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Differentiation in the classroom

If we are to ensure that every pupil can make progress then a key skill for every teacher is the art of differentiation, both in their lesson planning and their teaching. For this *SecEd Best Practice Focus*, **Matt Bromley** discusses practical approaches for effective differentiation



Effective differentiation: What does it look like in practice?

Last year in *SecEd*, I wrote a series of articles focused on effective curriculum design. Now I would like to bridge the gap between those pieces (see further information for details of the free pdf download) and effective differentiation.

After all, at its heart, differentiation is about delivering the curriculum in a way that makes sense to all pupils irrespective of background, starting point and need, and in a manner that enables every pupil to access curriculum content and achieve.

Instruction to deliver

Once we have designed our curriculum, we need to teach it. Although teacher autonomy is important – teaching is a profession after all – pupils undoubtedly benefit from a degree of consistency in approaches to pedagogy. Pupils like routine, after all.

In her book *Student-Centred Leadership* (2011), Vivianne

Robinson argues that although “feet of varying shapes should not be shoved into the same ill-fitting shoe”, in the sense of professional practice – teaching and teacher-learning – one size does fit all.

It is assumed that any loss of teacher autonomy is undesirable because it somehow reduces the professionalism of teachers. Although there can be no question that increased coherence (requiring teachers to teach in a consistent manner) means reducing autonomy, this does not necessarily imply a decrease in professionalism. After all, doctors are regarded as professionals precisely because they have mastered complex sets of shared diagnostic and treatment practices.

Teachers, too, need sufficient autonomy within which to exercise professional judgement about how to use the framework they are given and to contribute to evaluative discussions about its adequacy. However, that autonomy should

also be constrained by the need to ensure effective teaching practice – that is, practice under which all pupils achieve to a high level.

We may encourage collective autonomy (teachers working together to improve their practice), but curtail individual autonomy (teachers working in a purely idiosyncratic way) because standard professional practice provides the scaffolding that is required for the exercise of truly professional rather than idiosyncratic judgement.

In other words, although we should not eradicate individuality, we should eliminate individualism (habitual or enforced patterns of working alone). Eliminating individualism should not be about making everyone the same and plunging them into groupthink, it should be about achieving collective responsibility. In his book, *Good to Great* (2001), Jim Collins expounds the importance of having a set of consistent systems and structures which dictate what staff can and

cannot do and which governs how they should and should not operate.

He uses the analogy of an airline pilot. A pilot, he says, operates within a very strict system and does not have the freedom to go outside of that system. Yet at the same time, the crucial decisions – whether to take off, whether to land, whether to abort, whether to land elsewhere – rest with the pilot.

Collins says that great organisations have a culture of discipline which involves a duality. On the one hand, it requires people to adhere to a consistent system, yet on the other hand it gives people freedom and responsibility within the framework of that system.

In other words, schools can excel at delivering a great curriculum if they do so in a consistent manner. They must have strong values and high expectations. Their achievements will not happen by chance but through highly reflective, carefully planned strategies. There needs to be a high degree of internal



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consistency. So what "routines" enable teachers to deliver the curriculum in the most effective manner? Furthermore, what teaching strategies best ensure a differentiated approach to curriculum delivery that meets the needs of every pupil? I am glad you asked because I recommend a four-step teaching sequence...

The four-step teaching sequence

All mental activity – and all activity is mental activity, of course – is a delicate balance between intrinsic load (the space in working memory dedicated to performing a task), germane load (the space in working memory dedicated to trying to understand the task), and extraneous load (the space in working memory dedicated to understanding and responding to the instructional context).

Making the instructional context familiar helps to automate these processes which, in turn, frees up space in working memory to focus more on performing the task.

This explains why, when we first learn to drive a car, we must focus on the various actions required to, say, change gear and we cannot do this well while also holding a conversation. As we grow used to changing gear, however, we free up the space used to understand the instructional context and this enables us to multi-task.

As such, when teaching the curriculum in a differentiated way, we can free up much needed space in pupils' working memories by following a familiar pedagogical routine – by using a consistent teaching sequence – in every lesson and in every subject across the curriculum.

What is more, pupils with learning difficulties and disabilities, and other vulnerable learners, benefit even more from a consistent routine, so following a familiar teaching

sequence is the first step towards effective differentiation.

My four-step teaching sequence is as follows:

1. Telling.
2. Showing.
3. Doing.
4. Practising.

Telling...

...is the most effective, expedient way for pupils to acquire new information. And the best teacher explanations – or direct instruction – are often formed of three features.

- First, good teacher explanations involve metaphors and analogies because this enables the teacher to contextualise new information so that abstract ideas or hitherto alien concepts are made concrete, tangible and real, and so that they are related to pupils' own lives and experiences.
- Second, good explanations make effective use of dual coding. In other words, teachers' verbal instructions, as well as any text-based explanations displayed on the board or in handouts, are paired with and complemented by visuals such as diagrams, charts, graphics and moving images.
- Third, good explanations are reciprocated, with pupils explaining concepts back to the teacher as well as to each other. This works on the basis that only once you teach something do you truly learn it. Learning by teaching works because by teaching pupils gain feedback and make better sense of a topic. Learning by teaching also works because it is a form of learning by doing – of practising – and thus provides a source of both intrinsic and extrinsic motivation.

Showing...

...is the effective and plentiful use of

models – exemplars of both good and bad work, as well as exemplars from a range of different contexts – which show pupils what a final product should look like and what makes such products work.

It is important to show pupils what excellence looks like by sharing models of the very best work, giving them something to aspire to and an understanding of how to produce high-quality work of their own. But it is equally important to show pupils models of ineffective work, work that is not quite the best (or perhaps is so very far from being the best) so that pupils can learn what not to do and how to avoid making the same mistakes themselves.

While modelling, the teacher should think aloud in order to make visible the invisible decision-making process and to make explicit what experts do implicitly.

Doing...

... works well because by engaging in co-construction the teacher engages pupils' thought processes and helps them by questioning their decisions and by prompting further decision-making.

The teacher's role is not to construct another model themselves but to ask targeted questions of pupils to encourage them to complete the model together, as well as to provide corrections and feedback along the way, and drip-feed key vocabulary into the mix.

During co-construction, the teacher will mostly be engaged in asking open questions such as:

- Why did you choose that word?
- Is there another word which might fit better or have more impact?
- Why is this word better than this one?

“If we do not provide lesson time for pupils to respond to feedback and improve their work, we send a negative message about the importance of redrafting work and learning from our mistakes”

- Should we use a short sentence here? Why/why not?
- What is the effect of this?

Practising...

... is the opportunity for pupils to complete work independently. Independent practice enables pupils to demonstrate their own understanding and for the teacher to assess the extent to which they have "got it".

Until a pupil completes a task by themselves, we – and perhaps they – cannot be certain they can do so or that information has been encoded in long-term memory.

If pupils succeed, the teacher can move on. If not, the teacher can use the feedback information to guide further teaching of the subject, perhaps re-teaching key elements of it or engaging those pupils who have succeeded by asking them to teach those who have not.

Of course, the teaching sequence does not end here. Rather, pupils need to garner feedback on their independent practice and then act on that feedback in order to improve by increments.

As such, once pupils have practised new learning we need to provide planned opportunities for them to be assessed (by themselves, by each other, and/or by us) and receive feedback on what they have mastered and what they still need to practise. Then, crucially, we need to provide planned opportunities in class for them to act upon that feedback.

Pupils learn through practice, by making mistakes, and by experimenting. They also learn best when engaged in a process of trial and error and when they repeat actions several times, making incremental improvements each time. And so, if we do not provide lesson time for pupils to respond to feedback and improve their work, we send a negative message about the importance of redrafting work and learning from our mistakes. What is more, if pupils do not respond to feedback in class, the teacher cannot see progress being made and cannot, therefore, recognise and celebrate it.

Same destination, different route

Effective differentiation is about ensuring every pupil, no matter their background and starting point, is headed towards the same destination, albeit their route and ▶

pace may differ. In other words, we should not “dumb down” and expect less of some pupils, but should have high expectations of every pupil.

When we talk about differentiation we often have in mind ways of scaffolding learning for our “less able” learners. But learners – like learning – are complex and no pupil is uniformly less able than another.

Rather, some pupils have acquired more knowledge and skills in one area than another pupil, or have practised a task more often. Of course, some pupils have additional and different needs – such as those young people with learning difficulties – and they require a different approach. But to say they are less able is, I think, an unhelpful misnomer.

To suggest a pupil is less able implies there is an average pupil against which we are comparing all others. But there is no such thing as “average” – rather, we are all made up of myriad individual characteristics. If you take an average of each of us (height, weight, IQ, shoe size, etc), you will not find any individual who matches this average in all respects. This is known as the jaggedness principle...

In the 1940s, the US Air Force had to refit fighter planes with adjustable seats because the cockpits had been designed around the average range of 10 body measurements taken from a population of 4,063 pilots. But because no individual met all those criteria, they ended up with a seat which did not fit a single pilot.

So “average” does not exist and we would be wise not to compare pupils to the average, deeming some to be less able and others more able.

What is more, the term less able

“Every pupil at every level of their academic development needs to answer questions on the full spectrum of Bloom’s Taxonomy”

infers an immovable position – if you are less able you are destined to remain so ad infinitum, living life languishing in the left-hand shadow of the bell-curve.

I am not suggesting that every pupil performs the same – or has the same capacity to do so. We are not all born equal. But defining someone as less able as a result of a test – whether that be key stage 2 SATs, year 7 CATs or GCSE outcomes – means we are in danger of arbitrarily writing off some pupils by means of a snapshot taken through a pinhole lens.

When approaching differentiation, therefore, we would be wise to remember that all pupils – like all human beings – are different, unique, individual. Differentiation, therefore, should not be about treating “less able” pupils – or indeed those with SEND or eligible for Pupil Premium funding – as a homogeneous group. Rather, we should treat each pupil on an individual basis.

Nor should we assume that what works with one pupil will work with all, or that what was proven to work with “less able” pupils in another school, district, or country, (according to research evidence and meta-analyses) will work in our classroom.

A word about Bloom’s

All this rather begs the question:

what does work? Differentiation in the guise of teaching to the middle and scaffolding for lower performing pupils while stretching and challenging higher performing ones (and therefore expecting less of lower performing pupils) carries with it an inherent danger: it is, by any other name, “dumbing down”.

Differentiation of this kind is delivered by means of placing limits on learning, lowering a glass ceiling on top of pupils’ ambitions. Differentiation of this kind might take the form of differentiated questions using Bloom’s Taxonomy. For example, the teacher might start a classroom discussion by asking a question from the bottom of the taxonomy – a knowledge-based question which requires a recall of facts – to a lower performing pupil before moving up the taxonomy with higher performing pupils.

But sticking to the bottom of Bloom’s Taxonomy does not allow lower performing pupils to deepen their understanding; rather, it leads to surface learning. What is more, this approach is guilty of assuming that because the taxonomy grows in difficulty, the bottom end is not as important and that higher performing pupils do not need to waste their time down there.

It is true that Bloom’s is a spectrum of task difficulty: it goes from easy – such as recalling knowledge – to harder – such as evaluating an argument. But it is a spectrum because it explores the full range of cognitive learning. Knowledge is just as important as evaluation. Without knowledge, pupils cannot access the higher bits. In other words, without the bottom layers of the pyramid – the foundations – the whole structure crumbles.

To demonstrate their complete mastery of a topic, every pupil (no matter their current level of performance) should be able to answer a combination of recall-type questions (these are questions which can be answered in a short period regardless of prior learning) and developmental-type questions (these are questions which stretch pupils and develop the skills required for academic success).

Every pupil at every level of their academic development needs to answer questions on the full spectrum of Bloom’s Taxonomy; every pupil needs access to both mastery and developmental questions.



Rather than expecting different outcomes of different pupils, we should have high expectations that all our pupils will reach the same destination, albeit some will take a different route and need more time to do so. This notion that all pupils achieve the same outcome forms the basis of “mastery learning”.

Mastery learning

Mastery learning is founded on the belief that all pupils are capable of learning anything if that learning is presented in the right way. Mastery learning works on the basis that understanding is the result of intention and effort, and that difficulty is enjoyable.

In practical terms, mastery learning, which was first introduced into the UK system in maths (but which is now gaining traction in other subjects) and is modelled on practices popular in China and Singapore, is about pupils demonstrating that they have mastered something before being





able to move on to the next thing. The teacher decides the level of mastery required – 80 or 90 per cent, say – and pupils are given opportunities to learn through a variety of instructional methods before taking a test. If pupils do not attain the right level of mastery in the test, they are given additional instructional activities to complete before retaking the test (which is usually in a different form or uses different questions).

One benefit of the mastery approach is that it avoids the negative effects of differentiation, which can translate as lower expectations of what the so-called “less able” pupils are able to achieve. With differentiation, activities can also be oversimplified. Mastery, however, allows teachers to genuinely challenge pupils.

Here is how it works...

In a traditional classroom, as I have already explained, the teacher tends to teach to the middle and when the

middle is ready, the teacher moves on to the next topic. This sends a signal to the class that everyone learns in the same way and requires the same activities.

This approach also tells pupils that once the majority of the class has learnt something, all pupils move on. Many pupils learn nothing but are compelled to move on whether they are ready to do so or not. Those pupils who are ready to move on faster than the middle, meanwhile, have to wait for the majority to catch up.

But with mastery learning, the teacher sends a very different signal to their pupils: that everyone will

learn and succeed, that the teacher is not going to move on until everyone is ready to do so.

With mastery, the teacher also makes it explicit that every pupil will get a minimum of, say, 80 per cent in tests and that the teacher and/or teaching assistant will keep working with them until they do so.

The teacher can tell the faster pupils that they can move on whenever they are ready, that they will not be held back. The teacher makes it clear that people learn different things in different ways and at different paces.

Although, at its heart, mastery learning is about handing over

responsibility for learning to pupils, it is not the same as independent learning or self-teaching.

In fact, teachers who employ a mastery approach tend to interact more, not less, with individual pupils compared to more traditional instructional methods. By using a variety of resource materials (such as texts at different reading levels) and addressing various learning styles (by presenting information visually, verbally, and in writing), teachers can address differences in preferred learning styles and achievement levels.

By allowing pupils some options about how they work (for example, independently or in groups) or how they communicate their learning (visually, verbally, or in writing), teachers can personalise the learning still further.

Learning how to fall

Now I would like to explore the importance of challenge in more detail and offer some advice ▶

“ The teacher can tell the faster pupils that they can move on whenever they are ready, that they will not be held back. The teacher makes it clear that people learn different things in different ways and at different paces ”

about how to make pupils more comfortable accepting hard work.

As I have said, differentiation should not be about treating “less able” pupils as a homogeneous group. Rather, we should treat each pupil on an individual basis.

Instead of expecting different outcomes of different pupils, we should have high expectations that all our pupils will reach the same destination, albeit some will take a different route and need more time to do so.

Of course, some pupils fear challenge. We need to eliminate – or at least mitigate – their feelings of fear and hesitation by creating a classroom environment which encourages the making of mistakes as an integral part of the learning process and a pedagogical culture which explicitly says (through our choice of language, our modelling and thinking aloud, and the routines in which we engage) that there is nothing to fear by trying your best and pushing yourself to do hard work. After all, challenge is innate. Pupils love challenge when it is private because, in the safety of their own homes or when with trusted friends, there is not the fear of humiliation or peer pressure.

To promote challenge in the classroom, therefore, we need to reduce the threat level, we need to ensure no-one feels humiliated if they fall short of a challenge. Rather, they need to know that they will learn from the experience and perform better next time. They will learn by increments.

Being comfortable with discomfort

When I talk about reducing the threat level, I mean we need to create a positive learning environment in which pupils’ senses are stimulated so that they pay attention to the right things and are made to think hard but efficiently about curriculum content.

I refer, too, to an environment in which pupils are challenged by hard work but know that they are safe to take risks and make mistakes. What I do not mean to imply is that our classroom should be regarded as an easy, fun place to be. There is nothing wrong with pupils enjoying themselves while they learn, and we certainly would not want school to be a dull and boring place. However, fun is never the goal. Rather, we need pupils to think and work hard.

What then, if not fun, are the

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hallmarks of a positive learning environment? To my mind, a positive learning environment is one in which all pupils:

- Feel welcomed.
- Feel valued.
- Are enthusiastic about learning.
- Are engaged in their learning.
- Are eager to experiment.
- Feel rewarded for their hard work.

But behind all these characteristics – and any more we care to mention – is a simple, albeit oxymoronic, aim: to ensure pupils are comfortable with discomfort. In other words, we want our pupils to know that the work they will be asked to do in our classrooms will be tough, that they will be challenged with hard work and made to think. We want our pupils to know that there will be no hiding place in our classrooms; they must ask and answer questions and attempt everything we ask of them.

However, in so doing, we want them to feel safe and protected, we want pupils to be eager for challenge and to willingly attempt hard work because they know that we have strung a safety net beneath them: yes, they might falter but we will catch them if they fall. We also want our pupils to know that taking risks and making mistakes is not just accepted in our classrooms but is positively and proactively welcomed as an essential part of the learning process. Indeed, the only people who do not make mistakes either never get any better at anything or have reached the point of automaticity – they have fully mastered something and so can now do it through habit.

Our pupils are not at the point of automaticity and so must make mistakes if they are to get better in our subject. If they do not make mistakes, they cannot receive feedback; if they do not receive feedback, they will not know how to improve; if they do not know how to



improve, then they are unlikely to develop at all.

There are many ways of achieving a positive learning environment in which pupils are comfortable with discomfort: some are simple common sense, some are more complex. Let us take some of the hallmarks I listed above and discuss some tangible ways of achieving them.

Feel welcomed

A positive learning environment is one in which pupils feel welcomed. The best – and simplest – way of achieving this is to physically welcome them into our classrooms.

For example, we could establish a habit of greeting pupils at the classroom door at the start of every lesson and do so with a smile and by greeting some pupils by name. For some pupils in some contexts that might be the first time someone – an adult, at least – has acknowledged their existence.

Ultimately, if we cannot show our pupils that we are pleased to see them and eager to teach them, then

can we really expect them to be pleased to be in our lesson?

Feel valued

We can achieve this by making sure we are on time and have a lesson planned and ready to go. We can also do this by creating a culture whereby everyone’s contributions are welcomed and given the time and attention they deserve.

This might involve explicitly teaching and repeatedly reinforcing, not to mention modelling, debating skills such as active listening.

Valuing each pupil’s contribution is not the same as agreeing with everything they say. Indeed, if a pupil gives a wrong answer then they need to know that it is wrong and why it is wrong. But a pupil’s response does not have to be right for it to be useful.

Enthusiastic about learning

Having pupils who are enthusiastic about learning is, in part, achieved by developing their intrinsic motivation, but this is not always possible and is rarely easy.



So another tangible, teacher-led strategy for enthusing pupils is to model that enthusiasm by constantly articulating – through our words and actions – our joy at teaching our pupils and at teaching our subject. In this regard, sometimes a little over-acting goes a long way. It is better to be considered the kooky, eccentric teacher who is truly, madly, deeply in love with science, say, than the boring, staid one who never cracks a smile and only perseveres for the pension.

Engaged in their learning
We want our pupils to be engaged in

“ Our goal as teachers should be to ensure our pupils learn in an effective, efficient, and enjoyable way – in that order ”

their learning, but what is “engagement” and why does it matter? As I said earlier, fun is never our goal as teachers; we do not need pupils to enjoy our lessons in order to learn. We need them to think about the right things.

If they happen to enjoy what they do, then that is an added bonus. But “fun activities” are not our guiding star; rather, thinking hard but efficiently about curriculum content is.

When I talk about pupils being engaged in their learning, therefore, I do not mean – or do not solely mean – that they are enjoying what they are doing. Instead, I mean that they are actively paying attention to the right things and are thinking hard. It is about being engaged (as in “meaningfully occupied by or connected to”) as distinct from enjoying (as in “taking pleasure from”).

It is understandable that we should want our pupils to enjoy our lessons and to be busy, but the emphasis should not be on enjoyment and it is not desirable to

employ a strategy in which pupils are engaged by something that appears interesting but leads to little substantive learning or, at any rate, slows down the process of learning because it will prove ultimately demotivating.

Their initial interest and their investment of time and energy will gradually fade then disappear altogether because motivation can only be maintained if it is accompanied by positive results. Without positive results, demotivation quickly develops.

Our goal as teachers should therefore be to ensure our pupils learn in an effective, efficient, and enjoyable way – in that order. Yes, we want pupils to be motivated and engaged but motivation and engagement are not substitutes for learning nor can they be a proxy for learning.

In a paper in July 2017, Paul Kirschner and Mirjam Neelan quote Carl Hendrick (2015), who says that he has “long thought that one of the weakest proxy indicators of effective learning (was) engagement, and yet it is a term persistently used by school leaders (and some researchers) as one of the most important measures of quality”. Hendrick adds: “In fact, many of the things we have traditionally associated with effective teachers may not be indicative of pupils actually learning anything at all.”

Kirschner and Neelan urge fellow researchers, teachers, trainers, instructional designers, and all other learning professionals” to “agree that motivation, engagement, fun, and many other positive emotions during learning are great to strive for but let us first go for learning”. After all, without learning, what is the point of pupils being motivated and engaged?

Differentiation: Part two

In *SecEd*'s May edition – due out on May 9 – I will continue this *SecEd Best Practice Focus* on differentiation in the classroom.

I will consider how to use the



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INFORMATION & REFERENCES

- ▶ *Curriculum design and delivery*, Matt Bromley, *SecEd*, Autumn 2018. A seven-part *Best Practice Focus* for *SecEd* looking at how to design and deliver and broad, balanced and effective curriculum: www.sec-ed.co.uk/knowledge-bank/curriculum-design-and-delivery/
- ▶ *Student-Centred Leadership*, Vivianne Robinson, Jossey-Bass Leadership Library in Education, 2011.
- ▶ *Good to Great*, Jim Collins, Random House Business, 2001.
- ▶ *Motivation for Learning; Is there a point?* Paul A Kirschner & Mirjam Neelan, 3-star Learning Experiences, July 2017: <http://bit.ly/2TPoSPG>
- ▶ *Engagement: Just because they're busy, doesn't mean they're learning anything*, Carl Hendrick, March 2015: <http://bit.ly/2FpVwxz>

strategies of “exit tickets” and “hinge questions” in order to enable differentiated instruction. These techniques will help us to set the right level of challenge for our pupils – hard but achievable with time, effort and support – and they will help us to locate pupils’ “struggle zones” – the point just beyond their current capability but within their reach, something they cannot yet do but will be able to with time, effort and support.

I will also come back to the important of high expectations and what these look like in the classroom. I will look at eight of the most common forms of differentiation in use in our classrooms today and analyse their advantages and disadvantages. Finally, I will examine the role that teaching assistants can play in ensuring that learning is differentiated.

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