Raspberry Pi Foundation

Thought leadership

Future of England's Computing Curriculum: Report

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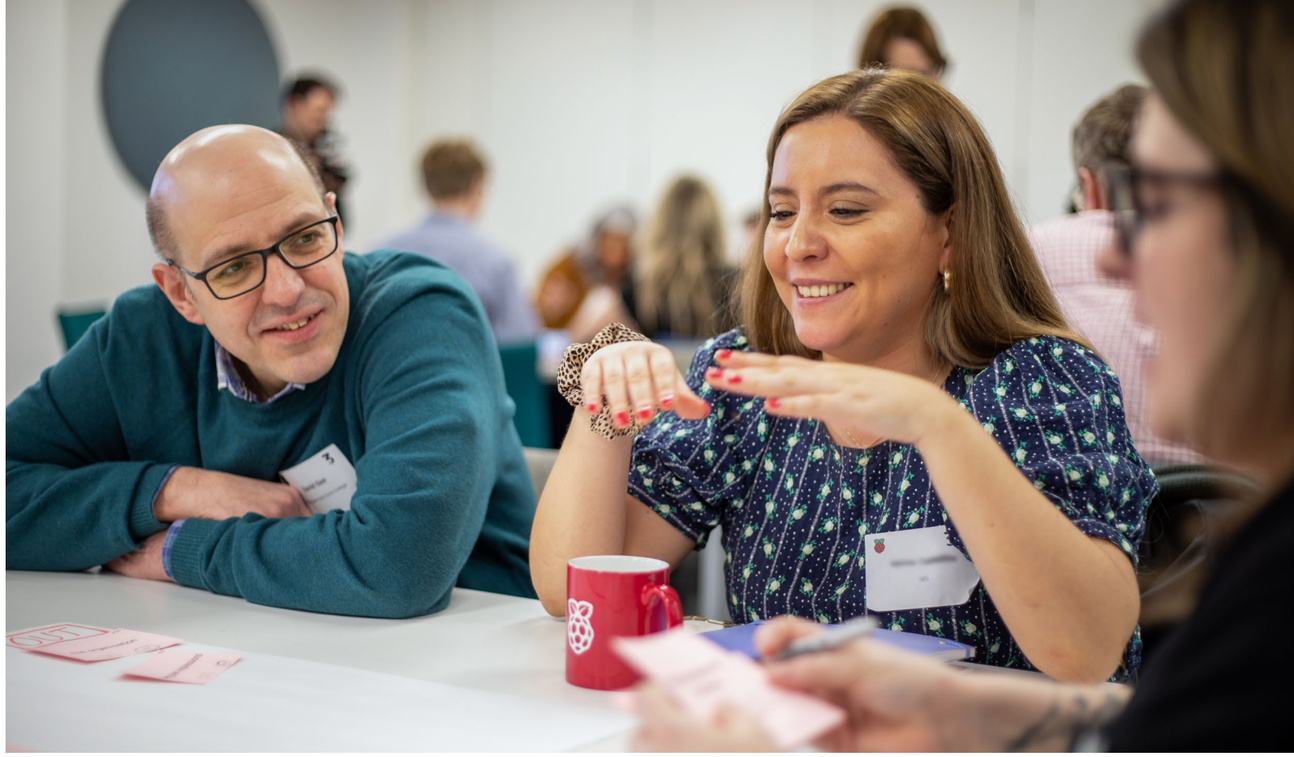


Educators at the Talk Computing workshop

What students and teachers in England want from a computing curriculum

England's computing curriculum is at a critical moment.

The UK Government's ongoing Curriculum and Assessment Review is the first major review of England's curriculum and qualifications system since the current national curriculum was introduced in 2014. The review provides a rare opportunity to consider whether the knowledge, skills, and experiences young people develop through education remain aligned with the realities of contemporary society, technology, and work.

At the Raspberry Pi Foundation, we believe this is particularly relevant for computing education. We believe that this is an excellent opportunity not simply to update the computing curriculum content, but to reconsider what computing education is for, who it serves, and how it prepares young people for life in a digital society.

Too often, curriculum reform happens around students and teachers rather than with them. Yet these are the people who experience computing education every day, and they have valuable insights into what is working, what is not, and what needs to change.

This report draws on conversations with students and teachers from across England and identifies a striking level of consensus. While perspectives differed in emphasis, participants consistently pointed to the same underlying challenge: the current curriculum no longer reflects the realities of technology, work, or young people's lives.

At its best, computing education can empower young people to understand and shape the digital world around them. But many students and teachers feel that the current system is too often constrained by overloaded content, narrow assessment structures, and a lack of flexibility in how learning takes place.

Our discussions with people with firsthand knowledge of the current curriculum suggest that the next phase of reform should not focus on adding more content, but rather focus on making computing education more practical, relevant, inclusive, and future-facing.

This report discusses both general computing education and computer science qualifications. In England, all pupils study computing as part of the national curriculum until the end of Key Stage 3 (Year 9, age 14). Beyond this point, students may choose to continue studying computer science at GCSE and A level. Throughout this report, we use 'computing education' when referring to the broader curriculum experienced by all young people, and 'computer science' when referring to the optional qualification pathways studied after Key Stage 3.

Listening to students and teachers

This report is based on a series of student focus groups and teacher workshops held in Manchester, London, and Cambridge during spring 2026.

The student discussions included young people currently studying computer science at GCSE and A level (ages 14–18) as well as students who had decided to not continue with the subject (50 students in total). As might be expected, these groups often brought different perspectives. Students studying computer science were generally more positive about the subject and its technical content, while those who had chosen not to continue were more likely to question its relevance, accessibility, or alignment with their future aspirations.

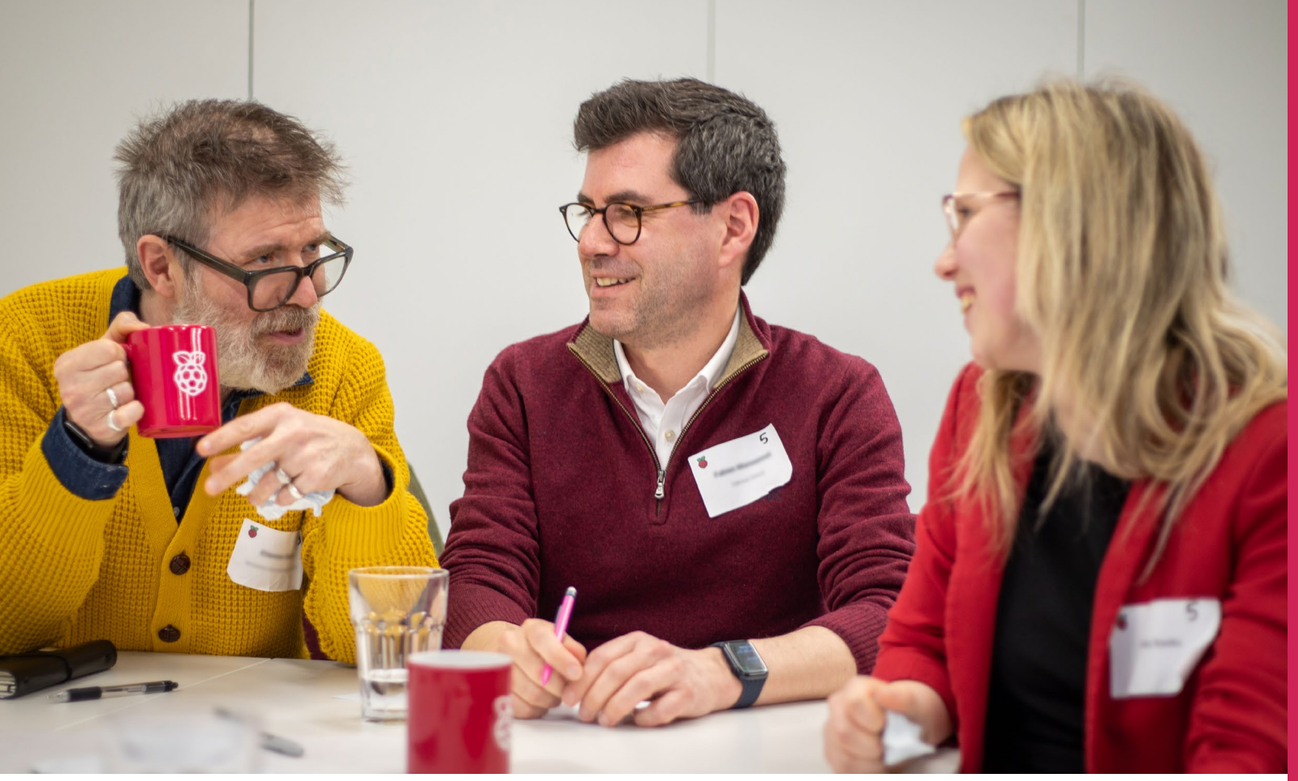
Alongside this, the Raspberry Pi Foundation and the University of Cambridge brought together 18 computing teachers from secondary schools across England to explore curriculum priorities and challenges for implementation.

The sessions focused on four broad questions:

- What should young people learn about computing?
- Why does computing education matter?
- How should computing be taught?
- Who should computing education serve?

The findings presented in this report are qualitative and are intended to identify themes, priorities, and areas for discussion rather than provide statistically representative evidence.

While participants did not agree on every issue, and views sometimes differed between students and teachers, several broad themes emerged consistently across the discussions.



Educators at the Talk Computing workshop

Build on existing strengths

Students and teachers highlighted several key strengths of the current curriculum.

Teachers consistently emphasised the value of computational thinking, programming, algorithms, data, and understanding how digital systems work. Students studying computer science often described enjoying problem solving, coding, and the sense of achievement that comes from creating working programs.

> **“Programming is the language through which students understand how technology works.”**
>
> **Teacher workshop participant**

Participants were clear that curriculum reform should build on these strengths rather than replace them. Across our discussions, there was broad support for helping young people understand how digital technologies work, not simply how to use them. Participants valued the emphasis on technical knowledge, creativity, and computational thinking that already exists within the subject.

The challenge identified by students and teachers was therefore not whether these foundations should remain, but how they can be made more relevant, engaging, and accessible for a wider range of young people.

> **Programming is the language through which students understand how technology works.**
>
> **Teacher workshop participant**

Student workshop, London

Computing education must become more relevant

One important finding from these discussions is that disengagement from computing is not simply about lack of interest in technology. Many students who chose not to continue with computer science still recognised the importance of digital skills and emerging technologies. However, they did not see the subject itself as relevant, accessible, or aligned with their futures.

Several students described computer science as intimidating, overly focused on coding, or disconnected from their career aspirations.

> **"It's almost like it is another language and I think getting your head around it is really hard."**
>
> **Student, London**

Others worried that their wider educational opportunities would be negatively affected if they found the subject too challenging.

> **"If I'm not that good at it, whilst what you picked for GCSE matters, I think sixth form is more just looking at grades. So if you get a super bad grade, it doesn't really matter that you learned something, it's more that you might not get picked."**
>
> **Student, London**

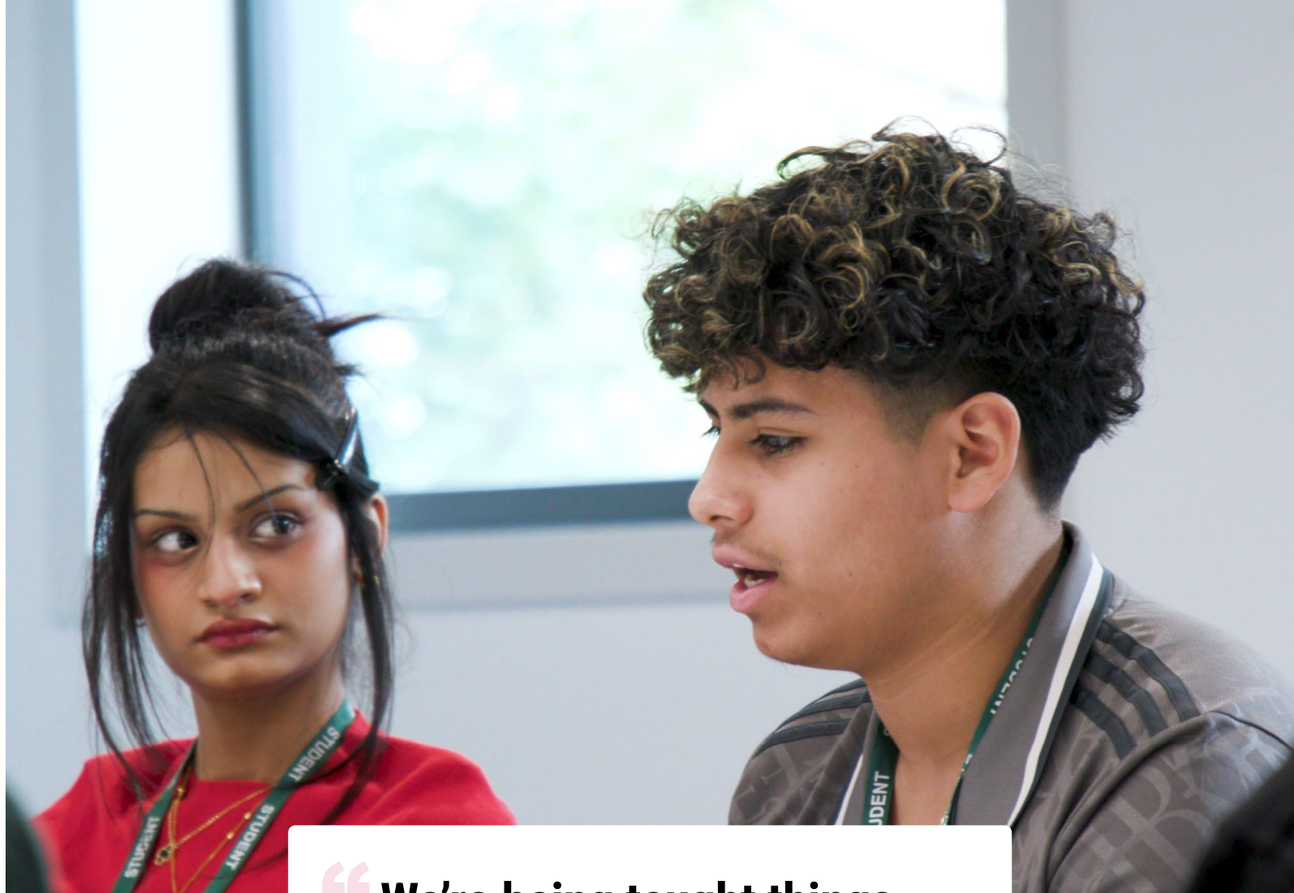
This raises important questions about how the subject is currently positioned within schools. For some young people, computer science is seen less as a valuable subject with wide applicability and more as a highly specialised pathway suited only to those who are already confident coders.

At the same time, these students still strongly valued digital literacy and digital creativity, alongside practical knowledge about cybersecurity, online safety, and managing digital identity. Students, however, described considerable variation in how they were taught in practice, despite many of these topics being included in the UK Council for Internet Safety's *Education for a Connected World* framework (a non-statutory framework that outlines the digital knowledge, skills, and online safety understanding that children and young people should develop throughout their education).

Some students said that they preferred subjects such as media studies or design and technology (DT) because they felt these offered more visible real-world applications and clearer connections to future careers.

> **"Subjects like DT may also just be more useful than computer science because they link to careers such as architecture, engineering, and carpentry."**
>
> **Student, London**

These discussions suggest that the challenge is not to convince young people that digital understanding matters. Rather, it is to ensure that computing education feels relevant, meaningful, and accessible, and that it equips young people with the agency to understand, question, and shape the digital world around them.



> **"We're being taught things we'll never use and missing what we actually need."**
>
> **Student, London**

One of our clearest findings was the perceived gap between the curriculum and the realities of modern digital life.

Students frequently described lessons as overly theoretical and disconnected from the skills they felt they would need beyond school.

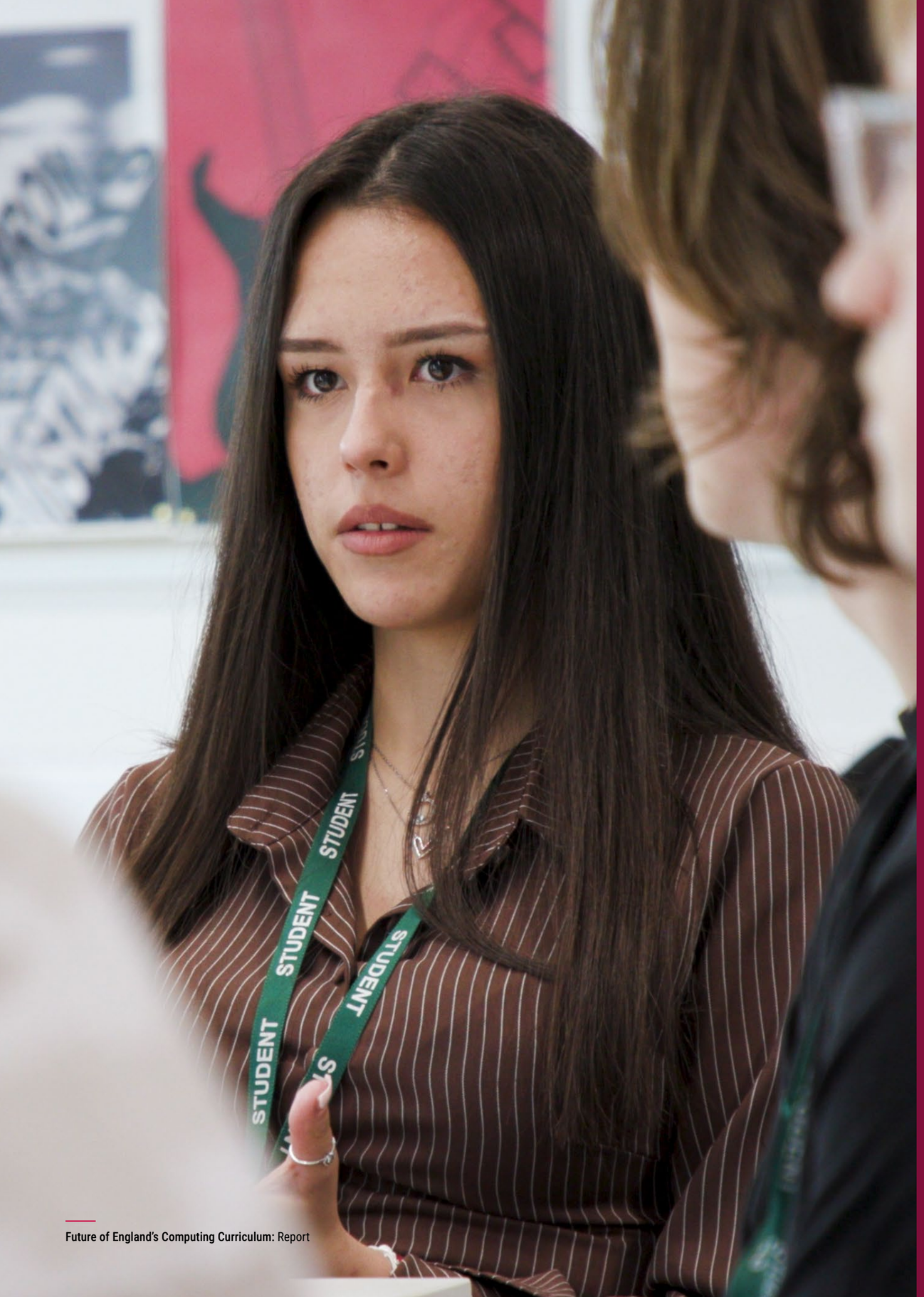
> **"We're being taught things we'll never use and missing what we actually need."**
>
> **Student, Manchester**

In particular, many students highlighted a lack of confidence in practical digital skills despite using technology constantly in everyday life.

> **"I can code a bit, but I don't know how to use Excel properly, that's what I'll actually need."**
>
> **Student, London**

Teachers also shared these concerns. While many of the teachers we spoke to strongly defended the importance of technical knowledge, they also questioned whether parts of the current curriculum had become too focused on abstract or outdated content.

This does not suggest that we should abandon technical rigour, programming, or computational thinking. Many teachers emphasised that these remain essential components of computing education. Rather, participants argued that these concepts are most meaningful when taught through relevant applications and contemporary contexts.



Student workshop, London

> **AI is everywhere now, we need to understand how it works, not just be told not to use it.**
>
> **Student, London**

The growing prominence of artificial intelligence (AI) sharpened this discussion further. Students and teachers alike argued that understanding AI is now essential, but that teaching should go beyond simply when and how to use AI tools.

Teachers particularly emphasised the importance of helping students understand how AI systems function, including issues such as bias, training data, limitations, and ethical implications.

Together, these discussions point toward a broader redefinition of digital literacy, one that extends beyond functional skills to include critical understanding, digital agency, and the ability to use and create technologies confidently for work, learning, creativity, community participation, and personal purposes.

The Foundation's Chief Learning Officer Rachel Arthur (middle) and Senior Research Scientist Jane Waite (right) engaging with students, London

Focus on making for better learning

Another strong theme was the importance of practical and applied learning.

Both students and teachers consistently described computing as a subject best understood through experimentation, problem solving, and creation.

> **"The only time I really remember lessons is when we actually made something."**
>
> **Student, Manchester**

In the teacher workshop, design-and-making was the most commonly identified perspective on the purpose of computing. This reflects the wider view expressed by many teachers that computing is fundamentally a design-and-making discipline in which programming and technical knowledge are most meaningful when used to create solutions, products, and experiences. It also supports the idea that students learn best when technical concepts are applied to problems they care about and have tangible outcomes.

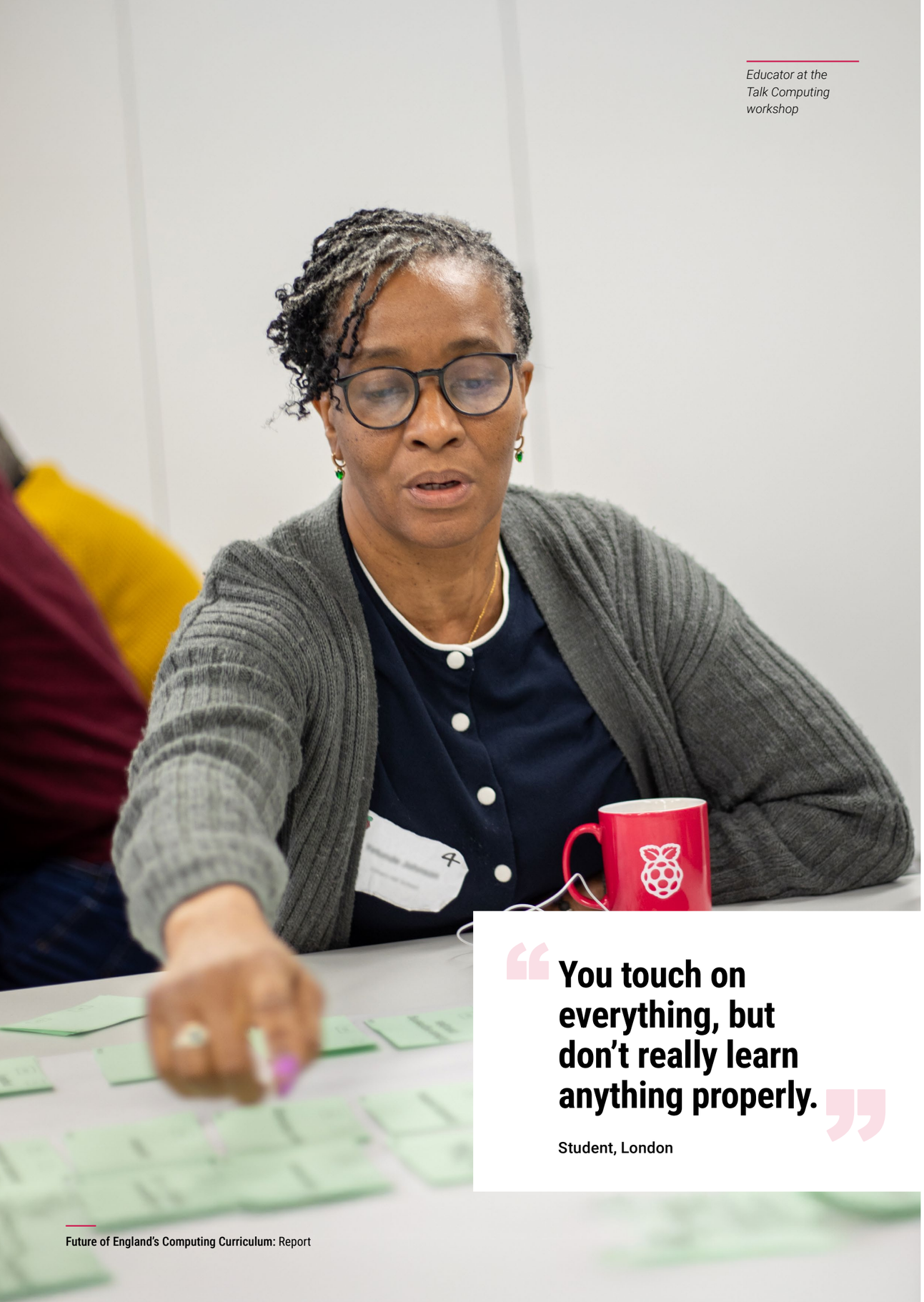
> **"Students learn computing best when they are making something that matters to them."**
>
> **Teacher workshop participant**

Students also valued opportunities for autonomy and exploration.

> **"It's just sitting and copying code most of the time, that's not how you learn."**
>
> **Student, London**

Participants repeatedly highlighted the limitations of approaches dominated by worksheets, passive instruction, or preparation for written examinations. Instead, they argued for learning experiences that more closely reflect how computing operates beyond school: collaborative, iterative, creative, and connected to real-world outcomes.

Teachers and students want curriculum reform to extend beyond the content itself. The way computing is taught matters just as much as what is taught.



Educator at the Talk Computing workshop

> **You touch on everything, but don't really learn anything properly.**
>
> **Student, London**

A stronger foundation, followed by meaningful choice

Students and teachers also questioned whether the current curriculum attempts to cover too much at once. Many described a curriculum that is broad but lacks depth, making it difficult for students to develop sustained interest or expertise.

> **"You touch on everything, but don't really learn anything properly."**
>
> **Student, London**

Across discussions, a common idea emerged: all students should receive a strong foundational computing education, but older students should then have greater opportunities to specialise. This reflects the reality that computing now spans a wide range of disciplines and career pathways, from cybersecurity and software engineering to creative computing and digital design.

> **"I think basic tech literacy, like Word or Excel or something, that should be taught to everyone because they're used so widely throughout the world. But more niche things like networking and how to set up printers should be left for people who actually want to specialise in the subject."**
>
> **Student, London**

Students also questioned whether the current curriculum tries to cover too many different areas within a single pathway.

> **"When it comes to the curriculum, it can branch off in so many different ways and there are so many different subjects crammed into one that I feel like there should be more options."**
>
> **Student, Manchester**

Rather than treating computing as a single linear pathway, participants favoured a model that balances a strong common foundation with flexibility and choice.

Inclusion remains a major challenge

> **It’s still seen as a subject for a certain type of person.**
>
> Student, London

The conversations also highlighted persistent barriers to participation.

Some students described computing classrooms where stereotypes about gender or ability continue to shape experiences.

> **“It’s still seen as a subject for a certain type of person.”**
>
> **Student, London**

Others pointed to unequal prior experience and confidence levels, which can make some students feel excluded before they even begin.

Teachers reinforced the importance of inclusive teaching approaches, scaffolding, and ensuring students can see themselves reflected in the subject and the careers associated with it.

This matters not only for participation, but for the future of the digital workforce itself.

Curriculum reform needs teachers to succeed

Perhaps the strongest area of agreement was that curriculum reform will only succeed if it is matched by investment in teaching.

Students spoke candidly about experiences with non-specialist teaching, inconsistent provision, and lessons built around outdated resources.

> **“If you get a good teacher, it’s great. If not, it’s just videos and worksheets.”**
>
> **Student, Manchester**

Teachers themselves highlighted major systemic pressures, including recruitment challenges, limited curriculum time, uneven access to equipment, and a lack of sustained professional development.

This creates a significant tension for implementing reform. There is understandable ambition to modernise computing education, but that ambition must be grounded in the realities of classroom delivery.

Without sufficient support for teachers, even the strongest curriculum risks failing in practice.

Towards a future-facing computing curriculum

Taken together, these discussions suggest a clear direction for reform of the computing curriculum.

Students and teachers are not calling for a less rigorous curriculum. Nor are they arguing that computing should lose its technical foundations.

Instead, they are calling for a curriculum that:

- Connects technical knowledge to real-world application
- Reflects contemporary technologies and challenges
- Balances foundational learning with flexibility and specialisation
- Prioritises practical and creative approaches to learning
- Ensures all young people develop essential digital literacy
- Is deliverable within the realities of schools and classrooms

Most importantly, participants argued that computing education should help young people understand the technologies shaping their lives, not simply prepare them for examinations.

Our recommendations for reform

Based on these discussions with students and teachers, we have identified several priorities for curriculum reform.

1

Guarantee a core digital education for every young person

All students should leave school with a strong foundation in digital literacy, online safety, data awareness, and AI literacy. These should be treated as essential components of modern education, not optional extras.

2

Modernise curriculum content

The curriculum should focus on contemporary technologies and concepts, including AI, cybersecurity, and data, while trimming content that is overly specific, outdated, or disconnected from modern practice. Core foundations such as programming, algorithms, and computational thinking should remain central.

3

Prioritise practical and applied learning

Computing should be taught through making, experimentation, and problem solving. Project-based learning, physical computing, and relevant, real-world applications should become central approaches across all ages.

4

Introduce greater flexibility and specialisation

The revised curriculum should balance a shared foundation with opportunities for students to specialise in areas aligned with their interests and aspirations.

5

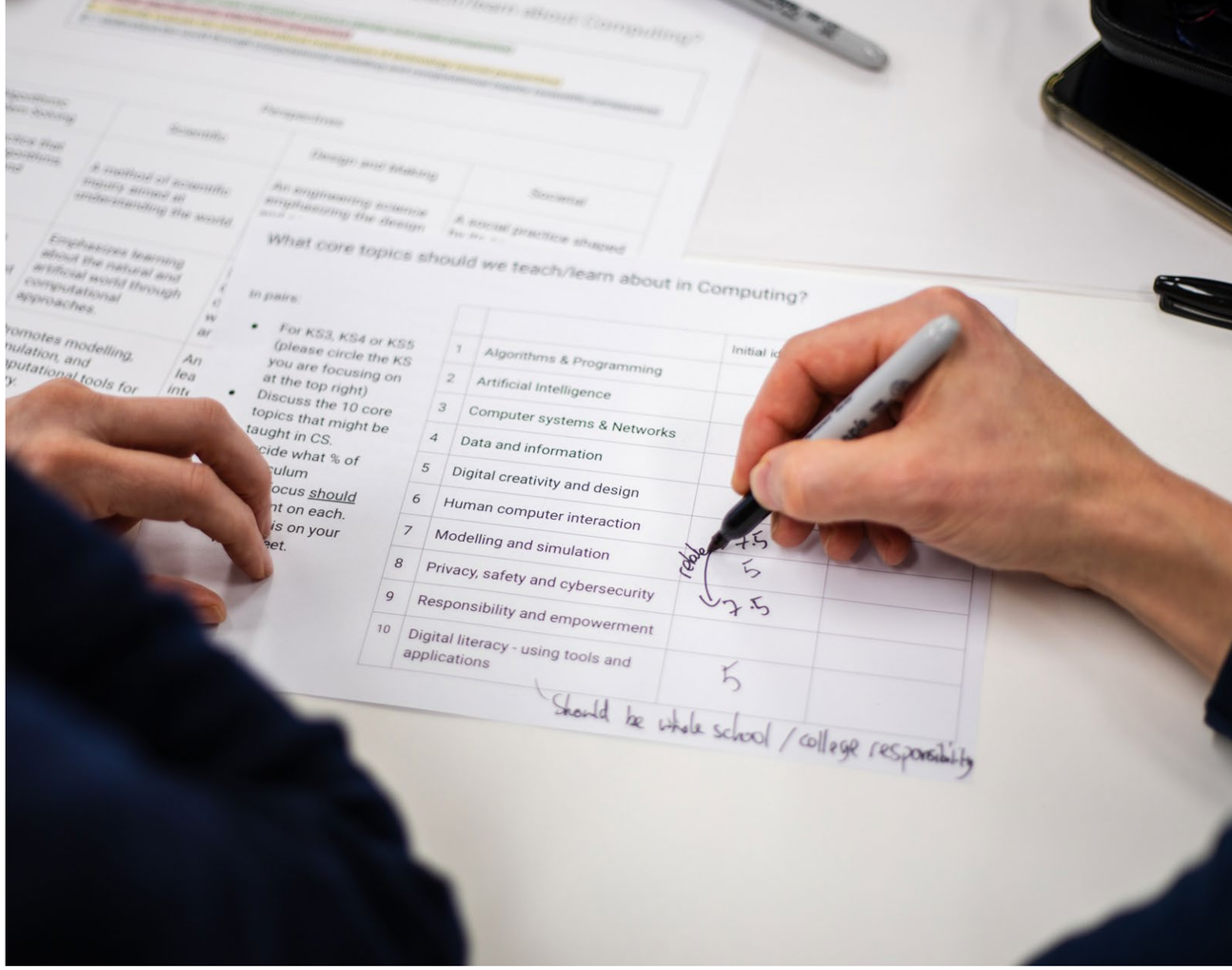
Embed inclusion throughout the curriculum

Any reforms should actively address barriers to participation by ensuring inclusive teaching approaches, diverse, relatable role models, and accessible learning experiences.

6

Invest in teachers and implementation

Curriculum reform must be accompanied by sustained investment in teacher recruitment, professional development, and classroom resources. Without this, reforming the curriculum risks widening existing inequalities in provision.



Conclusion

The current curriculum review presents an important opportunity.

At a time when digital technologies increasingly shape work, citizenship, creativity, and everyday life, computing education matters more than ever.

The discussions captured in this report suggest that students and teachers share a broadly similar vision for the future of computing education in England: one that is more relevant, more applied, more inclusive, and more responsive to technological change.

The challenge for this round of curriculum reform, however, is not simply deciding what content to include or update. It is deciding what kinds of knowledge, experiences, and capabilities young people need to participate confidently in our rapidly changing world.

Listening to students and teachers should be central to that process.

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www.raspberrypi.org

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