**Module 5: Inclusion**

**An intervention to Support Inclusion**

The meaning of inclusion, to me, is ensuring that every pupil is able to access the curriculum and is appropriately stretched and challenged, so they progress as much as possible. How you achieve this is through provision, which should be a combination of teaching strategies, resources and extra support. It is not the oversimplification of the curriculum and lesson tasks. As highlighted in a Department for Education and Skills (DfES) publication: ‘Equality of opportunity requires an understanding that some individuals and groups of pupils will need *more* support or additional provision in order to have an equal chance of access to success and achievement in the mainstream classroom’ (DfES, 2004, p2).

The more I reflect on inclusion, the more I realise the importance of having the right mindset. You have to believe in equality and have a ‘never give up’ attitude when it comes to young people. I was therefore quite shocked when reading about the findings in Walters’ (2011) article as it seems to have found many examples of where teachers have been discriminatory and possibly even racist.

Labelling is probably the most significant factor that is detrimental to teacher expectations and inclusion, as it allows teachers to subconsciously adopt a fatalistic attitude of ‘what else can I do? They are of such low ability’. This is a self defence mechanism adopted frequently, which is a deflection of blame from the teacher not overcoming learning barriers to the pupil supposedly lacking in intelligence. Labelling gets worse when the pupils who are most in need of cognitive stimulation end up getting the least, due to being labelled as ‘low ability’. It is saddening to still witness supposed differentiation, which is really just dumbing down of tasks so that they no longer stimulate any cognitive challenge. Of the three types of social justice identified by Archer (2007, p113), I feel that ‘Distributive justice’, is the most pertinent issue for my school to address, because EAL and SEN pupils are not always getting their fair share of challenging tasks and resources in class.

Another issue is the way EAL pupils end up grouped in low sets which contain pupils with SEN (Cummins, 1989 p. 26 cited in Walters 2007, p89). Things are further confounded by the fact that many of our EAL pupils have been labelled as also being SEN, but how can we be sure a pupil has a learning difficulty when they cannot actually access the learning material in the first place? Unfortunately, I have to agree with Cummins (1989, p. 26 cited in Walters 2007, p89), that EAL pupils are labelled as SEN due to a perceived deficiency in their cognitive ability or intelligence level and indeed sometimes their lack of motivation, which is inextricably linked to their English language needs not being fully met.

I strongly believe that low teacher expectations impact pupil identity. This is particularly noticeable when a teacher decides in advance (based on passed data and SEN codes) the ‘ability level’ or ‘Positioning’ (Walters, 2007, p.88) of particular pupils within the class, and hence what level of work they will be able to cope with. The following quote sums up the biggest barrier our school faces: ‘It is all too easy to underestimate what pupils learning EAL can achieve in science, simply because they are new learners of the English language. The expectations should be that they progress in their scientific learning at the same rate as other pupils of their age.’ (DfES 2002 p1).

Frequently having the lowest ‘ability’ intake in the borough, we have had to place more value on the wider meaning of intelligence, otherwise we would have many ‘losers’ and relatively few ‘winners’ according to the IQ methods of testing that Stobart (2008, p57) refers to. I believe intelligence is the brains’ ability to adapt its cognitive functioning in response to changing pressures in the environment. It is this range of cognitive functions, which account for all the different types of intelligence. These are not innate fixed abilities, simply some individuals find development in these areas easier than others. Pupils who appear to be ‘unintelligent’ or ‘low ability’ have the potential for higher cognitive functioning, but have probably not been exposed to enough stimuli during critical cognitive development phases and hence have not practiced adapting their cognitive functioning in certain areas. I truly believe this can be rectified. And this task falls to us as educators to create highly adaptive, multifaceted, lifelong learners.

As head of biology, I am responsible for pupil progress across all Key Stages in biology. The progress of pupils from Key Stage 4 to 5 has not been so good, and each year we lose about 50 percent of our students by the end of the AS year, many dropping out with ‘U’ grades. The ‘U’ grade signifies that these pupils are simply not accessing the course, despite having strong GCSE results and being able to get reasonable grades in their other A-level subjects. Furthermore, there were pupils outperforming them who had weaker prior attainment at GCSE. It is widely accepted that science A-levels are among the hardest A-level subjects, but theoretically, there is no reason for any pupil to end up ‘Ungraded’.

From the groups identified as potentially at risk of underachieving (DfES 2004, p3), the most relevant categories to the A-level biology cohort at my school were; those pupils (previously) classed as EAL (35% of cohort), had (previously) identified special educational needs (23% of cohort), and possibly boys, being the minority gender group (28% of the cohort). I use the word *previously* in reference to EAL and SEN, as these categories do not continue with pupils into the sixth form at my school. EAL and SEN issues and provision appear to be forgotten about, when pupils move from GCSE to A-Level, as it is assumed that because they meet A-level entry requirements, they no longer need their provision. However, the underpinning language issues and learning needs are still there, and could be a significant factor in their potential attainment. Furthermore, whilst their conversational English may be on par with other pupils, their ‘scientific literacy’ as explained by DfES (2002, p1) may still be significantly behind the other pupils in the class. I would even argue that for the majority of our pupils doing A-level Biology, this ‘scientific literacy’ is a significantly weak area, even for pupils who have English as their first language. For these reasons, I felt there was a pressing need for an inclusion intervention, as a matter of priority, for all our A-Level biology students.

I wanted to try a new approach, by compiling the most valuable resources in supporting access and inclusion for learning in class and extended learning at home, into a handbook/workbook. Producing the handbook for free would resolve any issue of limited financial resources available to parents for supporting their childs’ learning, a point made by Archer (2007, p123). The handbook used in conjunction with attendance at Biology Clinic should help reduce the need for a private tutor at home as it should provide the type of guidance and structure one would expect from one-to-one tuition.

It is an important point to make, that by trying to be more inclusive with a particular group you may unwittingly be excluding other groups, by moving your focus and resources away from them, as Archer (2007, p115) points out. As a result, my intervention is aimed at inclusion for *every* A-level biology student with the hope that whatever their barriers are to learning, they may be overcome by using the handbook.

The introduction to the handbook (appendix 2) provides advice on how to study efficiently. I also provide pupils with contact details and our biology website, which was created to support their learning. Therefore, if they hit any barriers when trying to study out of school hours, they could still have several sources of support available to them in addition to the handbook. This links to the first element of successful inclusion in that all pupils are given an equal chance of access and achievement (DfES 2004, p1), which is the main aim behind my intervention strategy.

The DfES (2004, p4) also outline several principles that underpin inclusive teaching, many of which are strong components of the biology handbook. For example, the principle that pupils should be clear what they will be learning, what to do to progress, and what the success criteria are, is addressed through the Biology performance descriptors (appendix 4), the content checklists (appendix 7) and the Mathematical skill descriptors (appendix 5). The latter also supporting the principle of making links to learning elsewhere in the curriculum. By setting out all the skills and content within the handbook, pupils should be able to understand what is expected of them and use this as an audit to ensure that any lack of existing skills are not a barrier to their learning, through seeking out extra support in these areas. This links to the third element of successful inclusion (DfES 2004, p1) where pupils should be able to monitor and evaluate their progress, which should be a easier when they have clear success criteria. This is also addressed though the Student Tracker (appendix 6). The tracker is designed to allow pupils to monitor their progress from their previous data and allows them to clearly see how they are progressing towards their target grades, and this in turn should give them a greater sense of ownership of their end results and more confidence in approaching exams.

The Content Checklist (appendix 7) is designed to encourage pupils to monitor their performance on a lesson by lesson basis, as well as keep track of the content covered. For each lesson outcome, they reflect on how they did and set themselves targets if any outcome was not fully met. The checklists also highlight the content to be covered by pupils independently, which enables them to plan ahead with their study at home and ensures that the course content is covered in the time available. The Content Checklist ensures pupils have personal targets which they take ownership of and are working towards, which is another desirable feature highlighted by the DfES (2004, p4).

The Learning Grids (appendix 8) could be the most significant part of the biology handbook as we have never used such a resource before. The grids provide support with writing through the use of matrices and writing frames, a strategy also recommended by the DfES (2002, p1). The grids also meet the second successful inclusion criteria, where pupils should be ‘taught in ways that take account of their varied life experiences, and needs, including their language needs’ (DfES 2004, p1). Each pupil will have their own specific life experiences, especially when it comes to study and academic success, and their own individual language needs, even those pupils who have English as their first language, because they actually need to have a high level of English proficiency in order to initially understand and access the A-level biology exams, as well as gain the Quality of Written Communication (QWC) marks. However, the learning grids should do more than just provide language support. They are a scaffold to help pupils process the course content, during lessons or independently at home, and interpret this content in order to be able to answer questions and complete the grids. They are an aid for; checking understanding of content, revision, to help synthesise ideas, organise thinking, and to clarify ideas in order to write with more precision. The grids are perfectly matched to the text book so pupils should find the grids easily accessible. When completed, the grids can then be revised from as notes, so that instead of just revising copied sections out of the book, pupils would instead revise questions and answers which involve the use of higher order thinking skills. Furthermore, the grids provide a range of question types including; challenging fill-in-the gaps type questions to test understanding of key language and concepts, questions involving drawing or labelling parts of diagrams, which may also help learners who prefer visual aids to help them remember information. Some questions involve sequencing of sentences in the right order to show how a process occurs which can be testing for pupils as it requires logical thinking. The fact that each question has a specific size box to write the response in, with some going as far as to split the answer box into numbered subsections, also is an important part of the effectiveness of the grid, as it clearly scaffolds pupils in how much detail they should be going in to or how many key points they must include in their answer. After every four lesson grids (which equates to 8 double pages of content from the book) there is also a quiz (appendix 8 p10) to help pupils assess themselves on their retention, before moving on to the next set of lessons.

The Past exam papers were included, as I wanted pupils to have easy access to every existing past paper in one place, so they did not have to search for them or purchase them independently as this could limit the number of pupils able to access the more recent papers. The Model Answers (appendix 10) are available to download from the OCR website (OCR, 2012), however not many students have utilised this free resource. The model answer not only gives ‘A’ grade answers to past paper questions, but it also gives essential examiner feedback to really emphasise to pupils what was required in the question and answer. This element covers the fourth aspect of successful inclusion (DfES 2004, p1), in that it sets high expectations for all and targets additional support so that all pupils can access learning at the ‘A’ grade level and ensures adequate challenge for progression. Even if pupils do not make the A- grade, if they at least strive towards it they may fall short with a grade B which will still be higher than they were targeting initially.

The Thinking Frames for ‘How’ (appendix 11) and ‘Why’ (appendix 12) type questions, are a type of scaffold to help pupils construct their thoughts. I wanted pupils to have a copy of this resource so they could get into the habit of using them at home, when trying to tackle past exam questions. These scaffolds are designed to make questions more accessible to pupils and to draw out their deeper understanding when forming well written answers in grammatically correct paragraphs, which again is a necessity for our students who are EAL or just have lower level literacy skills especially for questions involving QWC (appendix 9 p18). These resources in particular should help meet the final criterion for successful inclusion (DfES 2004, p1) as they should help support pupils with barriers to writing extended exam answers, so these needs can be addressed and overcome.

But perhaps most significantly the biology handbook, I would hope, might raise confidence and allow pupils to get over the initial shock they feel when they realise the difficulty level of the course and maybe help maintain pupils’ belief in their own capabilities by making the workload more manageable and less daunting for them.

Having read Drevers’ (2003) account of different types of interview, I have decided the most useful form for evaluating my intervention will be the Semi-structured interview (Drever, 2003, p10). I concluded that the highly structured interview (Drever, 2003, p16) would be far too prescriptive and limiting in terms of pupil responses and that the ethnographic interview (Drever, 2003, p17) would be too non-directive and possibly give me responses of less value. I have therefore selected the semi-structured interview because I do not want to influence pupils’ opinions, as it is important that I get responses that express their true thoughts and feelings about my intervention. However I agree that when interviewing young people it is important to have ‘prompts’ and ‘probes’(Drever, 2003, p11) otherwise you can frequently end up with one sentence answers of very limited value. Similarly to Drevers’ (2003 p11) point that even if they were giving ‘wrong’ interpretations of my intervention, I would not attempt to correct them, but merely ask them to elaborate. I would also be selecting the key inclusion features of the intervention to prompt for, and then pupils will also be probed and given ample opportunity to elaborate freely on other issues not covered in my questions. I also decided to try to balance the use of closed questions with open probing ones as it is important for pupils to elaborate on what the intervention meant to them, as opposed to, their opinion on what I thought it meant to them.

Kellet (2005, p64), raised the important issue of standardising responses. If I wanted to know what percentage of my class thought the intervention was highly effective or not very effective then I needed some form of structured questions and answers, otherwise I might get useless responses like ‘yeah it was ok’. At the same time, as Kellet (2005, p70) highlights, it is possible to find issues that you may never have anticipated would be relevant and hence would never have asked about, all from asking one very open question. I have therefore decided to merge an open ended initial interview with more semi-structured interview in the form of a survey. Indeed, as Kellet 2005 (p70) points out, researchers do not have to be restricted to one type of interview. By giving pupils the open ended questions first, I would then tailor the semi-structured questions to elaborate on concepts they raised in their answers, hence gauging the other pupils’ opinions on these points, whilst also including some of my own concepts which the pupils may not have thought of. This progressive use of interview to actually shape the rest of the questions, should allow me to gain a varied set of responses, with enough standardised ones for data analysis purposes, and furthermore, to obtain a larger sample of responses via the survey than through interview alone.

Kellet 2005 (p71) outlined the procedures to follow to ensure the interviews are done in an ethical manner. I decided to keep the location as informal as possible, which is their classroom. This should reduce any feelings of anxiety they might have if seated in an office. I assured them that their responses will be confidential and their identities kept anonymous, and I gained their consent before they took part in the process. I informed them that I would record their answers purely so I can then refer back to their responses later without missing any details. I intended to interview around six pupils from my A-level biology classes and then survey all forty four members of the A-Level biology cohort, which comprises of 29 AS pupils and 15 A2 pupils. The format of the interview and survey are shown below:

**Stage one:**

A qualitative, small sample interview, using open questions. All six pupils were given the three questions below, in order to initiate the interview.

*Question 1: What do you think of the A-Level Biology Handbook?*

*Question 2:* What are the good points about the biology handbook?

Question 3: How could the Biology Handbook be improved?

Where pupils gave very brief responses to question 1, question 2 and 3 were then used to help prompt for more information. Furthermore, if pupils gave superficial responses like ‘yeah it’s useful’, I would then ask them to elaborate in more detail about how and why they found it useful and hence probe for more valuable responses. The aim here was not to put ideas about inclusion into their heads but to let them just think out loud about how the handbook has impacted them.

**Stage two:**

A quantitative and qualitative large sample survey (done online see appendix 13) using a mixture of open and semi-structured questions designed to stimulate deeper exploration of the range of responses from Stage 1 and question more overtly about inclusion (Appendix 13, p32).

From the initial interviews carried out with six pupils, I gained a variety of interesting responses. As the six pupils were selected randomly some were more vocal than others. For example, some pupils had a lot to say about the handbook and gave a detailed response to my opening question of ‘what do you think about the handbook?’ However, others were less forthcoming with their responses and so I had to prompt and probe by asking them to suggest positive (question 2) and negative (question 3) features about the handbook and to explain more specifically whether it impacted their learning. The main theme which arose was a high degree of usefulness where pupils felt strongly that the handbook was helpful to them, for example responses that highlighted this were: ‘it’s really useful for consolidating what I’ve learned previously’ ‘it’s really effective in summing up everything you need’, ‘I love it! It’s got everything you need in one place’ ‘it helps me understand things better’, ‘it’s changed the way I revise’ ‘I think I’ll get a better grade now’, ‘I feel more confident about the exams now’. For question 3, regarding improvements to the handbook, I was very surprised at how limited the suggestions were, with some pupils saying they could not think of any improvements. However one boy made some very interesting points, perhaps because he is in his third year of doing A-level biology having come to us as a re-sit candidate and therefore has a much better understanding of what his needs are. For example, he said; ‘Some of the questions are straight from the book so not really challenging enough. They don’t really test your deeper understanding. And so they don’t really prepare you for the application questions in the exam either, because they are just testing you on the content’. The only other suggestions were to produce it in colour as opposed to black and white and to make it smaller and lighter. From these interview responses I then phrased the eight survey questions as shown in Appendix 13.

The survey findings were surprising to me, as I had not expected the pupils to respond so positively. Indeed it was intriguing that all 44 pupils answered all the questions, apart from the one on suggested improvements. In fact 6 pupils skipped this question entirely, whilst a further 5 answered ‘None’. This could mean that they think the handbook is perfect the way it is, or perhaps they are not sure what more support or extra resources they actually need.

Interestingly, the learning grids came third where 53.5% of pupils found them ‘very useful’ (Appendix 13 p31). In fact 90.9% of pupils found the exam papers very useful, 86.4% of pupils found the model answers with examiner feedback very useful, and no pupils found them to be ‘not that useful’ or ‘useless’. Whereas for the learning grids, 9.3% (four pupils) felt they were ‘not that useful’ and 2.3% (1 pupil) ‘useless’. There may be another reason for those five pupils not appreciating the learning grids as much as the other pupils and that could be simply that it increased their work load as the grid completion was made compulsory in class and at home. Alternatively, perhaps these pupils just prefer to study and form their notes in a different way and therefore felt frustrated at having to complete the grids.

In terms of how inclusive the handbook was, according to the pupils 100% of them felt that it made it more clear what they had to learn, 95% felt that it made clear the criteria for how to succeed, 100% felt more positive and confident because of it, 83% thought it was appropriately challenging, 93% felt it met their learning needs, 81% felt that it had helped them overcome barriers to learning, 95% wanted a similar handbook for their other subjects, 77% agreed that it has changed the way they study, 95% felt that they will get higher grades because of it, 88% agreed it gave them everything they needed in one place, 81% agreed the learning grids make them think more, 91% agreed that there was a need for more application type questions, and 56% said that they now use the learning grids instead of their usual methods for taking notes.

The most surprising finding was that so many pupils said they completely changed the way they study as a result of the handbook. A change in study culture is a huge step forwards in such a short period of time.

In conclusion, I have gained a far better understanding of how to meet the learning needs of the pupils I teach and those I am responsible for as Head of Biology. From the results I can conclude that the handbook is an effective inclusion strategy and with the improvements suggested by the pupils in Appendix 13 (p30), it should be even more effective with the next cohort. I have been able to find out what types of resources they value most and least, and I am now very clear on the improvements I need to make to the hand book and our online support provision for next term. Since reflecting on the points pupils made about there not being enough application type questions and a need for mark schemes and the fact that they valued most highly the past exam papers and model answers with examiner feedback, I have decided that my next steps will be to try and meet these needs in a different, more effective way. Instead of having completed exam papers with guidance added to the handbook, I am going to record videos where I model to the pupils how to answer difficult application type exam questions, talking them through how to analyse and fully comprehend the question and then how to structure their answers whilst I actually complete the exam question myself. I might also try and get some of the higher performing pupils to produce some of these videos as extension work for themselves which can then be used to support other pupils who are struggling. I am confident they will find this even more valuable as through sharing good practice with other staff members, it transpired that this has already been done in the maths department with fantastic results and very positive feedback from pupils and staff.

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**Appendix**

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