Bridging the attainment gap:

edtech and the struggle to level up

Contents:

Welcome

Educators have been grappling with the challenge of addressing the needs of disadvantaged children since Rab Butler's 1944 Education Act[1].

The fact is, despite a cavalcade of intervention strategies over the decades – and a cluster of initiatives in recent years – a yawning gap remains between disadvantaged students and their better-off peers. A recent report by the Education Policy Institute[2], funded by the Nuffield Foundation, found that, despite years of policy interventions, progress on closing the disadvantage gap between students eligible for free school meals at some point over the past six years and their better-off peers had changed little since 2017. This, they say, represents "a stalling of progress in reducing educational inequalities."

So, narrowing the attainment gap remains the key challenge for the education system, especially as we steer our way out of the pandemic.

Our round table gathered together some of the leading thinkers and innovators in the education world to consider the role that edtech could, and should, play in tackling this challenge. We avoided discussions about access to equipment and data and instead focused on key questions of design and delivery so that it benefits every learner, especially the most disadvantaged.

Equality of access to edtech is one thing, but do we need to double down on equity, so that edtech offers a platform to raise disadvantaged groups faster and ultimately close the learning gap with their peers?

And what needs to happen for edtech software to deliver *particular* benefits for disadvantaged children and young people?

This report captures the thrust of our discussions as we tried to answer those questions and I hope it will make a valuable contribution as we put the pandemic behind us and focus once again on this key challenge in education – and the role edtech can play in meeting that challenge.

Murray Morrison, Founder and CEO, Tassomai

[1] www.parliament.uk/about/living-heritage/transformingsociety/livinglearning/school/overview/educationact1944/1

[2] https://schoolsweek.co.uk/epi-blasts-governments-decade-of-failure-on-disadvantage-gap/

Introduction

This report is based on an online round table discussion hosted by Tassomai on Thursday,10 February 2022. Participants were:

Bukky Yusuf - Senior Leader and Science Lead, Edith Kay School, London and Leadership Matters ambassador

Emma Rogers - Founder and CEO, Little Bridge

Kim Rihal - Co-founder and CEO, Equal Education

Carla Aerts – Director of Digital Change, Hodder Education

James Stradling – Head of Science, All Saints CE Academy, Weymouth

Joe Hallgarten - Chief Executive, Centre for Education and Youth (Chair)

Nick Worsley - Head of Policy, Education Endowment Foundation (EEF)

Kristy Evers - Head of Impact Partnerships, ImpactEd

James Garnett - Programme Lead - Edtech Demonstrator Delivery Partner, United Learning MAT, Peterborough

Tom Harbour - Founder and CEO, Learning with Parents

Can edtech personalise learning for disadvantaged children?

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After a long period of pandemic upheaval during which edtech did a lot of the technological heavy lifting, the education system is waking up to the possibilities that technology can provide for all pupils.

Ofsted, for example, has made explicit reference to the effective use of edtech in its latest inspection framework[3], but there is a way to go if it is to be used to fully address the needs of disadvantaged learners.

EdTech is increasingly able to provide personalised learning using powerful technology such as AI but there is more it has to do if the needs of disadvantaged children are to be met.

Our panel acknowledged this. For too long there had been little discussion about how technology worked in different education contexts, with edtech development more akin to process engineering, remarked one contributor.

"One of the issues was that edtech tried to turn teaching processes that worked in the classroom into systems, and didn't put pedagogy and learner-centricity first," she said. "All learners benefited less, not just disadvantaged kids."

While most of our panel agreed that edtech may have over-promised and under-delivered in terms of impact on the education sector in England and internationally over the past two to three decades, they saw cause for optimism.

[3]https://www.gov.uk/government/publications/school-inspection-handbook-eif/school-inspection-handbook

"I feel that now is a moment of opportunity for edtech, in partnership with teachers and educators, to deliver in a very big way on narrowing the gap," said one.

Defining exactly who makes up those disadvantaged groups is a vital prerequisite if edtech was to properly address their needs.

"There are so many different forms of disadvantage but for me it is fundamentally about children being hindered by circumstances beyond their control," said one contributor. "This could be SEND, or the fact that English is your additional language. And it is important to emphasise that being 'disadvantaged' doesn't mean that you have less ability than your advantaged peers."

One of the few benefits of the pandemic was that it had encouraged a greater focus on the needs of these different groups – with edtech playing its part.

Adaptive learning – the use of edtech tools to meet specific learning needs – means that individual students can then provide evidence of their learning and progress and get tailored teaching feedback as a result. "This approach makes learning very specific to where students are and what they need to do in order to improve," she added. "We've already got the platforms that do that and there needs to be a continuation of that."

With some students struggling to maintain their focus for longer periods of time – a clear result of the pandemic, according to several panellists – edtech platforms that help young people to learn key concepts in the quickest and most meaningful way so that they can then apply their learning are most needed.

One teacher panellist saw edtech as a “hands-on mechanism for improving progress”. “Some children are not coping with the typical school learning environment at the moment so quick, easy access into edtech is really important,” he said, adding: “I’m looking for edtech with the functionality to boost up children but also that will allow me to link it into specific mechanisms for improving progress and then be able to evidence it within the new Ofsted framework.”

This quick route to boosting progress is especially important for Year 9 students, we heard. “They've missed all those fundamental building blocks, and they're all slightly different in their needs.

“Edtech tools need to provide us with an easy way to say to each individual student ‘right, this is your plan, these are the gaps and this is what we are specifically going to do about them’. I have to be able to evidence where they are, what we're doing to fill those spaces, and then be able to talk about how this child has made progress.”

Can edtech data help teachers and leaders understand more about disadvantaged learners?

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Edtech software is often highly effective at producing vast volumes of data but there is work to do on using that data effectively to understand the specific learning needs of disadvantaged groups.

“While some edtech tools have user engagement and performance data on individual learners, they don't necessarily have that data in combination with data on people demographics, such as Pupil Premium or EAL indicators,” one panellist told us.

While teachers and leaders will have a deep knowledge of the circumstances of individual learners it is harder for them to understand overall trends in terms of demographics and subgroups of pupils. That’s where edtech products could help more.

“The message I would give to edtech organisations is that it's really worth thinking about how you might match your data up to demographic data, perhaps through integrating with school management information systems, so that teachers and leaders can see overall trends,” said one panellist.

Thinking about what progress means in relation to edtech tools was another important consideration, she added. “I’d encourage organisations to take a step back and think about what outcomes they are hoping to change for learners as a result of interacting with their tools, and how they will show progress on these. For example, identifying your outcomes and your steps to get there that will help to show progress.”

Teachers and leaders should also ask themselves how they present the data generated by edtech tools. “Presenting a whole host of data without really thinking about how it can be interpreted quickly is meaningless,” she continued. “I would advise them to think about how to structure that data and to provide their colleagues with support on how to interpret and use the data, and also think about how it can be used to determine strong versus poor progress and performance.”

Education Endowment Foundation research has pointed to edtech offering lots of opportunities for teachers and leaders to access data about disadvantaged learners’ needs but our panel heard that, ultimately, the effective use of data generated by edtech software is determined by the quality of pedagogy.

“Data in itself isn’t that useful; it is how teachers use that information, how pupils act on the additional feedback they're getting, and how leaders tailor interventions based on the information that they can get through edtech software,” said one panellist. “The key point is, if the quality pedagogy isn't there, then you won't see a positive impact.”

Aggregating edtech data and using it to target the needs of disadvantaged learners becomes even more of a challenge at trust level but it is well within the realms of technology to facilitate that, we heard. If it is a straightforward process to interrogate the data produced by edtech tools then teachers and leaders can determine if a learning issue is limited to a handful of pupils in one school or students across a number of schools. “If you have the contextual data, as well as the assessment data, then MATs can identify a problem across a group of schools,” said one panellist.

How can we design edtech for disadvantaged learners?

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A ‘laser focus’ on the needs of disadvantaged learners should be a priority for all designers of edtech tools, the panel agreed.

We learned about one education charity’s work with a group of refugee and asylum seeker parents in Coventry, which underlined this point. The parents were asked about what they valued about their children’s reading and they said that they enjoyed reading Bible stories to their children, stories from their home culture and reciting spoken word stories passed down through the generations.

“But when we asked what the most important reading was for their child, they told us that it was the Biff, Chip and Kipper reading scheme books because they came from school,” our panellist said. “The point for me was that if you don’t understand where the families are coming from then you will design around the Biff, Chip and Kipper books.

Of course, these do work really well with many families, but they won’t necessarily align with some of these disadvantaged groups.”

Asking questions from the perspective of users would help edtech designers better address the needs of disadvantaged learners.

“We need to start from the perspective of the child that will be using that edtech software,” said one contributor. “What does it feel like to be that child that has been confronted by that piece of edtech? What is it, within the technology itself, that might be facilitating their underperformance?”

Edtech designers should take into account the need for schools to encourage and support social engagement at a time when children are still recovering from long periods of learning isolation, she added. “There's still a huge amount of work that edtech can do to facilitate that, helping kids to collaborate with each other on all sorts of group projects, encouraging group motivation and peer to peer support.”

That point was echoed by another panellist. “Social interaction is one of the fundamentals of teaching and learning, and especially so for disadvantaged children. The key questions for me are: how does edtech broker and build in those social interaction points and support them?”

The importance of using online to go offline was emphasised by several panellists. With studies showing the lasting educational benefits of children and parents learning, speaking and working together to solve problems there is a giant opportunity for edtech platforms that can take what it knows of a child's needs and produce exercises that can be carried out in the home without the need for a device – an activity that can bring the parent into the learning process without fear, and without the requirement of time, preparation and prior knowledge.

Edtech design needs to take into account the needs of different disadvantaged groups, we heard, avoiding any barriers that disproportionately impact upon the most disadvantaged pupils; designing a solution that works for disadvantaged groups will also work for everyone else, it was pointed out.

“We need to consider the different disadvantaged groups such as looked after, adopted, SEND and those in palliative care,” urged one panellist. “There needs to be serious consideration of the profile of individual students so that the data is rich enough to deliver a wider, holistic picture of that child.”

We learned that one social enterprise had launched a technology supply service, using state of the art device-management technology to ensure iPads are safeguarded and personalised for disadvantaged and vulnerable learners. The organisation could select which applications appear on each student's iPad and have created personalised libraries for students, whilst limiting access to harmful websites.

Making audio and video responsive to the needs of disadvantaged groups, for example to those students with EAL, was another important consideration. "If the technology is able to encapsulate the language quickly then these students can overcome the language barrier and move forward in their understanding."

Design that accommodates and supports the teacher-student relationship was another key discussion point. "I'm a great believer in hearing your own teacher tell you things," said one of our guests. "If I'm modelling something in class, can I point to it from within the platform as well? That's important because I think children and young people will often engage with their teacher better than they would if they were left alone with the platform."

Another contributor pointed out that something as simple as requiring an email address to register for a platform could exclude some groups. "Email addresses are quite widely used but at one school I worked with, which was 85% Gujarati speaking, lots of the mums there had an email address, but it was registered to the father and they never actually saw the emails. Being able to register purely by mobile phone number will boost engagement for many disadvantaged groups."

Edtech designers should also be aware of the need for schools to account for how they use edtech to support student learning. "Ofsted is now very keen on digging down into exactly what edtech we are using and how we use it," said one contributor.

"I think that adds to the case for edtech providers to give school leaders much more training on how to use the technology as effectively as they can."

The point was reinforced by another contributor, who made the case for a greater emphasis in general teacher education on embedding edtech and the data it produces in everyday practices.

What small change to edtech software could make the greatest difference to disadvantaged learners?

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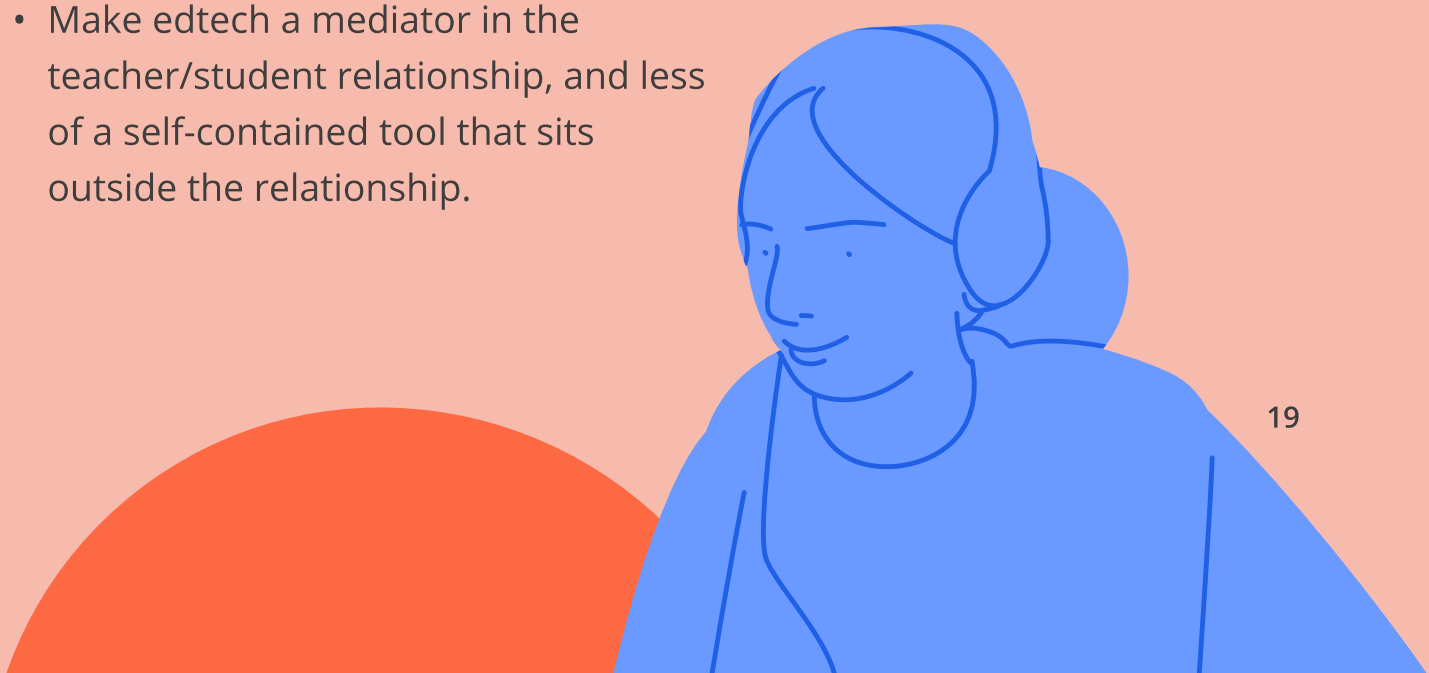
Our panellists were asked to each recommend one single change. Here's a selection of their responses:

- Improve accessibility through the audio transcription of text and the captioning of audio and video content, with special attention to colour and contrast for the visually impaired.
- Ensure that software is robustly and independently evaluated so schools can be confident in its quality and likely impact.
- Give teachers the opportunity to add short audio/video explanations within the platform, helping to foster student relationships and allow teachers to pitch explanations that address specific learning points.
- Build in social elements that give all learners a voice and boosts peer to peer support.
- Publication of the statistics that support a narrowing of the gap, such as average engagement by richer and poorer pupils.
- Make edtech a mediator in the teacher/student relationship, and less of a self-contained tool that sits outside the relationship.



Conclusion

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We set out to answer three key questions in this round table. Our conclusions could be summed up as follows:

1. Edtech is capable of personalising learning to the needs of disadvantaged children and should build on the progress made during the pandemic. Working closely with teachers to create edtech software that supports them in their work to close the attainment gap, including helping them to tailor support to the specific needs of individuals and groups of students, is imperative.

2. The data generated by edtech learning software can help teachers and leaders understand more about disadvantaged learners, but it should be easy to analyse and present so that it can be used by teachers and leaders to inform teaching and learning decisions that will benefit disadvantaged learners.

3. Edtech will better support the closing of the attainment gap as long as the specific and differing needs of different groups of disadvantaged learners are factored in at the very start of the design process.

Edtech software is a firmly established part of the fabric of teaching and learning today but there is some way to go to ensure that it more effectively addresses the disadvantage gap that continues to loom over our education system.

While it is true that edtech has in some cases over-promised and under-delivered the relationship teachers and leaders have with edtech software continues to grow. The technology did some serious heavy lifting during the pandemic and that legacy will be with us for some time to come.

But it won't be a success unless the needs of disadvantaged learners are properly addressed. There's still much work to be done but we are going in the right direction.

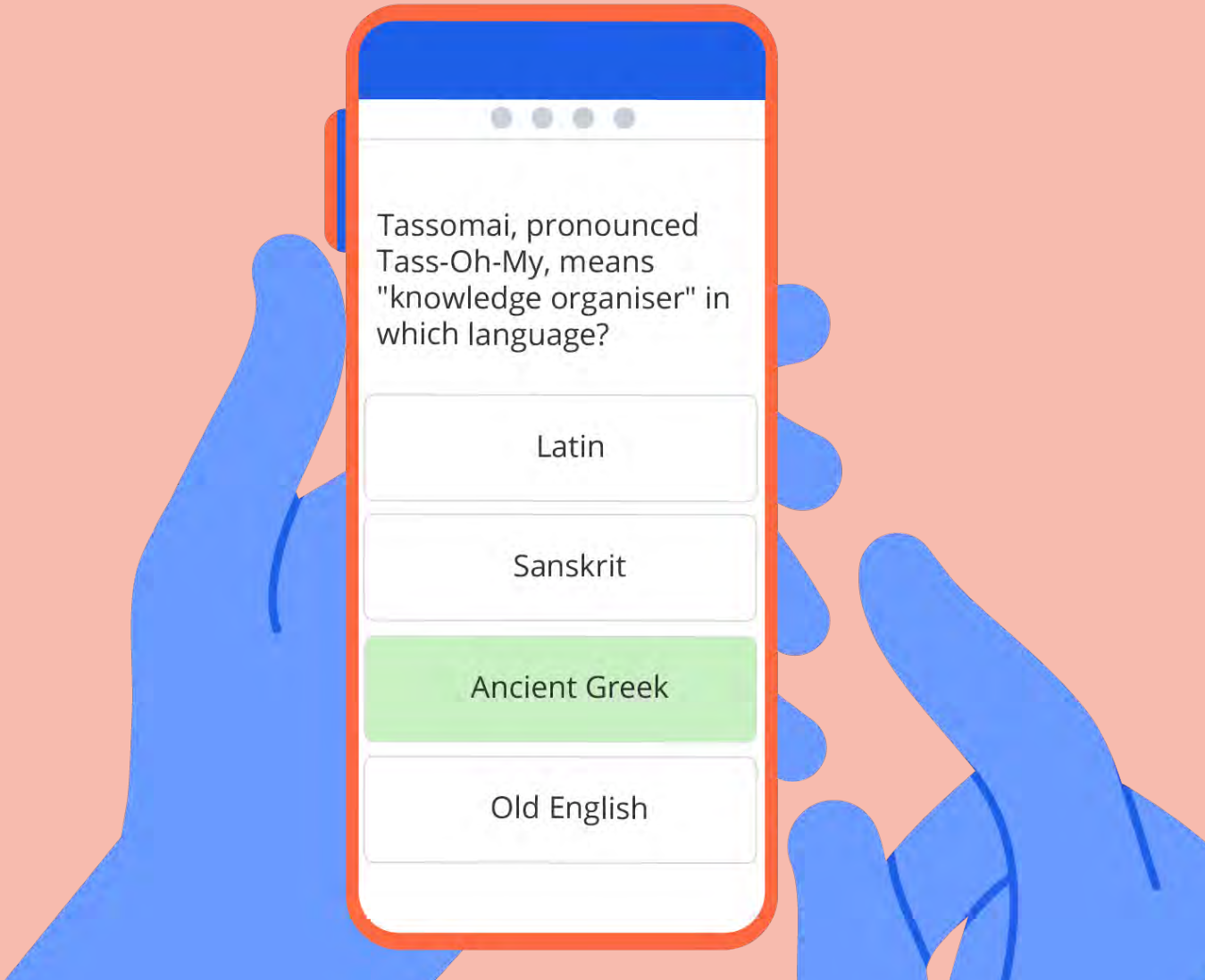
Links to further reading and resources:

Design for Learning by Jason K. McDonald and Richard E.West

Using Digital Technology to Improve Learning by the Education Engagement Foundation

Learning with Parents, blog

About Tassomai



TASSOMAI

Tassomai is an intelligent learning program that raises attainment in secondary education. With a game-informed design, Tassomai works by giving students personalised daily practice activities, identifying learning gaps that can be quickly closed by teachers through intervention strategies. The program also significantly reduces the time that teachers need to spend on admin and marking.

Tassomai covers science, maths and English at KS3 and KS4 with more subjects in the pipeline. More than 500 schools now use Tassomai as a homework tool, with over 250,000 students benefiting from the software. Parents can also sign up as private subscribers.

For more information about Tassomai or to set up a free 5-week school trial visit: www.tassomai.com/schools or email enquiries@tassomai.com.

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