

Ogden Trust Teach Physics Reflective Diary

Introduction

I undertook my Teach Physics internship at Alexandra Park School (APS) in Haringey, North London. It is a secondary school with a sixth form that has academy status and was graded as 'Outstanding' by Ofsted after its most recent visit in 2011. From early on it was made clear that Physics is a real focus within the school, driven forward by a thriving Physics department, boasting extremely enthusiastic and motivated teachers. I have previous experience in educating children, from a part-time tutoring job of two and a half years that takes place in a classroom-setting with up to twelve children, and from my time on the Teach First Insight Programme last summer. These experiences have given me the confidence to stand in front of a class of schoolchildren and speak, but other than this, I was aware that they may not have much bearing on my time in a school over five weeks due to the vast contrast in the different environments. This experience impacted my observations and the way that I saw certain events unfold in the classroom and how I approached certain situations.

Observations

On Day 1, I was introduced to the teaching staff in the Science department and was given my timetable, which featured lessons with Year 7s, Year 8s, Year 9s, Year 10s and Year 12s. I was very pleased to see that I would be observing lessons for every year group that was currently in the school (Year 11s and Year 13s were absent due to exams and study leave). I was also introduced to the form group with which I would be attached throughout my time at APS, a Year 8 form called 8X.

From the first day I began to observe lessons and immediately noticed many differences in approach between the methods used at APS and the methods I was familiar with from my own school days. A method used by many teachers for all ages of child is the 'Praise Chart'. If a pupil does something positive in class, then a mark is placed against their name by the teacher without them breaking stride or stopping their explanation. If a pupil causes a minor disruption or misbehaves in some small way, then a dot (known as a 'warning') is placed next to their name. If they receive a certain amount of positive marks, then a 'commendation' may be given (which filters back to the pupil's tutor), or if enough marks are given then a phone call home may be received. If three dots are received for negative behaviour, then a 'concern' will be given and the pupil's tutor will be notified.

The subtlety with which this method is used means that both praise and discipline can be distributed with minimal disruption to the class while every child is aware of whether they have been doing well or not. This can influence behaviour without any loss of time or any need to impact the lesson. The pupils are coached through their time in the school to be responsive to the Praise Chart and are aware that good/bad behaviour in a lesson can result in immediate praise/reprisal.

A further method used in many classes is to countdown from five or three to one to achieve silence in the class. The start and end of this countdown is sometimes punctuated with the ringing of a reception-style bell depending on the preferences of the individual teacher. Much like the Praise Chart method, the countdown is something that the pupils are coached to respond to and it becomes a reflex for the class to end their conversations and bring their focus back to the teacher. Owing to the enforcement of this method, pupils know that they are expected to respond to a countdown and know that to do otherwise is to risk receiving a warning. This method is particularly effective as it leads to minimal class disruption and does not require the teacher's voice to be raised as the pupils are practised at listening out for the countdown and responding appropriately to it.

On Day 2 I was given the opportunity to follow one of the pupils from 8X (who shall be referred to as Child H) around for the duration of their school day. This is a common practice for new teachers at APS and it serves to remind new staff that pupils have a full day encompassing lessons from multiple different departments, and that the mood and general behaviour of a pupil for the one hour that you teach them has many influencing factors. Whilst following Child H around, I observed him and his class in Drama, History, Design & Technology and Science. It was incredibly interesting to see the different ways in which Child H, and the rest of his class, behaved depending on the different lessons they were in and the different approaches of the different teachers. Some children who misbehaved and were rowdy in some subjects like Science or Design & Technology, would then behave completely differently in History for example. This appeared to not depend so much on interest in the subject, but on the relationship between the pupil in question and the teacher.

Building this common middle ground is something that I have learned is a key ingredient to being a successful teacher and to getting pupils onboard. During my early days at APS whilst observing lessons of the classes that I would soon be teaching, I took the opportunity to get to know the children in the classes and to start to talk to them and help them with their work. This had the effect of getting to know them and building a mutual trust. This common understanding sets out expectations that I have of the pupil, of how they should behave, that they should apply themselves to their work and that they should be respectful. It also allows the pupil to form the expectations that they can have of me, such as being comfortable asking me questions, knowing that I am willing to help them as much as possible and knowing that I will be firm but fair in terms of discipline.

During my lesson observations, the teachers commented on how well I had built a rapport with a number of pupils. The pupils felt comfortable asking me questions and were willing to put in effort when I asked them to; I was told this was especially noticeable with some pupils who were known to be more prone to misbehaving. It was evidenced to me how important this mutual ground is when I saw a Year 10 class I had been observing respond to a supply teacher. When confronted with the supply teacher, they acted completely differently than with their regular teacher because they had no bond with the supply teacher and no desire to work for her. On the other hand, when I came into the room, some pupils asked why I could not teach the lesson instead of the supply teacher as they would prefer me to teach them. This was all down to the fact that I had been working with them for a couple of weeks and had built a common middle ground with them. Furthermore, when some pupils began to get distracted and misbehave later in the lesson, I approached them and asked them questions about their work, which prompted them to ask me questions regarding what they did not understand. I also encouraged them to focus on their work and behave themselves and for the second half of the lesson they did just that. When the regular class teacher returned, I talked about this with him, and he confirmed to me that the reason they responded to me so well was the work that I had put in to getting to know them previously and we discussed how important this is as both the teacher and the pupils know what to expect of each other. My success in achieving this was evidenced when a pupil from the Year 10 class won a Science award in Celebration Assembly and she was so excited to tell me that she ran down the corridor and burst into a classroom just to do so. Also, a number of pupils from 8X expressed their desire for me to return to the school next year which was a very humbling moment.

Something that I learnt throughout my time in the school, and that became particularly apparent to me during some Year 12 lessons that I taught, is that it is important to not dictate to pupils when you are teaching, however, a hierarchy must be maintained to some extent as you are still there to lead the class. In my Year 12 classes, I took the opportunity I was given to go 'off syllabus' and teach them something that I had learnt at university over the last two years. They were a very capable Year 12 class of physicists and were more than able to tackle a watered down and condensed version of the content that I had been taught. The Year 12s provided the perfect opportunity to test the boundary between not being too dictatorial and still leading the class. Typical Year 12 classes are small, and owing to their high

ability, they were keen for me to stretch them and yet they are still pupils at school. I learned that it is good to encourage them to discuss topics and work things out for themselves, but they still need directing as with any other class. A method that I was taught by one of the Year 12 teachers, that I was then commended for using in a Year 8 class the next week, was 'Socratic Questioning'. This is a method in which you ask a question to the class, and then you take the first answer given to you, and ask another pupil to expand on this answer, and another to expand on that answer, and so on, until you have a thorough answer that has engaged multiple pupils and incorporated multiple ideas. This method of questioning had multiple positive effects within the class. It encouraged the engagement of multiple pupils, and it also encouraged pupils to not only deliver their own ideas, but to take the ideas of their classmates and merge these with their own thoughts and opinions. On reflection, the pupils enjoyed Socratic Questioning so much more than if I had asked a question and just taken the first answer before adding my own information to this answer. It promoted independent thought and the ability to develop ideas with peers. It allowed more able pupils to stretch themselves and those who were less able to hear ideas put forward in a variety of different ways. It is an effective method that I used multiple times in lessons when presenting new concepts to classes.

Another method that I put to good use with my Year 12 class that I taught multiple times was 'constructivism'. I was teaching them about Mohr Circles and seismicity, both concepts that are not really covered in any great depth at school. Constructivism relies on the fact that pupils' minds are not empty vessels that teachers fill with knowledge, but that pupils come to lessons with their own knowledge and ideas that can be used to aid in understanding new concepts in class. To visualise the movement of tectonic plates, I first got them to make their own models and then use these practically, by for example blowing up a balloon a little bit and putting it between the plates to simulate increasing fluid pressure. I then called upon their knowledge of pressure and volume and their mathematical ability, so that they constructed what I wanted them to learn from their own pre-held understanding, my job being to introduce the new concepts and ideas at the start of the lesson to lay the foundations upon which they add their knowledge.

A concept of knowledge building that I was introduced to by the Year 8 Science class teacher was the 'Zone of Proximal Development'. This is the idea that there is a given amount of knowledge that a pupil may have; without help they may be able to extend their knowledge to a certain point and with help they can extend it further, to the Zone of Proximal Development (ZPD). Then there is a point that is beyond what an individual could hope to understand at their current stage. It is the job of the teacher to try and stretch a pupil's knowledge into the ZPD. At a point in a Year 8 lesson, when I was teaching radar, I realised that the presentation I had prepared, and the explanation that I was delivering, was beyond the ZPD of the class, and I was losing their interest as I was over-complicating concepts. Upon noticing what was happening, I tried to backtrack and reexplain what I had said, which further confused the matter. This occurred just before the class teacher was due to take over and run a practical with the class. After the lesson, he explained to me the concept of the ZPD, and gave me some suggestions as to what I could do if I ended up in the same situation again. The key thing that he shared was not to backtrack in quite the manner that I did, as this leads to confusion. He told me that it would have been better to fully explain what I had in my mind to the class, either simplistically so that they could gain an understanding, or to go in to too much depth but with the aim of promoting curiosity. This method was evidenced by this same teacher in a Year 7 lesson on space, when as a result of some of the class questions, he proceeded to discuss Hawking Radiation with the class. They did not understand the concepts, nor did they need to, as their curiosity was piqued, and this was shown to be the best way to manage going beyond the ZPD.

Early on in my time teaching lessons, I learned that creating engaging lessons was a top priority to creating a good lesson. A pearl of wisdom given to me by one of the Physics teachers was that sparking interest in the subject was the key up until Year 9 where the subject takes on more of an exam-focused

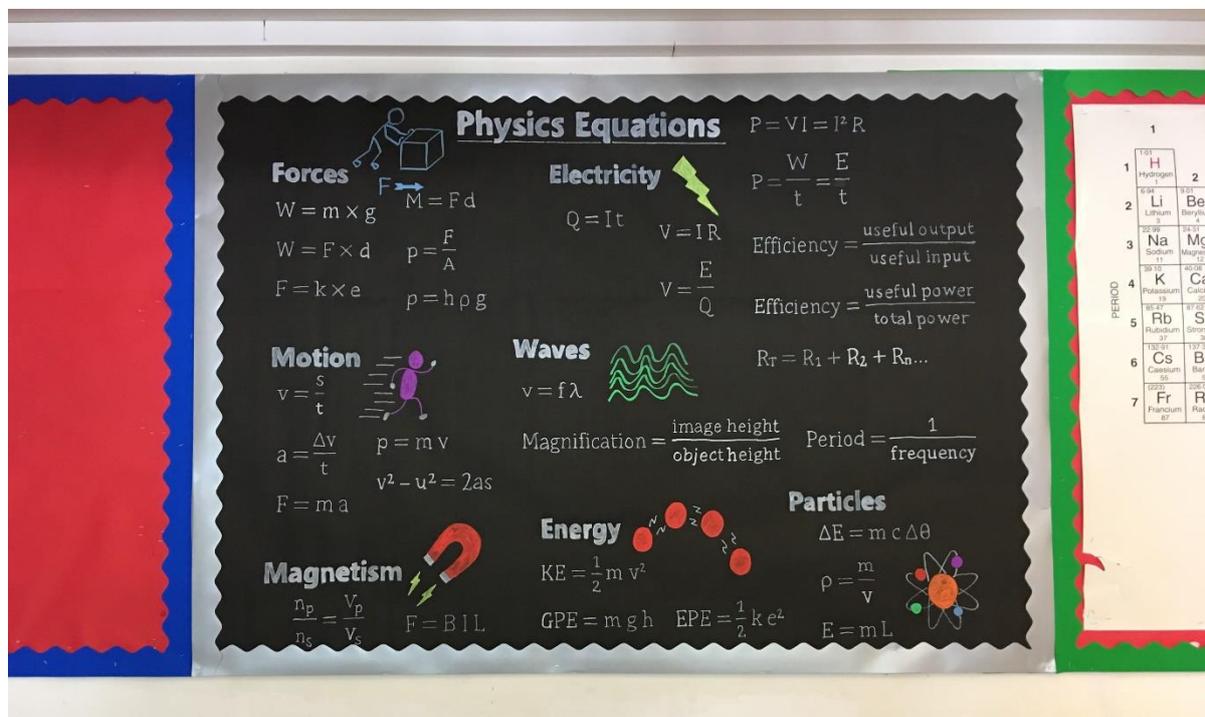
approach. With this in mind, when teaching climate change to my lower ability Year 9 class, I observed that I had been talking to them a lot in the lesson and had not given them too many tasks, so on the spot decided to give them a large task that involved creating a poster summarising what I had taught them over the last few lessons. With the same class but in a different lesson, I was commended for the manner in which I had made an exciting lesson that held the attention of the class during the whole of their last lesson on a Friday afternoon. The teacher observing me was a Physics teacher but was covering for the class teacher, and I told her that I was confident enough with my class management that she could carry on with her marking, but she reported back to me at the end of the lesson that my teaching was so engaging that I had managed to distract her from her marking and interest her, as well as the pupils, in my lesson.

I was repeatedly commended for the calm and control that I introduced to lessons for all age groups. I learned early on that it is not possible, with a class of up to 30 children, to increase the volume of your voice above all of them to get them to settle down. I soon accepted that to embrace the countdown method to achieve quiet was to save my voice and to achieve quiet in the most efficient way possible. Once I had practised this method and immersed it into my classroom management tactics, I was able to focus on other finer points. Despite using the countdown method, occasionally I would still raise my voice to try and overpower the voices of the class and found that this did not work. I was advised by class teachers to practise two things in terms of achieving quiet in the classroom. The first was to not begin talking when any member of the class was still talking, and the second, more difficult tactic, was to stop talking immediately should any member of the class start talking while I was talking. This served the dual purpose of reinforcing the coaching of the class in correct conduct and knowing when it was time for them to be silent, and also to assert the authority of myself as the teacher so that they will be responsive to my instructions. I was informed by a teacher observing my Year 10 lesson that I had displayed comfort with being an authority figure in the classroom during my interaction with a pupil. He was becoming increasingly disruptive in the lesson, so I walked over to him, instructed him to carry on with his work quietly and ask me if he needed any help. I then proceeded to walk away without waiting for him to respond to my instructions, and as I walked away, he did as I had asked him. The teacher reported back to me that this was a good display of confidence in my own authority. It also set out my expectations to the pupil, that I do not expect to have to stand next to him waiting for him to carry out my instructions.

I also received some useful advice with regards to classroom management. A verbal tic that I had displayed was to say “please” after instructing the class to do something. It was an inadvertent attempt to be polite, however, the teacher pointed out that saying “please” gave pupils an option to follow my instructions or not, as “please” turns my instruction into a question. Saying “thank you” after delivering instructions suggests to the pupils that they have already completed the instruction that I gave them, and I am then thanking them for doing so, and is a more assertive way to politely deliver instructions.

Over my time at APS I also learned to appreciate the importance of extra-curricular activities. A club that I became particularly involved with, and even ran one session of, was STEAM (Science, Technology, Engineering, Arts and Maths) Club. This club was aimed at Year 7s and its primary purpose was to inspire an interest in Science. The pupils who attended responded strongly to being given the freedom to experiment and build, in this case, their elaborate marble runs. This freedom to experiment is something that I learned is also important to encourage in the classroom. However, experiments in lessons do pose their own unique set of challenges. One experiment that I ran in a lesson started later than I had planned, and we ran out of time to properly complete it and get all the academic content from it that I had intended. Upon speaking to a few Science teachers, they told me how using experiments in lessons is a particularly difficult skill. They serve an important purpose for excitement and engagement in the topic, however, it can sometimes be difficult to assess the actual academic value of the experiment. This is something to be aware of in future Science lessons, and that it takes practise

to get the full academic benefit out of experiments whilst still making them exciting. I discovered that further aids to lessons such as wall displays are an often-neglected part of the classroom, as teachers do not have enough time to create the displays that they desire. I found that creating displays, such as the one pictured below, gave me the chance to assess how to communicate information and knowledge to children without being in the room, and it allowed me to especially focus on and hone methods of visual communication.



My physics equation board.

Conclusion

I spent a thoroughly enjoyable five weeks at an incredible school. This internship has inspired me to become a teacher in the future. It has taught me many things about teaching, about how to become a better communicator in the classroom, about how much work is done outside of the classroom, and about how rewarding it is to have had a positive impact on the life of a pupil. I now realise that teaching is about so much more than simply standing in front of a group of children and talking. Alexandra Park School has shown me that teaching is a constantly evolving discipline, to be honed, studied and improved.

Word Count: 3,472