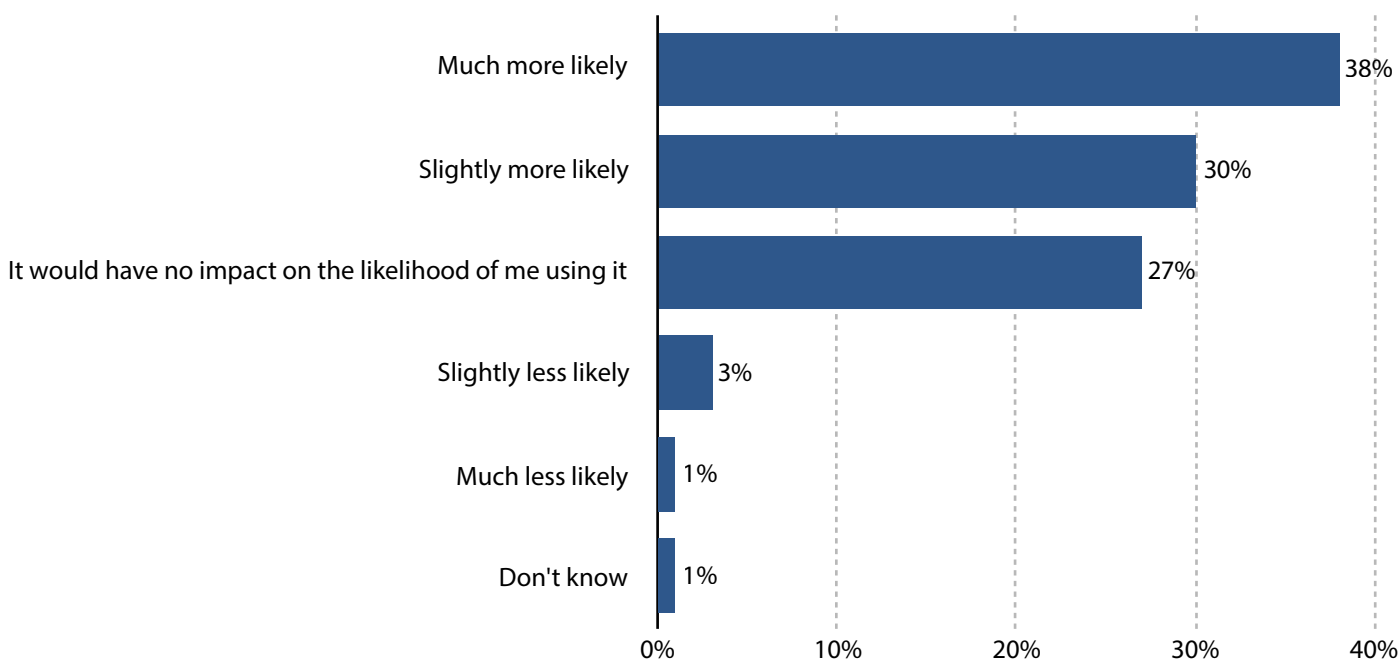
Q14: Would any of the following features make you less willing to use a digital learning resource?

Weighted Proportions of Responses

| Feature	%
The resource can only be accessed from a computer on campus	67%
The resource appears cluttered and 'busy'	63%
The resource has text which is very small or difficult to read	55%
The resource cannot be accessed via tablet or smartphone	50%
It does not allow me to download material to use while offline	49%
It's too wordy and can't display information other than words	47%
The resource requires me to submit my personal data	43%
The resource requires multi-factor authentication to use	36%
The resource requires an active internet connection to use	33%
There are no videos to watch explaining how to use the resource	24%
None of these would be a significant barrier for me	5%

Q15: To what extent would you be more or less likely to use a digital learning resource if there was also a smartphone or tablet version?

Weighted Proportions of Responses

Response	Percentage
Much more likely	38%
Slightly more likely	30%
It would have no impact on the likelihood of me using it	27%
Slightly less likely	3%
Much less likely	1%
Don't know	1%

Q16: Would you value learning more about your study behaviours when using digital learning resources and the changes you can make to learn more effectively?

Weighted Proportions of Responses

Response	Percentage
Yes	52%
No	11%
Not sure	31%
I already have access to this information	6%
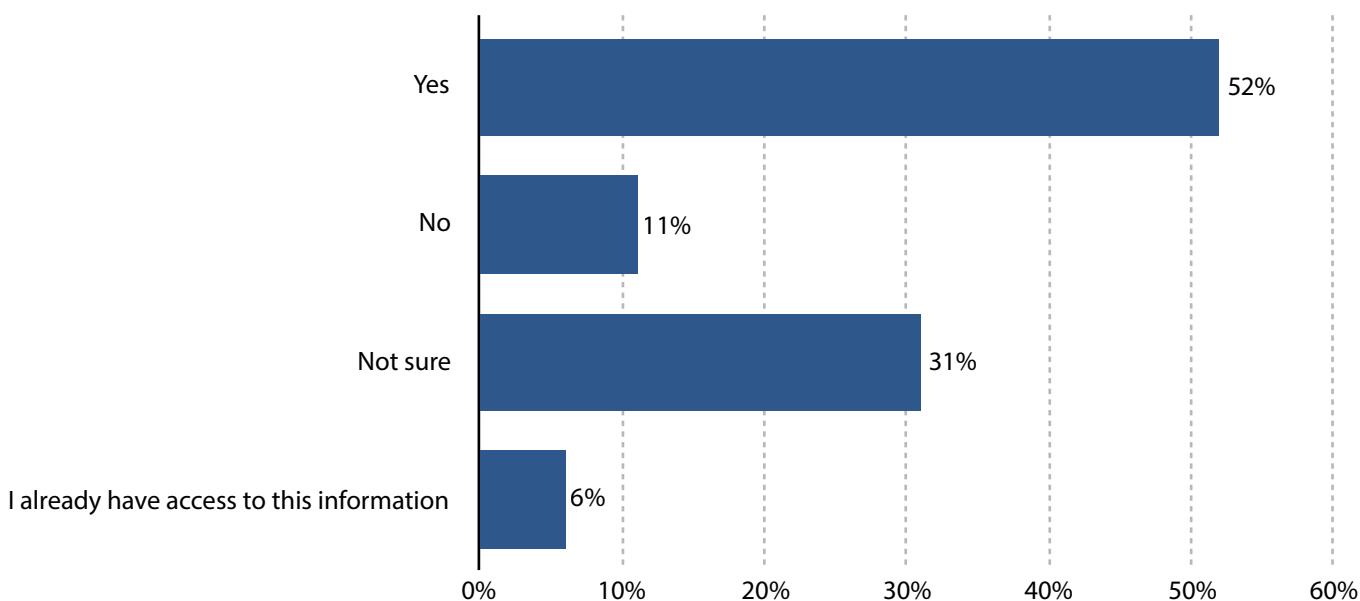
Conclusions and recommendations

Online learning is here to stay and it is timely to focus on the disparities between realities and student expectations when it comes to digital learning resources.

The polling results lend themselves to three clear policy recommendations for institutions:

1. Students want a single digital learning platform that is easy to use

Throughout the survey, respondents were consistent in demanding the streamlining of digital learning resources onto one single platform with an easy-to-use interface. Students expect texts to be easily readable and platforms not to appear cluttered and busy. Students also want

the platform to be available across devices – laptops as well as smartphones and tablets – and accessible on- and off-campus.

2. Students want to be able to access online resources without waiting lists

Demand for online resources to be available at the point of need, without waiting lists, outstripped demand for physical learning resources. Although most students (52%) say they 'rarely' or 'never' worry about being able to access course books at the point of need, 59% of those students who do worry say that the wider availability of digital resources would improve their mental health. This seems a workable solution to improve student wellbeing.

3. Students want digital recordings of their lectures

The most in-demand digital learning resource is lecture recordings. Recordings should be uploaded for the duration of the course and the resource could improve accessibility for part-time students, students with caring responsibilities, and students who are otherwise unable to attend lectures in-person. Videos should be uploaded onto a single, user-friendly platform. As a previous HEPI Policy Note has pointed out, however, the feature raises questions about intellectual property rights, more particularly who owns recorded material and who has the right to disseminate it.[8] Answers to these questions need to be firmly established.

Endnotes

1 Olasile Babatunde Adedoyin & Emrah Soykan, 'Covid-19 pandemic and online learning: the challenges and opportunities', *Interactive Learning Environments*, 2 September 2020 10.1080/10494820.2020.1813180

2 Sumitra Pokhrel and Roshan Chhetri, 'A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning', *Higher Education for the Future*, 8 (1), 19 January 2021, pp. 133–141 https://doi.org/10.1177/2347631120983481

3 World Economic Forum, 'The COVID-19 pandemic has changed education forever. This is how', 29 April 2020 https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

4 World Economic Forum, 'The COVID-19 pandemic has changed education forever. This is how', 29 April 2020 https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

5 Sumitra Pokhrel and Roshan Chhetri, 'A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning', *Higher Education for the Future*, 8 (1), 19 January 2021, pp. 133–141 https://doi.org/10.1177/2347631120983481; Emma Howard, Aneesa Khan and Charlotte Lockyer, 'Research and analysis Learning during the pandemic: review of research from England', Ofqual, 12 July 2021 https://www.gov.uk/government/publications/learning-during-the-pandemic/learning-during-the-pandemic-review-of-research-from-england

6 Michael Natzler (ed.), *What Is the Student Voice? 13 essays on how to listen to students and how to act on what they say*, HEPI Report 140, 5 August 2021 https://www.hepi.ac.uk/2021/08/05/what-is-the-student-voice-13-essays-on-how-to-listen-to-students-and-how-to-act-on-what-they-say/

7 Aileen Fyfe, Kelly Coate, Stephen Curry, Stuart Lawson, Noah Moxham and Camilla Mørk Røstvik, *Untangling academic publishing : a history of the relationship between commercial interests, academic prestige and the circulation of research*, University of St Andrews, 2017, p.13

8 Alexis Brown, *Who Owns Online Lecture Recordings?* HEPI Policy Note 32, 30 November 2021 https://www.hepi.ac.uk/2021/11/30/who-owns-online-lecture-recordings/