Getting the most out of live online tutoring: insights from half a million hours

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INTRODUCTION

Education was forced online during a tumultuous 2020. From schooling to tuition, live instruction became a virtual affair as lockdowns of varying severity came into effect around the world.

That dramatic change is looking more than temporary, with the winter surge of coronavirus leading to renewed restrictions and 99% of tutors planning to continue tutoring online for the next year.

- What have students and educators made of this shift?
- What's proved challenging?
- Have there been some unexpected benefits?
- What can be done to get the most out of live online tutoring over the coming year?

This report seeks to answer those questions and many more. It synthesises data from the most comprehensive survey into online tutoring to date, featuring over 2,000 students and educators, with engagement data from over half a million hours on Bramble's live online teaching platform.

The final part of the report goes further. By analysing the content of live lessons it explores the topics and concepts students focus on with their tutors – providing unprecedented insight into the areas students struggle with.
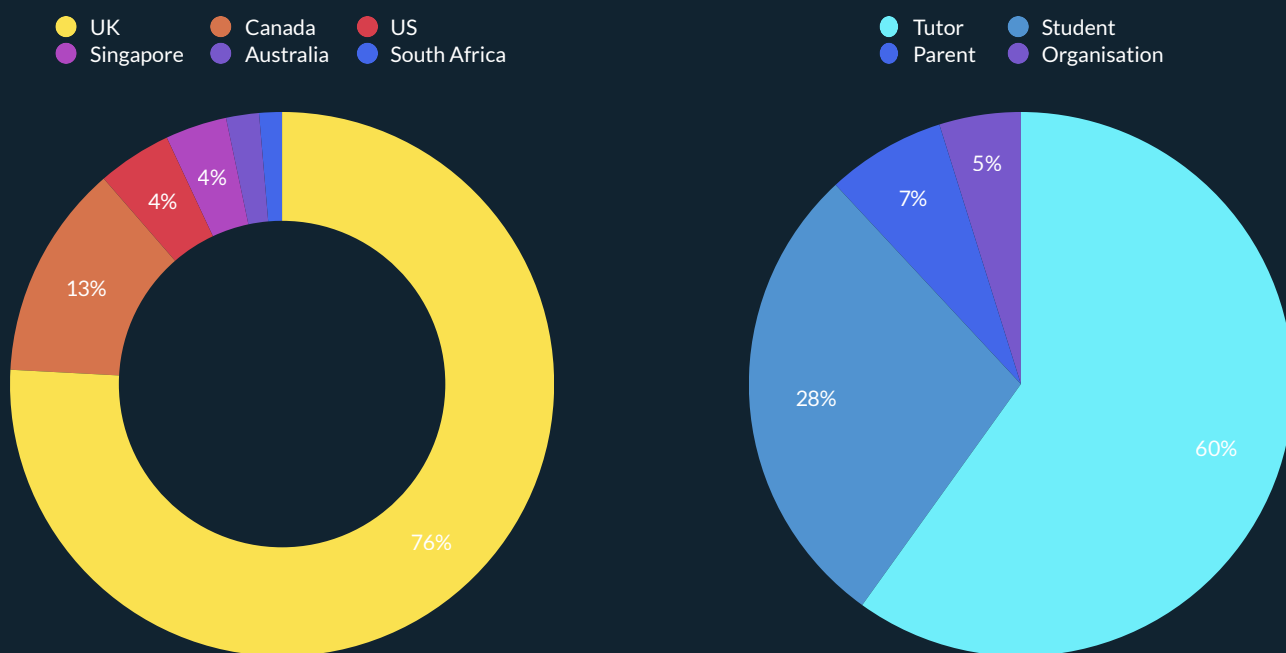
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WHO RESPONDED TO THE SURVEY?

2,063 Bramble users responded to a survey asking them to share their experience of live online teaching and learning under lockdown. The survey ran for three weeks between 4 June and 25 June 2020.

Respondents came from 37 of the 155 countries Bramble is used in. The overwhelming majority (73%) were from the UK. Teachers and tutors (60%), students (28%), parents (7%) and organisations (5%) all shared their experiences. Between them they had over 20,000 hours of live online teaching experience.

BREAKDOWN OF SURVEY RESPONDENTS

UK   Canada   US
Singapore   Australia   South Africa

Tutor   Student
Parent   Organisation

76%
13%
4%
4%

60%
28%
7%
5%

WHO IS TUTORING ONLINE?

We heard from a range of different types of tutors working online:

- 33% university students who tutor
- 28% part-time tutors
- 17% teachers who also tutor
- 13% full-time tutors
- 5% retirees who tutor

Many tutors taught more than one subject with maths (64%), English (45%) and the sciences (64%) proving most popular. Tutors are working with students of all ages online, with the most common age range being students age 14 to 16.

## % OF TUTORS TEACHING A SUBJECT
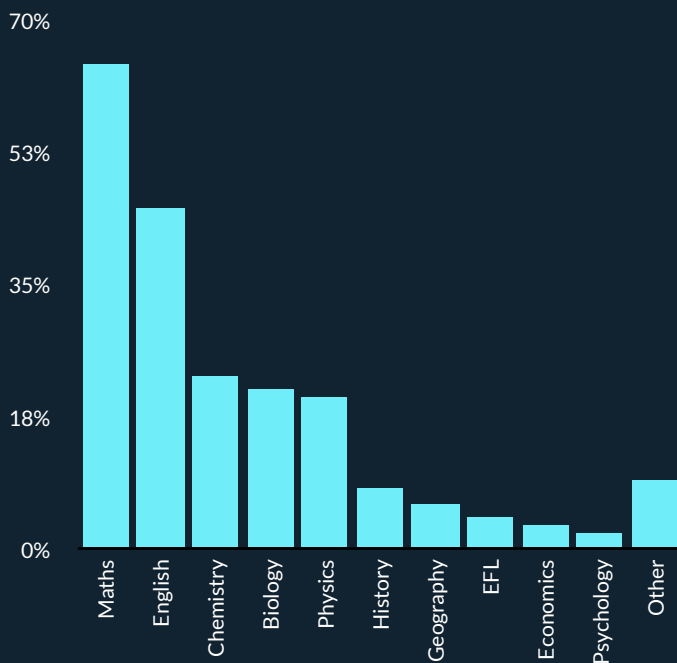
AGE OF STUDENTS TUTORS WORK WITH
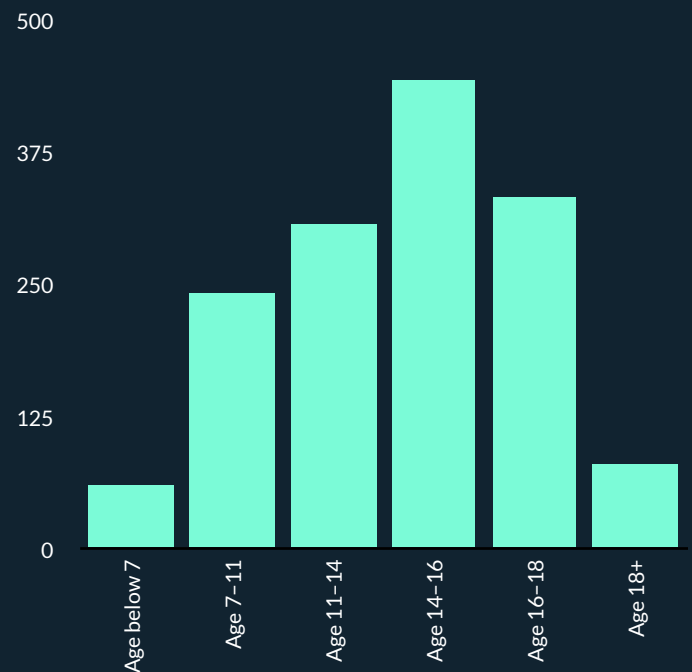
THE SHIFT ONLINE

The majority of respondents, be they tutors or students, previously had little or no experience of online tutoring. Despite that, they now see it as the norm for at least the next 12 months.

80% of tutors who responded to the survey had no prior experience of tutoring online before lockdown yet 99% of them plan to continue tutoring online for the coming year. This emphasises how dramatically the events of this year have accelerated the transition to online tutoring.

% OF TUTORING ONLINE BEFORE LOCKDOWN

■ Tutors ■ Students ■ Parents
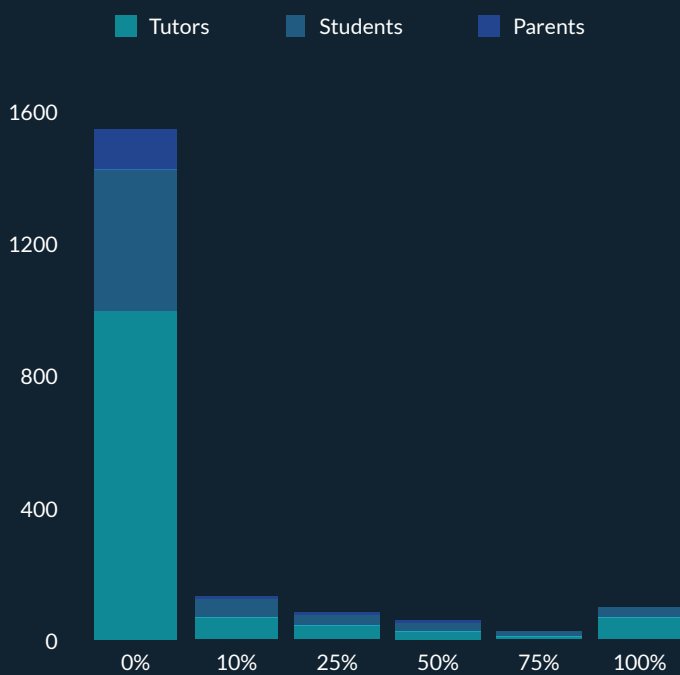
% OF TUTORING ONLINE NEXT YEAR

■ Tutors ■ Students ■ Parents
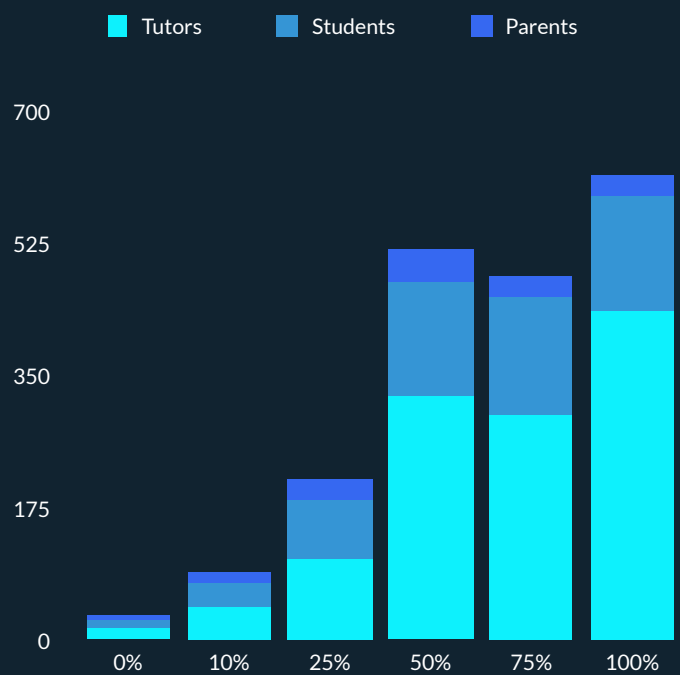
HOW EFFECTIVE IS ONLINE TUTORING?

Until recently, the majority of tutoring was delivered in person. Whilst the volume of tutoring delivered online has risen consistently throughout the past decade, most have focused on the status quo of in person delivery. As such, there has been very little research investigating the efficacy of online tutoring.

That should change, with large swathes of the UK's National Tutoring Programme due to be delivered online. In the interim, we asked tutors, students, parents and organisations for their view on how effective they'd found online tutoring to be.

Students were by far the most positive, with 84% of them finding online tutoring to be more effective or as effective as the in person alternative. Parents, tutors and organisation were all around the 75% mark and generally leaned towards online being at least as effective as in person.

HOW EFFECTIVE IS ONLINE VS IN-PERSON TUTORING?
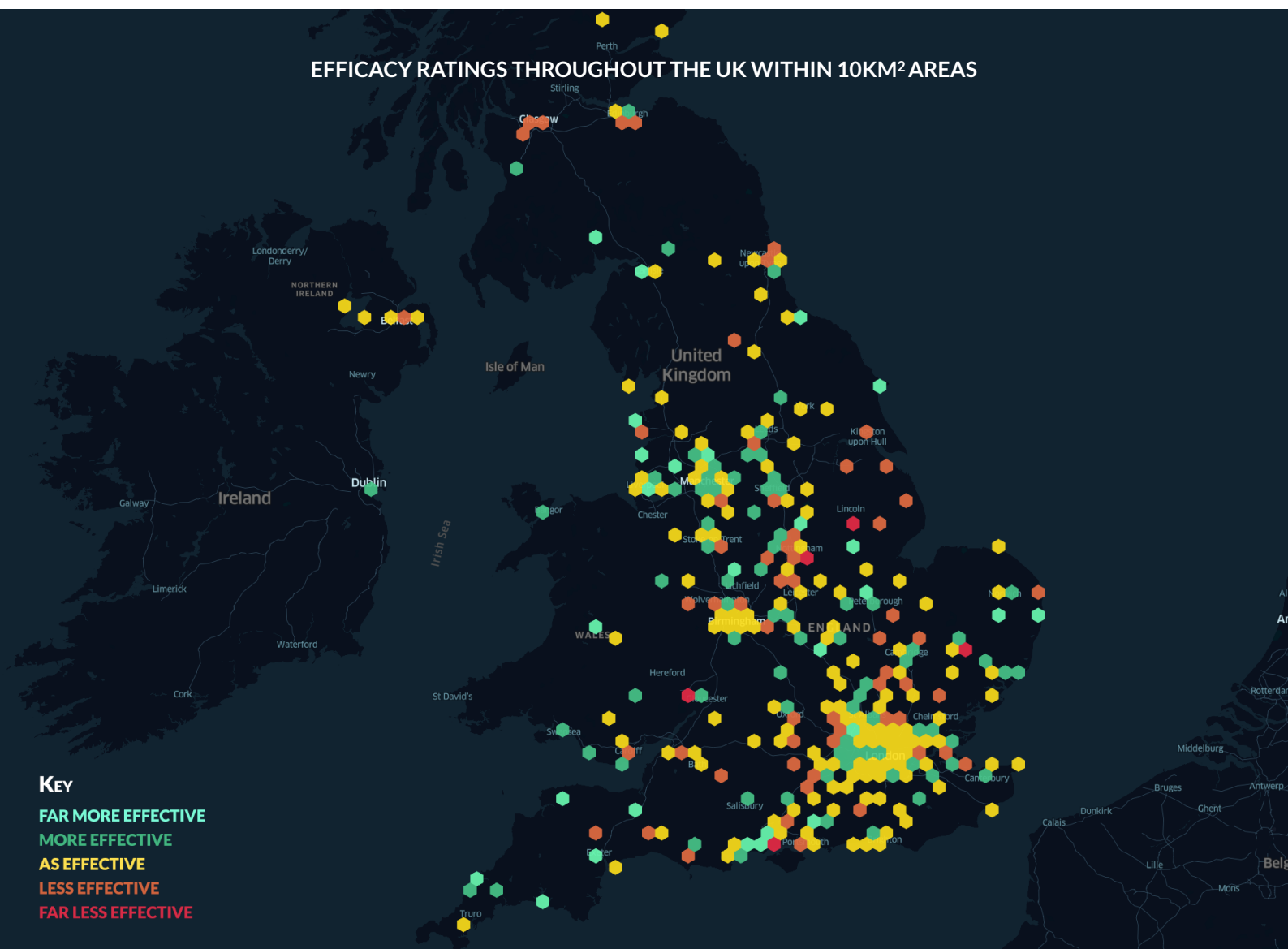
■ More Effective   ■ As Effective   ■ Less Effective
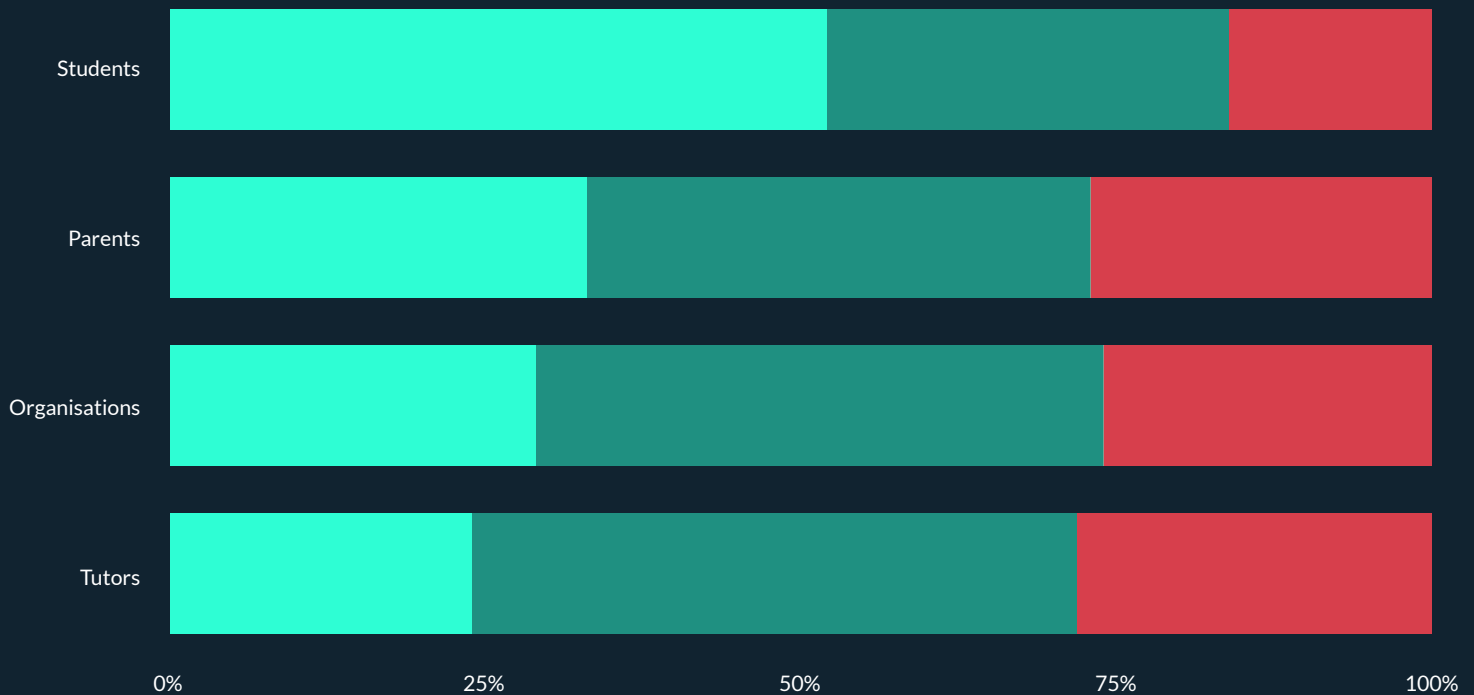
WHICH FACTORS INFLUENCE THE EFFICACY OF ONLINE TUTORING?

To explore the factors that might be influencing efficacy we cross-referenced the survey findings with Bramble's usage and engagement data. In doing so, we uncovered some instructive links.

Firstly, we looked to see if there were any geographic patterns. We narrowed our focus to the UK and averaged the ratings within 10km² areas throughout the country. Whilst we'd like to see more data before drawing firm conclusions, some interesting patterns did arise.

Ratings came from all over the country but there were a number of city hotspots. In London and Birmingham, online tutoring was generally seen to be as effective as the in person alternative – apart from in West London, where it was seen to be more effective. Looking further north, users in Sheffield, Manchester and Liverpool generally seemed to have a more positive perspective with many clusters rating online tutoring as more effective.

EFFICACY RATINGS THROUGHOUT THE UK WITHIN 10KM² AREAS

KEY

FAR MORE EFFECTIVE
MORE EFFECTIVE
AS EFFECTIVE
LESS EFFECTIVE
FAR LESS EFFECTIVE

The strongest predictor of efficacy was past experience. The larger the percentage of tutoring a tutor delivered online before lockdown, the more effective they rated online tutoring to be. 70% of tutors who had never tutored online before lockdown found online to be more effective or as effective as in person. For those who tutored solely online, that number was 100%. At this stage, we cannot say whether this difference is due to tutors becoming more comfortable and adept online or whether it merely reflects the bullish attitudes of those who had already chosen to tutor online.

EFFICACY RATING VS PRIOR ONLINE TUTORING EXPERIENCE

More Effective   As Effective   Less Effective

Prior % of tutoring delivered online

0%
10%
25%
50%
75%
100%

0%   25%   50%   75%   100%
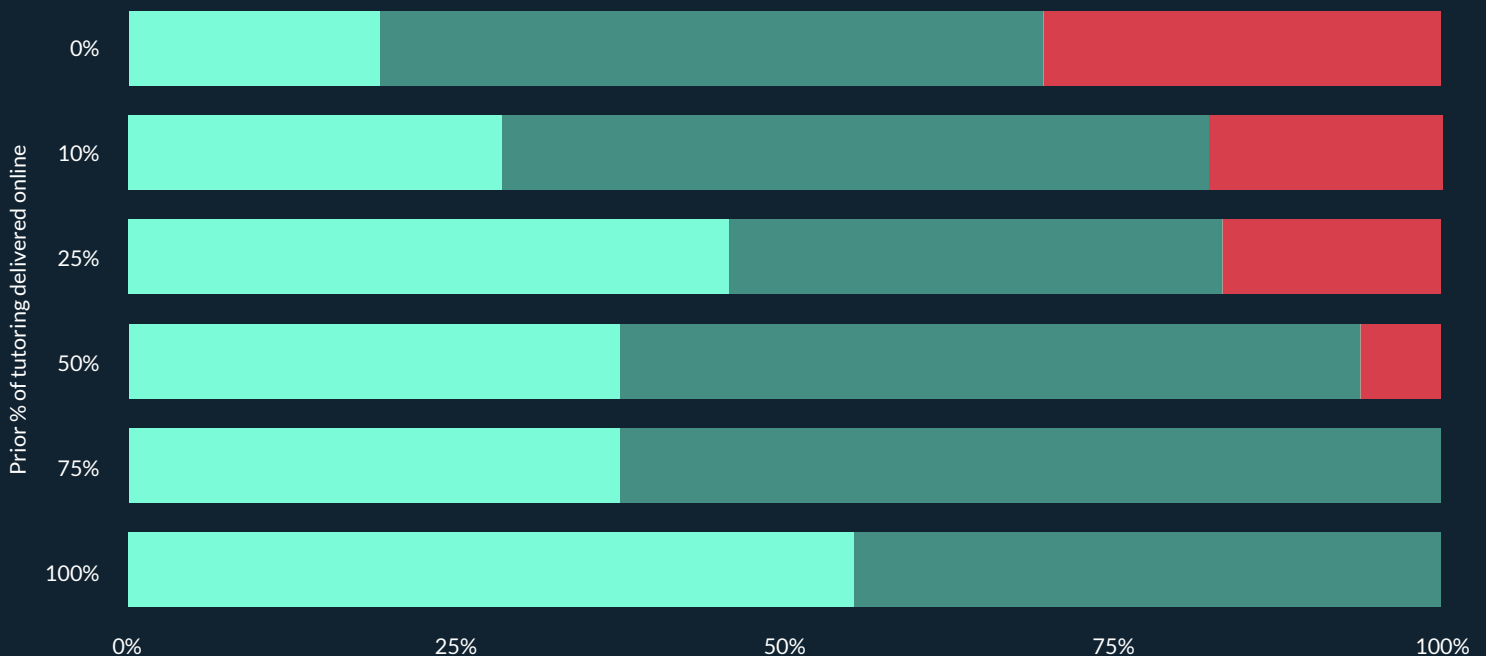
Access to technology also impacted efficacy. Much of the conversation around access to technology has made the error of conflating devices and internet connectivity. Whilst they may at times be linked, they are separate issues with different impacts and, critically, different solutions.

Unsurprisingly, users with poor connections were likely to find online tutoring less effective. For both tutors and students, those reporting internet connectivity as a challenge found online tutoring to be less effective 1.6x more than those without connectivity issues.

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IMPACT OF CONNECTION ISSUES ON EFFICACY RATING

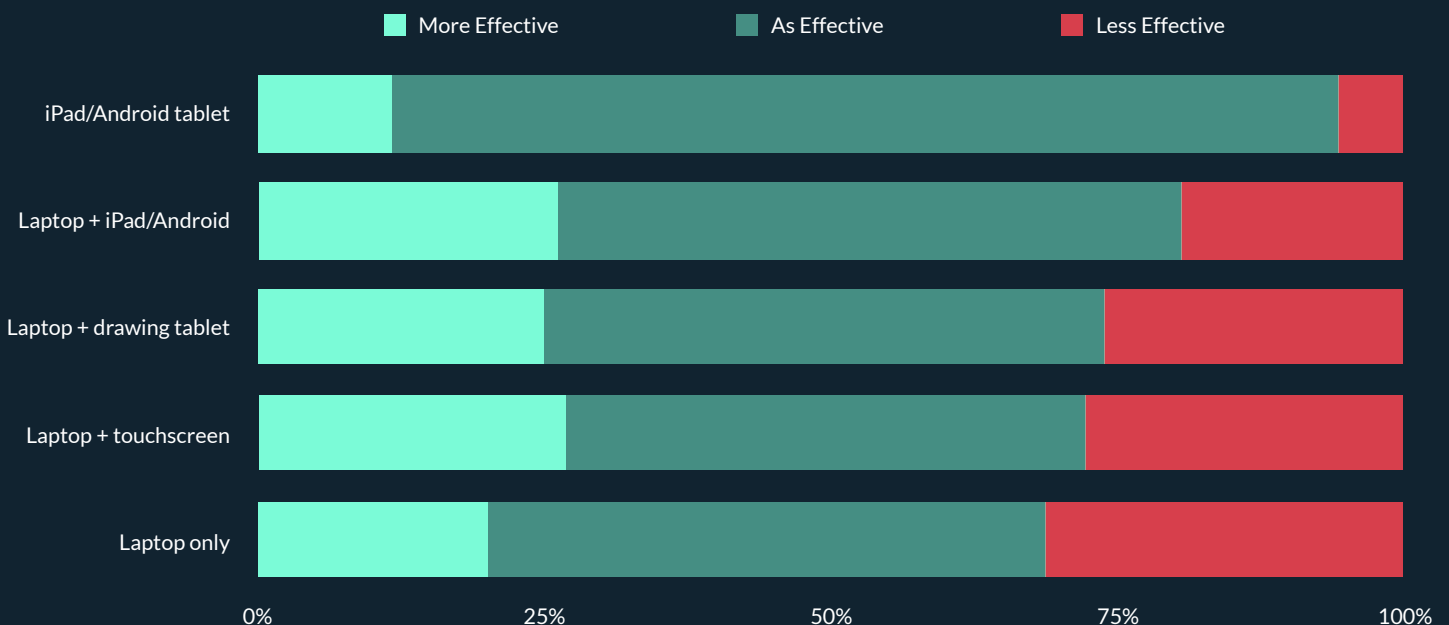Legend: More Effective | As Effective | Less Effective

Did you experience internet connection issues?

- Yes
- No

(Axis: 0% — 25% — 50% — 75% — 100%)
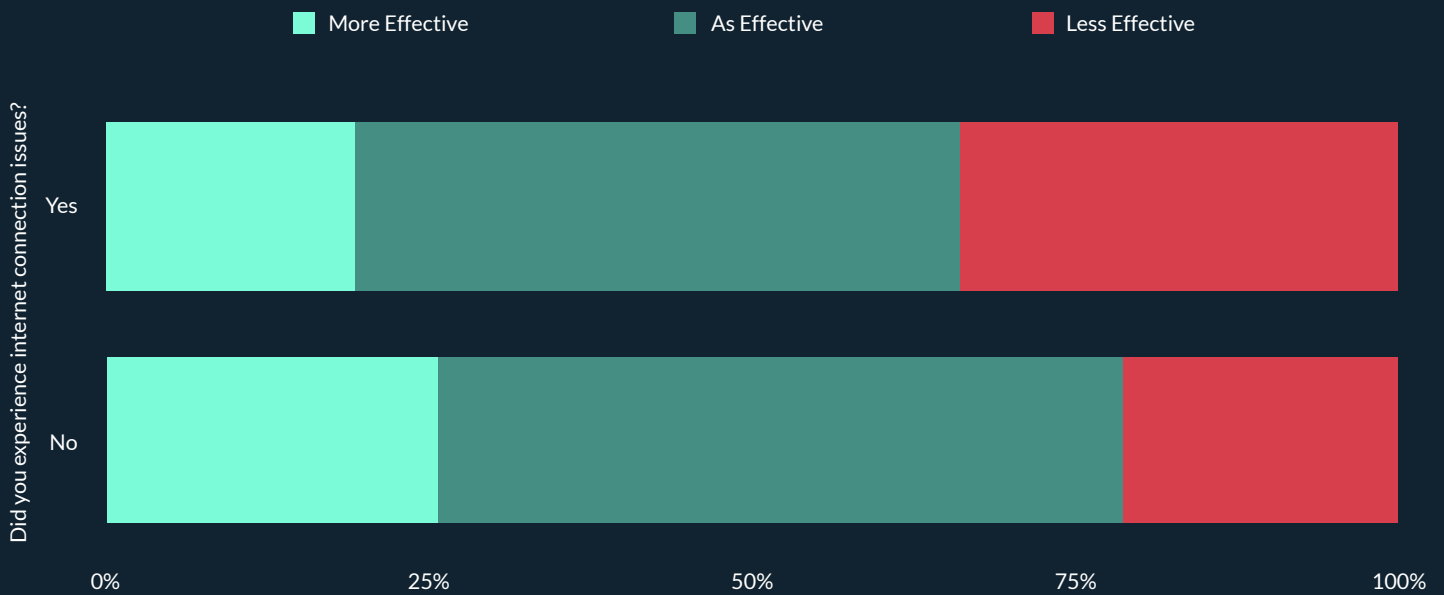
Devices had a part to play as well. Tutors who only had access to a standard laptop or desktop device were generally less positive about the efficacy of online tutoring, with 69% of them reporting online to be more effective or as effective as in person. With access to devices which better facilitated drawing onscreen (thereby supporting more interactive lessons) that percentage increased. 80% of those using an iPad or Android tablet alongside their laptop or desktop found online to be more effective or as effective. Despite this, the majority of surveyed tutors were just using a laptop or desktop – which is reflective of the wider Bramble dataset.

IMPACT OF DEVICES ON EFFICACY RATING

Legend: More Effective | As Effective | Less Effective

- iPad/Android tablet
- Laptop + iPad/Android
- Laptop + drawing tablet
- Laptop + touchscreen
- Laptop only

(Axis: 0% — 25% — 50% — 75% — 100%)

BENEFITS OF ONLINE TUTORING

Online tutoring clearly differs from the in person alternative and as such brings with it a different set of benefits and challenges. There was a broad consensus on those benefits and challenges across tutors, students and parents when we asked them to list their top three in each category.

The top three benefits were consistent across groups: more flexible lesson scheduling, searchable lesson recordings aid learning and students are more relaxed and focused. The next most important benefits were searchable lesson recordings keeping students and tutors safe and a number of tutors and students reporting that they covered more content online.

WHAT ARE THE BENEFITS OF ONLINE TUTORING FOR STUDENTS?
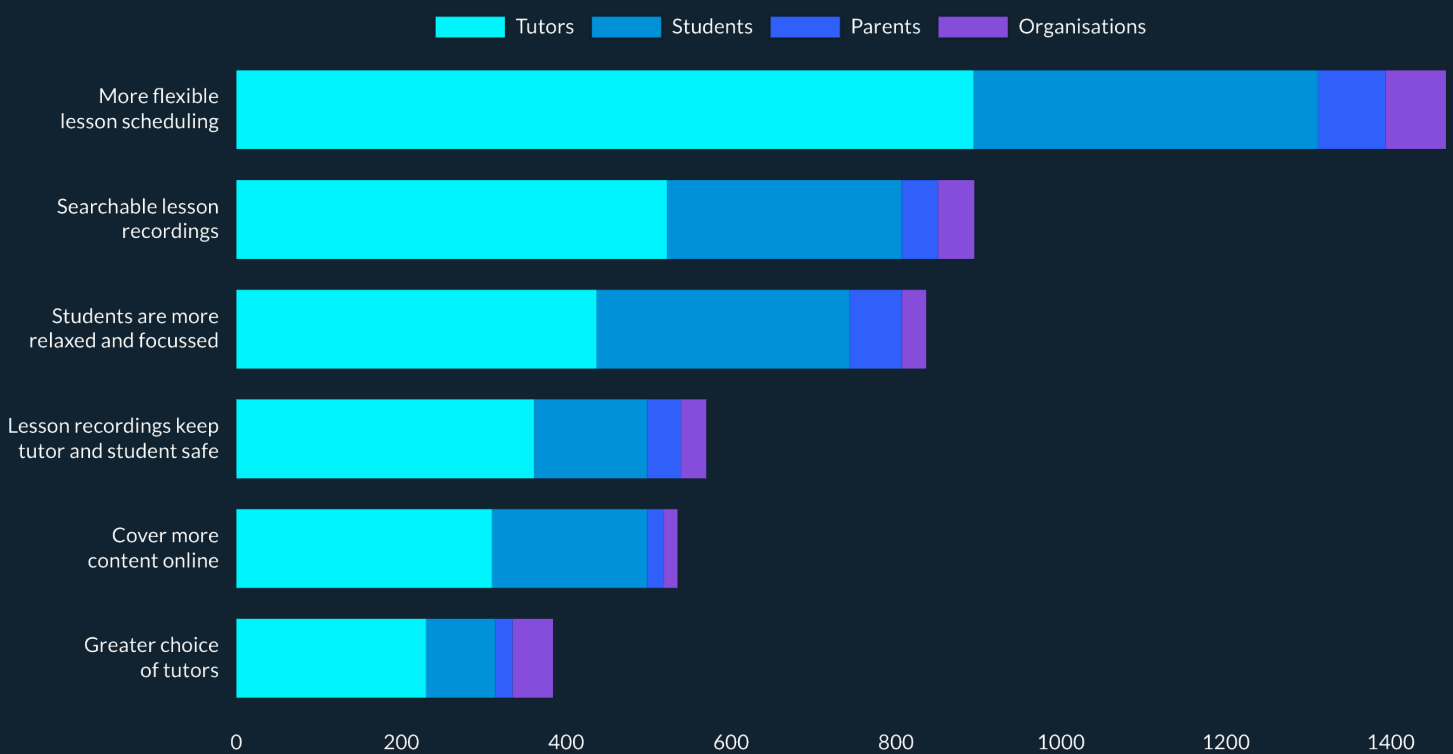
73% of students stated that they planned to use their searchable lesson recordings over the next 12 months. Whilst it is too soon in the academic year to corroborate those statements, we can look at the Bramble dataset to explore the impact that search has on engagement with lesson recordings.
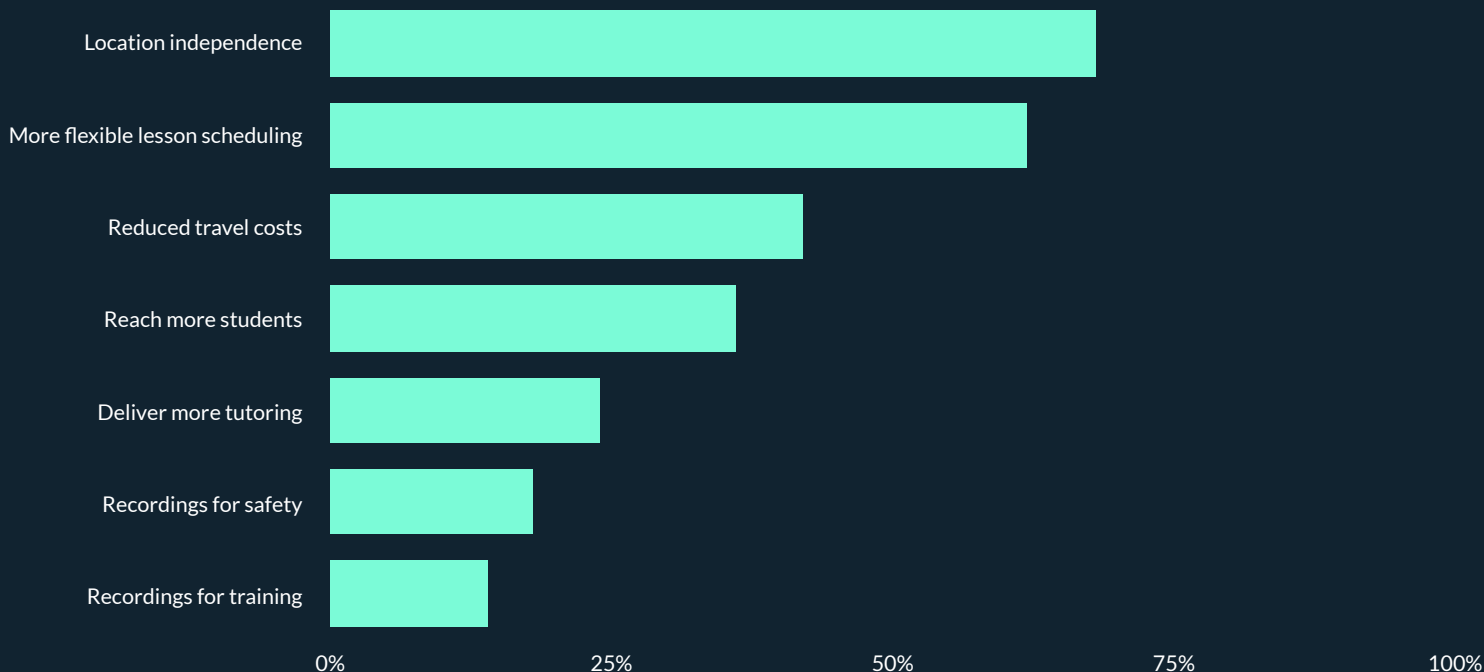
The data is striking. In Q2 of 2020, Students who used search to access their lesson recordings spent 16x more time consuming lesson recordings compared to those who simply accessed their recordings by playing back a whole session.

Online tutoring doesn't just bring benefits to students – it also benefits tutors. Separately, we asked tutors for the three main benefits they felt online tutoring offered them. Again, flexibility came out on top: be it in location or scheduling. The reduction in travel costs and the ability to deliver more tutoring to more students were also attractive. A typical full-time tutor can save thousands on travel and comfortably deliver twice as much tutoring online as they can in person.

Searchable lesson recordings provide tutors with additional benefits, including giving them peace of mind from a safeguarding perspective as well as presenting an opportunity for them to use those recordings in their own training and development.

Having tasted these benefits as a result of being forced online this year, tutors don't appear to want to go back to their pre-pandemic ways of working, with 99% planning to continue working online for at least the next 12 months.

WHAT ARE THE BENEFITS OF ONLINE TUTORING FOR YOU AS A TUTOR?

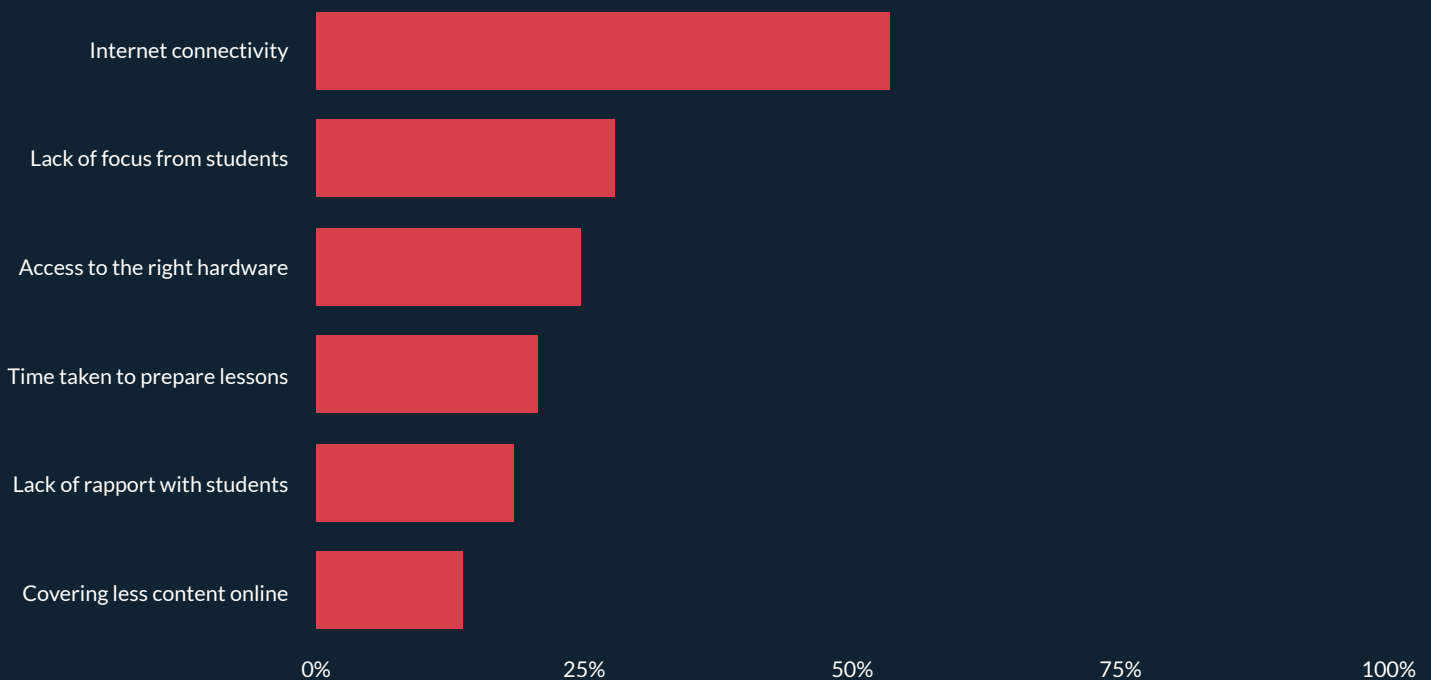| Category	
Location independence	
More flexible lesson scheduling	
Reduced travel costs	
Reach more students	
Deliver more tutoring	
Recordings for safety	
Recordings for training	

0%   25%   50%   75%   100%

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CHALLENGES OF ONLINE TUTORING

As predicted by the efficacy findings, the biggest challenge tutors, students and parents faced with online tutoring was their internet connection. This proved to be a bigger problem for tutors, with 54% of them reporting internet connectivity as a challenge versus 32% for students and 30% for parents. Getting the right hardware set up was a challenge for 25% of tutors and 18% of students.

This illustrates the importance of delineating between internet and devices when it comes to discussing technology requirements for online tutoring – much of the media narrative has been dominated by talk of devices, whereas internet connectivity appears to be a bigger issue.

WHAT ARE THE CHALLENGES OF ONLINE TUTORING?

| Challenge	
Internet connectivity	
Lack of focus from students	
Access to the right hardware	
Time taken to prepare lessons	
Lack of rapport with students	
Covering less content online	

0%   25%   50%   75%   100%

It is interesting to see student focus and the amount of content covered crop us as challenges given that they were also reported as benefits. In both cases, more tutors felt that students focused better online and that they covered more content online than the converse but such polarised perspectives warrant further exploration.

NUMBER OF TUTORS REPORTING MORE/LESS FOCUS AND CONTENT COVERAGE ONLINE VS IN-PERSON
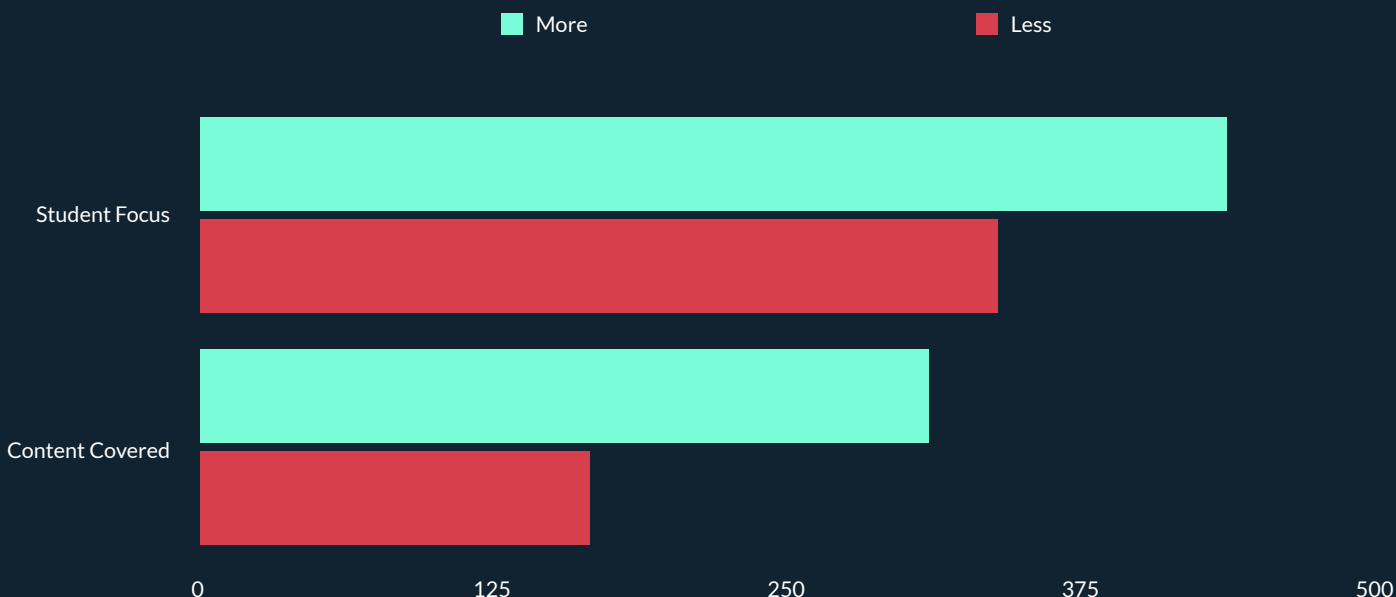
We looked at a number of factors to see if they could explain the difference between tutors who felt their students were more focused online and tutors who felt their students were less focused. Few of those factors seemed to have any impact. The age profile of the students in both groups of tutors were remarkably similar. It wasn't the case that younger students focused less whilst older students focused more. Nor did the devices being used by the tutor, or their prior experience of tutoring online, differ significantly between the groups.

COMPARING STUDENT AGES BETWEEN TUTORS WHO REPORT MORE/LESS STUDENT FOCUS ONLINE
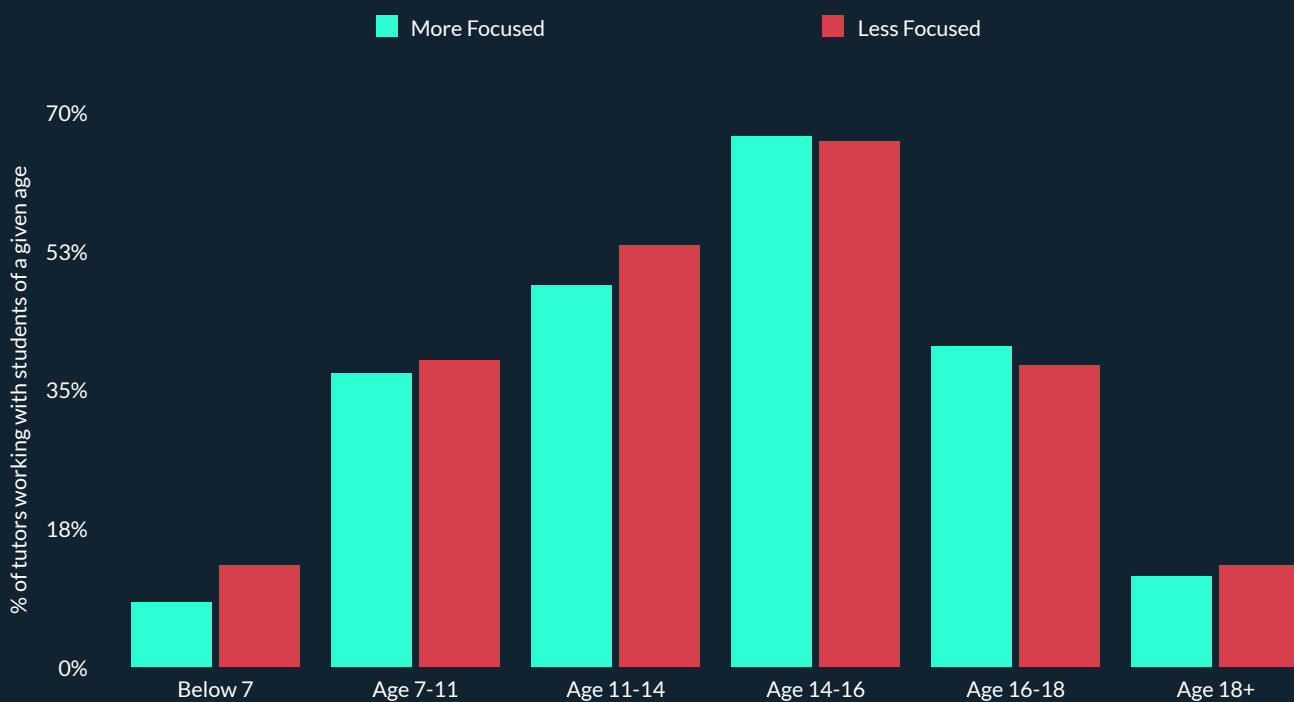
One factor that did differ was internet connectivity. Tutors who felt that students were less focused online were 1.5x more likely to report problems with their internet connection. A similar pattern was seen between the groups of tutors who felt they covered more versus less content online.

The Bramble engagement data shows that tutors who felt they covered more content online than in person did indeed cover more than those who said they covered less. Tutors who reported covering more content shared 40% more resources, spoke 34% more words and drew 26% more strokes than tutors who reported covering less.

BRAMBLE ENGAGEMENT DATA FOR TUTORS WHO FELT THEY COVERED MORE VS LESS CONTENT ONLINE

MAKING ONLINE TUTORING MORE EFFECTIVE

Given the insights from the survey and Bramble's usage and engagement data, what practical steps can be taken to make online tutoring even more effective?

The survey showed that the strongest predictor of efficacy was past experience tutoring online. This suggests an important role for training. If training can help tutors who are new to online delivery become as familiar with the methods and tools as those with more experience, then this will have a knock-on impact on efficacy. This is an obvious first step and it is encouraging to see many organisations recognising this and providing tutors with specific training and support for online tutoring. Bramble provides a variety of resources to aid this: from webinars and walkthrough videos to help articles.

On the technology front, the survey and engagement data emphasise the importance of separating internet issues from device issues. Whilst devices are the first barrier – without one you can't connect to the internet in the first place – the data suggests that internet connectivity is a more frequently occurring issue and one that has a greater impact on efficacy and student focus.

Critically, there are far more options for improving internet connectivity and most are far less costly than purchasing devices. Tutors, in particular, should be aware of the steps they can take to improve their connectivity. This enables them to get the most out of their internet connection, providing some compensation for student connectivity which is generally more difficult to improve. It also enables them to provide their students with some advice and support if they encounter issues.

Those steps fall into two categories: maximising signal strength and minimising bandwidth. The single most impactful step is to plug an ethernet cable directly into the device from the router. Ethernet cables cost around £5 and ensure the strongest possible signal. To minimise bandwidth, users should close other applications and tabs running on their device. They can also minimise their use of webcam, instead focusing on the online whiteboard they're working on.

Improvements can also be made with the devices tutors and students have access to, but these improvements are more marginal and more expensive. Other than making the most of the devices people already have in their homes – if an iPad or Android tablet is available they should definitely use it to augment their online tutoring – it could be worth considering USB drawing tablets. These tend to cost between £20 and £50 and make it much easier to draw diagrams and add annotations during online tutoring sessions.

Making online tutoring more effective isn't just about mitigating the challenges outlined above but also maximising the benefits.

The primary benefit identified by tutors and students was the flexibility online tutoring gave them. This flexibility presents the opportunity to ask whether the typical one hour a week model is actually the most effective or whether it is simply a result of old constraints around travel and schedules. For some students, it may be that shorter more frequent sessions are more effective. Whilst a tutor could never drive anywhere to deliver a 30-minute lesson, there's no reason they can't do that online. At the other end of the scale, we nearly 30% of sessions on Bramble lasting 90 minutes or longer – perhaps this represents a sweet spot for focus? It's too soon to say which of these approaches is best, and it may well differ between students, but tutoring online at least makes it possible to ask the question.

DURATION OF SESSIONS ON BRAMBLE IN Q2 OF 2020

● <0.5 Hours ● 0.5 Hours ● 1 Hour ● 1.5 Hours ● 2 Hours ● >2 Hours

3%
7%
6%
17%
17%
50%
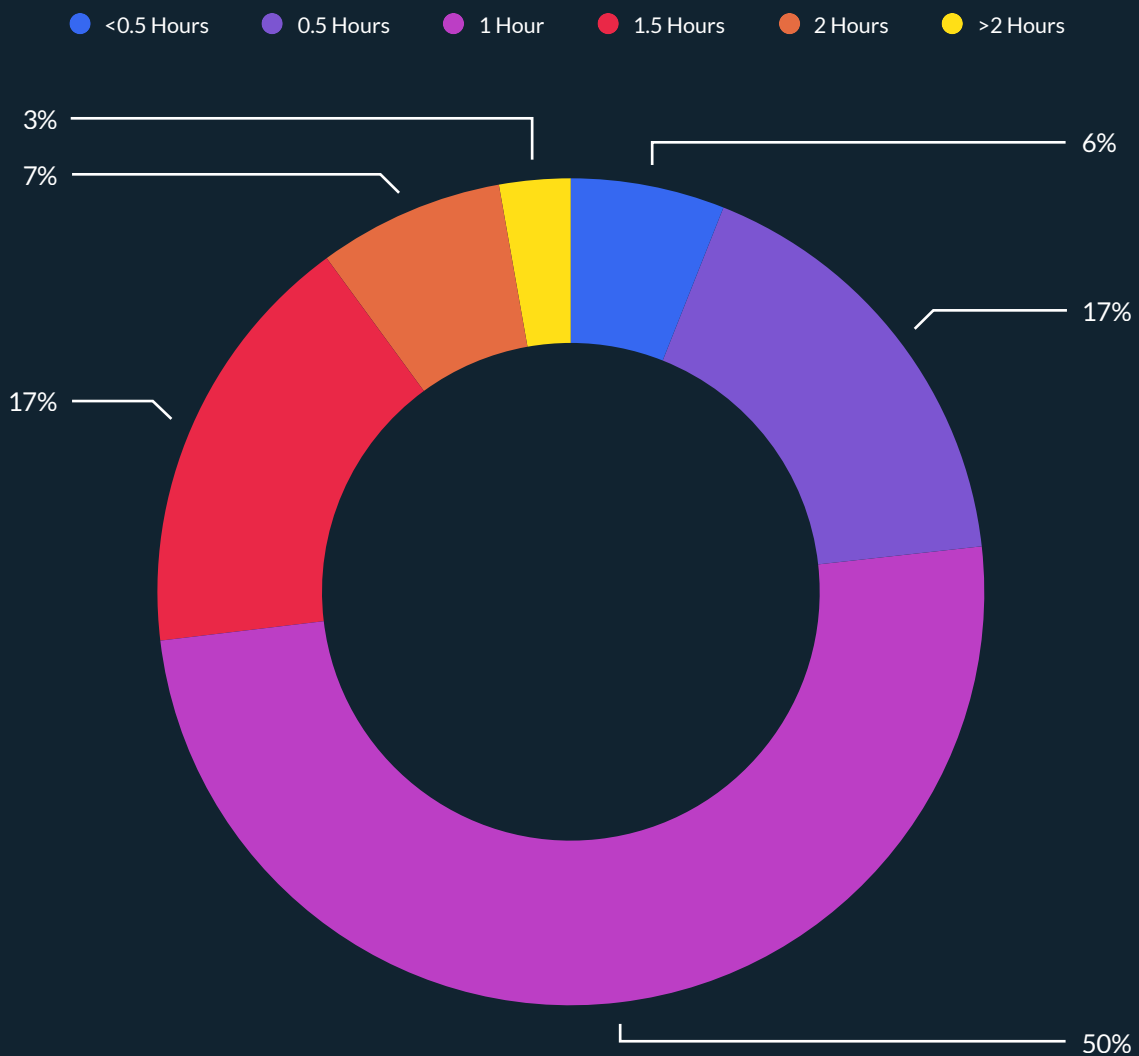
The second greatest benefit of online tutoring, according to tutors and students, is searchable lesson recordings. Again, this represents a change to the tutoring model. Rather than a session a week with some content remembered and some forgotten, searchable lesson recordings provide students with a legacy of learning which they can revisit again and again. This benefits students in a number of ways: it gives them a hyper-personalised revision library, it aids spaced learning and strengthens memory reconsolidation whilst encouraging them to take responsibility for their learning.

Some may bemoan the fact that students are simply able to search their recordings rather than having to consult a textbook. But, as many teachers have pointed out, the key is engagement. If students are more likely to engage with searchable lesson recordings than a textbook, then searchable lesson recordings can only help. Further, search based learning can help students to identify links between key concepts that appear in different contexts. By using artificial intelligence, we're able to identify and emphasise these links to students – as is demonstrated later in this report.

Searchable lesson recordings don't just benefit students. For tutors, they offer the opportunity to reflect on and improve their tutoring – a benefit identified by over 150 tutors in the survey. They also make it easy to find and reuse resources, helping to reduce preparation time and generally streamline tutoring. Finally, they provide schools, teachers and organisations with unprecedented insight into what students are struggling with. Combining searchable lesson recordings with AI Synopses makes it easy for teachers to see, at a glance, exactly what their students have been covering in their tutoring sessions. Whilst not applicable in all tutoring circumstances, this instant visibility clearly has huge value in situations (such as the UK's National Tutoring Programme) where schools and tutors collaborate closely.

AI SYNOPSES PROVIDE INSTANT INSIGHT IN TO WHAT WAS COVERED IN A TUTORING SESSION

WHAT SUBJECTS ARE STUDENTS TUTORED IN?

Tutoring, by virtue of being supplementary education, tends to focus on areas of learning that students struggle with. As a result, analysing the content of tutoring sessions provides powerful insights into what students find difficult and how that might vary over the course of an academic year or even a block of tutoring.

This analysis can help tutors work more closely with schools by providing a shared view of gaps in the student knowledge and how those are being addressed. Taking a wider view, it can even help identify common challenges for students at a curriculum level.

The broadest level of analysis takes place at the subject level: for which subjects do students receive the most additional support through tutoring?

This question could be answered by simply asking tutors what they teach. However, as the survey shows, many tutors teach multiple subjects: does a tutor who teaches maths and chemistry deliver more maths sessions or more chemistry sessions? The best way to analyse what subjects are being taught is therefore on a per session basis. But no tutor or student is going to label every single one of their sessions by subject. Instead, artificial intelligence can be used to automatically detect the subject(s) taught in each session.

Differentiating between maths and English could reliably be done with existing techniques, but understanding the difference between trigonometry taught in Spanish and English as a foreign language is a far more complex challenge. Even mainstream humanities subjects such as English, history and geography have huge areas of vocabulary overlap, as do many of the sciences like maths and physics, or physics and chemistry.

To overcome these challenges Bramble used hundreds of thousands of hours of sessions to create a high-dimensional vector for each topic. The algorithm is currently using a vector space of more than 30,000 dimensions to delineate 35 different subjects. This allows it to learn insightful semantic associations between sentences and topics, greatly increasing its accuracy.

This AI subject detection confirms that maths is by far the most common subject for students to receive tutoring in, accounting for 38% of sessions on Bramble this year. English sessions are less than half as frequent at 17%. The bulk of the remaining tutoring takes place in the sciences, which together account for 35% of sessions.

AI ANALYSIS OF SUBJECTS TAUGHT IN SESSIONS ON BRAMBLE DURING Q1 + Q2 OF 2020

Maths	38%
English	17%
Chemistry	14%
Physics	11%
Biology	10%
History	2%
Economics	2%
Psychology	1%
French	1%
Politics	1%
Other	2%
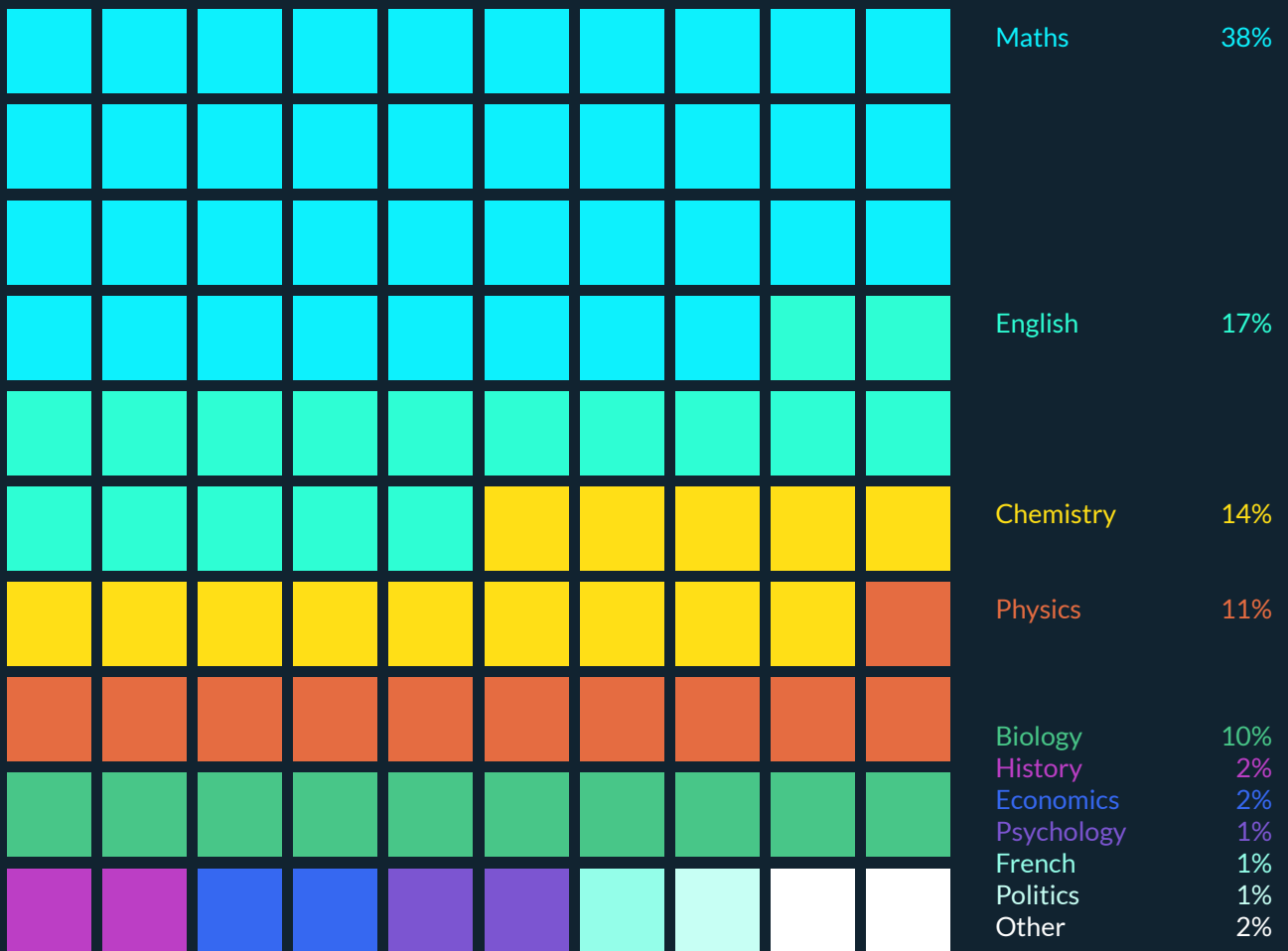
GOING BEYOND SUBJECTS: TOPICS AND CONCEPTS

Ultimately, subjects are too broad to provide much insight. It's useful to know that maths is the subject students struggle with the most but it is more instructive to understand which topics and concepts within maths prove challenging.

Furthermore, analysing topics and concepts shows how different concepts link to each other in tutoring sessions – often breaking out of traditional subject boundaries. For example, energy is a key concept across physics, chemistry and biology but how do the concepts taught alongside it differ across those contexts?

One way of approaching this analysis is topic modelling – a means of deriving insight from large volumes of unstructured text data through unsupervised machine learning. We used a popular topic modelling approach, Latent Dirichlet Allocation (LDA), to analyse the transcripts of 40,000 sessions which took place on Bramble this year – thereby analysing the equivalent of nearly half a century's worth of schooling.

By visualising the fitted LDA model, we can answer the following questions:

1. What is the meaning of each topic?
2. How prevalent is each topic?
3. How do the topics relate to each other?

Slide to adjust relevance metric:[2]

λ = 0.15

Intertopic Distance Map (via multidimensional scaling)

Top-30 Most Relevant Terms for Topic 1 (15.3% of tokens)

Marginal topic distribution

Overall term frequency

Estimated term frequency within the selected topic

1. saliency(term w) = frequency(w) * [sum_t p(t | w) * log(p(t | w)/p(t))] for topics t; see Chuang et. al (2012)
2. relevance(term w | topic t) = λ * p(w | t) + (1 - λ) * p(w | t)/p(w); see Sievert & Shirley (2014)

There are two parts to the visualisation. The left panel shows a global view of the topic model, addressing questions 2 and 3. Topics are plotted as circles in the two-dimensional plane with centres determined by computing the Jensen–Shannon divergence between topics. Multi-dimensional scaling is used to project the inter-topic distances onto two dimensions. The area of each circle represent each topics overall prevalence.

The right panel shows the individual terms that are most useful for interpreting the topic selected in the left panel, helping to answer question 1. The larger bar against each term represents the overall frequency of that term. The overlaid bar represents the topic-specific frequency: how often that term occurred in that cluster. Additionally, the terms in the right panel can be ranked by relevance a measure of the frequency and exclusivity of any given term under a topic. We can apply a weight parameter λ to relevance. When λ = 1, terms are ranked purely according to their topic-specific frequency. As λ moves towards 0, terms are ranked according to how exclusive they are within that topic.

Immediately, this topic modelling approach demonstrates sharper insight than subject detection alone. The largest topic, topic 1, is indeed a maths topic – as would be expected given the prevalence of maths sessions. However, it's clearly a specific area of maths: number and algebra. Compare that to the terms in topic 4. Maths, once again, as might be expected from the proximity of the clusters, but these sessions are clearly focussed on geometry. We can therefore conclude that there are more tutoring sessions focussing on number and algebra than on geometry and that these concepts are usually addressed in separate sessions. Future analysis could investigate how these patterns varied across ages, geographies and time.

LDA VISUALISATION SHOWS TWO DISTINCT TOPICS WITHIN MATHS SESSIONS: TOPIC 1 VS TOPIC 4

Intertopic Distance Map (via multidimensional scaling)
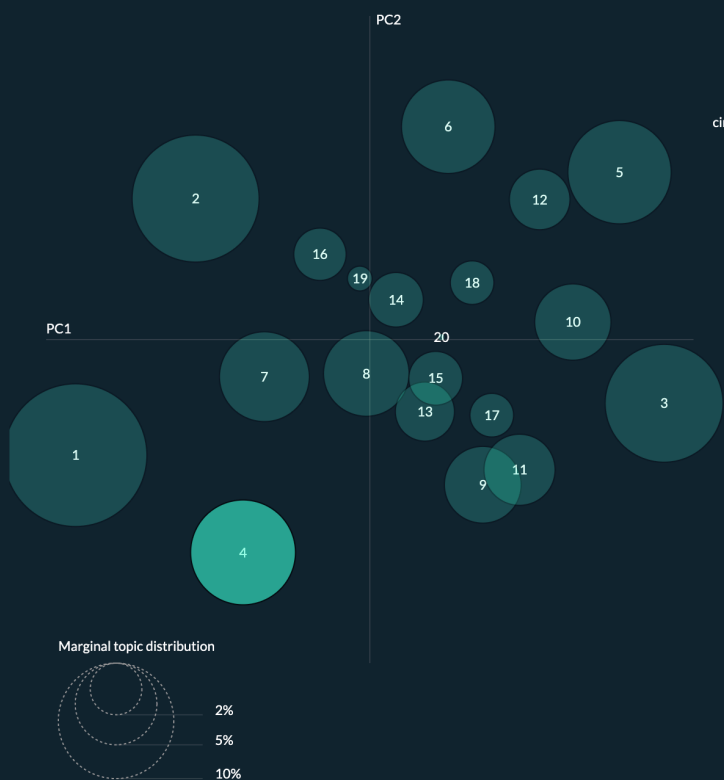
Top-30 Most Relevant Terms for Topic 4 (8.2% of tokens)

Overall term frequency
Estimated term frequency within the selected topic
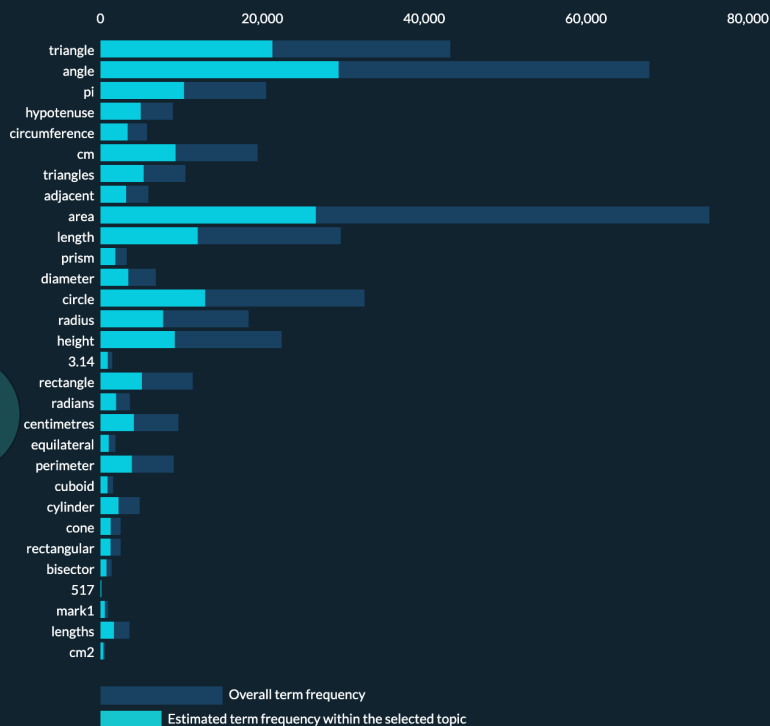
1. saliency(term w) = frequency(w) * [sum_t p(t | w) * log(p(t | w)/p(t))] for topics t; see Chuang et. al (2012)
2. relevance(term w | topic t) = λ * p(w | t) + (1 - λ) * p(w | t)/p(w); see Sievert & Shirley (2014)

The other topic clusters rounding out the top five represent chemistry (2), English (3) and economics (5). Each clearly distinct but with chemistry closer to the maths clusters, whilst English and maths sessions show little shared terminology – a useful sense check. It is interesting to note the inter-topic distance between maths and economics. From this we can infer something about the type of economics being taught. Whilst there is plenty of discussion of cost, demand, market and profit, likely alongside accompanying graphs, there is little calculation taking place. If there was, we'd see a much closer relationship between topic 1 and 5.

COMPARING MOST RELEVANT TERMS ACROSS TOPICS 2, 3, 4 AND 5

Top-30 Most Relevant Terms for Topic 2 (12.1% of tokens)
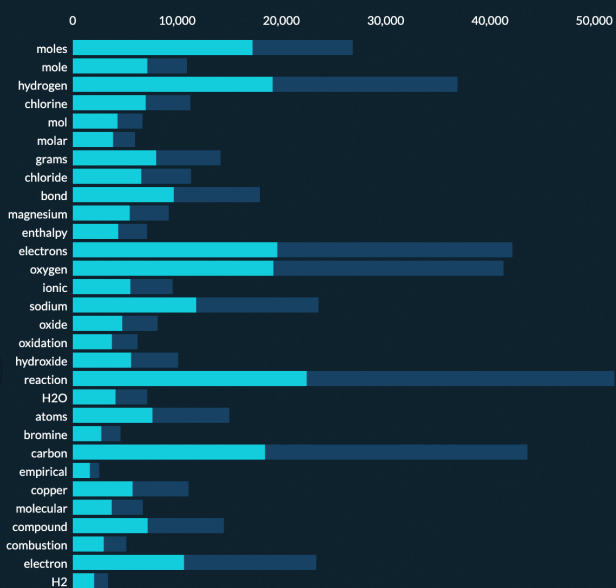
Top-30 Most Relevant Terms for Topic 3 (10.4% of tokens)
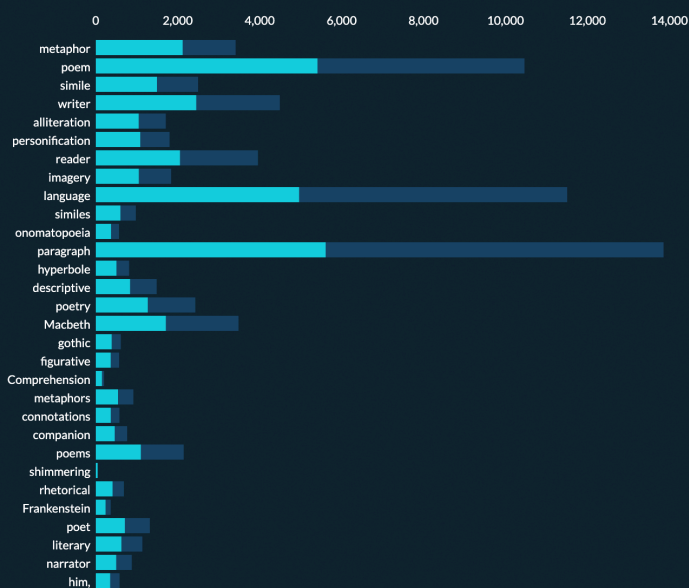
Top-30 Most Relevant Terms for Topic 4 (8.2% of tokens)
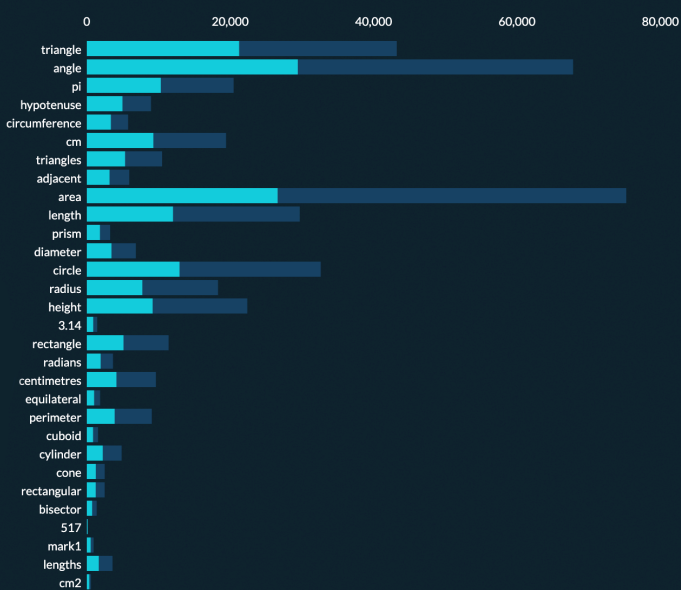
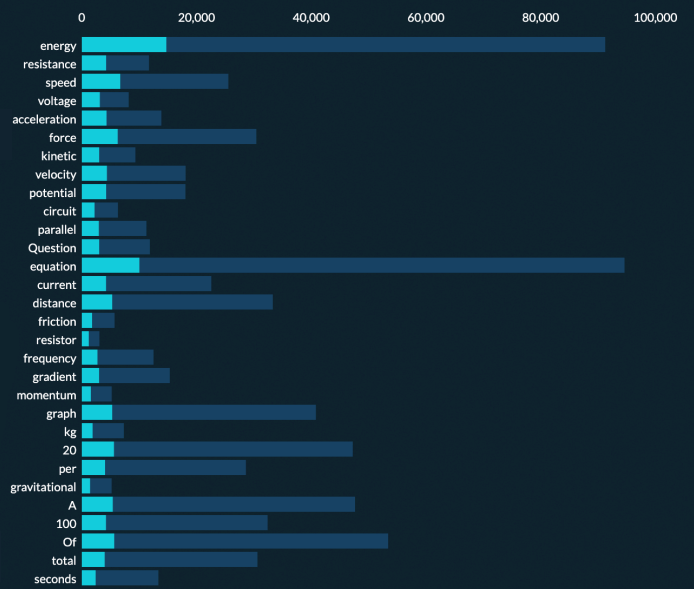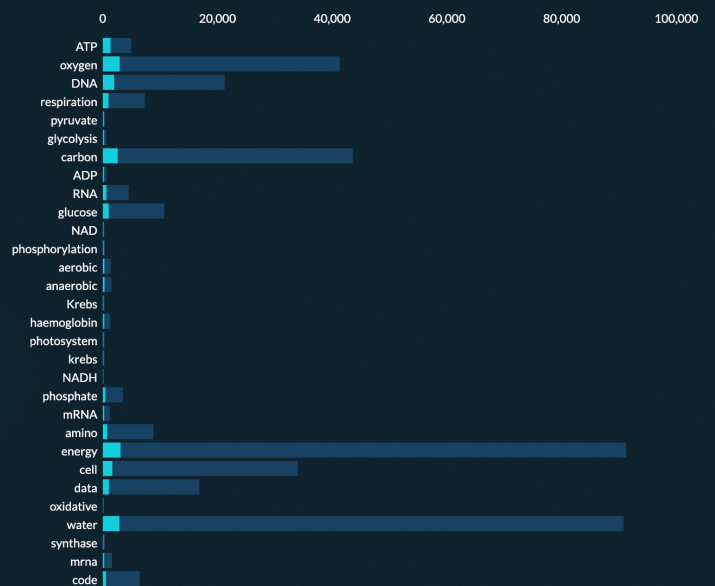Top-30 Most Relevant Terms for Topic 5 (8% of tokens)
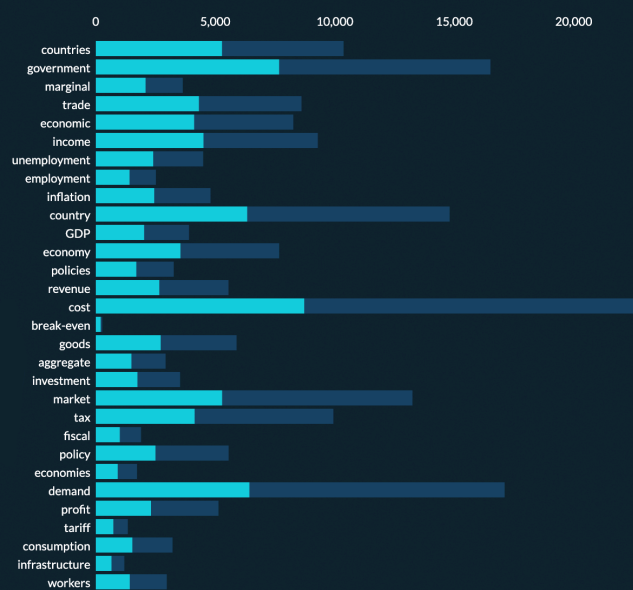
Topic modelling also highlights how the same concepts arise in different context – something which this analysis suggests is particularly true amongst the sciences. Energy is a frequent and relevant term in topic 7 and 8 yet those topics are clearly covering different aspects of physics. Topic 7 encompasses sessions looking at electricity and mechanics, given their proximity to topic 1 they likely involve a number of calculations too. Topic 8 appears to be looking at energy in a different context, that of matter and state. Again, suggesting that these different areas of physics tend to be tutored in a fairly siloed manner. Finally, topic 15 also features energy, albeit with lesser relevance, but here the context is completely different – these are biology sessions looking at energy and respiration.

LDA MODEL SHOWS HOW THE SAME CONCEPTS ARISE IN DIFFERENT CONTEXTS

Biology sessions show the clearest example of distinct concepts being covered in distinct sessions. The topic modelling breaks out four clusters relating to biology sessions: 9, 11, 13 and 15. Each maps to a different aspect of the biology specification. Sessions in topic 9 are looking at the nervous system and immune response with the most relevant terms being: pathogen, antibodies, antigen, neurone and receptors. Topic 9 shares some overlap with topic 11 – these are sessions on human physiology: ventricle, blood, atrium and artery are the most relevant terms in this group of sessions. Topics 13 and 15 are shown as distinct from 9 and 11. Comparing the most relevant terms shows that 13 and 15 are sessions on molecular biology rather than physiology. The sessions making up topic 13 are covering cell biology with discussions of chromosomes, mitosis and its various phases (prophase, metaphase, anaphase). Topic 15 is biochemistry, sessions looking at how energy is generated: ATP, glycolysis, phosphorylation and the Krebs cycle are highly relevant terms in this cluster.

LDA MODEL SHOWS FOUR DISTINCT TOPICS WITHIN BIOLOGY SESSIONS: 9, 11, 13 AND 15

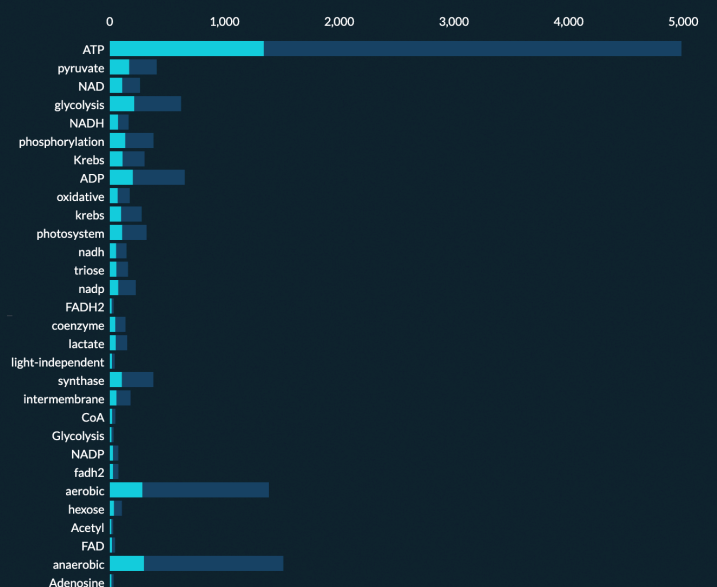Top-30 Most Relevant Terms for Topic 9 (4.4% of tokens)
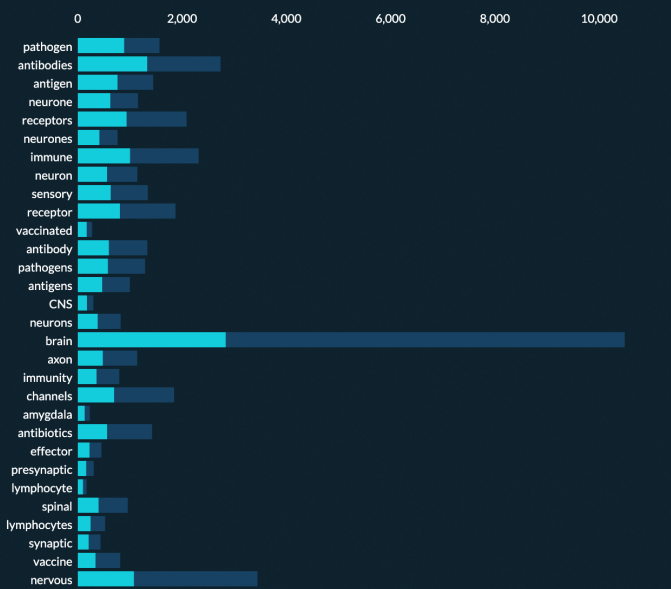
Top-30 Most Relevant Terms for Topic 11 (3.8% of tokens)
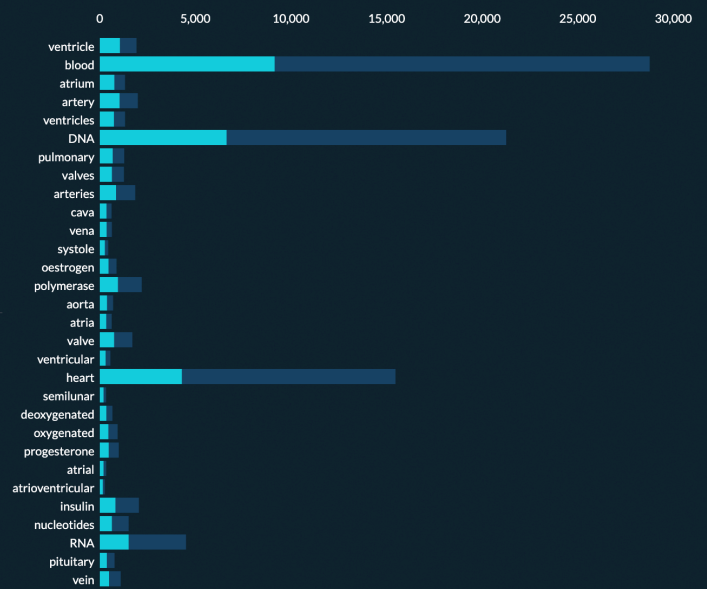
Top-30 Most Relevant Terms for Topic 13 (2.6% of tokens)

Top-30 Most Relevant Terms for Topic 15 (2.2% of tokens)

KEY TERMS IN MATHS AND THE SCIENCES

Topic modelling is one way of understanding what concepts are being covered in tutoring sessions and therefore what students are struggling with. An alternative approach is simply to look at the occurrence of key terms: how many times are they mentioned and across how many sessions?

The balance between the usage of key terms and their mentions to sessions ratio indicates which areas within subjects students are focussing on in their tutoring sessions.

In maths, cosine has been mentioned 49,000 times this year across 5,700 different sessions. It comes up far more often than Pythagoras which was mentioned 10,000 times across 3,800 sessions. This suggests that more tutoring time is spent on complex trigonometry than on the pythagorean theorem. It appears students also spend more tutoring time trying to understand integration (15,000 mentions) than differentiation (10,000 mentions).

FREQUENCY OF KEY MATHS TERMS IN BRAMBLE SESSIONS IN 2020
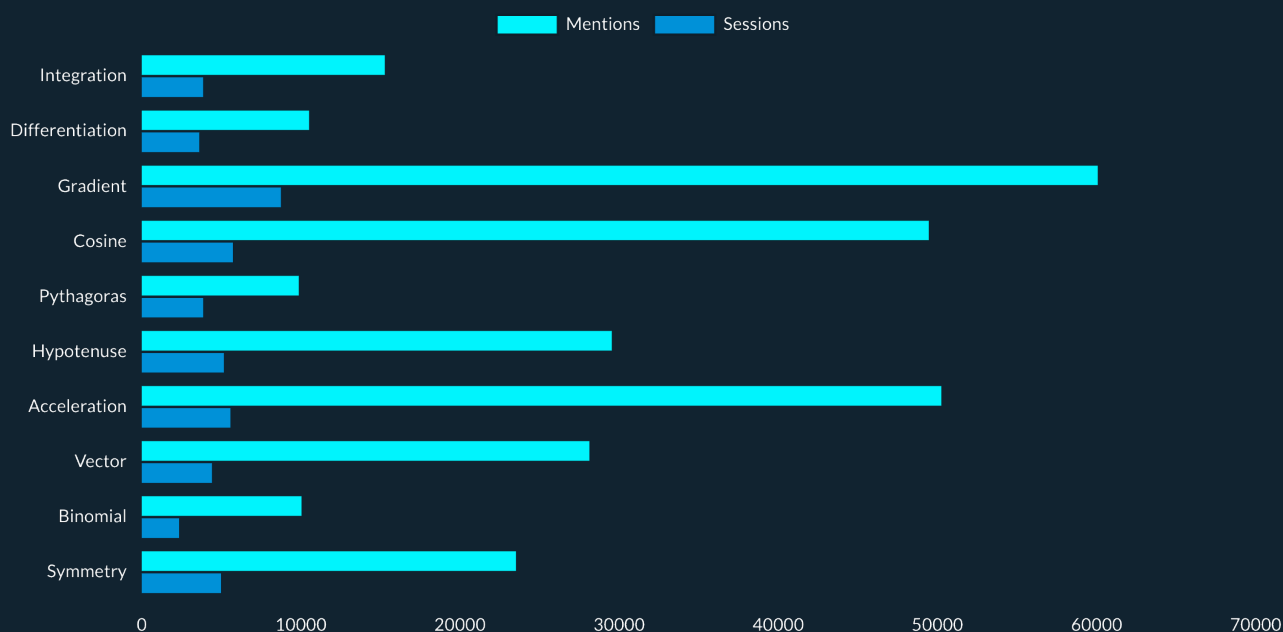
In chemistry, moles are clearly a foundation topic – mentioned 56,000 times across 5,000 sessions. More tutoring time is spent discussing bonding (17,000 mentions of covalent and 20,000 mentions of ionic) than discussing energy transfer in reactions (9,000 mentions of exothermic and 7,000 mentions of endothermic). Oxidation is discussed more often than reduction: 15,000 times vs 10,000 times. But reduction comes up in more sessions: 3,600 vs 2,400.
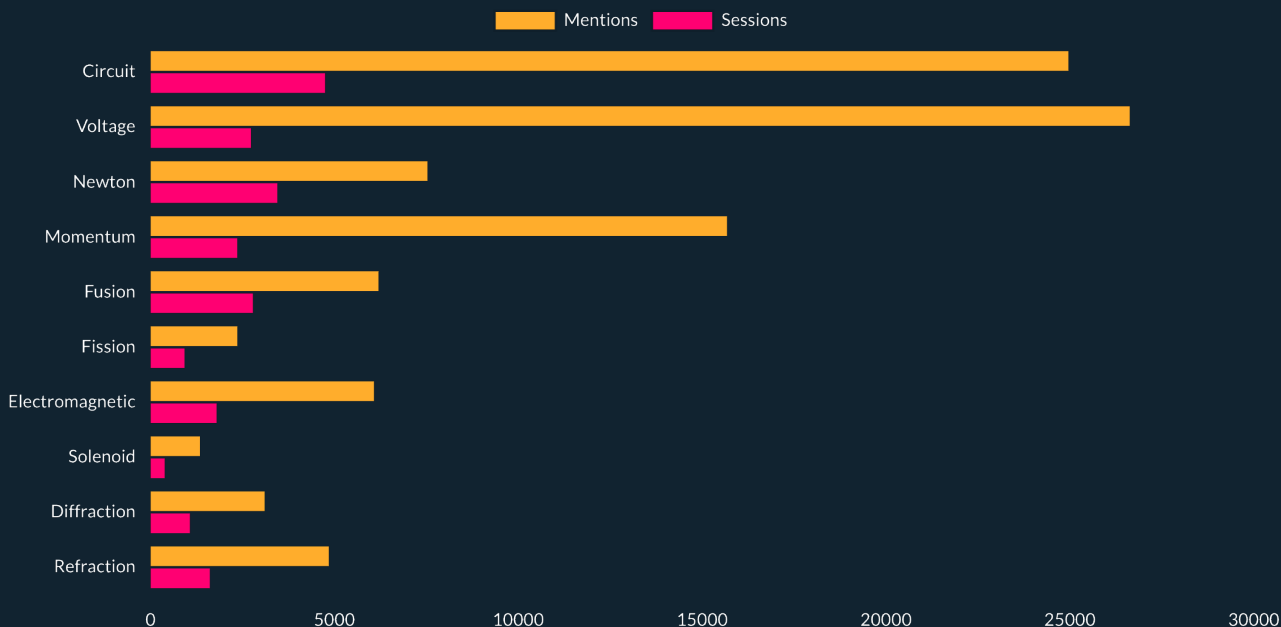
FREQUENCY OF KEY CHEMISTRY TERMS IN BRAMBLE SESSIONS IN 2020
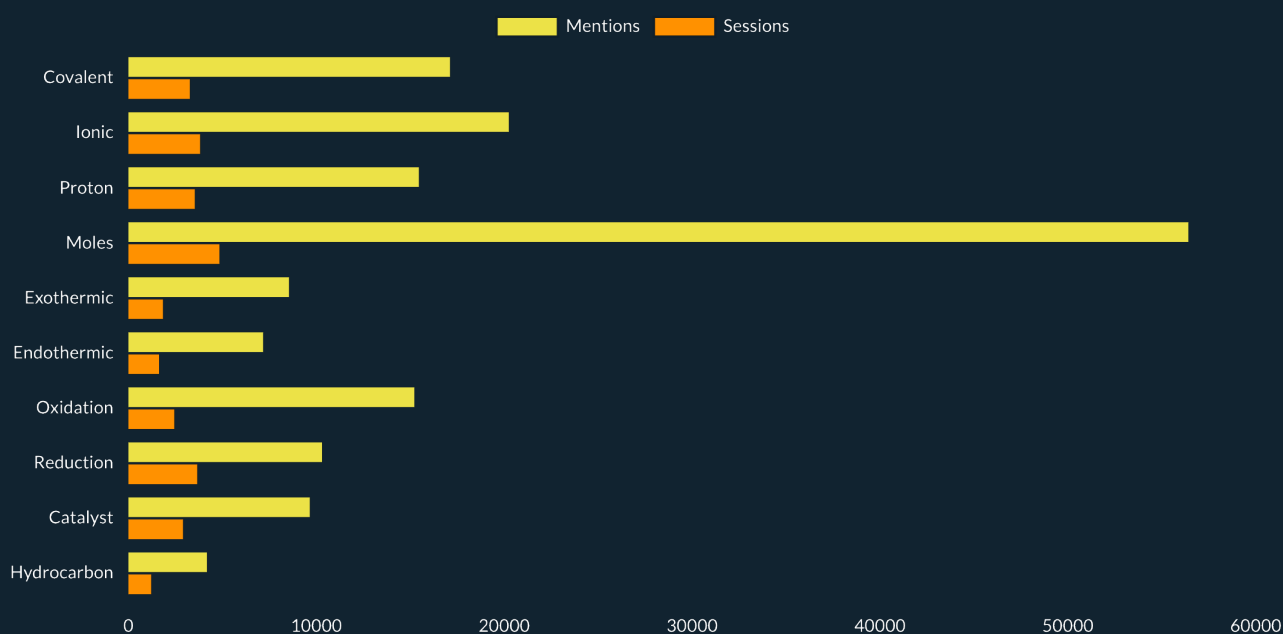
In physics, it appears students find electricity more challenging than mechanics. Circuits and voltage were discussed 25,000 and 27,000 times respectively whereas momentum was only mentioned 16,000 times.

FREQUENCY OF KEY PHYSICS TERMS IN BRAMBLE SESSIONS IN 2020

DNA was discussed 46,000 times across 6,000 sessions in biology. RNA is mentioned far less often, just 8,000 times in 1,300 sessions. Respiration is discussed more often than photosynthesis: 20,000 vs 17,000 times. Students spend more tutoring time looking at lung function with 13,000 mentions in 2,500 sessions than they do looking at kidney function with 4,000 mentions in 1,500 sessions.

FREQUENCY OF KEY BIOLOGY TERMS IN BRAMBLE SESSIONS IN 2020
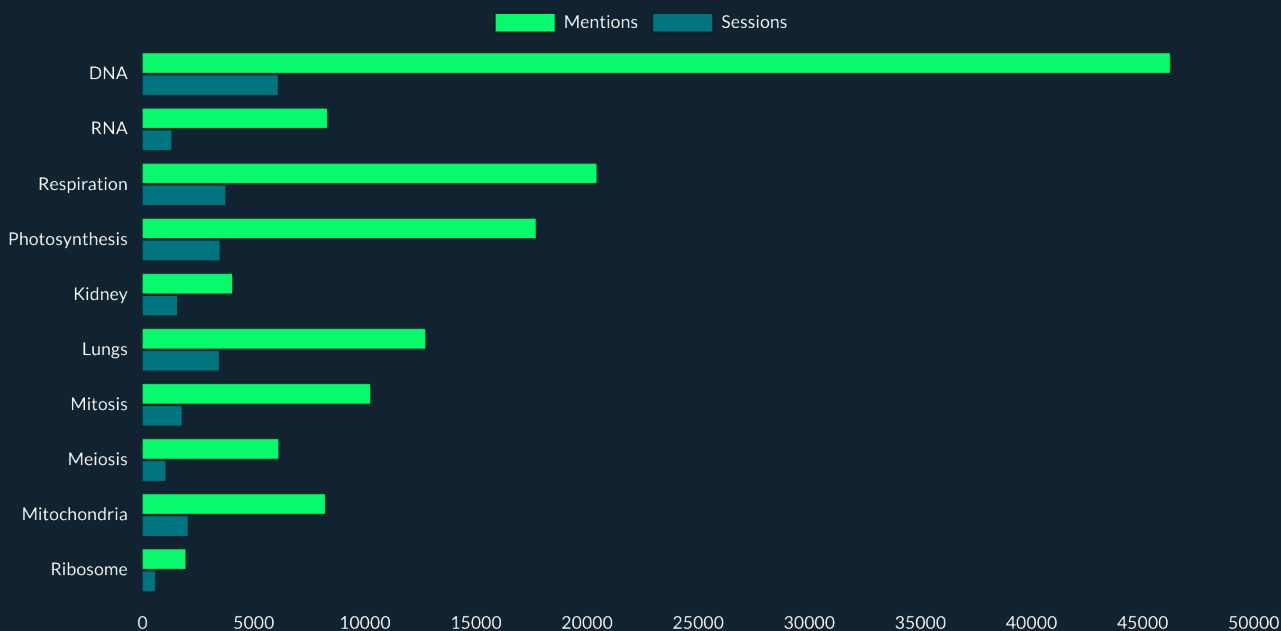
LOOKING FORWARDS

The turmoil of 2020 has forced students and educators to adapt to entirely new means of education, of which live online teaching has been a key component. Despite the sudden shift, it is encouraging to see so many students and educators finding the online approach so effective. Something that speaks volumes for the resilience of students and the willingness of educators to embrace new methods.

The survey featuring in this report shows that in many cases, hidden benefits were discovered: from additional flexibility and better focus to searchable lesson recordings as a powerful tool for learning and safeguarding. Inevitably, there have been challenges too with the survey suggesting clear actions around training and technology to improve the live online teaching experience.

The move online creates exciting opportunities to enhance the live learning experience with data and insights. Never before has there been a clearer picture of what topics and concepts students are receiving tutoring in. At a population level, this insight can influence conversations around curriculum. On a personalised level, students, teachers, tutors and schools gain unprecedented insight into the gaps in learning and how tutoring can be used to fill them. It is well established that tutoring programmes in which tutors and teachers work together deliver better results. These instant insights should support and enhance that collaboration.

The UK's National Tutoring Programme represents a chance to further enhance this analysis. Insights on content and engagement in tutoring sessions can be mapped to assessment and outcomes to provide the clearest picture yet of what effective tutoring looks like.