We need to talk about… Differentiation

Differentiation has been one of the main teaching strategies used to support inclusion in the classroom when teaching a diverse class of pupils who vary in ability and needs. In England, the Teachers' Standards 5 (DFE, 2021) is clear that teachers need to 'know when and how to differentiate appropriately, using approaches which enable pupils to be taught effectively' (p11). This aim is challenging as differentiation is a complex and broad teaching approach that incorporates many practices to improve inclusion. It involves a multitude of professional decisions that the teacher must make during a lesson. This article will explore differentiation, the misconceptions associated with it and classroom practices to support differentiation.

What is differentiation?

Graham et al (2020) identify a range of definitions of differentiation. Unfortunately, there is no definitive definition, however, it is agreed that the overarching aim is to support inclusive education and reduce the attainment gap between pupils. Hattie (2009, 2011) suggests that differentiation is the application of a wide range of strategies used by teachers to meet the needs of pupils. It cannot be ascribed to one strategy such as differentiated or adaptive questioning to assess the needs of all pupils. In England, the simplest definition of differentiation is the adaptations that teachers make in their practice to support different pupils' needs (Gheyssens et al., 2020). Any agreement in the definition is the acceptance that differentiation incorporates different strategies and processes. As such, the best means of defining differentiation is that it is a flexible approach to teaching in response to pupil diversity through the domains of:

- Planning and preparation
- Classroom environment
- Approaches to content (including activities and materials)
- Assessment practices
- Management

In the planning stage, teachers need to be aware of what they hope to achieve with the differentiation strategies chosen. This should be in response to pupils' needs, readiness to learn and interests (Graham et al., 2020). Deunk et al (2015) take this a step further to include teacher attitudes, knowledge and practices. Differentiation promotes inclusion and can have a positive impact on pupils' achievement (Gheyssens et al., 2020). The authors of this article who have had years of teaching experience both in secondary schools and as teacher trainers planning and implementing differentiation in the classroom echo this view. On the contrary, the Minister of State for School Standards in England claimed that differentiation is linked with low expectations and lower access to academic content and negative consequences for the pupils' life chances. The death knell of differentiation according to Ofsted (2019) is that it has little impact on pupils' attainment. They assert that the strategy has been reduced to the production of different tasks and resources that increase teachers' workload with little impact on pupils' learning. This comment may appear to be reasonable on the one hand but on the other can be contested simply because experienced teachers may not see differentiation as increasing their workload but rather as an approach that promotes inclusive learning.

Sherrington (2017) strongly presents a case that too many pupils are systematically under challenged at school, especially in the years furthest away from high-stakes tests and exams. He indicates that the secret to addressing this is to think about it in three areas of teaching

practice namely attitudes (the belief and mindsets teachers need to have themselves and inculcate in their pupils), routines and habits (regular practices in every lesson) and extra challenges (what is included into an overall scheme of work and used occasionally). He purports that teachers should have the confidence to pitch their lessons based on the capabilities of the higher attainers, providing scaffolds for lower attainers, as too frequently teachers fail to 'teach to the top.'

Misconceptions related to differentiation

The complexity, difficulties and misconceptions of differentiation are strife to teachers as some believe that it involves planning on an individual level to meet pupils' individual needs and can be difficult to implement in mainstream schools (Graham et al., 2020). Placklé et al (2020) suggest that teachers use differentiation when other strategies do not achieve the intended purpose. The workload and resources associated with differentiation may be enormous and there seems to be an inconsistent implementation with not all domains being differentiated. The incomplete approach to differentiation makes it limited to three ability levels in the classroom such as high, middle and low (Scheerens and Bosker, 1997). This situation supports Ofsted's (2019) concern about increased teacher workload due to producing different resources. At the same time highlights the need to improve differentiation as a pedagogy that should be directed by teachers through knowing their assessment data and how to use it to promote teaching and learning.

Other issues with differentiation may include a lack of assessing pupils' needs and matching these to relevant tasks, knowledge of how to teach different cognitive levels, or being unable to identify learning strategies that would support the pupil development further. For example, grouping pupils may be a useful differentiation strategy but may not be effective if there is no sufficient movement between attainment groups to support teachers with the complexities of differentiation (van de Grift and Houtveen, 2007). Consequently, the lower attaining pupils will not get the support to progress due to a lack of sufficient encouragement which may lead to a wider attainment gap.

Classroom practices to support differentiation

Teachers need to make decisions on the choice of differentiation strategy and goals to accomplish. Below we have discussed some effective strategies for differentiation in the secondary school classroom and some may apply to the primary classroom. However, we encourage teachers to consider which of these would be relevant in meeting the needs of their pupils.

- The most efficient means of supporting difference is through grouping pupils by their developmental level and supporting these groups (Graham et al., 2020). Hattie (2011) suggests that the jigsaw method may be more effective where pupils in the group have a specific task to complete, and therefore gain specific teaching on that task. An example would be in a science lesson with each member of the group given a specific role such as researcher, writer, leader, etc. The pupils can be encouraged to be the experts in each group task and are allowed to share outcomes with their peers.
- Using structured group work where the higher attainers are stretched and challenged with extension tasks. The lower attainers can work with the teaching assistants (TA) under the teacher's supervision. This would enable them to make progress like the higher attaining pupils. Ensure time restrictions for group tasks to help pupils work with the time and assign roles to them. The group can be made up of pupils with low

to high attainers to allow the high attaining pupils to support the low attainers through peer support.

- During practical work, teachers can request pupils working at higher levels to write a report on the outcome while those at a lower level may be provided with a writing frame as means to scaffold their learning. This method caters to the needs of all pupils and promotes inclusion. Those working at higher levels can be allowed to plan an investigation, but others can be given a guide with steps to complete the practical work.
- Differentiation can be applied to a setting with visual and audio cues which help to create an inclusive learning environment. For example, written texts should be set at levels that accommodate low-level readers as well as consideration in the extension of vocabulary for high attainers. There should be thought for those who are visually impaired so that written guidance is also made available audibly.
- Teachers could plan a lesson with teaching assistants (TA) and inform them of the contents of the lesson in advance to build their knowledge of the subject, especially for those TAs that are not science subject specialists. This will help TAs to provide the maximum level of support to pupils.
- When topics are presented, they should be differentiated in a way that allows thinking among pupils of different attainment levels. For example, if worksheets are provided of the skeleton to be labelled, the upper arm bone (humerus) for the low attainers may have the first three letters 'Hum' and even a clue 'sounds like something funny'. Those considered as mid-attaining pupils may just have the letter 'H' on their worksheet and the higher attainers may have the clue 'long bone connecting shoulder to the scapula'. The focus is on all pupils labelling the correct bone but how they get their answers can be differentiated.
- Some pupils may require larger text, different colour paper or a teaching assistant to support them. The subject itself may need to be adapted into smaller and more manageable chunks.
- Teachers can use the 'I do, We do, You do' model of discourse whereby the 'I do' is usually completed in silence by the teacher in the first instance. This reduces the cognitive load on the learners, followed by the teacher narrating what they have done. 'We do' is where the teacher provides scaffolding such as prompts or partially completed procedures for pupils to complete. The teacher uses this to assess whether the pupils are ready to move onto the independent phase or require further support. 'You do' is where the pupils can do the question independently.
- Many schools use red, amber and green (RAG) questioning; the traffic light card system or bronze, silver and gold with differentiated questions to help pupils to achieve the aim of the lesson.
- Giving lower attainers aids such as number lines and multiplication tables can aid calculations in topics that require this.
- Teachers could train pupils to create questions using either Bloom's taxonomy or the Solo taxonomy question prompts. The higher attaining pupils can be encouraged to create high order questions while the lower attainers could be guided through the various question domains until they can move on to the next. The next step is to allow pupils to respond to the questions through peer assessment.
- By using mastery learning teachers can provide pupils with activities to correct their learning difficulties based on their abilities. This will enable them to work on those concepts or skills until they master them. Completion of the activity can be time-

bound, and teachers can revisit it when required. This can prompt alternative means to further support learning such as enrichment activities.

The various differentiation strategies can affect the progress of pupils and science teachers would require an understanding and insight into the following aspects:

- Data – current attainment and performance goals. The ability to ascertain the current attainment of the pupil through tests and work in the classroom.
- Assess the current level the pupil is learning; novice, capable or proficient
- Knowledge of how to teach different cognitive abilities
- Make professional decisions in the differentiation domains as to what the pupil needs to learn.

(Deunk et al., 2015)

Conclusion

Differentiation has a great potential to support pupils at whichever level they are working and studies indicate a positive impact on achievement. It is an all-encompassing approach that incorporates various strategies that can be differentiated or adaptive. The questions are whether all the complexities of differentiation can be overcome without teachers increasing their workload and potentially burning out. In mainstream schools, teachers work very hard to support all pupils, however, the demands of differentiation, the professional decisions that are required by the teacher, the misconceptions and the goals that they are trying to achieve using differentiation may be insurmountable. Therefore, this article suggests that differentiation should be encouraged among teachers by supporting their pedagogical knowledge in carrying it out in their classrooms. The more experienced teachers can provide training and support to the less experienced ones. As such, we need to talk about differentiation.

References

Deunk, M., Doolaard S., Smale-Jacobse, A. & Bosker, R. J. (2015) *Differentiation within and across classrooms: A systematic review of studies into the cognitive effects of differentiation practices.* Available at: https://www.nro.nl/sites/nro/files/migrate/Roel-Bosker-Effectief-omgaan-met-verschillen-in-het-onderwijs-review.pdf Accessed 14.6.22

DfE (2021) *Teachers' Standards: Guidance for school leaders, school staff and governing bodies.* Available at: https://www.gov.uk/government/publications/teachers-standards Accessed 15.5.22

Gheyssens, E., Coubergs, C., Griful-Freixenet, J., Engels, N. & Struyven, K. (2020) Differentiated instruction: the diversity of teachers' philosophy and praxis to adapt teaching to students' interests, readiness and learning profiles, *International Journal of Inclusive Education.* https://doi.org/10.1080/13603116.2020.1812739

Graham, L. J., de Bruin, K., Lassig, C. & Spandagou, I. (2020) 'A scoping review of 20 years of research on differentiation: investigating conceptualisation, characteristics, and methods used', *Review of Education, 9*(1) 161–198

Hattie, J. (2009) *Visible learning: a synthesis of meta-analysis relating to achievement*. London: Routledge.

Hattie, J. (2011) *Visible Learning for Teachers: Maximizing Impact on Learning* (1st ed). London: Routledge

Ofsted (2019). *Education inspection framework: overview of research*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963625/Research_for_EIF_framework_updated_references_22_Feb_2021.pdf Accessed on 15/5/22)

Placklé, I., Könings, K. D., Struyven, K., Libotton, A., van Merriënboer, J. J. G. & Engels, N. (2020) 'Powerful learning environments in secondary vocational education: towards a shared understanding', *European Journal of Teacher Education*, 43(2) 224-242.

Scheerens, J. & Bosker, R. (1997) *The foundations of educational effectiveness*. Oxford, UK: Pergamon.

Sherrington T (2017) *Rosenshine's principles in action*. UK: John Catt Educational Ltd.

van de Grift, W. & Houtveen, T. (2007) 'Weaknesses in underperforming schools', *Journal of Education for Students Placed at Risk,* 12(4) 383-403

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