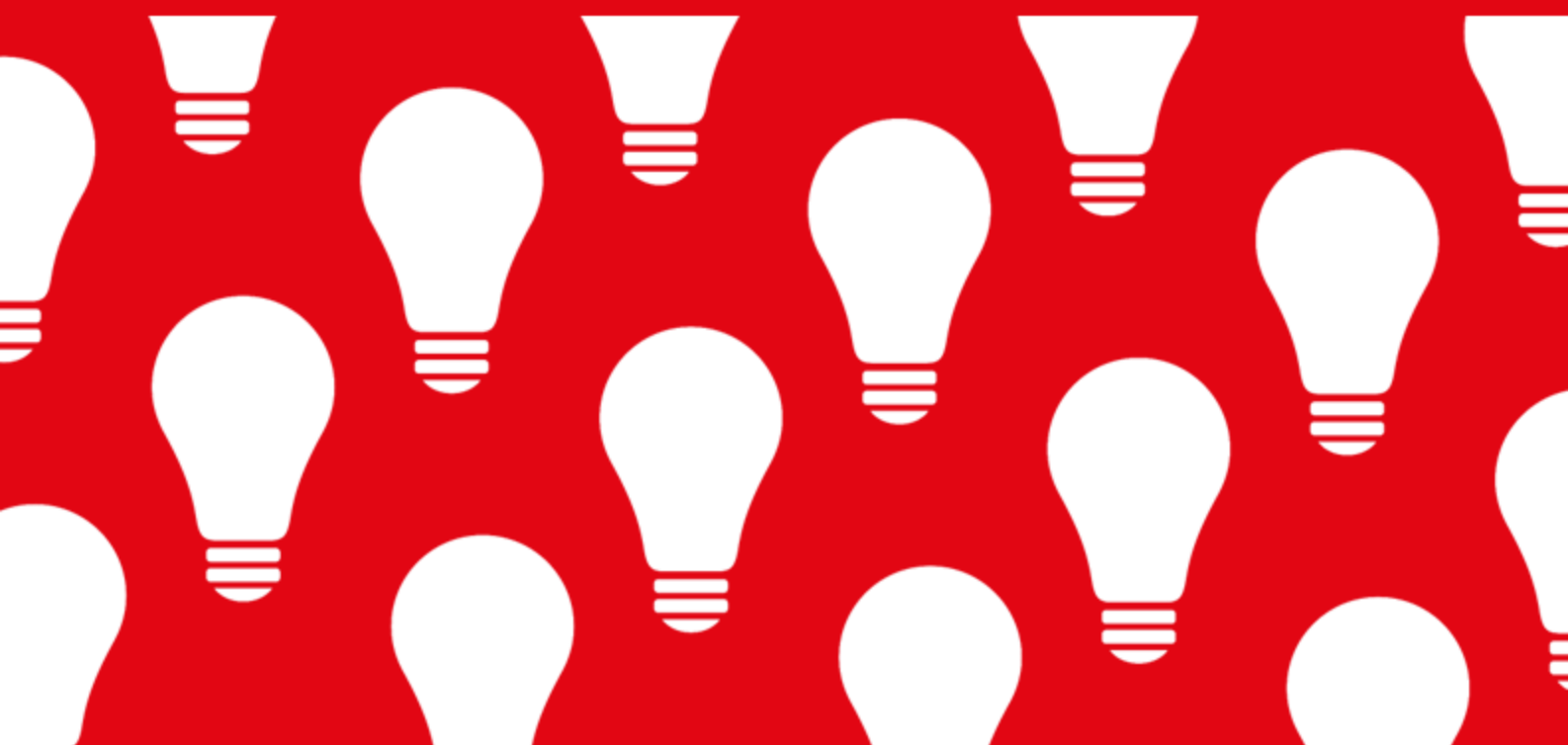


September 2023  
APPG AI Evidence Meeting



# Democratising Artificial Intelligence: Generative AI as a Catalyst for Change in Education

PARLIAMENTARY BRIEF



***Democratising Artificial Intelligence: Generative AI as a Catalyst for Change in Education*** is a Parliamentary Brief based upon the All-Party Parliamentary Group on Artificial Intelligence (APPG AI) Evidence Meeting held in House of Lords: Committee Room 4A on the 11<sup>th</sup> of September 2023.

This APPG AI is co-Chaired by **Stephen Metcalfe MP** and **Lord Clement-Jones CBE**.

We would like to express our appreciation to the following people for their oral evidence:

- **Edward Fu**, Head of Government Affairs, **Duolingo**
- **Henry Ajder**, Generative AI Expert & BBC Presenter
- **Prof. Rose Luckin**, Professor of Learner Centred Design, **UCL Knowledge Lab**
- **Louis Halpern**, Chairman, **Conversations by Ami**
- **Dr. Andrew Rogoyski**, Director of Innovation and Partnerships, **Surrey Institute for People-Centred AI**
- **Matthew Mayes**, Co-Founder, **A-dapt**

Big Innovation Centre is the appointed Secretariat for APPG AI

- CEO, **Professor Birgitte Andersen**
- Rapporteur, **George Farrer**

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# PARLIAMENTARY BRIEF

## **Democratising Artificial Intelligence: Generative AI as a Catalyst for Change in Education**



**All Party Parliamentary Group on  
Artificial Intelligence**

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# 1. Introduction

This APPG AI meeting featured insightful discussion around the disruptive potential of rapid advancements in Generative AI to transform Education. Expert speakers provided diverse perspectives on opportunities to leverage these technologies to enhance personalised, adaptive learning and expand access to high-quality instruction. However, experts also raised concerns about risks related to plagiarism, over-reliance potentially limiting critical thinking development, and the need to reinvent pedagogical approaches.

The rapid emergence of Generative AI over the past 12 months is stimulating important conversations about the future of Education. These systems can produce human-like content, inspiring possibilities for creativity and personalisation. However, concerns around ethics, bias, and misinformation also exist. Policymakers and educators must thoughtfully explore if and how to integrate Generative AI into learning, while establishing policies and critical thinking skills that mitigate risks.

## Main questions:

- *How is AI being used currently in schools and other Educational settings?*
- *Have Generative AI tools, such as **ChatGPT**<sup>1</sup>, changed the way Education and training takes place? If so, how?*
- *What can the Government do to increase digital literacy and AI-related life skills in the UK?*
- *What is the current state of digital inclusion, digital literacy, and digital life skills in the UK? Is the UK ahead of international rivals?*

## List of panellists:

- **Edward Fu**, Head of Government Affairs, **Duolingo**
- **Henry Ajder**, Generative AI Expert & BBC Presenter
- **Prof. Rose Luckin**, Professor of Learner Centred Design, **UCL Knowledge Lab**
- **Louis Halpern**, Chairman, **Conversations by Ami**
- **Dr. Andrew Rogoyski**, Director of Innovation and Partnerships, **Surrey Institute for People-Centred AI**
- **Matthew Mayes**, Co-Founder, **A-dapt**

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<sup>1</sup> ChatGPT. <https://chat.openai.com/>



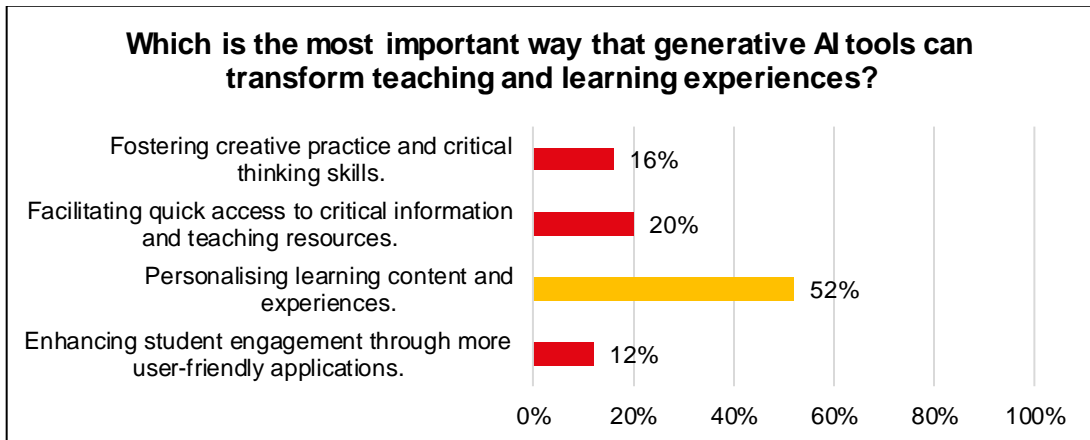
*(From L-R: Matthew Mayes, Henry Ajder, Dr. Andrew Rogoysi, Prof. Rose Luckin, Louis Halpern, Lord Clement-Jones CBE, Lord Knight of Weymouth, Edward Fu, Prof. Birgitte Andersen)*

This meeting was chaired by Co-Chair **Lord Clement-Jones CBE**.

**Parliament has appointed Big Innovation Centre as the Secretariat of the APPG AI, led by Professor Birgitte Andersen (CEO).** The Project Manager and Rapporteur for this meeting is **George Farrer**.

## 2. APPG AI Pavilion Survey

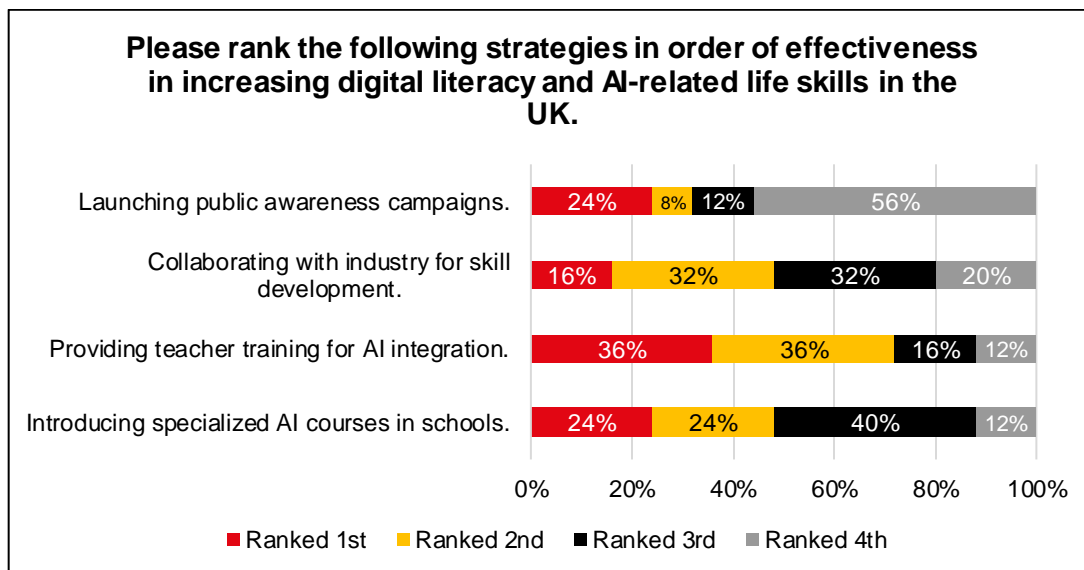
Prior to the APPG AI meeting, a survey was issued on the **APPG AI's Pavilion Platform**.



Question 1 asked members of the APPG AI *what they thought was the most important way Generative AI tools would transform teaching and learning experiences*. Notably, 52% of respondents stressed the significance of **'personalising learning content and experience'**. This strong support indicates that respondents recognise AI's potential to adapt Education to individual student needs, moving away from one-size-fits-all approaches.

Moreover, 20% emphasised **'facilitating quick access to information and teaching resources'** using AI, underlining its role in streamlining learning. Another 16% valued AI for **'fostering creative practice and critical thinking skills'**, seeing it to stimulate innovative thinking and problem-solving. While receiving the least support at 12%, **'enhancing student engagement through user-friendly applications'** remains a consideration. It underscores the importance of user-friendly interfaces in creating engaging learning experiences with AI.

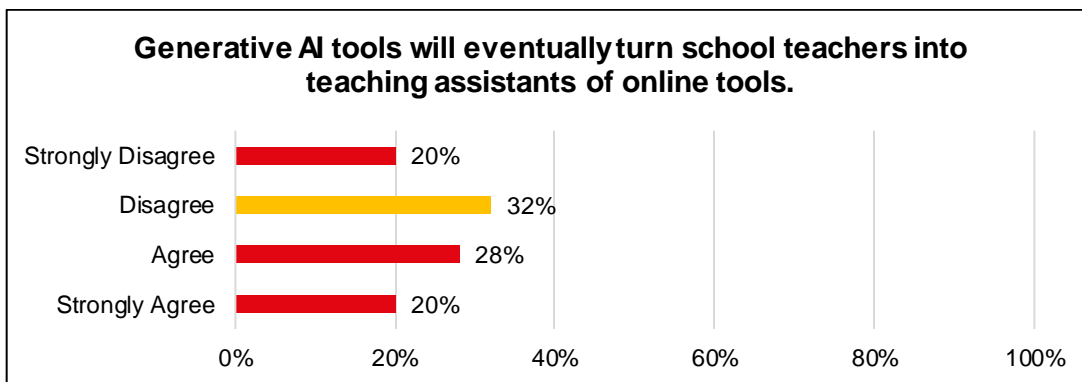




Question 2 asked respondents to rank four different strategies in order of their perceived effectiveness when it comes to increasing digital literacy and AI-related life skills in the UK. **‘Providing teacher training for AI integration’** received the highest support, with 36% of respondents ranking it first and another 36% ranking it their second choice. This strong endorsement suggests that respondents believe equipping teachers with AI-related skills is essential for increasing digital literacy and AI-related life skills.

**‘Introducing specialised AI courses in schools’** received mixed support. While 24% ranked it in the highest position, 40% placed it in the third. This indicates that while some consider specialised AI courses crucial, others see them as less important compared to other strategies. **‘Collaborating with industry for skill development’** garnered support from 16% ranking it first and 32% placing it second. This strategy is seen as valuable by those surveyed, particularly for skill development.

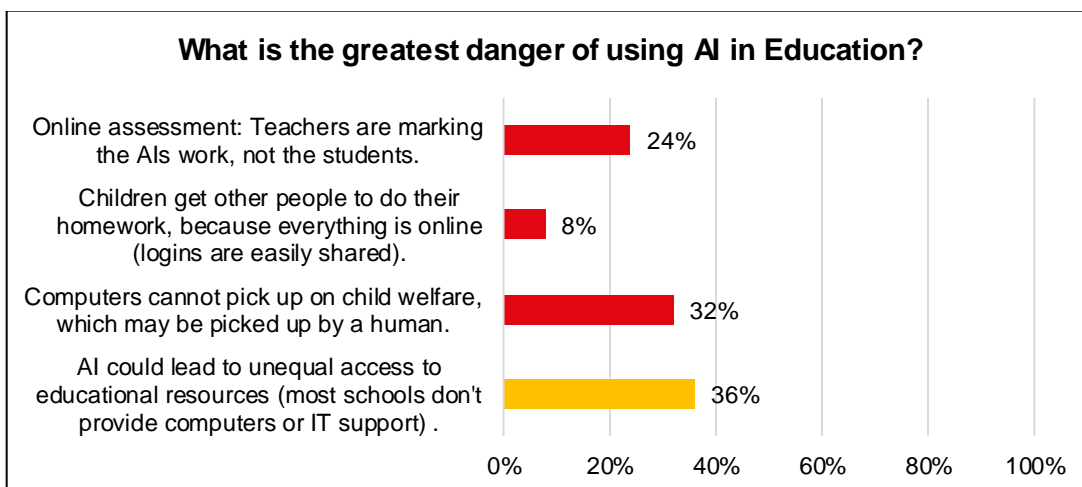
**‘Launching public awareness campaigns’** received mixed responses, with 24% ranking it in the first and 56% ranking it in the fourth position. This suggests that while some respondents believe in the importance of public awareness campaigns, a significant portion ranks it as the least important strategy. In summary, the results indicate a strong consensus on the significance of providing teacher training for AI integration in Education. Collaborating with industry and introducing specialised AI courses also receive notable support. However, public awareness campaigns are seen as less important by the majority of respondents.



Question 3 proposed the statement that *Generative AI tools will eventually turn school teachers into teaching assistants of online tools*. Around half of the respondents (52%) do not agree with the idea that AI will turn teachers into teaching assistants, with 32% selecting ‘**disagree**’ and 20% ‘**strongly disagreeing**’. This majority emphasises the enduring value of human educators and sees AI as a supplementary tool rather than a replacement.

Conversely, 48% believe that AI could significantly influence teaching roles. Of this group, 28% ‘**agree**’, and 20% ‘**strongly agree**’ that AI might reshape teachers' roles to varying degrees. These respondents anticipate AI's potential to personalise learning but also acknowledge the possibility of more substantial transformations.

In summary, the survey portrays a divided perspective on AI's impact in Education, with a majority emphasising the continued importance of human teachers and a substantial minority recognising AI's transformative potential.

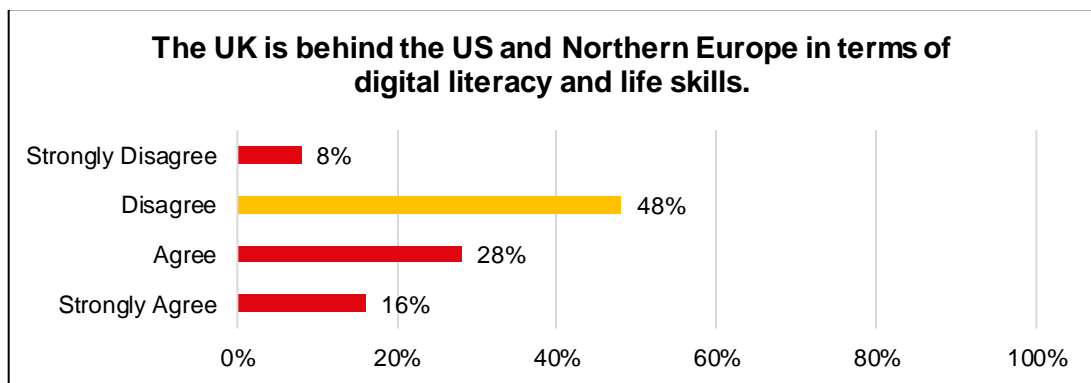


Question 4 asked members of the APPG AI Community what they thought *is the greatest danger of using AI in Education*. A substantial 36% are apprehensive about AI potentially exacerbating ‘**unequal access to Educational resources**’, particularly in schools without essential technology support. This concern underscores the pressing need to ensure equitable access to Educational technology, especially in an era where tech plays an increasingly pivotal

role in learning.

Closely trailing, 32% underscore the **'limitations of AI in identifying child welfare issues'**. This emphasises the indispensable role of human educators in addressing non-academic needs, such as students' well-being and emotional health. The recognition of this vital human element in Education remains paramount.

Furthermore, 24% express reservations about the **'increasing reliance on AI for online assessments'**, raising concerns that this could sideline teachers in the evaluation process. This prompts critical questions about how to balance AI's efficiency with educators' expertise in nurturing students' growth. Finally, 8% draw attention to the **'potential for students to misuse AI for academic dishonesty'**, taking advantage of the online accessibility of Educational resources.



Question 5 stated that *the UK is behind the US and Northern Europe in terms of digital literacy and life skills*. The results reflect a range of perspectives on this issue. While a minority of 8% **'strongly disagree'** with the notion that the UK lags in these areas, a more substantial 48% simply just **'disagree'**.

In contrast, 28% **'agree'** that the UK is indeed falling behind, indicating a noteworthy portion of respondents who perceive a gap in digital literacy and life skills. Moreover, a significant 16% **'strongly agree'** with the statement, highlighting a considerable level of concern about the UK's standing in these crucial domains. These findings underscore the mixed sentiments among respondents regarding the UK's relative position in digital literacy and life skills compared to its global counterparts.

### 3. Recommendations for policymakers

1. Making the development of a **national AI literacy curriculum**, a top priority to cultivate critical thinking and analysis skills across all students. This can incorporate real-world case studies on the societal impacts of algorithms and address responsible use of Generative models.
2. The Government should **fund comprehensive professional development programs and training scholarships for educators** across all levels to gain applied AI expertise grounded in ethics. This will empower teachers to prepare students.
3. Generous **government funding is imperative for supporting schools and teachers through the extensive teaching reinvention** required in the era of Generative AI. Resources should focus on enhancing human instruction rather than automating teaching and emphasise transferable meta-skills.
4. Policymakers need to **urgently invest in scaling proven AI innovations across UK classrooms**, beyond limited pilots. Providing implementation platforms, decentralising decision-making powers and easing procurement can accelerate practical integration.
5. New regulations on issues like privacy, transparency and redress are necessary so that **Generative AI's benefits are distributed equitably** across all communities.
6. To inform evidence-based policymaking, **research councils should substantially expand support for interdisciplinary studies on Generative AI's impacts on learning**, skills demand, and employability as occupations and careers transform.
7. Providing all students-controlled access to experiment with personalised AI models tailored to national curricula can **build tech literacy**. This grants practical understanding of risks like overreliance.
8. The Department for Education should **convene a diverse taskforce of experts** across technology, Education and ethics to formulate a long-term national strategy on AI in Education. This can align government, academia and industry.

During the discussions there was broad agreement among the expert speakers that Generative AI has immense potential to transform Education in powerful ways, but also poses significant risks that require thoughtful governance and management. Speakers highlighted the opportunities of AI to enable personalised, adaptive learning at scale, democratise access to high-quality instruction, and augment human teachers. However, experts also raised important concerns around issues like plagiarism, over-reliance on AI limiting development of

critical thinking, widening digital divides where some students lack access to AI tools, and the need to completely rethink pedagogy, curriculum and assessment. There was consensus that realising the benefits of Generative AI in Education while mitigating its potential harms will require a measured, evidence-based approach involving new policies and regulations, teacher training programs, updated teaching methods focused on AI literacy, and concerted efforts to ensure equitable access to AI capabilities.

Furthermore, a clear point of accord across the expert speakers was the pressing need to cultivate AI skills and literacy among both students and educators to optimise the potential of AI in Education. Equipping students to utilise Generative AI tools in responsible and transparent ways to enhance their learning was seen as vital. Similarly, providing teachers the training and support to deeply comprehend these technologies, leverage them effectively in the classroom, and critically analyse AI content and outputs was considered imperative. Multiple speakers stressed the need for updated curricula, training programs, community partnerships and other capacity building efforts focused on fostering AI skills for students, teachers and the broader public. Investing in this human capital and expertise was regarded as essential to harness the benefits of Generative AI in Education and manage risks suitably.

Edward Fu, Head of Government Affairs at **Duolingo**<sup>2</sup>, starts by detailing the potential of personalised tutoring to dramatically enhance student achievement, which has been conclusively demonstrated through rigorous studies. Fu mentions that analysis reveals that one-on-one human tutoring delivers striking learning gains on the order of 2 sigma<sup>3</sup> compared to conventional classroom instruction – known as “**Bloom’s 2 sigma problem**”<sup>4</sup>. Furthermore, this sizable magnitude illustrates the tremendous impact that tailored, individualised pedagogy can wield in developing each student's abilities. Fu states that systematically personalising the Educational experience holds monumental promise to unlock previously unseen levels of academic excellence.

Continuing his evidence, Fu contends that AI finally enables personalised learning to be delivered efficiently at scale across entire school systems, which will help overcome the impracticalities of solely relying on human tutoring. While in-person individualised teaching is unrealistic for most schools to provide affordably, Fu argues that AI systems can dynamically adapt curricula and teaching to match each student's evolving needs and abilities. The tailored benefits of a personal tutor can now be feasibly extended to entire classrooms through AI, representing a turning point in access and equity.

Fu provides examples of AI demonstrating enhanced efficiency and accessibility in important assessments like language proficiency tests required for migration. AI-enabled English testing greatly reduces costs and time burdens compared to conventional exams costing hundreds of

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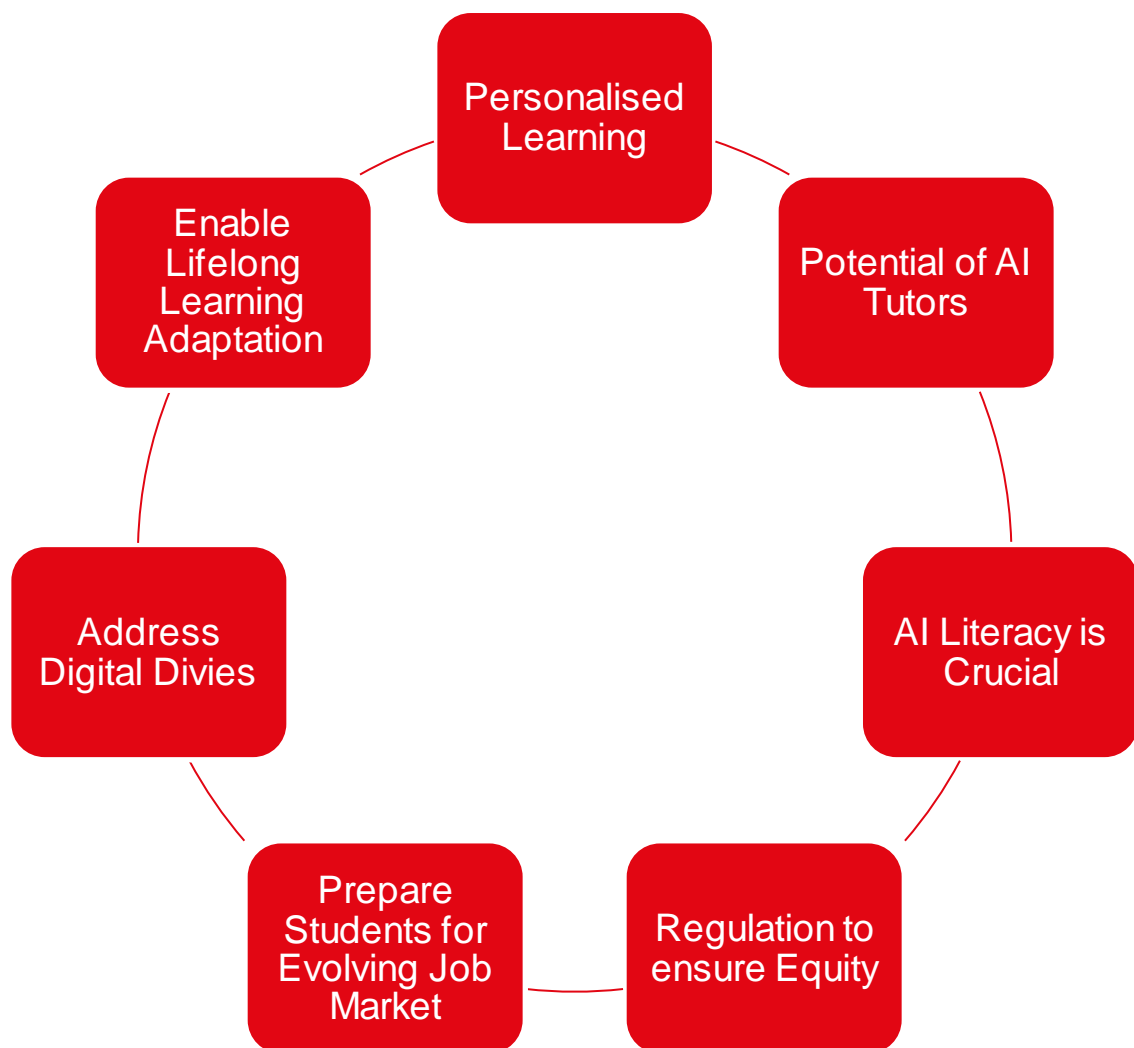
<sup>2</sup> **Duolingo**. <https://www.duolingo.com/>

<sup>3</sup> Sigma is generally used to denote a sum of multiple terms. Sigma is generally accompanied by an index that varies to encompass all terms that must be considered in the sum.

<sup>4</sup> Benjamin Bloom, ‘**The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring**’ (1984). <https://web.mit.edu/5.95/readings/bloom-two-sigma.pdf>

pounds and taking hours. Fu emphasises that democratising access to critical assessments will empower more people to pursue essential opportunities, and that AI promises to remake assessments into more agile, responsive, and fair evaluations.

*Generative AI in Education: Significant issues to explore.*



Henry Ajder, a Generative AI Expert and **BBC Presenter**<sup>5</sup> kicks off his evidence by contending that educators face monumental challenges detecting AI generated text, with the failure of the Turing Test<sup>6</sup> even stumping experts in written contexts. Ajder argues that the realism of AI writing has reached such sophisticated levels that distinguishing human from machine authorship through textual analysis alone has become improbable even for specialists. This exacerbates the already difficult task of identifying academic dishonesty in student work, and it is paramount that new detection paradigms are developed to contend with this reality.

Ajder continues, stating that plagiarism detection software cannot reliably flag AI generated text as inauthentic, giving the example of **OpenAI's classification tool**<sup>7</sup> which demonstrated extremely low accuracy, in turn undermining confidence in AI versus AI textual analysis. While automating parts of the detection process is enticing, existing automated solutions utterly fail to meet the urgency of needs. Ajder declares that wholly novel technological approaches are required to make AI versus AI scrutiny accurate.

Finally, Ajder is of the opinion that fundamental assessment reimagination is imperative considering the rise of Generative AI models that can pass exams and produce human-quality written work. Testing factual recall and writing fluency are insufficient gauges of learning when AI can facially demonstrate those capabilities. Ajder posits that more holistic, comprehensive means of evaluating true human knowledge acquisition and comprehension are vital to drive students toward deeper mastery.

Prof. Rose Luckin Professor of Learner Centred Design at the **UCL Knowledge Lab**<sup>8</sup>, starts by claiming that AI could promote greater equality throughout Education, if thoughtfully and equitably implemented under conscientious regulations, unlocking personalisation for all. The tremendous capacity, when using AI, to adapt instruction to each individual learner could make quality Education more universally accessible. However, Prof. Luckin maintains that this immense promise can only be fulfilled if access is genuinely democratised, avoiding concentrated control by powerful technology companies.

Moving onto regulation, Prof. Luckin advocates that essential lessons must be learned from past regulatory failures like social media to avoid domination of Generative AI by big-tech interests. Robust guardrails and oversight are imperative to prevent distorted incentives and outcomes from undermining the technology's benefits to society, and proactive policies can help decentralise AI capabilities across communities.

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<sup>5</sup> BBC Radio 4, '**The Future Will Be Synthesised**' (2022).

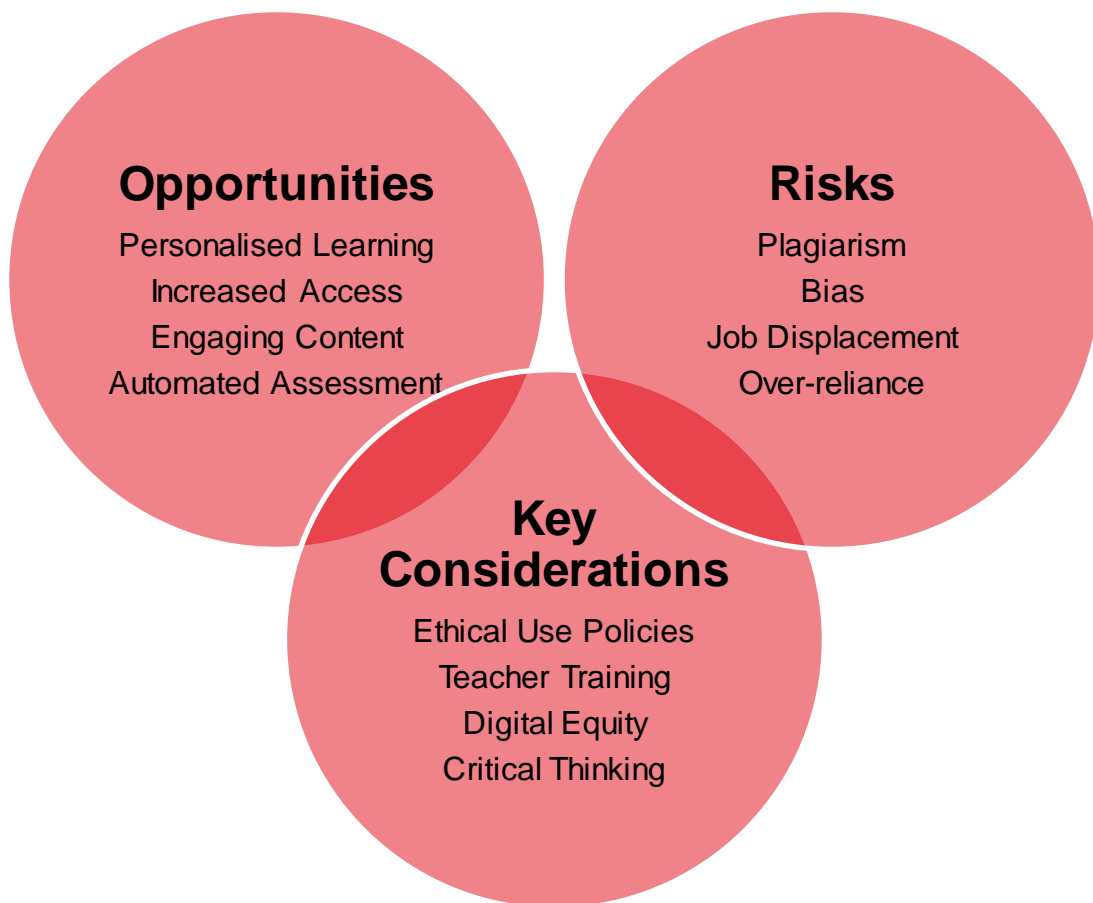
<https://www.bbc.co.uk/programmes/m0017cgr>

<sup>6</sup> The Turing Test is a method of inquiry in artificial intelligence (AI) for determining whether or not a computer is capable of thinking like a human being.

<sup>7</sup> '**Open AI's New Classifier for indicating AI-written text**'. <https://openai.com/blog/new-ai-classifier-for-indicating-ai-written-text>

<sup>8</sup> **UCL Knowledge Lab**. <https://www.ucl.ac.uk/ioe/departments-and-centres/centres/ucl-knowledge-lab>

*Opportunities, Risks & Key Considerations.*



Prof. Luckin holds the view that constructing widespread AI literacy through community-embedded partnerships constitutes a vital foundation to position these skills as essential for citizens to actively participate in shaping an AI-integrated world. She affirms that grounding Education in local contexts and dialogue can empower people to navigate AI systems as empowered agents rather than passive consumers.

Louis Halpern, Chairman of **Conversations by Ami**<sup>9</sup>, starts his evidence by asserting that sophisticated critical thinking and analysis abilities is paramount to empower students to effectively evaluate voluminous information provided by Generative AI systems. Honing individual capacities for questioning sources, identifying assumptions, and probing logic is

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<sup>9</sup> **Conversations by Ami**. <https://www.meetami.ai/>



crucial to navigate this complex data environment judiciously, for Halpern.

While democratising access to AI models holds potential to allow more universal benefiting from Generative technologies, Halpern insists that appropriate statutory data rights and protections must be enshrined in policy to prevent exacerbating existing inequalities. He affirms that legislation can help ensure that historically marginalised communities also experience Generative AI's advantages by guaranteeing data dignity.

Halpern maintains that without sufficient policy safeguards around equitable data privacy and access, Generative AI risks concentrating power and opportunity. However, by codifying fairness principles into law we can help guarantee that Generative models do not ultimately undermine social progress by departing from democratic values. Halpern is of the opinion that enacting regulatory guardrails is imperative.

Dr. Andrew Rogoyski, Director of Innovation & Partnerships at the **Surrey Institute for People-Centred AI**<sup>10</sup> starts his evidence statement by stating that the reality of students already actively utilising AI in their academic work necessitates urgent pedagogical adaptation rather than reactionary resistance or denial. He believes that teaching methods across subjects must evolve to account for this new capability and provide students guidance in using it responsibly, and that balanced integration will enable students to enhance critical thinking.

Dr. Rogoyski continues by declaring that the transformations AI is precipitating across many careers and professions requires transitioning toward a model of lifelong learning and continuous retraining. Dr. Rogoyski contends that Educational top-ups and periodic reskilling will likely become more commonplace as occupational demands evolve rapidly alongside AI capabilities. For Dr. Rogoyski, policy must promote affordable access to continual training.

In closing, Dr. Rogoyski states that keeping national AI Education policy and investments coordinated with the accelerated private sector developments is imperative to maintain sufficient governmental influence over societal outcomes. Strategic government engagement with industry can help align private incentives with public values and steer the ongoing AI revolution toward collective prosperity.

Matthew Mayes, Co-Founder of **A-dapt**<sup>11</sup>, states that AI empowers the creation of highly adaptive and personalised video tutorials that enhance student engagement through emotion AI, which can respond to individual patterns to create more immersive, tailored learning experiences – which is the basis of his business, **A-dapt**. Automated customisation unlocks new possibilities for Education responsiveness.

The UK presently lags many other advanced nations in practically implementing cutting-edge AI innovations within mainstream Education environments beyond small pilots. Therefore,

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<sup>10</sup> **Surrey Institute for People-Centred Artificial Intelligence**. <https://www.surrey.ac.uk/artificial-intelligence>

<sup>11</sup> **A-dapt**. <https://a-dapt.com/>

Mayes believes that considerably more governmental dynamism and funding is required to push promising applications past bureaucracy and inertia bottlenecks, and that change is impeded by slow-moving incumbent systems.

In stark contrast, Mayes details how countries like France are actively investing in large-scale AI Education platforms, evidenced by major vocational college investments. He insists that the UK must follow suit in providing substantial opportunities for AI experimentation and validation if it hopes to keep pace. Nurturing innovation through farsighted platforms is indispensable.

## 4. Evidence statements

### Edward Fu, Head of Government Affairs, Duolingo



#### Bloom's Two-Sigma Problem

I'd like to take about an old, unsolved problem in Education from 40 years ago. Bloom's two-sigma problem. The problem is very simple. Forty years ago, the famous educator, Benjamin Bloom, decided to systematically catalogue what worked and didn't work in teaching. So, for example, how important is homework? According to the research, if you look at classes that assign homework, versus the classes that don't, you'll see about a 0.3 sigma improvement in your students' performance.

So, what is a sigma? It's another word for standard deviation, and one way I visualise it is through an analogy through height. So, homework improves your students' performance by about 0.3 sigma and if it improves height by about 0.3 sigma, you're looking at adding about an inch or so of height. Benjamin Bloom<sup>12</sup> found that most of the things that we looked at, cooperative learning or classroom participation, even socioeconomic status, are only about half a sigma or maybe 0.75 sigma at most, which might make you think that you just can't improve student achievement all that much. The same way you can't really make adults that

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<sup>12</sup> Benjamin Bloom (1913-1999) was an American educational psychologist who made significant contributions to the classification of educational objectives and measurement of student learning in the cognitive, affective, and psychomotor domains.

much taller.

Except for the fact that Benjamin Bloom found one intervention with not just a half sigma improvement, not a 1 sigma improvement, but a 2-sigma improvement. How big is 2 sigma? Well, within this class, the average student now became the 98th percentile. Within that same class, even the lowest performing worst students got to 90th percentile overall. In terms of height, that's like imagining that we're now in a world where the average man is 6'4 and even the shortest people are over 6 feet. This is the degree of impact we're talking about here for student achievement.

### **Personalised Tutoring**

So, what is this incredible intervention? It's personalised, high quality, one on one tutoring – nothing else comes close. That's also why this is called the “two sigma problem” and not the “two sigma solution”. It was immediately obvious to Bloom and everyone else that this wasn't a practical solution to Education, no society could afford to place all its schools with high quality personalised tutors for every student.

Instead, what Bloom said, the challenge for us as educators is now that we understand the potential that our children are capable of, the most important thing is for us to find something, anything, that can come close to replicating this 2-sigma effect. His paper is called the “**The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to One Tutoring**”.

I'm sorry to say that that search continues. 40 years later, still nothing has been found that comes close to one-on-one tutoring.

### **The Power of AI**

Until now, I think that now, for the first time, we are as a society capable of solving Bloom's “two sigma” problem at scale, thanks to the power of AI. For those of us in Education, the ability of AI to personalise learning to individual students, and more importantly to be able to do that efficiently at scale, is the single most exciting thing to happen to Education.

I'm not going to sit here and tell you that **Duolingo** solved the two-sigma problem where anybody else has with AI - that would be an exaggeration. What it can say is that people are starting to get closer. Today, over about a billion language exercises are done on **Duolingo**. Amongst our users include members of the Royal Family as well as refugees. How do you create a language curriculum that's high quality enough for a member of the Royal Family, but make it accessible enough that it's used in refugee camps around the world? The answer is AI.

In my view, if you care about Education, if you care about improving teaching, then you owe it to yourself, to your students, to all of us, to make use and learn as much about as you can about this incredible tool.

## Language Test for Migration

There are so many seemingly unrelated aspects of our society that benefit from this use of AI in Education and in assessment. Here's one example: consider migration, in order to come to the UK, the Home Office requires you to take an English test to prove that you know English. This doesn't sound like a big deal, unless you've had to try to do it. It turns out that in some places it takes up to four hours and costs up to £400 to take an English test in order to get approved for migration. Not only that, if you think about it, this doesn't make a whole lot of sense. I've only been speaking for a short while, but you probably have a good enough sense of my English proficiency, and you didn't have to pay me £400 to figure that out either.

It was maybe the case 40 years ago, the best thing that we could do was in English test that took four hours and costs £100s. But unlike the two-sigma problem, I think this is a problem that we can say has been solved through AI. Today, the US Government agencies, American universities like Yale, MIT and Princeton, have switched to using digital AI assessments that take less than an hour and cost less than £50. They're able to do this because of AI. Just like how you figured out that I'm probably proficient in English, just from listening to me speak for four or five minutes, AI allows us to figure out in three minutes what used to take us 45 minutes. It's not easy, but it's been done.

## Duolingo

I'll end with a confession to make, I think the reason we at **Duolingo** have put so much effort into solving this problem is because it happens to be a really personal one for many of us at **Duolingo**. Many of us at **Duolingo** are immigrants who have gone through the same challenge. Take our Co-Founder and CEO, Luis von Ahn<sup>13</sup>, who is originally from Guatemala, and he had to take an English test. He couldn't pass it, not because he didn't know English, but because there were no places to take an English test in all of Guatemala.

Ultimately, he was very fortunate that he was able to go to a different country and pay over a £1,000 in order to do so, but that was a lot of money for someone in Guatemala 30 years ago. Now, today, multiple successful companies later, it's still something that bothers him. 30 years later, there is still not a UK approved English test centre in Guatemala. Today, if you're the next to the Luis von Ahn, you can go to MIT, but you can't come to Cambridge unless without going to a different country first in order to take an English test.

I think solving problems like this is why we're so excited about AI. I'm excited about AI because it's an opportunity to elevate the average child up to the 98 percentile. I'm excited about it because it can unlock potential in our children that we didn't even know existed. I'm excited because the UK can finally figure out that I can speak English without it costing £400. Solving problems like these is why the **Duolingo** and many other Education folks are so excited about

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<sup>13</sup> Luis von Ahn is a Guatemalan entrepreneur and computer scientist who is the co-founder of Duolingo, a popular free language-learning platform. He is also known for inventing the CAPTCHA and reCAPTCHA systems and selling them to Google.

AI. From our perspective, it's the key to the mission of developing the world's best Education and making a university available.

## Henry Ajder, Generative AI Expert & BBC Presenter



### Introductory Remarks

For those of you who are not aware of my work, I've been working on Generative AI, deepfakes and synthetic media for about 6 years, particularly focusing on malicious uses, threats, and challenges. So, when I was asked to speak at this session, there were some uses that really jumped to mind from that lens within which I'm looking at this space.

### Democratisation of AI Technologies

You have all seen over the last 18 months in particular, a radical democratisation in these technologies that have been around for a while in some form or another. They have now reached a point of confluence around the realism of the outputs, the efficiency of the models being used to generate these outputs, and of course the accessibility to everyday people needing just an email and a password to get one to a tool like **ChatGPT** for example.

Before I get into the kind of space which I want to focus on, which is **ChatGPT** as a language model, I do want to say that it isn't just about text. Audio-visual content is massive when it comes to Generative AI and is one of the areas, I think I'm most excited about when it comes to Education. For example, this is the ability to create incredibly convincing, lifelike avatars of Holocaust survivors who can read their testimony and answer questions in real time to students<sup>14</sup>. This is about providing new ways to engage with content via synthetic lip synchronisation, being able to translate things into languages for groups or minority groups, who haven't traditionally had access to audiovisual content in the Education space. Therefore,

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<sup>14</sup> 'Holocaust survivors use AI imagery to keep stories alive' (January 2023).

<https://www.reuters.com/world/holocaust-survivors-use-ai-imagery-keep-stories-alive-2023-01-26/>

I do think there is a lot to be excited about in that regard.

### **Disruption & Impact of Language Models**

However, inevitably, and this is where a lot of conversation and moment centers, is the impact of language models and the disruption. We've seen in the last 12 months in particular, these tools passing tests for the law bar exam, MBA courses, scoring in the top 1% of students, including human students of the **Torrance Test of Creative Thinking**<sup>15</sup>, for example. These tools are now in the palms of everyone's hands, and indeed a statistic that came out today from Salesforce found that 70% of Gen Z are now using these tools, and their primary use case for them surprisingly is Education<sup>16</sup>. I'm sure some of you might have seen the reporting that suggested that the dip in **ChatGPT** usage in around July was due to students no longer being in classrooms.

So, you can see these are tools that are quite compelling for young people in their classrooms, and rightly so. You can see tools like **Grammarly**<sup>17</sup> and Auto Correct, are all using some form of AI to help us smooth our outputs, whether we're students or whether we're professionals. Many people see **ChatGPT**, **Claude**<sup>18</sup> or **Bard**<sup>19</sup>, for example, all these language models as a new form of enhancing, augmenting, improving Education. This is just in the same way as on so many of you also, when you were studying, picked up a thesaurus to try and find another word for a word you've used three times in one sentence, and you didn't really know what it meant, but that was something that you used to help improve the quality of your work. In some senses, I think we can look at AI in a similar way.

### **Issues for Teachers & Academics**

At the same time, there is no doubt that this is causing teachers and academics an absolute nightmare. Being a visiting researcher at the University of Cambridge, I've had many conversations with academics who are in a bit of an existential crisis around the use of AI in teaching. The main reason for this is that teachers are not AI experts, and more to the point, AI experts even aren't able to spot Generative outputs consistently. This is something where the Turing Test really has become redundant in the text space. It is incredibly difficult, particularly in shorter passages of text, to spot AI generated content. If you are marking a pile of essays, it may be incredibly difficult, in fact, I would say it may be impossible to pick out where a paragraph might have been slipped in that was AI generated, or indeed where entire

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<sup>15</sup> 'ChatGPT can match the top 1% of creative human thinkers, says new study' (July 2023).

<https://www.cnn.com/2023/07/17/study-chatgpt-can-match-the-top-1percent-of-creative-human-thinkers.html>

<sup>16</sup> 'New AI Usage Data Shows Who's Using AI — and Uncovers a Population of 'Super-Users''

(September 2023). <https://www.salesforce.com/uk/news/press-releases/2023/09/08/ai-usage-research/>

<sup>17</sup> Grammarly. <https://www.grammarly.com/>

<sup>18</sup> Claude. <https://claude.ai>

<sup>19</sup> Bard. <https://bard.google.com/>



pieces of work have been AI generated.

So, the natural response from a lot of educators has been to turn to automated detection. That is tools which are AI, fighting AI, so it is to be trained on massive amounts of AI generated text, to spot signals, patterns, syntax, etc. which the human eye might not notice. It sounds great in principle, except it does not work. OpenAI released a classification tool when they first released ChatGPT, which had a 26% accuracy rating. If that's the best that they can do, and they've now taken it down, that doesn't really much hope, when a teacher desperately searches on Google for an AI detection tool and there's a bunch of companies that are happy to take their money, but obviously don't provide explainability or reliability with those results.

This is something we have seen affecting students around the world, where they are getting their essays flagged incorrectly. Indeed, the teacher in some respects is outsourcing that critical role to these models without having that sense of explainability, without certainty. However, they have got a job to do, which is a really difficult job already with classrooms of large sizes and essays to get through. This is a challenge.

### **Concluding Remarks**

How do we help educators navigate this new reality? How do we tell them, well actually the best chance that you think you have, doesn't work? Looking forward, I think we need to radically rethink what it means to assess and evaluate a piece of work. For example, if you are fortunate enough to go to some of the Oxbridge universities, you have supervision, and you have a much more dialectic process of learning and assessment. Obviously for many institutions that are not realistic financially, that is going to be something which is very difficult to implement, but we don't have a choice but to rethink and reform our approach to assessing in this world.

We are not going back to a world where language models are not accessible, all it takes is a few clicks of a button, and in many ways, we don't want to be. I use these tools, I use them to help me kind of shape a passage of text, as a partner to bounce ideas off. We need to encourage that responsible use, as some of the Russell Group universities are, building principles around how to use it transparently.

The message I want everyone to take away from here is that AI detection for Generative text is not a reliable solution. The temptation of teachers is understandable, and we must help them find another way to assess and navigate this new world of AI in Education.

**Prof. Rose Luckin, Professor of Learner Centred Design, UCL  
Knowledge Lab**



**Introductory Remarks**

I am going to be unashamedly pragmatic, and I am really looking at that question of what can we do and what can the Government do? I've been looking at AI and Education for over 30 years, and I have always believed that AI could be a huge force for bringing greater equality. I still believe if we can democratise AI, we can democratise Education, and if we can really democratise Education, then we bring about equality.

Education changes lives, we know that. I know that personally at the age of 14, I was a school refuser, no chance of getting any qualifications. Fortunately, things turned round for me. I'm a proud first-generation graduate, and I have a PhD and I'm a professor. I know how much Education changes lives. I know how much responsibility we must take for ensuring that we do democratise these powerful tools and that we use them to bring about a much fairer, much more equal Education system.

**AI in Education**

AI has the power to bring about personalisation; because of the autonomy, because of the adaptivity that AI brings even without Generative AI, we can personalise Education. I'm not talking about replacing teachers, I'm talking about giving teachers extra powers, giving students extra powers through with these powerful tools.

Over the last 30 years, and when I first started studying computer science and AI, many of the early examples were in Education. Programs like Buggy and Scholar, show that Education was a key application area. It's interesting that we're now in this space where Generative AI has really woken up the Education community to the fact that AI is here, AI is relevant to

Education, and AI has powerful things to offer. However, it also brings risks. One other thing that struck me over this period of looking at AI in Education is how poor we are at learning, and learning, of course, is what's made AI so powerful – AI is supreme at learning. We need to get much, much better at learning.

### **Access to AI**

We need to learn from situations that exist now. If we really want to democratise these tools, we need to give everybody access to these tools. That doesn't just mean putting the technology in the hands of the learners, of the teachers, it means giving them the skills and the knowledge and the understanding to use those tools effectively and safely. We'll look at what we've done with digital devices, where we have a high distribution of digital devices compared to other Organisation for Economic Co-operation and Development (OECD) countries, but it's very uneven, which is problematic. Of course, it's not just about the devices, it's about the institutions that support those students, who do or do not have those devices, also having the infrastructure, the knowledge and the skills to enable all those students to make most of those devices. We need to learn from that.

### **Pandemic Learnings & Regulation**

We need to learn from what happened during the pandemic. Decades of research on how to use technology effectively to support learning was ignored. Many students did not get the effects of experience they should have done. There are decades of research from the AI and Education community about how to do personalisation well, so let's learn from that and make sure that these tools are used as powerful tools that they can be.

We also need to learn from things that we've got wrong in a regulatory state. We need to learn from what's happened with social media, where we have not done a good job. We must do a much better job with AI, if we're really going to bring about the democracy that these tools could precipitate.

### **AI Literacy**

We must bring about AI literacy and we have to do it at scale. We could start trying to introduce into the curriculum, but I think that would take ages. Therefore, we need to build partnerships and we need community hubs. We need industry working with community organisations, working with Educational organisations, building on existing community organisations, building new community organisations, so that we build a population that has AI literacy. The countries that will thrive in the next few decades will be the countries whose populations are AI literate.

We can do this, but we must decide that this is a priority. Then we can help our educators and universities, our educators in schools. Of course, there's a scarcity of AI expertise, so we need to be careful how we distribute it to make sure that there was an evenness in that distribution, but we could do this if we set our minds to it. Yes, we could democratise AI and through doing that, we could transform Education, and we could do it with positive impact.

Of course, there's another scenario that I'm not even going to go into that's less positive, so let's assume we get it right and that we really don't get sucked into the huge profits that companies can make from these technologies, and we learn from our past mistakes. There's something even more profound about what we see here and now.

We know that there are so many reports, just take the World Economic Forum jobs report this year, that tell us that people are not prepared for the workplace<sup>20</sup>. In that report, 54% of people are not equipped with the kind of skills they need. We're talking here about critical thinking, systems thinking, analytical thinking, these are the kinds of skills that we must develop within our school and university curricula. These are also the kinds of things where AI is not so developed because we've developed AI in our own image of what we value in Education. That's why it's good at passing assessments because that's what we have valued.

### **Concluding Remarks**

So now we have to rethink what our Education systems are really for and start to really leverage our intelligence. It's all very well to look at the amazing progress of AI, but we're not a finished artifact, we're still evolving and it's our responsibility to make sure that we become ever more intelligent with these tools. These tools are there to make us more intelligent, not the other way around.

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<sup>20</sup> World Economic Forum, '**The Future of Jobs Report**' (April 2023).  
<https://www.weforum.org/reports/the-future-of-jobs-report-2023/>

## Louis Halpern, Chairman, Conversations by Ami



### **Introductory Remarks**

I have thought about how a Generative AI would look at us? How would a Generative AI look at a baby about to be educated and starting the world? How would a look at a three-year-old or a five-year-old or a seven-year-old? It would look at us as slow. We do things so slowly. It's frightening in that perspective.

Then my thought process went to 'what would I like the most like to teach these children?,' 'How could they use AI?' I think technology should be blind. I do not want to know if I'm using AI; I want to get to my destination first. I should not be thinking about how I use it or the underlying technology. The answer is obviously, critical thinking. We want them to, in turn, evaluate, analyse facts, make decisions, know how to make your decisions. Critical thinking is the must-have decision for our new world.

### **Democratisation of AI**

We've got to democratise access to AI, in order to do that. Just as no one should be denied the right to Education, I think no-one should be denied the right to use AI and get AI's benefits. To do that, you've got to have the freedom to interact with your AI in your own way, with your own words, with your hand motions, with your pictures, with any way that you choose to communicate yourself. You've got to be able to interact with this technology. Freedom is also important.

Confidence is also important. Confidence is going to get a suitable outcome when I ask a question to the AI. Confidence is going to use knowledge that we approve of, from approved sources, especially in school context. We've got lots of textbooks at schools. I have met lots

of lecturers, students, teachers, etc. who are making a good living teaching, but are making a better living writing books and textbooks.

### **Conversations by AMI**

What does our software do? If we use massive data for our website, whatever it needs, it's going to absorb it and talk about it instantly. The other thing it does is it has a concept called automated reasoning. So, it decides which bit is the best bit to do the best thing with, and then it can present it, then we get some of the detection that we want.

Then I got back to the textbooks in my mind. I think 100% of teachers and the lecturer should all be paid for their textbooks, I think I should be paid for the book I'm writing; I think musicians should be paid, I could carry on for any creation of intellectual property. It is further down the line, though.

### **Data**

I got this letter from the NHS about three weeks ago, and it *"Dear Louis, we've chosen you as one of five million lucky people to opt in to have us use all your health data to benefit the NHS."* So of course, the first thing I said was, "I love the NHS." The second thing I thought was, hold on, "who is doing this work? Who is going to benefit from this data? Who's going to benefit from knowing if I took my bills on time?," those are the big companies. If we don't build in freedoms for people when using their data, only big companies will have the benefit, and we'll create a poverty that's dystopian in the worst way.

### **Recommendations for Policymakers**

So, what do I think we should do? I think we should give everyone in the country a small language model, starting with school kids, but eventually leading to everyone. A small language model is cheap to make, it's cheap to run, you can heavily personalise it and control it, the schools can be involved and put their textbooks into it. The schools can trade teaching resources and create a whole new economy based on that. If everyone had a small language model, you're creating choice, creating freedom, you're educating people how to use the AI, you're giving the ability to mark the AI and their work, you get rid of this problem of who cheated, who didn't cheat, and you can have it so that it learns to a goal.

When we deploy our software, we look at something that happens, and then we go look at the goal we are learning to, and we make the software better towards that goal. We all have goals in life, every kid has a goal in life. If we use that fundamental technology to learn towards a goal, such as wanting to get better educated, I want to be the first person in my family to go to university, for example, that can be your goal.

I think we should set up the National AI Service. I think that a National AI Service should give every single citizen in the country their own a small language model. That's how you get everyone using AI and benefitting from it.

**Dr. Andrew Rogoyski, Director of Innovation & Partnerships, Surrey  
Institute for People-Centred AI**



**Introductory Remarks**

I think we're in the foothills of the AI Himalayas despite AI being an area of research for over half a century – I personally think that it is very early days. I believe that AI is going to have a profound effect on Education, which in turn will have a profound effect on our lives as individuals, societally and economically.

In the past few months since the launch of **ChatGPT**, Education has moved from nihilism to enthusiastic experimentation, perhaps more importantly the whole sale of adoption by our students. All this against a background where platforms proliferate, new capabilities, strengths and weakness emerging on an almost daily basis.

**Current Adoption of AI in Education**

Students are using AI, already resulting in improvements of their written work, helping non-native speakers improve their communication, supporting task-like summarisation, allowing students to gather the essentials of topic in a fraction of the time that traditional approaches provide. Students are using AI in essays, dissertations and other work. Progressive educators are recognising that there is a certain inevitability to this and are adapting. Academics are using AI for lesson and course planning, for examinations and tests for assessments, even from improved communications with students. My colleague has given a particularly terse reminders to his students when they're late with their assignments, has taken into putting his emails through a large language model to tone it down. Academic institutions have gone from convening emergency committees on AI earlier this year, to institutional charters that lay out the principles of acceptable use for those students and educators.



### **Impact of AI in Education**

The potential impact is unknown. It's simply too early to say what the effect of the intended non-intent consequences will have. There are undoubtedly risks that AI will be used as an aid to complete an Education task quickly, i.e., getting your homework done, rather than leveraging its power to improve understanding. We will see improvements to student performance, but it will be unclear, and it is unclear whether students have got a better command of their subject, or just becoming proficient in their use of their personal AI. There will be profound changes in pedagogy, as AI changes what we teach, how we teach, and how we assess, and how we deliver Education in the future. We just don't know what those changes look like yet.

### **Impact of AI on Careers**

Thinking about the act of Education, this foundation for careers and meaningful lives in the future, we also need to recognise that AI is disrupting careers, creating a fundamental challenge for both educators and students to navigate the future and uncertainty. The half-light of knowledge we impart of our students is getting shorter, we need guarantees that the job for life. There are careers that are being impacted already and might cease to exist altogether. Examples of this are: radiographers, copywriters, graphic designers, amongst others, who are all worried that their futures are uncertain.

This means that Education will have to shift to a model based on lifelong learning with Educational top-ups, cross-training, retraining, becoming much more commonplace. AI itself can assist in this process for providing personalised Education. Imagine your AI mentor, able to advise you when and what you need to study, to mentor you, to prepare custom materials, optimised for your own learning style, and to test and assess you. It's entirely possible to do that, and these technologies exist now today. What is certain is that the AI literacy will become an important life skill, knowledge of what AI is, in all its forms, its strengths and weaknesses, and how to approach the use of AI-enabled systems. We will need to have an awareness of topics in AI such as data, bias, privacy, security, safety, and ethical use.

### **Global Market Dominance**

What is equally certain is that the current pace of development will continue, as enormous investments are made in the pursuit of global market dominance. The sophistication of Generative AI will increase, with improved veracity and accuracy, increased opportunity, but also an increased dependence. This raises the important question of sovereign and control, with some worrying implications in Education. As we grow to allow this technology, most often provided by overseas companies, we run the risk of students becoming dependent on overseas sources, perhaps even bypassing traditional sources of Education altogether. This raises the possibility that the erosion of social norms has influenced its open to global providers, some of whom may not be aligned to our values.



## **Digital Divides**

We also need to face the implications of further digital divides, with sections of the population being denied the benefits of AI and able Education, because they can't afford access to the technologies, they don't understand its value, or it isn't readily accessible to people with disability and other needs. We also need to recognise the impact of divides at an international level, with many countries unable to benefit from AI. These are important issues, that need to be addressed by our government and our Education system.

## **The International Perspective**

Finally, in terms of international comparison, we're seeing early signs of Education policies starting to respond to the encroachment of AI. There are multiple AI universities being set up, as there is growing recognition that decision makers need to be AI-literate. Take for example the US's National Security Commission on Artificial Intelligence (NSCAI) recommendation recently to create a digital services academy for the military, recognising that the key decision makers need to understand what AI is in their context<sup>21</sup>. I particularly commend the recent UNESCO paper written by Stefania Giannini, Assistant Director General of Education, which highlights many of the points I've made<sup>22</sup>.

## **Recommendations**

So, my plea is to all. Firstly, we need to grow our investment in Education about AI, to undertake research to better understand its impact. We need to build AI awareness and literacy, as has already been said, creating skills needed for an AI-enabled economy. Importantly, educators themselves urgently need support to acquire and master an understanding of AI.

Secondly, we need to support continued funding for AI researchers. Academics struggle to compete with the Silicon Valley hyperscalers, including exploration of the impact of AI on Education.

My final point is we need to do this fast, not in the next Parliament, but now while we still have some influence.

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<sup>21</sup> **'Call for new US tech university to feed graduates into government'** (July 2020).

<https://www.timeshighereducation.com/news/call-new-us-tech-university-feed-graduates-government>

<sup>22</sup> Stefania Giannini (UNESCO), **'Generative AI and the Future of Education'** (July 2023).

<https://unesdoc.unesco.org/ark:/48223/pf0000385877>

## Matthew Mayes, Co-Founder, A-dapt



### Introductory Remarks on A-dapt

I spent 20 years in the advertising sector, then in 2019, we launched our AI format that adapts digital content to people based upon human factors such as attention, positivity and engagement. In 2020, Covid arrived, and we pivoted to Edtech. As with so many others, my kids suddenly had to switch to screen-based home learning. I quickly realised how our innovation could help them sustain attention.

We were initially funded by Innovate UK for a maths prototype, and later, worked with a curriculum provider, **White Rose Education**<sup>23</sup>, to build a fully adaptive video tutorial. We were also funded to develop a soft skills prototype that helps disadvantaged young adults to do better in job interview situations, which we are starting to sell to UK colleges.

### Benefits of Using AI in Education

I will be talking about the benefits of putting Emotional Intelligence into video lessons, and more generally, about what the UK needs to do to accelerate innovation in Generative AI.

With **ChatGPT**, we have seen how putting AI into something that already works – in this instance search engines, can be truly transformative. We can take the same approach to learning videos, so that they are no longer linear, but become smart and adaptive, unlike existing printed workbooks or traditional videos. One key advantage is that AI video works on the PCs and laptops already found in colleges and schools – so there is no immediate need

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<sup>23</sup> **White Rose Education.** <https://whiteroseeducation.com/>

for expensive VR headsets or “Metaverse” technologies.

However, the biggest opportunity with AI is its inherent scalability, making expert tuition available to all at very low cost.

### **Emotion AI**

However, Generative AI by itself is not so good at the human side of teaching. Our specific expertise is in Emotion AI, also known as affective computing, which focuses on human emotions. Emotional Intelligence is more natural, nuanced and innate than AI. It can be used to enhance the interaction between a system and a user, by allowing the system to respond to emotion and engagement levels, much like real teachers do.

We found AI to be very effective at spotting patterns of behaviour. During field testing we saw how Year 4's might have the right numbers doing fractions but would often put them in the wrong boxes. The teachers told us that this was quite common. Our AI can trigger learning pathways that explain how to put the right digits in the right boxes, whilst freeing up, but not replacing, teachers.

If a pupil is unable to answer a maths question, they should be able to answer, based upon the curriculum they have been taught, and their expression is obstructive – then there is a good chance they might have maths anxiety. Our maths lesson can then take them down a different learning pathway, to the students who exhibit no maths anxiety. Assessment data can manifest over space and time – so if a Year 10 pupil is still struggling with fractions, it could be the problem started in Year 6, so we can take them back through the curriculum at their own pace.

As you will be aware soft skills are vital to digital inclusion, literacy, and life skills. We often hear that soft skills are more important than IQ when it comes to being successful in life.

Emotion AI can be used in both formative and summative assessment, enabling us to develop tools that focus on the emotional development of young people. By using our **Interview Coach**<sup>24</sup> for just an hour we see huge improvements. We now have a fast and highly cost-effective method to help young adults learn and improve soft skills, and there is an open invitation for any of you who want to come and see it in action.

### **Work with the French Ministry of Labour**

The UK ranks high in AI innovation but scores much lower in the implementation of AI in operating environments, such as schools and colleges. I would contrast this with our experience with A-dapt France, where the French Ministry of Labour is creating operating environments within regions, with clearly defined strategic objectives of what they want to achieve, and then they properly fund AI implementations to test and scale across colleges.

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<sup>24</sup> **A-dapt Interview Coach**. <https://a-dapt.com/interview-coach/>

We anticipate our technology could benefit up to half a million young French jobseekers.

### **Concluding Remarks**

- AI learning can better support the pace of the individual learner.
- By combining Emotion and Diagnostic AI we can identify areas where students need additional support, all within the tutorial itself.
- With Generative AI we can generate questions for as long as the pupil needs.

Making AI innovation work in Education environments off the bat is really hard, and a bottom-up sales approach is painstakingly slow, and not attractive to UK VCs.

### **Recommendations for the UK Government**

- Create the conditions for more AI innovators to pivot into the Education sector (not out of it).
- Support AI innovation with the same urgency as demonstrated in the COVID pandemic.
- And not rely on 'Silicon Valley' to provide the AI solutions to UK Education challenges.

Generative AI will be one of the most transformative innovations we will see in our lifetimes. When photography was invented, the role of artists changed from drawing what they saw in front of them, to giving us Modern Art. The introduction of pocket calculators into classrooms in the early 80s did not hinder students learning maths. Therefore, if we focus Generative AI narrowly on solving specific Education pains points, then hopefully this can far outweigh the negatives.

## 5. Speaker Bios



**ai**ppg  **appg**

**EVIDENCE MEETING:**

**DEMOCRATISING ARTIFICIAL INTELLIGENCE  
GENERATIVE AI AS A CATALYST FOR CHANGE IN EDUCATION**

**MONDAY 11 SEPTEMBER 2023: 5:30PM, UK PARLIAMENT**

**EVIDENCE GIVERS FROM LEFT TO RIGHT**

**Edward Fu**, Head of Government Affairs, **Duolingo**

**Henry Ajder**, Generative AI Expert & BBC Presenter

**Prof. Rose Luckin**, Professor of Learner Centred Design, **UCL Knowledge Lab**

**Louis Halpern**, Chairman, **Conversations by Ami**

**Dr. Andrew Rogoyski**, Director of Innovation and Partnerships, **Surrey Institute for People-Centred AI**

**Matthew Mayes**, Co-Founder, **A-dapt**

<https://bicpavilion.com/about/appg-artificial-intelligence>

### **Edward Fu, Head of Government Affairs, Duolingo**

Edward Fu is currently the Head of Government Affairs for Duolingo. Previously, he was Director of Global Policy Development for Zipline, which uses drones to deliver, every day, thousands of pounds of blood, vaccines, and other essential medical products to rural and remote hospitals. Edward authored the first-ever research into the sustainability of real-world drone delivery.

Previously Edward was Senior Regulatory Counsel / Head of Policy at Bird. He led the nationwide creation of nearly every law and standard governing the micromobility industry, helping quadruple the industry in two years and enabling hundreds of millions of trips annually on shared bikes and scooters. Prior to joining Bird, Edward practised law at Davis Polk & Wardwell.

### **Henry Ajder, Generative AI Expert & BBC Presenter**

Henry Ajder is a globally recognised expert, advisor, and broadcaster on Generative AI and deepfakes. The first “GenAI Cartographer”, Henry’s work has transformed society’s understanding of Generative AI. He has led pioneering research at organisations including MIT, The Partnership on AI, and Sensity AI, influencing international legislation and commercial AI strategy.

Henry advises world-leading organisations on the immense opportunities and challenges AI and Generative technologies present, including Meta, EY, Adobe, The BBC, and EU Commission. He holds a visiting research position on Generative AI and responsible AI strategy at The University of Cambridge's Jesus College.

Henry presented the BBC radio series, *The Future Will be Synthesised*, the BBC's first documentary series exploring the Generative paradigm shift. He continues to contribute as a leading AI expert to international news media, including CNN, MIT Technology Review, Bloomberg, and The New York Times.

An established keynote speaker, panellist, and chair, Henry has spoken on stages around the world, including SXSW, CogX, and Adweek. He has been invited to keynote on the state of AI by organisations including The Economist, Barclays, and The University of Oxford.

Previously, Henry led Generative AI research world's first deepfake detection company, Deeptrace. He has authored several landscape and impact reports on deepfakes and Generative AI, including the seminal *State of Deepfakes* report in 2019. As Head of Policy at Metaphysic AI, he established Synthetic Futures, the first cross-industry organisation dedicated to ethical Generative AI.

#### Publications:

- **'The Future will be Synthesised'** (BBC Radio 4, June 2022).

#### **Prof. Rose Luckin, Professor of Learner Centred Design, UCL Knowledge Lab**

Rose Luckin is a UCL Professor renowned for her research into the design and evaluation of Educational technology, in particular Artificial Intelligence (AI). She was named as one of the 20 most influential people in Education in the Seldon List, 2017, and is frequently asked to provide expert evidence to policy makers, in both Houses of the UK Parliament and the European Commission. She is also the first non-American to win the coveted ISTE impact award.

Rose has published prolifically in academic journals, books and conferences proceedings. Her 2018 book: *Machine Learning and Human Intelligence: The Future of Education for the 21st Century* is available in English and Mandarin. In this book, Rose describes how AI can be used effectively to support teaching and learning. Her most recent book, published in 2022, is a collaboration with award-winning head teacher Karine George. *AI for Schoolteachers* is an essential and accessible guide to AI for anyone involved in Education. Rose is also lead author of Nesta's influential *Decoding Learning* report published in 2012 and Pearson's *Unleashing Intelligence*, published in 2016.

Rose is also Founder of Educate Ventures Research Ltd., a London hub for Educational

technology start-ups, researchers and educators involved in evidence-based Educational technology and leveraging data and AI for Educational benefit.

Rose has taught in the secondary, further Education and university sectors and is president of the Self-Managed Learning College in Brighton. She has also spent time in University Management as a Director of Undergraduate Studies and Pro Vice Chancellor. Rose is also the host of the EdTech podcast.

Publications:

- **‘Yes, AI could profoundly disrupt Education. But maybe that’s not a bad thing’.**  
(The Guardian, July 2023).

**Louis Halpern, Chairman, Conversations by Ami**

“A born-and-bred Londoner with a proven track record in AI strategy. As Chairman, I lead a talented team that has successfully deployed our AI platform, Ami, at M&S, BBC TV licensing, and other well-known private and public organisations.”

**Dr. Andrew Rogoyski, Director of Innovation and Partnerships, Surrey Institute for People-Centred AI**

Andrew’s experience spans 30 years in industry, government and academia. Originally a physicist at the Rutherford Appleton Lab, Andrew joined Logica at the height of the early AI boom, a decade later moving to space consultancy Esys, then became MD of QinetiQ’s Space Division, where early AI techniques were being applied to applications like satellite imagery. Andrew subsequently worked as a strategist, specialising in innovation and cyber security, including secondment to Cabinet Office, before becoming CGI’s Vice President of cyber security, where AI methods were used for threat detection. Andrew joined Roke Manor Research as Innovation Director, developing a number of products and services that utilised leading edge AI techniques. Andrew returned to academia as Director of Innovation at Surrey’s new Institute of People-Centred Artificial Intelligence, a group that leverages the University’s 35 years in AI by developing a new focus on creating AI solutions that focus on delivering benefit to people and society.

**Matthew Mayes, co-Founder, A-dapt**

Matthew completed an MA in Interactive Design at the Centre for Electronic Arts, Middlesex University in 1995. He spent 20 years working in leading agency networks, including McCann

WorldGroup and Omnicom, working on some of the world's most interesting brands such as Unilever, Intel and SAP. He worked as an Executive Creative Director with highly talented teams, building all manner of digital innovations. In 2018, he came across a new emotion intelligence algorithm that was to become the basis for A-dapt's Adaptive Media® Emotion AI Video tutorial format. The initial thinking was to create an AdTech format. That all changed in 2020 with COVID-19, when A-dapt realised the innovation could be used to help his children sustain attention, whilst watching Maths tutorials at home. A-dapt was initially supported by Innovate UK to develop its first Emotion AI tutorial prototypes for Maths and a Soft Skills video training prototype for disadvantaged young adults, in partnership with social justice charity Nacro Education. A-dapt's French operation is now scaling and delivering projects for France's national employment, Pôle Emploi. A-dapt's mission is to use its Emotion AI innovation for social impact. Matthew was recently made a Freeman of London. He lives in Brockley, Southeast London.

Publications:

- A-dapt Vision Emotion AI Technology
- Adaptive Maths Tutorial
- Interview Skills Coach



## **6. Contact**

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