
Defining Contemporary Adaptive Teaching



Background

Defining Contemporary Adaptive Teaching is a paper that has emerged from pathfinding work by a wide range of system leaders and school groups. These are colleagues who respect and value evidence based practice - ensuring the very best educational experiences for their communities. Furthermore, these leaders are committed to utilising a thoughtful combination of existing evidence as well as playing an active role in surfacing contemporary research findings. This deliberate fusion ensures that *today's* evidence base stays relevant and impactful for *today's* learners.

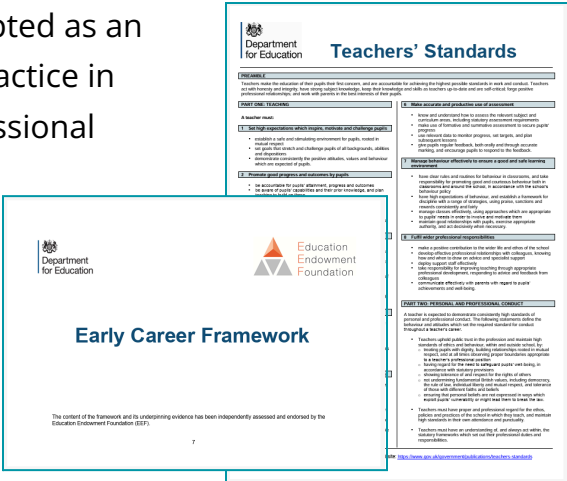
Emerging organically from a number of parallel school based research groups, a previous iteration of this paper - *Contemporary Adaptive Teaching: A Discussion Paper* was published in January 2025, and shared widely across the sector with an open invitation to become part of a collaborative definition. Many schools and trusts utilised the discussion paper as part of staff development sessions, conference stimulus, workshops and training sessions. In parallel, from February-October 2025, a series of 6 virtual and in-person roundtables took place with a diverse range of professionals represented - each bringing their own specialisms, expertise and insights; ensuring that the voices of their learners and educators became part of the broader thinking. Many debates, deep discussions and challenging issues were addressed, culminating in this final paper - *Defining Contemporary Adaptive Teaching*.

Cumulatively, this paper is the result of a 12 month project involving 92 school leaders (representing 70 schools and learning organisations), alongside 6 academic researchers. The schools and organisations involved represent both mainstream, special and alternative provision; state-funded and independent schools; and work with learners aged 2-19 across a diverse range of geographic, cultural, and socioeconomic contexts.

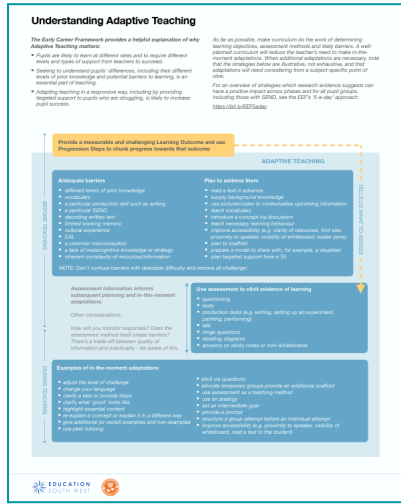
Our intention is to provide stimulus for teachers and teaching staff; school and system leaders, and those shaping future policy both locally, regionally and nationally. We hope that the material in this paper supports thinking and actions so that we can collectively improve the way in which we meet the needs of today's learners.

1.0 Introduction to Adaptive Teaching

Adaptive Teaching has been increasingly adopted as an evidence-informed approach to classroom practice in England. Popularised by its presence in professional standards and teacher development (e.g. DfE 2019; DfE 2011), adaptive teaching has become the focus of a number of efficacy and impact studies (collated by Deunk, 2018; OECD, 2016; Hattie, 2009), and consequently now seen by many as a reliable mechanism for improving effective teaching practice.



The origins of Adaptive Teaching are arguably found within the work of Hatano and Inagaki (1982), who used the phrase 'adaptive expert' to articulate the specific behaviours of a professional responding to the specific needs of a child. Importantly, these 'needs' referred to holistic development rather than an isolated aspect of a child's life (e.g. education, social, emotional, behavioural). Parallel developments in education have since been seen through the use of phrases such as adaptive instruction and classroom adaptations (Corno, 2008).



In the popularised landscape, the premise of Adaptive Teaching (as a mainstream approach) tends to pivot around a classroom teacher seeking out and utilising insights about learner's curriculum progression and associated barriers in order to better target the next set of teaching actions.

Within special school and alternative provision settings, Adaptive Teaching tends to further incorporate social, emotional and behavioural foundations that underpin learning readiness.

As its name suggests, Adaptive Teaching is intended to make a classroom teacher more effective at teaching, and consequently focuses attention on specific behaviours and actions undertaken by the teacher.

1.1 The Adaptive Teaching Cycle

As part of an Adaptive Teaching approach, a number of strategies are used which are helpful to consider as a cycle of mutually dependent actions. For Adaptive Teaching to be effective as an overarching *approach*, each component part needs to make an effective contribution.

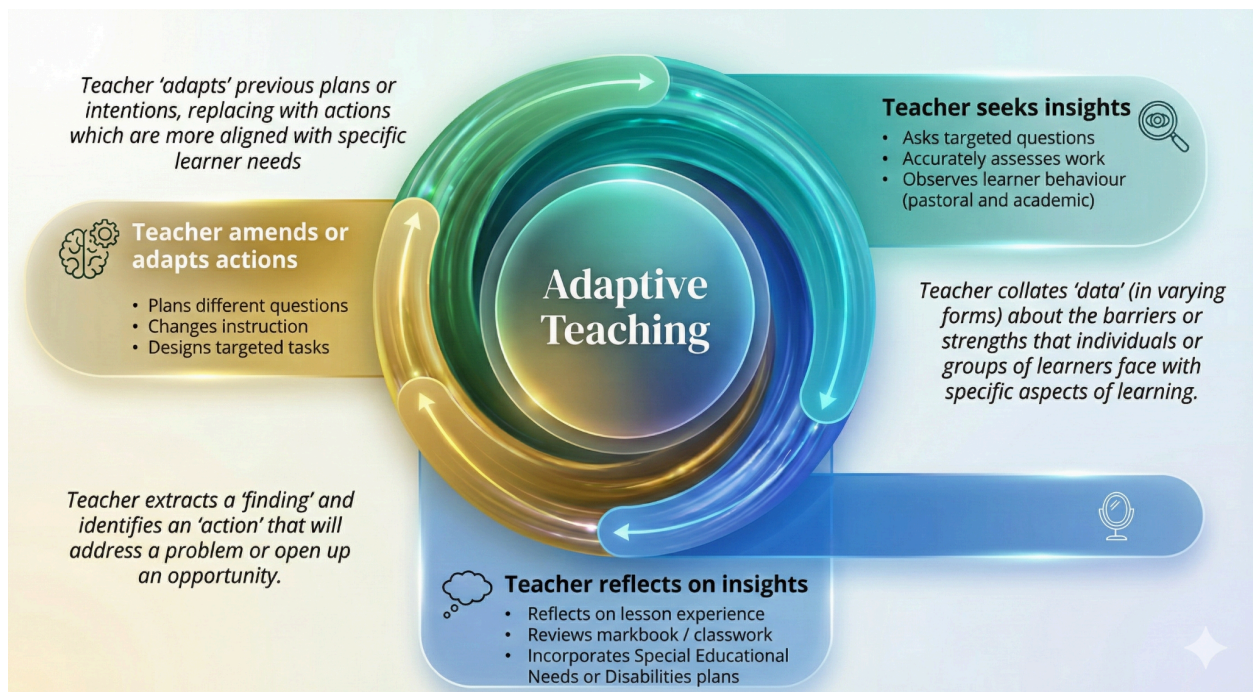


Figure 1: A summary of Adaptive Teaching components

The impact of this teacher-focused approach to classroom practice is often evaluated by the extent to which a teacher enacts each of the components set out above. Within this, there are a number of embedded assumptions which affect perceptions of efficacy.

For example, when a teacher asks a specific question about **content** in a lesson, we might consider whether we are:

- seeking confirmation of learner understanding or surfacing misconceptions *in order to make small adjustments to pre-planned questions or tasks* (**amending** teaching) or,
- seeking insights into learner perceptions *in order to meaningfully adjust conditions or provision, beyond any pre-planned actions* (**adapting** teaching)¹.

The nuanced difference illustrated here suggests that sometimes the phrase and *adaptive* teaching is used when the teaching is simply being *amended*.

Whilst this may appear to be slightly pedantic, it is an important distinction. *Amending* teaching requires very little change to pre-conceived practices, whereas *adapting* teaching requires a much more responsive approach.

2.0 Evaluation & Impact

There have been a wide range of studies examining the impact of different elements of Adaptive Teaching, ranging from case studies (e.g. Dickin & Thompson, 2023); methodological studies (e.g. Hardy, 2019); subject specific studies (e.g. Gallagher, 2020); professional learning approaches (e.g. Schipper, 2018); and outcome based analysis (e.g. Bruhwiler, 2020). This discussion paper does not seek to evaluate or report on these studies (nor is this summary extensive or fully representative). However, it is important to highlight the diverse interpretations and considerations emerging from an approach as multifaceted as Adaptive Teaching - not least its interplay and co-existence with other pedagogical strategies.



When thinking about the consequences of Adaptive Teaching, it is helpful to consider the criteria used to determine efficacy and impact. For example, is the intention of a teacher to:

¹ For a sample of definitions of 'adapt' and 'amend', see <https://dictionary.cambridge.org/dictionary/english/adapt> and <https://dictionary.cambridge.org/dictionary/english/amend>

- (1) adapt their provision to *ensure* that all learners reach age or stage related expectations (system centred), or
(2) to *enable* learners to pursue individual capability trajectories (person centred)?

If the adaptive teaching is about *ensuring*, then the adaptations are likely to pivot around deliberate stimulation of engagement and motivation (e.g. individualising resources or activities); addressing misconceptions (i.e. targeted intervention teaching, adapted content); or providing a differentiated range of instruction (i.e. scaffolds, differentiated worked examples, choice of strategies) - see Horn and Staker (2015).

If the adaptive teaching is about *enabling*, then the adaptations are likely to pivot around deliberate planning for specific classroom behaviours (e.g. accessibility, agency, autonomy); explicit task design (e.g. choice of audience or format); or routine provision of dignity (e.g. social, emotional and behavioural strategies, on-demand access to digital and non-digital tools).

These examples are not extensive, but are useful when considering tangible proxies by which to determine impact or efficacy. In turn, each element raises a number of specific considerations when viewed through a contemporary landscape - one where digital automation and accessibility offer new possibilities of scale, personalisation and individual on-demand consumer-oriented ways of working.

As Brighthouse and Waters (2022), highlight, most mainstreamed pedagogical and operational strategies are likely to support most teachers and most students for most of the time, so our efforts ought to pay attention to those whose *potential-v-reality gap* is wider than their peers - i.e. those who are not yet supported by our portfolios of pedagogical strategies.

We may wish to remind ourselves that the United Nations Convention on the Rights of the Child challenges us to ensure that accessible education is made available for 'all' children (Article 28), not just an indicative majority. The difference between *most* and *all* children in a class may be a statistic at class, school or system level, but for

the child themselves, it may be life changing in either a positive or negative direction.

Great teachers adapt their provision to close the potential-reality gap for every young person in their class.

3.0 Contemporary Considerations

Over a decade after the popularisation of adaptive teaching, it is healthy to reflect on contemporary considerations. In particular, in relation to a teaching profession and a generation of learners who have lived through a period which includes significant social and emotional complications arising from a pandemic and global unrest, and consumerisation of automation and artificial intelligence.

For example, issues such as:

- increased number of learners with particular *barriers to learning* (e.g. communication and interaction, social and emotional, classroom anxiety)
- frustration at the current *schooling system* (e.g. persistent absentees, classroom refusers, families considering blended or home education models)
- an increasing awareness that artificial intelligence (AI) and other *contemporary technologies* now offer on-demand, personalised experiences as part of everyday consumer and leisure experiences, which is at odds with the provision for both teachers and learners within a traditional schooling environment.

Perhaps the future lies in the blend of using evidence-informed and impactful pedagogical strategies, supported by contemporary tools and mindsets.

In addition, research, practice and policy have been increasingly recognising that mainstream schooling has a great deal to learn from expertise based in Early Years, Special Schools, Alternative Provision and Virtual Schooling models. In all of these contexts, individual human beings sit at the heart of practitioner, leader and system thinking - recognising that systems can be reconceptualised to better meet

individual needs at scale. These beyond-mainstream approaches are built to offer personalised, relevant, accessible, purposeful, sustainable and impactful experiences - which augment the lives of learners from 2-19. The mainstream school system is gradually shifting towards this mindset - where the system nurtures the needs of the individual - evolving from a model whereby the individual is expected to either conform to, or be excluded from, the system.

Within this landscape, impactful Adaptive Teaching is dependent upon a wide range of variables - not least professional knowledge and skills and willingness to learn (e.g. questioning, listening, subject knowledge), and cognitive and logistical capacity (e.g. resourcing, signposting, interventions). **The ultimate impact indicator of Adaptive Teaching is that a learner's experiences are more relevant, accessible and achievable - to them individually - as a result of the teacher's specific adaptations.** A range of proxies can be used to demonstrate this happening (e.g. activity participation, progression and attainment within and across tasks, attendance and behavioural compliance, social and emotional regulation, learner transferral of understanding from one context to another etc).

Teachers and leaders monitoring this might ask questions such as:

- To what extent is Learner X meaningfully engaged in this activity, in a way that *they* believe to be purposeful and impactful to their life and/or development? What is it that the teacher is doing to *scaffold* this?
- What does Learner X know, or what can Learner X *do* that was *not possible previously*? How do we know (rather than infer or assume) this to be the case?
- To what extent is Learner X physically *attending*, emotionally *present*, socially *engaged* and cognitively *focused* in this task / activity / lesson? How do we know the difference between outward compliance and internal engagement?

The reality of most current classrooms is that there are some practical constraints around what is possible in a context where there may be:

- one teacher (who may or may not be a subject or phase specialist)
- large numbers of learners (which may include a range of identified and unidentified additional needs)

- fixed timetabling
- standardised curriculum and assessment models
- high accountability measures that focus either directly or indirectly on benchmarked attainment levels.

Therefore, it is helpful to think about what *Contemporary Adaptive Teaching* offers - combining the principles of established Adaptive Teaching with contemporary challenges and ways of working.

For the purposes of this paper, there are at least 5 strands to this that we can begin to use to evolve Adaptive Teaching towards Contemporary Adaptive Teaching:

- 1) Data informed teaching
- 2) Inclusion through design
- 3) Deliberate autonomy
- 4) Intervention questioning
- 5) Equity as a mindset

It may be helpful to consider each of these strands first through a lens of traditional methods, and then through a contemporary lens - specifically focusing on what digital tools may offer that enhance established pedagogical strategies. What follows is not exhaustive, but intended as a series of considerations and provocations to support collective thinking.

3.1 Data informed teaching

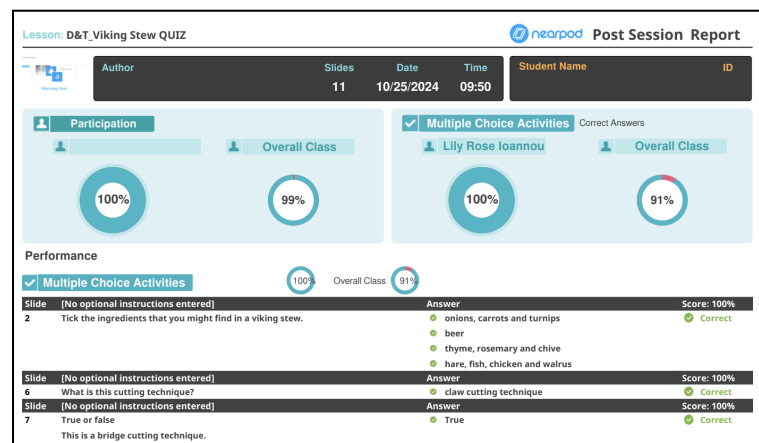
Using *traditional* methods for eliciting whole-class real-time response insights (e.g. hands-up, wipeboards, hand-held resources), a teacher will typically be attempting to visually analyse 30+ responses in a timeframe of just a few seconds.

Furthermore, once a second question is asked by the teacher, previous response data is usually removed (e.g. hands go down, wipeboards are erased). Even the most skilled of teachers is unlikely to remember



30+ individual learner responses for each individual question over a series of multiple questions. This creates an illusion whereby teachers base their decision making on *assumptions* that most (or all) learners conform to one of a set of trends or patterns (Hattie, 2020). The teacher is then required to use those overarching trends to inform consequent professional practice. Therefore, **traditional forms of adaptive teaching might be inadvertently based on assumptions and generalisations rather than individually accurate data insights**. In turn, this shepherds professional practice towards simple *amendments* to pre-defined plans (e.g. 'today my target intervention group will need to be child a, b and c), rather than *adaptations* (i.e. child a needs to do x, child b needs to do y, child c needs to do z). Furthermore, this approach perpetuates a classroom style where 'most' children understanding or applying an idea is perceived as good practice. Yet these approaches meet fewer needs than traditional performance metrics suggest - excluding both those who need additional support (e.g. learners with SEND), and those who are capable of far more than the critical mass.

Contemporary digital tools allow for whole-class real-time responses to be collected, collated, analysed and presented through a teacher dashboard. This automates some of the analysis that a teacher is expected to do in real-time - freeing up a teacher's cognitive capacity and bringing greater levels of accuracy to the response insight. For example, auto-checking individual responses (right/wrong marking); collating data across responses (e.g. changes to accuracy levels as challenge increases; common misconceptions based on question type); collating data across learners (e.g. changes to accuracy over time reflecting familiarity); number of attempts at answering a question (e.g. reflection of confidence), and perceptions of confidence (e.g. self-reporting confidence ratings). These are all valuable sources of data for the teacher to use for individual, group and whole-class adaptations, but incredibly



difficult to gather and store in real-time for a whole-class without the use of digital tools.

*"It allows teachers to be much more **data informed**, rather than relying on assumptions."* Deputy Headteacher, Grange Park Primary School

Simple live response insights and dashboards - automatically produced by digital tools such as [Nearpod](#), provide individual student responses to the teacher with an 'at a glance' analysis in order to guide consequent actions (e.g. a common misconception, pitch of example or question, pace of progression, confidence or security of knowledge). In addition, combined datasets and dashboards allow a teacher to review lesson data meaningfully between lessons - as part of everyday lesson planning. Traditionally, the time a teacher spends reviewing learner's work is largely focused on marking and feedback. In a contemporary landscape where much (but not all) of this can be automated and presented as a series of insights or themes, the teacher's time can then be repurposed towards planning for the next lesson or intervention². This empowers the professional to repurpose their time from replicating generic procedures to targeting personal interventions.



*"It allows teachers to probe much deeper in whole-class teaching. **The quality of teacher questioning is much higher** because you have the real-time data right there in front of you".* Vice Principal, Cheam Common Junior School

² It is important to note that some forms of formative assessment, marking and feedback specifically require human attention and insight due to elements that a digital or AI system cannot currently reliably conduct. However, *informed* decision making should guide what should or should not be human, and/or digital.

Given the increasing sophistication of data-driven tools, it is critical to attend to the ethical considerations that adaptive teaching raises: protecting human dignity in data gathering and discussion; resisting surveillance creep in relation to the roles of humans and systems alike; and ensuring that algorithmic systems and judgements do not replicate existing human biases. Furthermore, we must avoid cognitive offloading - on the part of both learner and teacher. Learner agency does not dissolve teachers of instructional responsibility, nor should digital tools replace teacher's professional judgement. There is a careful balance to strike whereby decision making, visibility, engagement and interaction become better supported by (but not replaced by), the informed, careful and ethical use of digital tools.

Contemporary adaptive teaching requires meaningful human relationships, empathy, sensitive intervention and longitudinal care just as much as traditional adaptive teaching has in the past.

With this in mind, there is an important role for those designing the use of digital tools. Digital tool developers are encouraged to forefront design principles which prioritise dignity, cultural richness, autonomy, and authentic adaptation, rather than simply speeding up existing traditional classroom practices. A focus merely on productivity and workload reduces human capital to mere processes, and replaces humanity with formulae. This does not reflect the heart of our profession. Instead, tool-oriented conversations around Contemporary Adaptive Teaching should serve to extend thinking through and beyond pedagogy into technological stewardship - carefully addressing ethical imbalances and investing professional expertise into a meaningful and contemporary toolkit.

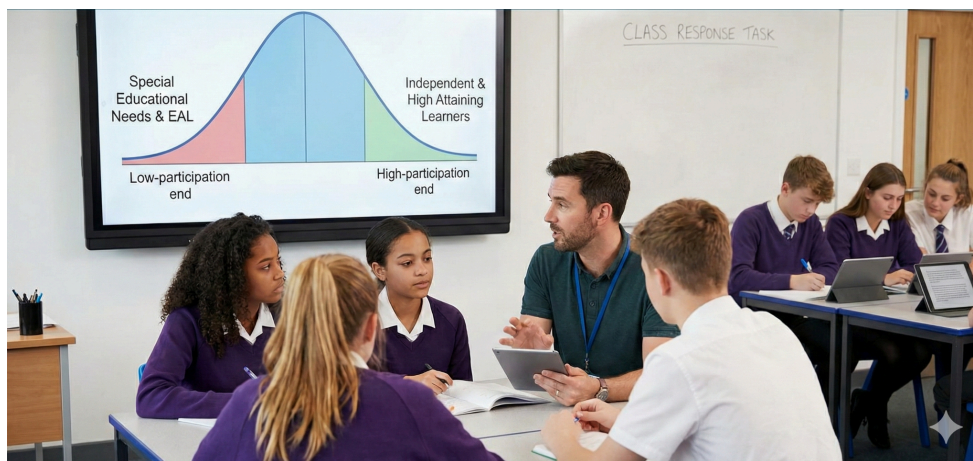
To further develop Contemporary Adaptive Teaching, teachers and leaders might wish to consider:

- What insights (forms of data) do existing practices capture, and how?
 - What proportion of these relate to (a) content / curriculum; (b) behaviour / participation / compliance; (c) social influences affecting learners; (d) emotional state / regulation / wellbeing; (e) physical accessibility; and (f) cognitive focus?

- What proportion of teachers (and leaders?) feel confident with how to gather these insights, and why they may be helpful?
- What proportion of these insights are gathered (a) before teaching, (b) during teaching, (c) after teaching?
- Which of these are actively utilised during teaching in a way that positively impacts practice?

3.2 Inclusion through design

From an equity perspective, learners who would benefit most from *adaptations* within teaching are often those at either end of the participation bell curve, e.g. learners with special educational needs, learners who speak English as an additional language, highly independent learners, high attaining learners (Westwood, 2018). These are students who sometimes choose subtle ways to opt out of whole class response tasks which they see as irrelevant to their needs or inaccessible due to format.



Traditional tasks often depend upon learner confidence and willingness to make public their capabilities, alongside fine motor skills (e.g. handwriting, resource manipulation), written English proficiency (e.g. use of specific vocabulary, and fluency in reading and writing), self regulation of cognitive load (i.e. knowing when to move on to the next activity or task) and importantly, perception of relevance (i.e. a task which links to learner prior attainment and individual progression).

However, traditional approaches often assume that learners are *ready to learn*. For example, that the student feels emotionally and socially regulated; that their physical and accessibility needs are being met; that the student has a familiar toolkit of support strategies available to them, and that the student is motivated through a range of influences and provision to be present for the task ahead.



Contemporary approaches allow for learners to do a number of things which historically are much harder to achieve using traditional methods. For example, through the use of digital accessibility features, learners can independently access pastoral and curriculum material and support, without placing additional demands upon teacher workload in terms of resourcing. Furthermore, a learner may choose to have text read aloud to them using a screen reader, or translated into their first language (with headphones in order to avoid distracting peers). Similarly, a learner may utilise a screen mask to reduce cognitive overload, or zoom to magnify a focus word or image. Another learner might use a digital dictate function to orally submit their response or a stylus to draw a diagram as a submission - opening up a wider range of ways to capture outcomes beyond traditional pen on paper based textual evidence.



Importantly, where digital provision is offered as a 'normal way of working' for a whole class, this removes the stigma of students observing noticeably different provision. Learners are freed from the visible indicators of difference (e.g. an

additional adult sat next to them to translate, or unwieldy A3 photocopies instead of A4 versions on their desk, or have to sit with the teacher micro-managing individual task participation). This issue can be a significant trigger for self-conscious learners, who (particularly during teenage years) would often prefer to go without help or challenge than be perceived as being different to their peers.



"The solution is not just about bringing digital tools into the classroom. The solution is about utilising a wide and blended range of tools and resources that collectively provide support for every individual need in the room. It's about developing a culture whereby on-demand support for learning is normalised for every single student."
Chief Executive Officer, Multi Academy Trust

A key element of contemporary provision is that learners become able to take greater control over the materials that they use to challenge their thinking without being seen by peers to be seeking additional challenge - a known socially-created barrier for young people (Newman, 2002). For example, high attaining learners may access extension material through accelerated self-paced tasks, or utilise challenge scaffolds that are provided on-demand. The fusion of standardised user interfaces on digital platforms (i.e. where the screen looks materially the same for all students despite differences in content), alongside self-paced actions, automated

self-marking and differentiated pathways, allows students to be unified by the overall lesson focus, but individually supported in the detail.



The increase in schools using digital tools for the capturing and submission of work has led to a range of well-meaning concerns. For example, questions have been raised about the relationship between the act of handwriting and the retention of knowledge; and the comprehension levels when comparing on-screen reading versus print-based reading. However, as with most emergent fields (and in particular in relation to research surrounding educational technologies), some popular myths and misconceptions have developed. For example, a commonly cited OECD study comparing on-screen and handwritten assessments (OECD, 2015) is often used to argue the case for excluding digital tools in classrooms. Yet methodological approaches in such studies often do not account for student prior exposure to the format; individual skills or confidence with handwriting or digital tools; individual SEND needs or SEMH characteristics; genre of stimulus material or response format; infrastructure reliability; differences in task or question format and so forth. Therefore, simple comparisons are unwise. The evidence base - as always in education - is far more nuanced than a simple RCT or comparative headline. More recent OECD studies report that

“moderate use of digital tools for learning is linked to better academic outcomes and a stronger sense of belonging.” (OECD, 2025)

From an inclusion perspective, it is perhaps wiser and more ethical to consider the potential of each individual student, and which historical barriers may be preventing them from reaching that potential. Then, which tools in a contemporary

toolkit are most appropriate to help overcome those barriers - physically, cognitively, socially, emotionally, and in a way that is sustainable beyond a single lesson, subject, phase or school life cycle.

To further develop Contemporary Adaptive Teaching, teachers and leaders might wish to consider:

- What do the learners in our classrooms see as barriers to their learning? (physical? cognitive? social? emotional? environmental?)
- To what extent are each of their teachers aware of these?
- To what extent would this learner experience consistency across teachers / subjects in how they are supported to overcome these barriers?
- To what extent do learner's views align with teacher / leader views about barriers? If there are differences, why might this be the case?

3.3 Deliberate autonomy

It is an irony that in contemporary education processes, policy and strategy both identify the importance of skills such as independence and responsibility, yet simultaneously (perhaps unintentionally) promote 'learned dependency' within classroom practice (Sroufe, 2021). This tends to happen as a result of an over-reliance on the teacher and their capacity (e.g. learners requiring teacher permission or feedback before accessing higher levels of challenge or sequences of further content).



Traditional classroom practice often requires learners to submit their work to their teacher and then for that learner to effectively pause their progress whilst they wait for teacher feedback to determine appropriate next steps (e.g. as the teacher moves around the room, or reviews a task as a group or whole-class, provides verbal feedback or marks work after a lesson).

Contemporary digital tools provide an alternative. For example, tools which include both a self-paced and teacher-led option allow the teacher to adapt the same material for learners with different levels of confidence and capability. The teacher can be reassured that the content and/or intentions are consistent, yet the pace is adapted to the needs of the individual learner. For example, learners who are identified as highly capable often articulate frustration at the pace of their



classroom or group being determined by the pace or pitch of specific peers (Gilson and Lee, 2023). Yet teachers may wish to release content to specific learners incrementally based on both a granular assessment of content understanding and the influence of socio-emotional or cognitive load. Where teachers are able to consider both academic capabilities (where accelerated content may be appropriate), alongside pastoral influences (where a student may need regular cognitive breaks scheduled into the lesson), they are able to

offer each student an appropriately balanced personalised experience - within existing constraints of teacher capacity and lesson timetabling.

Furthermore, contemporary tools which empower the teacher to present the same material either incrementally or autonomously free up vital teacher capacity - critical in ensuring that the most vulnerable learners are supported. Given the increased levels of SEND needs - particularly around Social, Emotional and Mental Health (SEMH) - this in-situ capacity is vitally important to both prevent, pre-empt and manage a diverse range of classroom needs (Fox et al., 2025).

"Teachers used to feel they were never enough because they couldn't get around to all 32 children. But now, teachers can access real-time insights to adapt their teaching, and the children can all access help and support as and when they need it."

Cheam Park Farm Primary School

Yet autonomy is not just about pace of access. One of the many other considerations relates to teacher adaptations allowing learners to access their own data insights. For example, instant task feedback plays a vital role in encouraging learner task persistence (EEF, 2021). Learners with access to immediate feedback, tend to display a higher pace of working which in turn increases capacity for learning within timetabled lessons (Wisniewski, 2021). When this increase in learner pace and productivity is aligned with teacher visibility on formative assessment data in real-time, classrooms become more focused, with notable impact seen on the nature of learner dialogue. For example, students tend to use more subject specific language, higher tier vocabulary, and higher order questioning in their conversations with both peers and their teacher (Aubrey-Smith, 2023).

“Contemporary adaptive teaching powerfully invites a view of the teacher as an adaptive expert alongside explicitly cultivating learner agency — equipping learners to become adaptive, reflective, and strategic in their own right.

Adaptation is something that both teachers and learners do with each other, not merely for each other.”

Laura Knight, Sapio

To further develop Contemporary Adaptive Teaching, teachers and leaders might wish to consider:

- Who or what defines the pace of a lesson, activity or task?
 - What proportion of learners work effectively at this pace?
 - What is the impact on learners who are capable of a higher pace, or who would benefit from a steadier pace?
- What proportion of a teacher’s time is spent responding to routine questions?
 - Which of these could be answered by on-demand support materials?
- What opportunities are there for learners to provide their teacher with insights that empower the teacher to become more precise in their intervention?

3.4 Intervention questioning

Questioning remains one of the most powerful tools in a teacher's repertoire, and great teachers ask hundreds of questions each day. Yet, a number of studies suggest that the majority of these questions are checkpoints (i.e. the teacher seeking reassurance about learner adherence to process or content, or knowledge recall), rather than probing, intervention based questions (Vrikki & Evagorou, 2023).

This evidence base conflicts somewhat with pedagogical perspectives where theory identifies the process of considering and responding to deeper questions as integral to developing a depth of understanding rather than just retrieval and application (Lave & Wenger, 1998). This creates a mismatch between the strategic improvement intentions that a school may have, and the lived reality of the teacher and learners in classrooms.

As one child highlighted,

"Why is it that the person in the room who asks the most questions [the teacher], is the same person that already knows the answers?"

The difficulty for teachers in incorporating higher-level or more probing questions is two fold. It partly reflects skills and competencies of classroom teachers (i.e. the quality of multi-variant questioning tends to improve with professional expertise and experience), and partly reflects the complexity of classroom management (i.e. simple logistical management and capacity issues arising from 1 teacher and 30+ learners of differing needs and motivations).

However, contemporary digital tools can be utilised to close this intention-reality gap. For example, whilst **traditional** approaches might utilise sequences of questions at the start or end of a lesson or task to check entry and exit levels of confidence and competence with taught concepts (e.g. Sherrington, 2019),



contemporary approaches can provide the teacher with whole-class inclusive and instant feedback alongside scalable data collation and analysis - translating an in-the-moment benefit to a deeper, scalable, and longitudinal one.

Furthermore, through contemporary digital tools, video stimulus can provide questions tagged to particular pivot points within content, such that learners are required to respond before continuing to watch - assessing comprehension, inference and confidence with curriculum material. Data from these questions can be instantly accessible to teachers, providing rich real-time whole-class insights about the needs of individual learners - both academically as well as pastorally.

Collectively, these contemporary enhancements facilitate a higher level of student engagement with the formative assessment process, and a more robust and forensic level of understanding on the part of the teacher - both key



influences to achieving meaningful and impactful formative assessment and therefore progression (Black and William, 1998).

"Digital tools can enable us to collect more accurate, timely insights than traditional Assessment for Learning strategies such as whiteboards or hands-up questioning. We support staff to integrate live data at the beginning of lessons, to identify gaps and adjust instruction in real time. However, we recognise the need for training to help staff interpret and act on data. It is vital to use data dashboards to support lesson design and real-time action rather than data collection for its own sake. So we prioritise training for teachers around effective data use, targeted questioning, and culturally responsive practice." Headteacher

Teaching is often described as both an art and a science, with the role requiring a teacher to be an educator, counsellor, advocate, role model, champion, co-regulator and so much more. Consequently, great teachers absorb phenomenal amounts of data from their learners in any given moment - with formal attainment, progress, and behavioural indicators being only the tip of the metaphorical iceberg. For example, highly effective teachers regularly study the facial expressions and body language of learners as they think about ideas and verbalise their thinking - recognising that these contextual insights can be as revealing about the security of knowledge as the answer itself. But it is this kind of multi-layered data which can be incredibly difficult to absorb and retain at scale (Sajjad et al., 2023).



"Questioning is relational, dynamic, and context-driven. It is also one of the best ways teachers can build inclusion, stretch thinking, and build classroom culture."

Director of School Improvement

Traditional classroom techniques tend to draw upon teacher instinct (e.g. the teacher's own social and emotional awareness and empathy) for pastoral insights, combined with targeted content oriented techniques such as repeated checks or monitoring deliberate practice (Lemov et al., 2012) - each of which being in-the-moment mechanisms to inform teacher action. Consequently, these approaches are often informal and inconsistent across subjects, classrooms, timelines and teachers. Furthermore, very few initial teacher education or teacher development programmes incorporate explicit guidance for teachers about how to read body language, or cues about a student's social psychology or emotional state. An understanding about these significant influences therefore becomes dependent upon a teacher's own skillset and personal characteristics (e.g. a neurospicy teacher may interpret a classroom very differently to a neurotypical teacher).

“Sometimes, the benefit of digital tools is simply to create capacity - redirecting our time towards being more human.” Chief Education Officer

Whilst many aspects of interpersonal insights and wellbeing strategies should remain the preserve of human-to-human interaction, we may wish to consider how we might use the tools available to us to free up vital human capacity. For example,



contemporary digital tools are able to capture subtle clues about confidence and security (e.g. number of attempts at a question, speed of response, use of hints). This allows a teacher to target their capacity towards understanding the nuanced difference between a learner who confidently responds with an answer and a learner who happens upon an answer either through multiple

attempts after a lengthy period considering a hint or use of a scaffold.

To further develop Contemporary Adaptive Teaching, teachers and leaders might wish to consider:

- As teachers, how often do we learn something (rather than confirm something) as a result of a question we ask a student?
- In any given lesson, what proportion of questions have answers that could be 'auto-marked'?
- What proportion of the class answer more than 1-2 questions during a taught input?
- To what extent are sequences of questions and answers used to inform teacher actions? What proportion of learners are these directly relevant to?

3.5 Equity as a mindset

Within the context of adaptive teaching, equity should be considered through at least three lenses. Most important should be the provision, experience and perception of equity for the learners for whom the teaching provision is intended. In other words, in the context of considering adaptive teaching, all learners in a given class (not just a majority), should have an equitable opportunity to access material and to then represent the extent of their knowledge and understanding when the teacher seeks insights from them. Similarly, all learners should see their learning benefit from adaptive teaching approaches through appropriately personalised provision. Using traditional techniques this can be difficult to achieve at scale within the current schooling system. However, in a contemporary landscape where consumer experiences are highly personalised, it is not unreasonable for the current generation of school aged learners to ask why this cannot be achieved in a system as dominant as the education sector.

Second, is the sense of equity between professionals. In other words, if a number of different teachers are working with a cohort of learners, perhaps in different subject lessons or as a result of different working patterns or timetabling, then those professionals should be equitably supported in order to implement adaptive teaching. The cognitive load for both students and teachers working across classes can be minimised through consistent provision, training and support.

"In our school I teach across multiple classrooms. So seeing prior attainment data in real-time for each class is really important - it means that I know exactly where each child is, and what I need to do to support them, and that means my teaching isn't at a disadvantage compared to other teachers".

Subject Specialist Teacher, LEO Academy Trust

The other key lens through which to consider equity in light of contemporary adaptive teaching is that of representation and cultural capital (Bourdieu, 1977). More often than not, **traditional** materials and stimuli used by teachers draw upon a relatively limited range of identities and stories from around the world. However, cultural capital is more than just about representation. It's about valuing the stories

that each individual bring into the moment valuing the perceptions that each individual brings to a conversation and about an openness to learn from and with each other, without these in all of these ingredients we simply have the equivalent of a buffet of different options but with people only eating from the dishes that they brought themselves.

Contemporary digital tools can play a significant role in supporting the representation of different identities and experiences through stimulus and through activity design. This may include visual images, audio recordings, immersive experiences such as interactive images or interactive videos, and image, text or audio based

representations of fictional material or contextualised examples, through the use of generative artificial intelligence. Critically, these provide choice so that every learner can access a concept through an identity that is meaningful to them.



Equity within the classroom thus becomes a fusion of dignified access to opportunities; appropriate exposure to experiences and ideas; enhancement and augmentation of existing awareness or knowledge; and support which is respectful, personal, meaningful, on-demand and appropriate. Contemporary forms of equity have evolved beyond traditional approaches to provision and practice. Instead, emerging from deeper pedagogical beliefs where learning looks and feels different for each individual and unique human being. Equity as a mindset represents a system that facilitates, rather than consumes, the individual.

To further develop Contemporary Adaptive Teaching, teachers and leaders might wish to consider:

- To what extent is every learner in a classroom able to meaningfully access (a) concepts and knowledge during a teacher input; (b) task instructions

during the task; (c) success criteria and opportunities for formative feedback?

- What proportion of these are dependent upon (a) reading skills, or (b) teacher availability / capacity?
- To what extent are learners able to represent their learning in a way that allows them to (a) feel successful, and (b) share, in order to receive both positive recognition and constructive feedback.
 - What proportion of these are dependent upon (a) reading skills, or (b) teacher availability / capacity during the lesson?
- When learners move between lessons / teachers, and when teachers move between classes / students, how equitable is the provision available to them when compared to their peers?
 - How much cognitive load are students / staff using to re-orient themselves when working with different classes or teachers?
- Whose cultural capital dominates classroom examples and resources? What forms of cultural capital might offer contrast to this - through different experiences, perspectives, examples, imagery and resourcing?
 - To what extent are contemporary tools being used to make diverse ways of understanding the world more accessible during everyday school life?

Conclusion

Contemporary adaptive teaching invites us to consider the current generation of learners in greater depth; the nuances affecting today's teachers with greater sensitivity, and the new opportunities available in today's classrooms through a global and inclusive lens.

With adaptive technologies able to automate many of the tasks traditionally undertaken by teachers, our profession is afforded the capacity to engage with students more meaningfully - providing targeted support and human intervention where it is most needed and most impactful.

Contemporary adaptive teaching invites teachers to develop new skills - evolving and growing from established professional expertise, and historical evidence about what has worked previously. Schools and leaders nationwide are seeing an increase in educator skills - branching out to include data analysis, strategic planning, environmental design and sociopsychology.

The Contemporary Teacher is not just a distributor of knowledge nor an assessor of recall. Contemporary Teachers are bringing new and rewarding dimensions to the teaching profession through their mainstreaming of digitally supported, on-demand, personalised provision.

By combining the most effective practices from traditional forms of adaptive teaching with the contemporary opportunities afforded through the use of digital tools, a new and exciting approach emerges. This approach - *Contemporary Adaptive Teaching* - encourages leaders to evolve the role of the teacher as a reflection of contemporary society, increasing teacher efficiency and professional satisfaction.

Most importantly, offering learners equitable, contemporary, relevant and impactful classroom experiences.

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