Edge Hill University

PGCE Secondary in Science

Initial School Experience

Initial Planning Assignment

Planning and teaching in Secondary School

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Contents

1. Introduction

This report is a reflection of my whole experience at my first-placement school, St. Mary's College in Crosby. Actually this report demonstrates some of my initial experience development as well some dilemmas in science education.

To consider all the learning theories used by teachers to pupils is to appreciate Piaget that developed the first learning theory when he observed pupils.

`Infants live in a world of sensory impressions. As young children, they begin developing abilities to understand, think, and generalize about objects, even when the objects are not present. Adults have these abilities, as well as more advanced reasoning skills´ **(Alan Colburn (2003)** *The lingo of learning, 88 education terms every teacher should know* ´, **NSTApress.**

Planning and teaching science in secondary school is not an easy target, but the strategy is to consider some important theories of learning that might help me to develop my actual aim of becoming a science teacher.

Objectives? An interesting word to make me think and consider about my role as a future teacher.

`The objectives of secondary school science are to promote an understanding of the role that science had in the development of societies, to promote an awareness of the humanistic implications of science and to develop a critical understanding…´**Peter Fensham (2002)** *Development and dilemmas in science education.* **RoutledgeFalmer.**

When I think on the objectives of teaching science, I totally agree with Fensham. My first role as a science teacher, is to be aware of those objectives and try to put pupils able to achieve them by a step by step scale of progress, assessing their learning as well their difficulties. Basically I want to promote an understanding and development of skills (observing, classifying, experimenting, interpreting data, rational thinking, creativity etc.) that they might use for their daily life.

It's impossible to achieve these objectives without having some guidelines. The NC is the initial key tool that supports me to work it out on pupils' progress. Science does not stand on its own. All the science teachers carry responsibility not only for helping pupils but also making connections between children science learning, and other subjects crossing the curriculum and contributing to pupils' development in other areas.

St. Mary's College is a private school that doesn't follow all the contents of the National Curriculum. On this initial experience I adopted the strategy of linking the science curriculum with English and ICT as a way to make pupils understand the significance in knowledge development of this fact (`Use of language across the curriculum´ and `use of ICT across the curriculum´, **NC science (DfES/QCA).**

Besides being an initial key tool to start my initial experience planning and teaching in secondary school, the NC also lead teachers to understand what to do to assess pupils' progression? Actually this is one of the dilemmas in science education.

What is progression? How to evaluate progression? These are just an example of my doubts when I started my observation week during this placement. `Progression is about pupils making progress´ **(Jenny Frost and Tony Turner, 2005, p34).**

The reality is that a pupil learning more is not really a progression. As the days went by, I had the opportunity to understand this issue by achieving the conclusion that, learning more can be a necessary precursor of progression. A positive strategy to understand this educational problem is to see progression as when a pupil is able to link information and use it in other contexts or complex situations, achieving a good level of thinking skills.

Nowadays there are concerns that the NC in science is not engaging all pupils and the most important need actually are the changes focus on the need to develop scientific literacy. Pupils need to be able to expand scientific literacy knowledge and a good way to start, is to introduce this new point of view on my planning using the NC/QCA and the national strategy to support the learning challenge.

The NC remains the statutory framework which must be used as a basis for planning science in schools. Then, inside schools the schemes of work will ensure that the work for example in Y7 builds on what students bring from primary school, and work in Y8 and Y9 grow from these.

One of the teaching strategies that I tried to develop with the group that I talk below was getting these children to consider the scope of science. `It is all too easy for pupils to take for granted that they get taught different topics in their different subjects in school´ **(Turner (2005) *Learning to teach science in secondary schools*, RoutledgeFalmer).**

This was one of my first approaches to pupils when I made them understand by a class discussion, why there are certain things that they study in science lessons as opposed to those studied in other lessons.

Below I speak more about one of the groups that made me achieve and develop a good progress on my objectives in teaching science as well the school environment that surrounded me.

I observed several form groups lessons during the initial experience of my placement. On this report different topics are discussed, but the main objective is to share my initial school experience presenting my work developed with an Y7 group.

The corresponding form group 1G (year seven) started a new experience on Tuesdays, period two (9h35 to 10h45), Chemistry lessons. I refer to the words `new experience´ to describe their initial meetings with myself, a new teacher and also some of the creative and innovative methods (e.g. pupils using ICT, pupils planning experiments, developing autonomous skills as science students), that I have adapted to deliver the Chemistry curriculum at year seven. The level of performance in this group is good on a way that this form presents a good background in chemistry knowledge.

During the first two weeks I observed, organised and selected didactic materials. This enabled me to familiarise myself with the school, the department and the teachers. I started to plan for my Chemistry lessons when a scheme of work was supplied from my Curriculum Mentor. Issues around the differentiation process, use of digital resources in the classroom and specific learning and teaching styles were from the outset, embedded within my scheme of work and also within all my lesson plans.

A variety of tasks were given to me each week. Over the weeks I concentrated on specific tasks, for example, differentiation and classroom management. As the weeks went by I achieved specific outcomes in relation to the tasks. Week by week, I became more confident in my approach to the specific tasks. My planning and development reflected the issues that were raised during my tutorial sessions with my Curriculum Mentor therefore helping me to adapt my teaching to enable me to grow while training to be a teacher.

In collaboration with my Curriculum Mentor, and the staff of the department we discussed some of the pupils` backgrounds as a means to helping me get know the children and understanding their specific individual learning needs. This discussion made me be aware of the pupils' main difficulties, and enabled me to forward plan for specific learning needs in relation to engagement and the differentiation process.

The following report will explain and give practical examples in more detail the summary I have given in my introduction.

Introduction references

- Jenny Frost, Tom Turner (2005) *Learning to teach science in secondary schools*, RoutledgeFalmer.
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2. Planning and teaching

Year 7 Form Group

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Scheme of work

Sequence of 3 lesson plans

Concept Map

3. Reflection

On the first day of my initial school experience I was apprehensive but at the same time I was exciting about starting to train in St. Mary's College, Crosby. My Professional and my Curriculum Mentor really tried to make me aware of the general issues around the school and the science department.

After two weeks of form groups lessons observations and working together with staff, I started planning for my first week of teaching five form groups.

All of my first lessons generally have been good and I really felt motivated and excited to keep up with my work. The pupils gave me some feedback, and helped me to understand what I can do better to improve and make positive changes for the next lessons?   An example of this is when I set a worksheet/evaluation with just questions contained within it. They suggested that they did not respond well to this method of evaluation, which made me reconsider how I evaluate learning at the end of the lesson or for homework. I realised that to develop their own creativity during evaluation was a much more successful outcome for the pupils, and encouraged them to want to complete their homework rather than finding it a chore.

I will now focus my reflection on the form group 1G (year seven). This group reacted in a positive way to a new type of chemistry lessons every Tuesdays mornings as I've mentioned within the introduction.

I think that in this sequence of three lessons, week after week some strategies like the seating plan and the class assessment table developed by me (involving pupils behaviour during lesson, effort,

time keeping and homework tasks etc.) for pupils to view at the end of each lesson were most successful. Pupils react positively when they have a positive competition inside class. All of them tried to show their good abilities to be successful inside the class and during lesson after lesson. That was for me one of the signs of their progress.

In reflection, I would like to concentrate on continuing to encourage the production of homework tasks (to pupils reinforce and consolidate science topics) at each lesson, and I feel that this could be developed further with the pupils during my second term at the school.

I have also adapted my schemes of work to encompass individuals' specific learning needs including bright pupils, dyslexic pupils, dyspraxic pupils, gifted and talented pupils etc.
No matter what the pupils' individual difficulties are, I endeavour as a teacher, to provide the means to understanding the subject knowledge for all pupils. This means that I will adopt and adapt all specific learning strategies, that I can to enable all children to be `reached´ and inspired. (**"The great teacher inspires!"** by William Arthur Ward)

In my lesson plan structure its relevant to make a reference to the use of ICT. The children showed a great respect for all my ICT resources. These were used to motivate pupils learning processes using an interactive teaching tool. It was really enjoyable for me prepare all my lessons and digital resources, because at the end I felt the pupils had progressed.

`I am interested in the uses of technology in teaching physics. However, I am worried that some people consider technology a substitute for the teacher´ **(Johnson, P. (1992). Educational uses of technology. EUITNEWS, December, 4-7. (Curtis & Turner).** This article made think and emphasize that even the most impressive innovation can only supplement what I and the teachers have already taught. My new target will be to give an amazing science lesson without using some ICT resources. I would like to test my ability to develop and to achieve this target, as well make sure that pupils had a very good science lesson where they really learnt.

Having an evaluative approach about my planning and teaching, I can say that I need to set a few more targets where I was less successful like to emphasize and share with pupils more the learning objectives as well revisit them. I felt very confident teaching and I observed pupils progress using assessment tools just moderated by me.

Developing assessment is also one of my next targets. I need to focus more on individual assessment, approaching the different types of assessment (formative and summative). Actually to evaluate pupils it's hard, and it can be harder once I tried to moderate this assessment without having one-hundred per cent of support by the actual form teacher. I'm still developing tools and devices like (tests, portfolios and lab practical's) to assess students and let them know how their performance in science. I need to share and emphasize more with my forms the lesson aims as well their assessment during the lessons to improve my progress as a trainee teacher.

Next step will be to work on my targets…

4. References

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5. Attachments

Fig 1 – Pupils works

Fig 2 – Study Trip to science and Industry museum in Manchester

Fig 3 – Test for Hydrogen

Fig 4 – Main Chemistry Lab

Fig 5 – Health and Safety Posters