



# Innovation in Education – DRAFT

## Creating a healthy ecosystem for England - a report for Foundation for Education Development by David Jaffa, 12th October, 2022

This report was requested by FED (Foundation for Education Development) as part of its work to make recommendations for a 10-year framework for education in England. The value of this report, I hope, is to provide a practical mechanism for change in education that sets FED's 10-year framework apart from other groups. I would like to thank all those whose ideas contributed to the report.

A better mechanism for change in education is available, if we choose to take it.

## A message of hope

The potential of young people, of all backgrounds, is virtually limitless. The young are capable of so much. I like to imagine my own children standing on my shoulders and reaching higher than I ever did. But in so many cases, potential remains trapped in structures or circumstances. Innovation can help unlock this trapped potential.

Innovation, as a process, is capable of amazing and sometimes transformative solutions. It can be inspiring to see what can emerge from a thriving ecosystem of innovation, given the right conditions.

Of course the needs of young people vary greatly, as do their talents and interests. Innovation can help us provide a set of solutions to meet this complexity effectively. Technology-based solutions can scale quickly at low cost. This creates an opportunity to meet niche learner needs at modest cost, which wouldn't be possible otherwise. The future of education can be much less 'one size fits all' than it is today. And with the right approach to innovation, as we shall see, large numbers of solutions can be tried out simultaneously, in pockets, without stressing the education system as a whole. There is an opportunity to be much better than we are now at innovation in education.

## Our Core Contention

The core contention in this report is that a fundamentally different approach (a **bottom-up approach**) is needed for innovation in education to meet the complexities of diverse individual needs and education's multiple purposes. This would allow us to innovate in multiple areas simultaneously.

A bottom-up approach to innovation in education, operating primarily through middle-tier bodies that have opted-in to this role, would put much less stress on the education system as a whole than the current top-down one-size-fits-all approach to innovation in education. This report argues that we don't currently have a healthy ecosystem of innovation in education. The current approach of government-created and government-favoured 'top-down' solutions means only one solution gets tried in any given situation. This is too risky and slow, and frequently results in considerable stress on the education system as education leaders and teachers feel solutions are being pushed from the top that don't meet their needs.

A bottom-up approach will re-build a culture of ownership, confidence and pride in our teaching profession, and provide a pipeline of investable solutions that education leaders and teachers like. We can tee up a succession of low-risk, easy wins for incoming secretaries of state in the form of new categories of education solutions that are already working at significant scale, providing stronger arguments to the Treasury for increased spending on education. And the English education system, our new solutions, and solution providers, will be admired around the world.

With a bottom-up approach, early-adopter schools within middle-tier organisations opt-in to use and refine promising solutions. This typically represents less than 10% of all schools, thereby protecting the remaining schools from unwanted change. The solutions that rise to the top are the **solutions that ordinary schools like**, not solutions that top-down experts **think** schools should have. A bottom-up approach to innovation is the way innovation works outside education and it has worked well inside education too, for example EdTech in the 2000s. We need to get back to this model now.

Government needs to enable an approach in which hundreds or even thousands of solution providers from all parts of the education system can co-create scalable models in partnership with **middle-tier** organisations and some forward-thinking individual schools. Perhaps the most difficult aspect of this is that this requires the government to resist the temptation to endorse specific solutions or create its own solutions.

Our current top-down approach to innovation is broken, whereas a bottom-up approach would give us:

- Less stress of unwanted change on the education profession
- Simultaneous innovation in multiple areas
- Step-change improvements in our ability to meet individual student needs and improve equity and inclusion
- A pipeline of investable solutions that education leaders and teachers like.
- A succession of low-risk, easy wins for incoming secretaries of state.
- Much stronger arguments to the Treasury for increased spending on education
- A world-class industry of suppliers exporting successfully
- Substantial Venture Capital investment
- English education will be seen as a global leader and admired around the world.

## Our current approach to innovation in education policy

Innovation in education currently is driven by a particular approach to 'policy', which works as follows. Problems and potential solutions are identified by the government working with representative organisations and individuals. This group sees their challenge as devising a new policy and garnering widespread support so that the proposed solution will be adopted across the education system. 'Pretty obvious' you may feel, and innocuous enough. Yet all too frequently it doesn't work. You may have noticed this already.

'Policy' doesn't have to mean 'WE must provide the solution'. It can mean 'We will foster a culture of innovation from which popular solutions emerge.'

Ministers are dismayed when schools or other educational bodies actively push back or (more frequently) pay lip service to a policy initiative, but don't actively engage with it, in spite of being consulted on it beforehand.

And the poor results aren't limited to the individual initiative failing. There are knock-on effects too. While failing, the initiative struggling to gain traction absorbs the (limited) capacity within education to adopt other innovations that might work better, and stresses out the profession at the same time.

In this report I am using the term '**top-down approach**' to describe this approach to driving change in education. My contention is that the top-down approach to policy is fatally flawed when it comes to problems that require novel solutions.

So what is the real problem here? **Top-down policy doesn't work because it is at odds with the way innovation works.** Innovation simply **isn't** a top-down activity. It's more complex than that. People adopt innovation through a dynamic process, not a one-way

process. Fortunately, this is well understood outside education. Fortunately, therefore, there is a better approach available to us.

A top-down approach is unlikely to succeed because it ignores the processes by which groups of people adopt new innovations.

## What does innovation look like from the inside?

In consulting with stakeholders on this report it's clear that 'innovation' means different things to different people. It became equally clear that the journey of innovation looks different from the inside. In this section I want to give an innovators' eye view.

For most people, innovation means developing a new solution to a perceived existing problem, or what we might describe as **product development**. But for those doing the innovation, 80% of the work is creating a successful **operating model** after the product is initially developed. Product development tends to focus on making a solution work for the learner; whereas creating the operating model focuses on making a solution work for the institution.

Creating a successful new solution is an iterative, sometimes painful process that takes time working in a variety of education settings to hone the solution, simplify adoption, improve communication, prove results, struggle to get attention, in open competition with large numbers of other solutions. Consider the following stages an innovation typically goes through.

Let us take Suhail, a (hypothetical) brilliant maths teacher who has devised a better way to teach KS3 Mathematics to neurodivergent learners.

- **STAGE 1: Product Development** - Suhail approach to teaching neurodivergent students mathematics has proven highly effective in Suhail's school. He now wants to 'package' this in some way so it can be used in other schools. Suhail considers creating workbooks/videos or a formal curriculum, but opts in the end for creating an online tool which he names **Diverse Maths**. Innovation at this stage is focused on making the solution work for **the learner**.
- **STAGE 2: Operating Model** - **Diverse Maths** expands first to three secondary schools within Suhail's local multi-academy trust (MAT), then to tens of schools across England. **Diverse Maths** publishes an impact study and wins a BETT award. Many of the new schools belong to middle-tier organisations: two additional MATs, a local authority and a City Partnership. There are also some individual schools. The leaders of these organisations are passionate about helping neurodivergent learners do better in mathematics and proactive about finding the funds to implement **Diverse Maths** in their schools i.e. they are **early-adopters**. Suhail met some of these middle-tier leaders at a session about neurodiversity at the Secondary Maths Association conference (made up) and through word of mouth. Innovation at this

stage is focused on making the solution work for **institutions**, standardising the solution so it is easier for school leaders to buy and implement.

- **STAGE 3: Scale-up** - Diverse Maths is now in 300 secondary schools and growing rapidly. After some years of standardising the solution, it 'just works', even in contexts where school leaders are focused on other things and not giving Diverse Maths much specific attention i.e it works for **non-early-adopters**. Innovation at this stage is focused **internally**: growing the internal team and streamlining internal processes. By now, Diverse Maths has two major competitors - online Maths for neurodivergent students is now considered a **category** of solution most schools may benefit from.

Suhail's journey with Diverse Maths represents typical stages that new categories of solutions have to go through. In the course of this consultation, I found it straightforward to know which stage individual solution providers are in. And I met multiple middle-tier organisations being proactive about finding, testing and in some cases co-creating new solutions. For the most part, the challenges they are facing, while considerable, are typical ones. Some solutions succeed. The majority don't. And this is all right and proper. It is part of the natural order of things. It's how innovation works.

There is a lot of 'computation' happening within a high functioning ecosystem of innovation. Early-adopters and non-early adopters make tens of thousands of individual decisions about adopting or not adopting particular solutions at each stage of its evolution. Those rare solutions that the ecosystem adopts en masse have been through a super-rigorous process. Hundreds of schools, thousands of educators and tens/hundreds of thousands of students have decided - ground up - that out of all the things they could spend their limited time and attention on, this is the one. And it's rarely the solution that experts would have predicted.

Fundamentally, innovation works the same way outside education as inside it, because the core dynamics are the same. These are the dynamics by which every population of people adopts something new. There is extensive literature on this outside education (e.g. Geoffrey Moore's 'Crossing the Chasm').

My point is that innovation is more difficult than most people think. But it isn't mysterious. The conditions necessary for a healthy ecosystem of innovation are well understood and can be controlled and made to work for us. They have worked in the past in English education. However, a top-down approach stifles the natural processes of innovation.

## Top-down stifles innovation

It was pointed out to me during the consultation that just because there is a government initiative in a particular area, doesn't prevent a forward thinking school or MAT from devising their own solution that better fits their needs. This is true, but only at the Product Development stage. A government provided or recommended solution prevents alternative solutions from creating a successful operating model or scaling up because (in practice) it's too difficult to expand to more schools and they can't secure investment. Perhaps without realising it, the proponents of a top-down solution assume it isn't possible that other stakeholders might come up with different solutions that schools might prefer.

## Top-down is often painful

It simply isn't possible to get a solution right the first time. We can consult relevant stakeholders and experts; do a pilot; get an impact study. But this only gets us part of the way there. There is likely to be proactive leadership supporting a pilot, but the solution also needs to work in settings where leadership is focused elsewhere. Before it can be rolled out to everyone, it must 'just work' with little leadership support. Solutions require years of refinement in a variety of settings before they reach that stage - most never do.

Frequently, top-down solutions are rolled out to everybody with insufficient refinement. But even if sufficient time is taken for refinement, there is no guarantee, a particular solution will turn out to be the 'right' solution i.e. the solution that would bubble to the top in open competition with several others. The result is that school leaders and teachers who need a solution that 'just works' are told to implement a solution that requires proactive attention, and may also be a poor fit for their needs.

There's no shortcut for cycles of trial and refinement or winnowing out among different competing solutions. Without this, we invariably roll out a solution that simply isn't ready or isn't fit for purpose. This is hugely wasteful and leaves the profession stressed and wary of unwanted change.

## What a healthy ecosystem of innovation looks like

Great ideas for new solutions can originate from anywhere in the system such as teachers, schools, government bodies, non-profit organisations and commercial suppliers.

Innovation works well where solution creators of all kinds collaborate with schools and colleges to co-create solutions. This results in a noisy environment, within an early-adopter community, with lots of experimentation and multiple solutions being tried at once and many discarded. This also protects the bulk of schools, who are outside the early-adopter community, from unwanted change.





We used to have an effective ecosystem of innovation in education. In the 1990s and 2000s, middle-tier organisations - often Local Education Authorities (LEAs) - played the role of incubator and filter for new solutions created by stakeholders right across the education system. The solutions that rose to the top were genuinely popular with schools having been fully field-tested and were frequently solutions that experts wouldn't have predicted.

When LEAs were disbanded in 2010, this removed much of the capacity for supporting innovation in our education system. We urgently need to rebuild capacity in the middle-tier to support innovation.

## How do we know whether an innovation 'works'?

The question of whether a product 'works' (produces the desired results for students) is important, of course. Typically when an innovation is in the early-adopter/operating model stage, there is a plethora of information such as impact studies, case studies with enthusiastic supporters, industry awards and expert opinion.

Being able to demonstrate that a solution works for students is necessary, but not sufficient. When it comes to making a system-wide decision that 'most schools should have one', the government needs to be confident the solution will 'just work' for most schools. This is much rarer.

The key thing to look out for is widespread adoption; not compelling narratives, enthusiastic supporters or impact studies.

## The problem of expert gatekeepers

In a healthy ecosystem of innovation the process for picking the winners is effectively a crowdsourced decision by ordinary schools (non-early adopters) that this is a solution that is ready for everyone. Those who baulk at the lack of top-down control should feel better knowing that this is exactly how new innovations gain widespread adoption outside education.

This was the process that EdTech went through in the 2000s. The professional association for LEA ICT Advisors (Naace) - a bottom-up consensus in the middle-tier - usually got it right. Whereas Becta, the top-down quango responsible for advising government on EdTech - following a top-down 'expert' model - consistently backed immature solution categories such as Learning Platforms far too early.

Gatekeeper organisations are structurally almost bound to get this wrong. They are the 'experts', so they demonstrate their expertise by identifying the compelling narrative of the solution with noisy support from early-adopters.

## The role of government in a healthy ecosystem of innovation

Firstly, policy-makers need to ensure there is a healthy ecosystem of solution providers (commercial and non-commercial) and middle-tier organisations engaged in trying out a plethora of approaches. To do this, they must avoid endorsing particular groups or creating in-house solutions.

They need to be able to distinguish between those (few) categories of solution that are scaling up on their own from the much more numerous and noisy 'next big thing' solutions with enthusiastic support from early-adopters.

If we want to identify that a category has left the Early-adopter season and entered the Scale-up season, the key dynamic to look out for is that schools that are non-early-adopters are coming on board with the solution. **The key thing to look out for is widespread adoption; not great narratives or impact studies.** When a solution category has been adopted by over 300 secondary schools in England and is still growing, we can be pretty confident it has run out of early-adopters and new schools coming on board are not early-adopters. This is the proof we need that the solution works in the 'typical' schools who 'just like it' because it 'just works' for them.

Innovations that are mature in this sense are investable by the government, **providing a strong case to the Treasury for increased spending on education.** This is because their key characteristics are now known:

- Cost per school / per student
- Typical results
- Difficulty of implementation / whether teachers like it
- Supporting narrative
- Typical arguments of those who don't like it. It reduces political risk for a politician supporting the roll-out to know this.

My contention is that if we allow bottom-up innovation to flourish, in 3-5 years we will have a pipeline of low-risk investible decisions for incoming Secretaries of State, indefinitely, into the future.

If VCs knew that the government had a policy and a process to back successful solutions in education, it would suck a huge amount of money into the space - as UK EdTech is already seen as a global success story and UK export opportunity.

Government rules and funding define the size and scope of markets for solutions. Whole market categories can emerge overnight (or collapse). Government may not see things this way, but it is in the role of regulating markets.



## Top 7 Mistakes List

<b>Mistake 1</b>	Government creating their own solution (or sponsoring a 'favoured party' solution) instead of allowing multiple solutions to bubble up from the Middle-tier.
<b>Mistake 2</b>	Identifying good practice by an early-adopter and thinking: 'We should get everyone to do this'.
<b>Mistake 3</b>	Thinking innovation is alive and well because there are solutions out there in individual schools, ignoring that it may be impossible to develop a scalable Operating Model around those solutions.
<b>Mistake 4</b>	Appoint 'gatekeeper' experts to decide what schools should have. Instead of allowing 'ordinary' schools and Middle-tier organisations to decide what fits their needs.
<b>Mistake 5</b>	Doubling down and using compulsion when schools aren't adopting the top-down solution
<b>Mistake 6</b>	Allowing arbitrary barriers to prevent experimentation by the Middle-tier. E.G. funding and accountability rules.
<b>Mistake 7</b>	Overlapping organisations going in different directions / Lack of join-up across phases of education.

## Recommendations

- Stop approaching innovation as a top-down activity.
- Build capacity to incubate innovation within the middle-tier.
- Don't introduce new gatekeeper organisations.
- Wait three to five years for a thousand flowers to bloom. Celebrate this.
- Build mechanisms to provide better information to the government about which 'categories' of solutions exist and which are starting to be adopted at scale.
- Invest in categories that are already starting to be adopted at scale, and not before.
- Identify and mitigate barriers to a healthy ecosystem of innovation e.g. accountability and funding rules.



## A) List of Contributors

### Written Submissions

- Training and Enterprise Company
- Doncaster MBC
- Oasis Academies
- Fair Education Alliance
- BESA
- Edith Kay School
- The New School
- ImpactEd
- 8billionideas
- Curriculum Wide
- Workfinder

### Oral Submissions

- 23
- - Permissions needed

## About Jaffa Foundation

We believe the future of the workplace is highly predictable and the skills needed to thrive are already very clear. We are a non-profit, dedicated to helping young people flourish in work and life and make a huge contribution to their chosen field.