HOUSE OF LORDS

Science and Technology Committee

Corrected oral evidence: Maths education

Tuesday 4 March 2025

10.15 am

Watch the meeting

Members present: Lord Mair (The Chair); Lord Borwick; Lord Drayson; Lord Lucas; Baroness Neuberger; Baroness Neville-Jones; Baroness Northover; Lord Ranger of Northwood; Viscount Stansgate; Lord Stern of Brentford; Baroness Walmsley; Baroness Willis of Summertown; Baroness Young of Old Scone.

Evidence Session No. 2 Heard in Public Questions 8 - 16

Witnesses

Alex Stevenson, Deputy Director, Learning and Work Institute; Sam Sims, Chief Executive, National Numeracy; Bobby Seagull, mathematics teacher, broadcaster and writer.

USE OF THE TRANSCRIPT

1. This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.

Examination of witnesses

Alex Stevenson, Sam Sims and Bobby Seagull.

Q8 **The Chair:** Welcome to the second panel session of this short evidence inquiry on mathematics education. I am very pleased to welcome our witnesses. We have Alex Stevenson, deputy director of the Learning and Work Institute, Sam Sims, chief executive of National Numeracy, and Bobby Seagull, maths teacher, broadcaster and writer. You are all very welcome.

I will kick off with the first question. Could you set out for us some of the evidence around adult numeracy in the UK? How severe are the gaps that we are talking about? What provision currently exists to help people learn numeracy skills? We would like to hear from all three of you. Bobby, would you like to start?

Bobby Seagull: I am a maths teacher, TV broadcaster and ambassador for the charity, National Numeracy. I have been teaching in schools since 2014, so for 10 years, in secondary and sixth forms. I was a leader of maths in a secondary school and also ran CPD—continuing professional development—for teachers. As of September, I am now a part-time specialist in maths in a local primary school and so, I hope, I see the full perspective of children from five to 18.

Very briefly, my story with maths is that I have had a positive relationship with maths and numbers ever since I was a child. It started with two things: football stickers—the stats in there—and cricket stats; they got me into maths.

At university, I did maths and economics. As a maths-qualified graduate, in my 20s I worked in the City. I was a trader at Lehman Brothers. I will not say much about that choice. I qualified at PwC as a chartered accountant. PwC is where I had my epiphany, at the age of 30. I was teaching graduates there and I thought, "I love this". I love communicating ideas to people, so I changed careers, went back to uni and started my teacher training, my master's. I started my doctorate—I have not finished it yet—on maths anxiety. I was on "University Challenge", went viral for enthusiasm, and I now use it as a platform to be a vocal advocate for maths, which is why I am here.

On the evidence base around adult numeracy, we work closely with Sam and National Numeracy. The headline statistic is that one in two adults has the numeracy skills that we would expect from an 11 year-old primary school child. In the first panel, you heard Conrad talking about hand calculation. However, I still think young

people and adults need that sort of number sense. I will give you an example of a question that National Numeracy sets for adults.

Somebody said, "You can use a calculator", and they said, "But can you work out, if you are earning £9 an hour, can you increase this by 5%?" People could use their phones, or calculators, or use the simple method that most of my students would use: work out 10%—90p; half of that, 5%, is 45p. Add it on, so £9.45. That is a straightforward question, yet National Numeracy has found that generally one in two adults in England—17 million adults of working age in the population—would struggle with that question. Obviously, we need to think about maths at the higher level, offering opportunities for AI and computation, but at the other end, we have this dearth—masses of people who have no sense of numeracy.

Anecdotally, I remember a parent telling me, "Mr Seagull, these payday loan companies—one is offering me 30%. Should I go for the one that offers 40%? That is better?" Again, let alone doing the calculation, people cannot understand even the implication of numbers.

Clearly, there are huge gaps in adult numeracy. We start at the bottom with GCSE, where one-third to 40% of students, depending on your perspective, are told at age 16, "You cannot do maths". That ends up with half of the adult population of the UK generally having maths phobia.

The Chair: Thank you. Sam, what do you think the gaps are?

Sam Sims: I am the chief executive of the charity National Numeracy, which works to build, and support people to have, confidence in their skills with numbers to open up opportunities throughout their lives, so that they can have brighter futures. That is what our mission is all about. I have a background working across educational organisations in the charity sector.

When we look at the gaps, we see that, as Bobby says, around half of the adults in the UK struggle. We have some good data points. In the UK, we have Skills for Life studies. More recently, OECD data focused on England shows that 52% of people are at or below the OECD level 2, which is equivalent to our entry level 3. As Bobby says, that is equivalent to an 11 year-old leaving primary school. That figure put us as pretty average, a little bit above the average, compared with OECD countries, but is holding back about half of adults and we see that right across the UK.

We heard earlier how around 30% of young people fail to achieve a pass in GCSE maths at 16. That contributes to around 17 million adults in the UK not having GCSE in maths.

National Numeracy's research shows that the strongest predictor of a person's numeracy level is their socio-economic background. That is using the proprietary UK Numeracy Index that we developed with Experian.

The next strongest factor—again, referring to the earlier panel—is gender. The research findings that we published last year show that, overall, women are significantly less confident with numbers than men and are disproportionately affected by negative experiences of maths at school, particularly when it comes to this confidence issue. We see that in the PIAAC OECD data as well. We see a big difference with gender.

The implications are that too many people emerge from school not having the basics in place to be able to function in their everyday lives, things that everybody needs to be able to make good decisions, solve problems, manage their finances, and support the children in their care. Innumeracy contributes to things such as the earnings gap, the wage gap, which is as much as £25 billion every year for adults just compared to if they had basic numeracy. That means about £1,700 per year per person across the UK.

We see that the lowest levels of numeracy result in a much bigger negative career impact across all areas of careers: earnings, career development and progression within careers. The data shows that innumeracy increases vulnerability to debt, fraud and financial exclusion. It has these huge implications across every aspect of our lives.

What exists to do something about it? For adults, it is important to note that it is primarily a demand-side issue. There is quite a lot of support for adults if they are ready to learn, engage or re-engage with maths learning. There is quite a lot available. We have a problem with people who have struggled, perhaps experiencing 12 years of failure and what that results in—the low confidence and maths anxiety. What does not exist very well are the steps to get people started on building their confidence, taking the first steps towards building their skills. That is where I think we still have a very big gap.

The Chair: Thank you. I think we will come to that in some of our later questions. Alex, would you like to add to what you have heard, in particular to what kinds of skills we are referring to when we are talking about functional numeracy, maths for life? Would

you like to comment on that?

Alex Stevenson: Thank you, yes. I am the deputy director at the Learning and Work Institute. We are an independent policy and research organisation dedicated to lifelong learning and better work. Before working there, I was working in further education colleges as a curriculum manager, including in providing for adult numeracy.

I very much agree with and endorse what my colleagues on the panel have already said but, in summary, we think that there are too many adults who do not have the numeracy skills needed for life and work and that holds them back from opportunities in work and other aspects of their lives. We are not investing enough in adult skills, including in adult numeracy skills. The numbers of adults participating in adult numeracy learning have been in a sharp decline over the past decade. There is not enough focus on policy at the moment to turn some of those issues around.

To dig into some of the detail, although I will not rehearse the OECD data that Sam mentioned, it is very useful to have that recent survey. One of the most concerning things that jumps out from it is that, while there have been some improvements in performance since the last survey a decade ago, most of that improvement has been driven by an increase in the performance of the top performers. The lowest achievers' skills levels have remained unchanged over the past decade. We are very concerned about that.

I mentioned declining participation. In 2023-24, adult participation in numeracy learning was around 23,000 adults. That figure is down by two-thirds from a decade earlier. Public funding for adult skills through the adult skills fund has fallen by two-thirds, according to the Institute for Fiscal Studies. I do not have a breakdown for how much of that goes specifically to adult numeracy, but this is the budget that funds that provision. You can see some of the impact in the falling participation figures. That means that a lot of people are missing out on the kinds of skills that Bobby was talking about. We are talking about skills needed in work and life, to compare prices, understand medicinal instructions, everyday financial skills, and everyday skills for the workplace, such as measuring and ratios, those kinds of things, so really foundational skills for life and for work.

Q9 **Lord Drayson:** Can you tell us about the new Labour Government's policy for adult numeracy and whether there have been any important policy developments in the past nine months?

The Chair: Who would like to start? Sam?

Sam Sims: We heard earlier about a greater focus from the new Government on early years and primary education, which I think is very positive. When look at some of the challenges around the link between educator confidence and skill and parental and carer confidence and skill and those of young people, and when those gaps start to appear, we see that it is at a very young age. Developing shape, measure and number skills is a crucial stage in a young person's journey. We see a stronger focus on those early years, and boosted investment in programmes such as Maths Champions, which I think is doing fantastic work. We need to see much more of this. It is an important area of work.

When we look at why people struggle as adults, we see that there is a big link intergenerationally. I do not think we can simply work on either young people or work to support adults. We must recognise the connections between the two and at National Numeracy we really see those connections when it comes to low confidence, low skills and maths anxiety, which are often passed intergenerationally. That is backed up by research. We have seen that the focus on early years practitioners, parents and carers is a fantastic and very important focus.

As earlier panellists mentioned, there are also some changes in the policy around requirements for qualifications. We must be very careful not to require maths qualifications in early years education, for example, or link them to apprenticeships. We must make sure that, while we give more flexibility and responsibility to early years settings and to employers around apprenticeships, we must make sure that we do not forget that every single one of us needs the confidence to use numbers and the skills to engage in basic numeracy throughout our lives, whichever job we do. It is not a case of removing qualifications and not replacing them with anything. Flexibility is good but we need a strong focus on building numeracy for everybody.

The Chair: Alex, would you like to comment on government policy towards numeracy?

Alex Stevenson: Yes, thank you. There has been quite limited focus on policy development on adult skills, and numeracy in particular, since the Government came into office. It has been positive to see some mention of adult literacy and numeracy in the first Skills England report, but we do not yet know enough about what Skills England will be doing to know any more about it. I believe that there is also a commitment to maintain the statutory

entitlement to fully funded maths provision up to level 2 for adults, which is a positive.

Beyond that, however, most policy development has been focused on the new growth and skills levy. We think that it should be possible to use the non-apprenticeship element of the skills levy to support adult numeracy training in the workplace.

I agree with Sam that when it comes to things such as the inclusion of functional skills maths within apprenticeships for adults, it was a mistake to remove that requirement. Comparing apprenticeships in the UK with those in other countries, we already have much less general education within them, and we should be increasing that. If there are challenges around the delivery, we should be investing to solve those problems and learning about what works rather than watering down the standards. We do not think that that is a solution in the case of apprenticeships.

The Chair: Thank you. Bobby, anything on government policy?

Bobby Seagull: When the Government came in there was a National Numeracy event where the current Secretary of State for Education said that she wanted to break down barriers to opportunity. She said that numeracy and maths were critical. There are two pieces to that. As a schoolteacher, I welcome the focus on early years. In maths from five to 18, the sad reality is that most teachers can probably tell on their first day if a child in year 7 is going to pass GCSE maths in year 11. That may stem from their experience of school maths in their early years.

Lynne mentioned that about 40% of the outcomes can be predicted early on, so, yes, any maths trauma early on. But I do want to see more from the Government on adult maths because part of that cycle is that children who experience maths difficulties at school, who go on to be parents—we can talk later about cultural attitudes—they will tell their children that maths is not important, "You do not need numeracy", and the cycle starts again. We need to focus on the early years, which I welcome, but we cannot ignore the adults; not enough has been done there.

Q10 **Baroness Willis of Summertown:** You have partly answered this next question about the Multiply Scheme for adult numeracy. I want to slightly tweak the question. In the previous session as well as this one, I am trying to work out what our ultimate aim is. Is it to increase the number of people who are numerate or is it to change the programme so that it is more relevant to the tools and technologies that people have in front of them in order to address some of these questions, such as the 40% you mentioned earlier

for loans? That is an interesting point. My own experience is that people do not know how to use the tools they have, even their phones, to address those questions.

Ultimately, what does good look like in this space? Is it having 90% of people more numerate or is it that people have the technologies and know how to use them? If so, do we have the wrong systems in place to do that? It is about the second part of the question: are there any successful models that we should adopt? Are other people doing this?

Sam Sims: I think the aspiration that we should have for all people—we can start with young people and come on to the adults—is that we should expect that every young person leaving the education system, becoming an adult, should have in place the basic numeracy skills to support them throughout their lives. Make no mistake, they are going to need those skills to have a job, manage their money, work and function day to day, and they should have the confidence to be able to use those skills.

We often talk about using technology. We often talk about the number confidence, the numeracy to be able to engage, to do so reasonably, and to make an assessment about what is coming back at us. We should have the aspiration that every young person leaves education with those things in place. Sadly, that is not the case now. We know that half the working-age people in the country do not have those skills in place and that is an issue. Where we need to start for everyone is by ensuring that those basic building blocks are in place and that people have the confidence to use them. We see that the strongest precursor to improving skills is improving confidence.

Baroness Willis of Summertown: Can I push you a bit further on that? Is it improving skills through changing the way that we teach, as Conrad Wolfram was saying? I think he was suggesting a radical rethink of the way that we teach in order that more people get the right skills.

Sam Sims: There are a couple of things there. The first is a point that came up earlier: what are we teaching towards? Is it towards passing an exam or is it to give us the skills that we need for life? I think we do need a radical overhaul because we need to ensure that everyone has those skills for life. We are very good at comparing young people when it comes to GCSE. We are not very good at equipping them with the confidence and skills that they need for life. Major change is needed.

Secondly, when it comes to talking about adult skills and maths, generally supporting millions of people with low levels of numeracy,

our go-to solution, particularly in policy and government policy, is to put on more courses, give people more things to do, make it free and freely available, and make it convenient. All those things are good, but the problem is not a supply issue. A person may have spent 12 years of their life struggling, experiencing failure, not believing that they can improve.

Very successful maths education systems—such as in Finland, for example—have a strong focus on self-efficacy, belief, having a growth mindset, really fostering these things first of all, before going anywhere near offering courses and expecting people to take them. As we have just heard from Alex, people do not take up the courses in any great numbers and they do not complete them. We must not forget about those first steps: building confidence, engaging people, and getting them started.

Baroness Willis of Summertown: Bobby, what is your view about that?

Bobby Seagull: We have this exam at age 16. In theory, if you pass the GCSE, you are numerate. But the problem is that maths is a skill. Imagine you pass your driving test at 17 but have not driven a car for 50 years. When somebody asks, "Can you drive?" you have probably forgotten the skills.

There is a difference between exams so that children can progress to the next stage of their academic tree and them having the numeracy skills to function, as Sam says, and be confident and competent in using their maths and numeracy in their day-to-day lives. I am thinking about the bigger picture. Conrad talked about the relevance of the education system.

I feel that our education system is a bit of a relic from the Victorian era. In my classes, children still sit in rows, sometimes at tables if we are being creative, and I will stand at the front of the room, explain percentages, do a few examples, the children will learn that and do a few examples themselves, answer a few questions, and it is still pretty much what it was in the Victorian era. There is definitely a case for wholesale change, but can you change a whole system overnight? It is tricky, but if you are looking for piecemeal change it is possible. We will come to that later, using AI technology to make teachers' lives better and the learning better for children and adults.

The Chair: Alex, do you want to add anything to what you have heard?

Alex Stevenson: Yes, please. It is a very interesting question. I think we need to do a bit of both. One way in which we are an outlier compared with other countries is that our adult system for maths skills is very focused on the achievement of qualifications. That is not always an engaging offer for adults who were turned off by a negative experience at school. Programmes such as the Multiply Scheme have been very helpful in diversifying the learning offer for adults, providing more informal opportunities for learning where teachers can work on people's confidence, and engage people with aspects of financial literacy.

Those kinds of learning opportunities are very valuable, alongside qualifications for those who want to go back and get them. But we do need to promote those opportunities. Participation has declined. Our research into adult participation in learning shows that only two in five adults are even aware that you can a free course in maths. The people who are the least likely to be aware who those who have not participated in learning recently and have the lowest levels of qualifications, so the people most likely to benefit from support.

If you think back to the 2000s, we had big national promotional campaigns around learning, literacy and numeracy skills so we could start to create a bit of a culture around lifelong learning. The content side is also important, making hooks relevant to the kinds of things that are likely to engage adults in learning.

The first thing that we have to do, before we can worry about the content or the teaching methods, is to get adults into the classroom. We need to overcome some of the barriers and sell courses around ideas that matter to people, whether in the workplace or the skills to support their children at school through family learning, budgeting and household accounts—those are the kinds of things that are more likely to engage adults than telling them, "We notice that you do not have a GCSE. Would you like to come back and get it?"

Q11 **Baroness Walmsley:** I tend to think of the adult numeracy workforce as the people who rescue the situation and sort out the mess after people have left school without functional numeracy. We have heard about the challenges in getting enough workforce of the right kind in schools to make sure that adults do not land up in that situation, but I would like to explore how well providers can recruit and retain the right people to do the adult numeracy, because it could be that there is additional skill sets needed there. Apart from obviously the mathematical knowledge and the pedagogy, there may be other skills that providers look for.

Could you say anything about the difficulties of recruiting and retaining the sort of people who can do that? Is there a role for people who are not currently professionals in that role—perhaps retired teachers or people of that nature—who would like to and be very committed to do this work?

Bobby Seagull: I would like to speak to this from the perspective of teacher recruitment generally because, again, I think people who are adult numeracy teachers probably come from the pool of teachers in general. Why do people become teachers in the first place? Why did I change careers and why did many of my peers become teachers? It is because they think, "I would like to make an impact on the next generation, pass on my skills to them so that they can fulfil their educational potential", but something goes wrong along the way. The educational wider stat is that one in three teachers leaves the profession within the five years. I think in maths it is probably higher. Again, if you are looking at adult numeracy teachers, it comes from that pool.

I think there are a couple of side issues here. One is that the Government have been short-sighted in terms of their cut to the AMSP—the Advanced Mathematics Support Programme—because some of the people who do the programme get A-level support and go on to universities. These are people who become maths teachers, and potentially adult numeracy teachers. It is that pipeline.

Also, recently we have seen news of universities making maths cuts. CaMS—the Campaign for Mathematical Sciences—talked about how universities such as Cardiff, Oxford Brookes and Kingston are cutting down their maths departments. You might think, "Okay, that is impacting the top end of students", but the impact on this is that—I think what Lynne McClure talked about in the first session—the undergraduates of the top Russell group universities end up going into the traditional maths professions of accounting, banking and finance, but if you are looking at the post-1992 universities, these people are three times more likely to become teachers.

If you are looking at our teacher pool and adult numeracy teacher pool, you need to make sure that these cuts to universities' maths programmes are reversed.

Baroness Walmsley: So it is the pipeline?

Bobby Seagull: Yes, the pipeline.

Baroness Walmsley: Any other comments? Are there any special

skills required to teach adults maths?

Alex Stevenson: I do think that teaching adults is a different proposition from teaching young people and in schools. One of the pieces of evidence around effective practice in adult basic skills teaching that we have come across does highlight the importance of having teachers who are relatable to adult learners, so perhaps sharing similar characteristics and backgrounds. There needs to be a way for people to come into the profession.

We do not represent providers as such, but from what I understand from working closely with them is that there are challenges around recruitment. While there may be bursaries available to support initial teacher training into maths in further education and post-16 settings, the key limitation is the fact that salaries typically tend to be much lower in further education and adult education than in schools. Even if you solve some of the pipeline issues, there is an added disincentive to people choosing to teach in further education rather than in a school.

Some of the policy reforms that we saw under the previous Administration, which were very well intentioned, around improving the maths skills of 16 to 19 year-olds, also had a knock-on effect that some of the adult numeracy teachers were brought in to prepare younger learners for their GCSEs as part of the condition of funding. There has been a bit of a loss of focus on adult numeracy as a distinct area of practice.

Certainly, some of the providers that have now been trying to recreate some of that in delivering the Multiply programme have reported that when they have been able to recruit adult numeracy teachers to deliver that programme they have not always had some of the skills needed as an adult numeracy teacher. If they can get a numeracy teacher, they might come across somebody who is very experienced in taking a qualification and teaching that content to learners, but Multiply, for example, provides a lot of flexibility to work with learners and develop a bespoke course that responds to their needs. Some of the teachers were not able to work with learners to identify a set of maths skills that they would like to develop, and it was that curriculum development and flexible working with adults that were proving a challenge.

Baroness Walmsley: Is there any help for potential adult numeracy teachers of that nature?

Alex Stevenson: The help that has been available for teachers in service through the Education and Training Foundation has also been reduced and funding there has been cut. Most of the focus of

that professional development that is provided by the Education and Training Foundation is in support of the condition of funding policy for 16 to 19. Some of it might be relevant but there is very little specifically with adult learners of numeracy skills in mind. That compares to much more comprehensive support that has been available under previous adult basic skills programmes in the past.

Sam Sims: I agree with those points completely, but I think understanding the adult numeracy landscape is important. Most adults post-19 and above who engage with a maths qualification will normally be compelled to do that. It might be for work or for a course of alternative study you will need to have that.

Generally, it involves lots of people who have struggled and so when you ask about what maybe is needed, even more so or differently with adults from with children, I think ensuring that the maths that is taught is very highly contextualised and relatable, so that people can understand the value straight away to their everyday lives, is important, so that they build confidence quickly. What that might look like is somebody experiencing success quite quickly, not experiencing more failure over and again, which is what they may well have typically experienced. Those are important aspects.

When it comes to adults who are typically compelled for some other reason to take a maths qualification, what Multiply has enabled to happen is a much more diverse environment around numeracy development, where we see basic numeracy being brought into all sorts of different subject areas and taught in very different ways, which are meeting people where they already are, doing things that they already want to do, and then realising that there is maths within that, and how it can help them become better and more proficient at the thing they are learning to do, whether that might be cooking or gardening or any other course that they are undertaking. It is not a simple workforce now. It is very diverse, and they require different skills and experiences in different ways.

Baroness Young of Old Scone: Why has the Multiply scheme fallen from grace? Some people seemed to think it was great. Others did not think it was value for money. What is the reality?

Sam Sims: I could share a thought on that. We have seen some great activity come out of Multiply. One thing it has enabled National Numeracy to do—in many respects, it relates to the previous question—is to train people to become numeracy champions across the country. We have now trained over 2,000 numeracy champions. They do not teach maths, but they support

adults to be able to build their confidence, take their first steps, signpost where they can get help, and understand that there is a psychological confidence barrier that needs to be broken down.

It has enabled things like that in different ways to happen over the country, which I think should be recognised as great steps forward. It insisted on innovation, which was important because, as Alex set out, we have seen declining levels of participation for so many years that we needed to innovate to be able to engage people. To do that in increasingly relatable, contextualised, exciting and engaging ways has been important.

It was introduced very quickly. By requiring innovation, that innovation, particularly when a policy is rolled out across the country, takes time. It took quite a long time of a three-year programme to get going, to build momentum; it would be fair to say it took at least 12 to 18 months to get fully started. That was one of the challenges: a short three-year programme that was announced quite quickly and was attempted to then be put in place.

It is a real shame that it is coming to an end at the end of this month. I think that there is a risk that all these gains that have been made, these innovations that have been developed, are going to be unable to continue. That is a real shame.

Baroness Young of Old Scone: Is that shared with our two other witnesses?

Bobby Seagull: I have nothing further to add on the Multiply programme specifically in terms of details, but it is about signalling and messaging. If you have a programme that is focusing on trying to improve adult numeracy and giving people the right skills, cutting that suggests that the Government do not see that as a priority.

Alex Stevenson: Briefly, I would say it is a little too early to say on Multiply, and we should wait for the results of the programme evaluation, which I believe will come out later, in the autumn. We are involved in a regional evaluation for the West Midlands Combined Authority at the moment.

There have been some challenges in the initial set-up of the programme, which was done with insufficient lead-in time, as Sam has mentioned, so some of the money in the first year particularly was not spent and there was a decision not to go ahead with an online national learning platform, which, again, was money that could have been spent on the delivery.

I think the last figures I saw, which were last autumn, were that about 188,000 adults have been engaged in numeracy learning through the programme. We need the evaluation to tell us what the outcomes of that engagement have been. Have they gone on to more substantive and more substantial forms of numeracy learning since then? Has it improved their confidence to the point where they have secured a job outcome or that kind of thing? I think we should wait for some of that data to come through.

The innovation in the programme is really important. It has also been delivering a number of randomised control trial evaluations of what works to engage adults. I hope that some of the findings from that will feed into mainstream numeracy provision in future. The programme was a time-limited programme, but it would be helpful to build some of those learning points and different numeracy interventions into the mainstream of adult numeracy delivery in future.

Q12 **Lord Ranger of Northwood:** My question builds on the theme that there has been about engagement. Thank you, Alex, Bobby and Sam, for your time today. It has been enlightening. On engagement with adults, I am of the generation that I remember Carol Vorderman—it is probably the role you are playing now—inspiring people, raising the profile of it. The worst thing I could think about would be the advert that says, "Come do a free course in maths". I am just not going to do it for whatever reason. If you were going to now design the ultimate engagement programme from what you have learned so far, the things you have touched on, what are the key ingredients that you would say should be in that programme now?

Sam Sims: I could certainly say a bit on that. You are absolutely right about ensuring that there are people in the public eye who are passionate and are helping and supporting people—like Bobby, as a National Numeracy ambassador, plays a huge role in being able to break down some of the barriers that people have and show that improvement is possible and get across those clear messages.

What we have learned at National Numeracy over the last 12 or 13 years in terms of what works is, first, to be able to understand where people are and to go to them, rather than, as you have said, "Come and take a course in maths". That involves someone going somewhere else, doing something else. Meeting people where they are is really important—understanding how they feel to start with. They are often feeling negative about maths. Leading with maths is often a bad idea and we make this mistake again and again.

It is incredible how many maths course posters you see with equations in the background. It is the equations; it is that school-based maths that people have developed an aversion to. We need to talk about value—always lead with value. "This is how it can help you. This is how it can help you feel more in control of your finances, get into work, build a sustainable career, support your children".

When it comes to supporting children, we often think about parents and carers struggling with the methods that are used nowadays, and that puts a lot of parents and carers off. But, as parents and carers know, the most important thing they can do is talk about the value of maths and numeracy at home and bring it into everyday life. That is shown in research to be one of the most powerful factors. Lead with value.

We need to change the cycle where people have experienced failure, they do not believe they can improve, and therefore they are shut down to maths. We need to make people feel and experience success quickly. We have something called the National Numeracy Challenge. It meets people where they are. They can do it online. They can get started in 10 minutes. It is bite-size. They experience success quickly. If they experience failure, it stops. All of these things we have learned and put into practice—making it relatable, contextualising all maths that we do. Never having abstract maths is really important. Make sure everything is designed for adults, not just repurposed, as things often are, from material that is for children, which can often appear quite patronising.

Q13 **The Chair:** You mentioned equations. How do you overcome maths anxiety that is quite common among lots of people?

Sam Sims: We see a huge amount of maths anxiety. As many as 35% of adults say they experience some form of maths anxiety. That can range from mild tension right up to external panic for people. There are some great organisations as well as National Numeracy that work around this—the Maths Anxiety Trust, people like Professor Tom Hunt and others—that have done a lot of work around this that we harness at National Numeracy.

Taking a step back, people taking their time, not being put under pressurised situations—a lot of it comes from being put on the spot and those situations in life where we might be put on the spot, an exam experience taking us back to maybe where that anxiety was developed from, giving people that space. There are lots of different tools, techniques and approaches that can be taken to reduce that anxiety.

The Chair: There is this cultural perception that some people just cannot do maths, which obviously is very concerning. What can be done to dispel that perception?

Sam Sims: One of the most important things we have seen is ensuring that there are relatable role models available. If somebody comes to us who is struggling, who does not believe they can improve—or we go to them—the first thing they will see is somebody just like them who feels the same as them, who has managed to overcome that. That is an incredibly powerful message to say: "Everybody can improve and here is an example of someone who felt just like you who did improve". That is something we have learned is incredibly powerful.

Baroness Walmsley: A quick follow-up. Sam, I have heard you say three times we need to approach people where they are. One place where many people are who have struggled with numeracy and experienced failure is prisons. I know there is a lot of good work in prisons—not enough, and in not enough places—but do you know of any examples of good work in prisons that has a wider application and how can that be spread more widely?

Sam Sims: I think there is important and good work going on in prisons. I completely agree, it is an area that we would love to do more work in and realise that there is a bit of a gap there. We see that with education in general in the prison environment. There are lots of great organisations doing some fantastic work already in prisons.

One of the conditions that I see as being successful is, again, the focus on value. When we try to—again, like with anybody—go back to the maths we learnt at school and the way we taught it at school and the way we learned it, that is something that puts people off very much. We need to have a different approach to engage people.

Bobby Seagull: On this, some of my points echo Sam's. I was doing the Brighton half marathon on Sunday—so if I am limping, it is because of that. When people ask me, "What do you do?", and I say, "I am a maths teacher", immediately they are like, "Oh, I could never do maths at school. I hated it". I say to them, "What is in your hand? You have a watch. So, in your run, what are you going to be working out? Your times, your average times, and you have probably been thinking about your calories and your training regimes". Those are all practical applications of maths. As Sam said, there is an image problem, where people think of maths, they think back to their days at 15 and 16. I think we have to work on how we can change that.

In terms of where people are at—I will come to that in a second. Before I do that, quickly, let us go into the barriers. I started doing my doctorate research in this. When you mention the barriers of maths anxiety, there is that negative emotional reaction you get when you encounter maths. For children it can be when they see a problem in class, or for adults it can be when the restaurant bill comes. The problem with this maths anxiety is that it impedes or interferes with your ability—because in the real world a little bit of anxiety is good.

I was on Dictionary Corner on "Countdown" a year ago, and I definitely felt nervous because I was on the spot. A little bit is good—it is like Goldilocks—but too much can impair your ability. I think with maths we have found that too many people in this country have that maths anxiety that tips them over. I think part of that is there is something separate about our brains, like the fear centre of the brain that lights up when we see maths is often the same part when we see snakes. There is that separate issue.

There is this cultural acceptability of saying you cannot do maths. I think there is probably a western issue here as well. My parents are from India and when I compare my cousins in India with my cousins in London, generally my cousins in India are better at maths. When they go to their parents' evenings, the teachers ask, "What is your son or daughter doing? Are they doing extra tuition?" But in England, if one of my cousins is doing well in maths the teacher immediately says, "Oh, your child is extremely bright. They must have a gift". Of course, people do have giftedness, but I think maths is something that people can achieve if they work hard at it over a long period of time. I think it is a big cultural piece.

In terms of where people are at—the Gen Zs and above—there are a lot of them on social media, so there is a powerful role for working with influencers to try to change the messaging around maths, almost like the equivalent of a Gok Wan makeover but using social media. The more we can make people think maths is cool and relevant—where is the running influencer, where is the cooking influencer? Showing them that this is all maths. It is not just Pythagoras and trigonometry.

The Chair: Alex, is there anything to add on maths anxiety?

Alex Stevenson: I would like to add on the places where people are at, and I recognise prisons as one context, although I find that the interventions in prisons are a slightly different kettle of fish from interventions in other areas of life. In the past we have run programmes of maths mentoring, which is a volunteer-based approach. It is not teaching but it is engaging people, supporting

them. I think there is a role for that programme, along with champions, as Sam as mentioned, and volunteers can play a really useful complementary role.

The other place where people are at is at work, and I do not think we are doing enough to work with employers on engaging them in the numeracy skills of their workforce. It is often associated with unemployed adults having numeracy skills needs, but we know that many of the adults who have low numeracy skills are in fact in work, and that holds them back from progressing into better-paid, more secure work. If you have lower-level skills, you are less likely to be offered further training.

We know that by international standards, employers invest far less in training in the UK than they do in other countries. I think this is something that should be picked up as part of skills strategy and policy, because the evidence shows that one thing that can make a difference to whether or not somebody engages in learning is the support of their line manager in the workplace and the support of other advocates, such as union learning representatives and so on. That is an important context where we can engage people.

Q14 **Lord Borwick:** Is there a need for a new, specific qualification, aside from GCSE and existing level 2 qualifications? What do you think should be included in that new qualification?

Sam Sims: I think there is a need. We heard a lot in the first panel about some of the things around GCSE in particular that are not proving successful. There have been some great alternatives and additional stepping stones proposed by exam boards—OCR and AQA have good examples—as well as the Maths Futures programme from the Royal Society that we heard about earlier.

I think we need this because this norm-referenced approach, which Lynne McClure talked about earlier, where we have to have around a third of people failing by design in the system, more or less, means that every year we are adding to this group of millions of people who are struggling. We should have the means to ensure that there is a certificate of some sort, a qualification of some sort, that everybody can demonstrate that they have the basics in place, that they are competent, that means something to employers. What it means is they can do the things that employers need them to be able to do—something that can be trusted.

We have already seen from some of the data around maths GCSE that it is not something we or employers can trust in at all. It is just a benchmark of comparison; it is how it is used. We need something else potentially as a stepping stone towards GCSE, so

something that everybody could do, could show what they know and can do, and demonstrate that and pass. A bit like that driving test approach where everybody has a chance of passing it, having and passing it would have some currency.

Yes, we should have something else. Quite how that works, what level that is at, whether it is a certificate or something else, remains to be seen. At National Numeracy we have the Essentials of Numeracy, which is a framework that has pulled together all of the maths that you need in everyday life. We have a certificate you can get for that through the National Numeracy Challenge.

That is an alternative. That is an option. It is something that if employers adopted it could be powerful. However we do that, we need something that more that young people—in fact, every young person—whether they get on well or do not get on well or struggle, can come back to and feel that they have a good chance of being able to pass, if they practise, prepare and persist.

Bobby Seagull: In 2025—which, for a maths teacher, is 45 squared—I am quite excited. I think it is a tragedy that we are in a country where we should be having aspirations for the very top—we should have 100% literacy, we should have 100% numeracy; obviously, there is always going to be leakage there—we are miles from that. It is a tragedy that our system of education, our GCSE system, creates a norm-referenced place where one-third of—about 200,000—children leave every single year. Within five years another million adults are there who are told that they cannot do maths, they cannot use numeracy.

Clearly, our GCSE is not fit for purpose for them and, at the top end, does it serve the needs of the people who are going to be our future AI and data scientists? Again, from listening to Conrad earlier, I am not sure it does either. But it is definitely failing our bottom third.

With those, there should be definitely some other qualification. In Scotland there is an additional qualification. I think in standard arithmetic there should be something numeracy-based where if you leave school just with that very qualification at least you can use numbers on a day-to-day basis. I think our school system is failing people if they leave after 11 years from five to 16 feeling that numbers are not their thing.

Alex Stevenson: We need a broad and inclusive learning offer for adults. Part of that might be the GCSE qualification because if somebody did not get it at school they might well want to go back and get it later in life. They should have the opportunity to do so.

We also need a different qualification alongside that. That has been the role played for a number of years now by the functional skills maths qualification. That qualification was last reformed around 2018, I think. Unfortunately, contrary to the intent of the reform, which was to make it more relevant to the kinds of skills that employers need in the workplace, it made the qualification closer to the academic content of GCSEs in the pursuit of rigour, but it is less relevant now than it should be. We are probably coming to a point where the content of that qualification should be looked at again to make sure that it is genuinely suitable, as its stated intent is, as a qualification for life and for work.

I do think there is value in smaller, bite-sized qualifications, such as the stepping-stones qualifications that Sam mentioned, and there is value in things such as the Multiply interventions, which are generally non-accredited learning. We need all of those in place and we need to look at what the progression pathways are between those things.

In terms of some of the content, what we are seeing from things such as Multiply is that the everyday financial skills of financial literacy and money management are popular in engaging people. I do not see why we cannot have a bit more of that kind of content in functional skills, for example. Yes, obviously, we need to include the basic number work, calculation, measures, shapes and space, and those kinds of things.

One of the ways in which you can make the content more engaging is something like the project a few years ago called Citizen Maths, which was using big mathematical concepts such as uncertainty and probability, which are very relevant in day-to-day life. If you are advised by your doctor that you could have an operation but there is an 80% chance of success, what sense do you make of that? These are real, everyday maths skills, developing that understanding of risk and proportion and representation and other examples of those big concepts. Probability comes into functional skills only at level 2, I think, so you could make more use of some of those bits of maths that are applicable to day-to-day life to make the content more relevant.

Q15 **Viscount Stansgate:** It is the last question and thank you very much for coming to give us the evidence, it has been very interesting. As a result of today's session, the committee is probably going to draw up a letter to the Government with conclusions and recommendations about their policies on mathematics, numeracy and functional mathematics. That is what committees do. If you were in our place, making the decision on

the top three recommendations that you would like to make to the Government, what are they? It is a succinct question: your top three priorities in each case.

Alex Stevenson: I am happy to start on that. First, what I would say is that we are hearing reports that the adult skills fund may be further reduced in coming spending rounds. I would say do not do that. I would also say—we have not got into the detail of this so far—but most of that money is now devolved to metro mayors and other devolved areas, and that will be more the case in future. I would say do not cut that funding and also hold the metro mayors and devolved areas to account on how that money is spent on securing adult numeracy outcomes.

Secondly, we need to tackle low employer engagement and investment in skills. As I mentioned previously, we would suggest allowing the non-apprenticeship element of the growth and skills levy to support adult numeracy training in the workplace.

Thirdly, it is important that we develop a more joined-up skills system. What I mean by that is partly about promoting lifelong learning more broadly. We cannot look at adult numeracy in silo, and many of the people who we are talking about today will of course require support perhaps with literacy or digital skills or English for speakers of other languages. We should have a holistic offer for those people who would benefit from improving their skills.

When I say, "joined-up", I mean we should join up with those opportunities that we have to reach people. That might be through employment programmes in Jobcentre Plus. It might be in prisons. It might be in the workplace. It might be through housing associations. It might even be through people visiting their GP and being referred by social prescribing into learning, but we need a more joined-up skills offer for adults.

Bobby Seagull: As a teacher, obviously, first, I am going to speak about the maths teacher talent pool. That should be a high priority for the Government, to look at—like Lynne said—financial incentives and career structures. Clearly, the shortage of those ultimately impacts the quality of teaching throughout the country and adult education.

Secondly, I would speak about our short-sightedness in not supporting universities and their maths education, closing many departments, especially the ones at the post-1992 universities. Ultimately, this is the pipeline of people who go on to become

future data scientists and AI workers but also teachers. So there is the university piece.

Thirdly, it is about the fitness of the GCSE and whether it serves a purpose, because, again, I think there should be some sort of alternative that makes sure that young people, adults, have their numeracy skills, they have financial literacy, they can understand and handle data, they can measure and estimate in daily lives. That alternative benchmark qualification should be there as well.

Sam Sims: I would add a new criterion-referenced numeracy qualification, bringing in the maths that everybody needs throughout their daily lives, perhaps as a stepping stone to GCSE, which has value and currency and is valued by employers as well as by young people or adults pursuing it.

I would also suggest that we stop insisting through policy that the only way to build numeracy skills is by taking a considerable course to start with. After the end of this month there is no way to fund those early stepping stones to build people's confidence, to take those first steps before a more formal course. That is a real shame, and I would suggest that we find a way to continue that work.

Finally, we need to be able to build on what we have learned and the innovations that have come from Multiply, so having a real interest in looking at what has been shown to work over the last three years with adults to help them re-engage with learning and to build upon those in the future.

The Chair: Thank you very much. We have learned a great deal from all three of you. We are very grateful for you coming to give your evidence. Please feel free to send us any follow-up evidence that may occur to you after this session. Thank you again for coming, and that concludes today's public session.