

Overview

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Assignment Title: A Critical reflection of the first teaching experience

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Pathway: Secondary PGCE

Link to OneNote document: https://uowtsd-my.sharepoint.com/:o:/g/personal/1903089_student_uwtsd_ac_uk/En0a4WE3E0pDiwabVyNKxTMBGNEtADQS0c0DHo_D43jlyw?e=ugxUkz

Assessment for Learning

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'Good teaching and learning means employing assessment for learning principles' (Donaldson, 2015).

Senses Investigation lesson plans: https://uowtsd-my.sharepoint.com/:f:/g/personal/1903089_student_uwtsd_ac_uk/EqIX82n85WVIsenp1pv6bpYBydqm1i6miCNBoYo0pSB03g?e=DHZY8X

Solid Fuels investigation lesson plans: https://uowtsd-my.sharepoint.com/:f:/g/personal/1903089_student_uwtsd_ac_uk/EgOYzR-itFIFvHVhUuTXjGoBOzG1a5MlkTynybCewcBKlw?e=e4SjsV

Sound Waves topic lesson plans: https://uowtsd-my.sharepoint.com/:f:/g/personal/1903089_student_uwtsd_ac_uk/EitiGq3dp_VBmcDZDjT1lqQBao25j1rDT_VOmt7HQ_P1Pw?e=KpPCBz

The links above lead directly to the lesson plans in the one-drive PTE1 folder. The main method of assessment for learning so far has been closed questioning, however there are other examples included within the lesson plans. In the Sound Waves lesson plans, in lesson 3, there is a worksheet that assesses their understanding of what had been covered up to that point. Also included is an extension worksheet for the MAT pupils.

Cross-curricular Responsibilities

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'Good teaching and learning regularly reinforces cross-curriculum responsibilities, including literacy, numeracy and digital competence, and provides opportunities to practice them' (Donaldson, 2015).

As with the lesson plans in the assessment for learning tab, the links are included below:

Senses Investigation lesson plans: https://uowtsd-my.sharepoint.com/:f:/g/personal/1903089_student_uwtsd_ac_uk/EqIX82n85WVIsenp1pv6bpYBydqm1i6miCNBoYo0pSB03g?e=DHZY8X

Solid Fuels investigation lesson plans: https://uowtsd-my.sharepoint.com/:f:/g/personal/1903089_student_uwtsd_ac_uk/EgOYzR-itFIFvHVhUuTXjGoBOzG1a5MIkTynybCewcBKLw?e=e4SjsV

Sound Waves topic lesson plans: https://uowtsd-my.sharepoint.com/:f:/g/personal/1903089_student_uwtsd_ac_uk/EitiGq3dp_VBmcDZDjT1lqQBao25j1rDT_VOmt7HQ_P1Pw?e=KpPCBz

In the beginning section of each lesson plan there is a section called 'meaningful links to cross-curricular responsibilities'. These sections contain the cross-curricular responsibility being focused on in that lesson.

Specific small group numeracy task lesson plan: https://uowtsd-my.sharepoint.com/:w:/g/personal/1903089_student_uwtsd_ac_uk/Eell6Q84NGdArVFH1xYALNgBIVZdXOQzLLmPM2EIAuXQdw?e=MYa8tT.

Problem Solving, Creative, and Critical Thinking

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'Good teaching and learning means employing a blend of approaches including those that promote problem solving, creative and critical thinking' (Donaldson, 2015).

See Touch test method lesson plan: https://uowtsd-my.sharepoint.com/:w:/g/personal/1903089_student_uwtsd_ac_uk/ESrMTYyiUShIqKdyX2YL7mMBhsn3a48peFC4RmD_o023tA?e=9uiUS0. Looking at two methods of the same experiment to encourage critical thinking about which is better.

See Prediction lesson plan: https://uowtsd-my.sharepoint.com/:w:/g/personal/1903089_student_uwtsd_ac_uk/EfbPK6rLWdRLrGZ4gJW68RwBc6TQSFPqmiCibCIITVHZ5g?e=8nECTj. Looking at using scientific reasoning to state which body part might be the most sensitive.

See planet research lesson with year 7: https://uowtsd-my.sharepoint.com/:w:/g/personal/1903089_student_uwtsd_ac_uk/Edt6pgvAMb5Kme3G-vGrHmABoXztRLCCowR3dueh0oNXsA?e=XN6mcH. Researching a planet in the solar system of their choice creating posters to present the information the pupils found. Develops their creativity and critical thinking skills.

Critical Reflection

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A Critical Reflection of the first professional teaching experience:

Introduction:

As part of the PGCE programme, student-teachers are placed in 2 schools with the time in each being split evenly over the duration of the course. There is also time spent in University at certain points throughout the year for the students to give feedback as to how their placement is going and to monitor if they are still on track for completing the programme. The focus however is on spending as much time as possible in the schools as that is where the practical experience comes from. These school placements are known as the professional teaching experiences one and two. The focus of this essay will be on a critical reflection of the first professional teaching experience (PTE 1) with respect to progress made towards the implementation of three of the pedagogical principles in practice laid out in the Donaldson report 'Successful Futures' (Donaldson, 2015); 'good teaching and learning means employing assessment for learning principles', 'good teaching and learning regularly reinforces cross-curriculum responsibilities, including literacy, numeracy and digital competence, and provides opportunities to practice them', and 'good teaching and learning means employing a blend of approaches including those that promote problem solving, creative and critical thinking'. The three principles along with nine others are the main attributes that the new curriculum will try to instil in learners to try to address the problems faced in the current curriculum in Wales. They should also reflect through the teachers as these principles should be at the heart of their practice.

Effective teaching and learning:

According to Kirschner et al. (2018), the effective acquisition of biologically secondary skills in certain cases can be enhanced by building upon biologically primary skills that are acquired sub-consciously. An example of this would be generic problem solving in relation to solving a problem in mathematics where the generic problem solving would be the primary skill and the mathematics problem solving would be the secondary skill. The secondary skill is a skill that is domain-specific and must be taught to someone for them to be able to apply it. In the context of teaching in schools, pupils are being taught biologically secondary skills every day as this is the way we communicate and transfer information to each other as a race. It could be argued that pupil-pupil and teacher-pupil collaboration leads to more effective learning as in a lot of situations, it would be very hard to obtain correct information about skills and their applications by means other than someone else. In terms of creating effective learning, allowing pupils to work in groups provides them with the opportunity to learn how to work collaboratively. However, to be effective the pupils have to be provided with expectations of how they should work in a group to see its full benefits (Welsh Assembly Government, 2010).

Collaboration between teachers can also have a huge impact on teaching and learning outcomes. Lesson study is one of the main ways in which teachers work together to improve the effectiveness of their own teaching practice which in turn can have positive influences on the subsequent learning. It allows them to focus in on different aspects of the lesson such as if pupils are finding the work challenging or easy, or if it is engaging for them. However, if teachers are not trained to be observers, they will miss aspects of the lesson that could have large impacts on learning and the exercise can be unbeneficial (Coe, et al. 2014).

For effective teaching and learning to take place, collaboration must be one of the core principles driving it, but also teachers and pupils first have to learn what it means to work collaboratively for it to be effective. This links to one of the four purposes Donaldson has set out in his report of trying to create enterprising, creative contributors as to contribute effectively to something that involves more than just oneself would come as a result of working collaboratively with other people. For the pupils to be effective in developing how they work collaboratively allowing for more effective learning, the teachers must first learn the importance of working collaboratively and how to do it effectively through methods such as lesson study or joint observations. There is a flip-side to this however. Working collaboratively definitely has its benefits and allows teachers to pick up on things they might have otherwise missed when developing their own practice for effective teaching, but a variety of methods must be used. A disadvantage of using lesson studies as a primary source of developing teaching is that having one or more observers in the room can influence the behaviour of pupils, especially if they are aware or become aware that they are the one being observed. This is known as the Hawthorne effect and it arises because of what a pupil expects researchers to be looking for (McCambridge, et al. 2014). Even if the pupil is told to act as they would normally, sub-consciously they will behave differently. If, however the main aim of the lesson study was not to address behavioural issues, but instead was focused on how much progress they are making through the lesson, this takes the behavioural effect of the Hawthorne effect out of the equation.

Another thing a teacher can do to ensure they are doing their best in creating an effective learning environment is to address three different aspects of how they teach; the planning of what they are teaching, its implementation, and finally evaluating how it went to see if it could be made better (Millard, 2000). In doing so they would break down their lessons into individual parts and see how each of these parts is affecting how the pupils learn making it as effective as possible. The implementation would then be putting the plan in to action to see if the outcomes were as expected and which aspects might need addressing. The final phase is a reflection back on the lesson looking at if it was as effective as it could be and if not, what could be changed to make it better for the learning. In an ideal situation, teachers would follow this process for every lesson they did allowing them to constantly strive to improve their teaching practice and consequently have a positive impact on effective learning. Effectively, this is just raising standards. The problem with this is that teachers were expected to raise their standards without any external help (Black and Wiliam, 1998). Personal assessment undertaken by the pupils and teachers known as formative assessment was designed so that both could find out what areas they needed to improve in, but if it is not carried out in the correct way, it loses its purpose. One of the issue's Black and Wiliam found was that teachers were not properly addressing pupils learning needs with regards to the feedback they were providing to the pupils. Rather than focusing on how to address their needs and move them forward, the focus was on where they were and collecting what marks they were getting. It meant that there was nothing being done to make the learning of the pupils more effective.

Nowadays, teachers are a lot more effective in terms of their collaboration with each other and addressing the needs of individual's in their classrooms. With the new curriculum for Wales, there is a much bigger focus on pupils needs and their wellbeing than there has been in the past. If they are addressed correctly, it could have a huge impact on the effective learning of the pupils. Furthermore, the fact that the curriculum is changing in such a way as to allow for more subject specialism, meaning teachers are playing to their strengths more, it means that the way they teach could become more effective as a result.

Conclusions about progress towards the three pedagogical principles:

With the new curriculum comes twelve pedagogical principles which teachers, trainee

teachers and the various other staff in schools around Wales should try to adhere to as best they can. Considering just three of the pedagogical principles, the first is that of the implementation of assessment for learning principles in one's own teaching practice. This can come in many different forms in a classroom setting. One such method used in the practice referred to in this essay was questioning; mainly closed questioning with a small amount of open questioning thrown in to assess for prior knowledge of new topics. The closed questioning was found to be very effective to assess what pupils were able to retain from previous lessons, but it can also be used as a means of assessment of one's own teaching practice as to whether the previous lesson was engaging enough for the students. With regards to the open questioning, it can also be used to create a teacher-guided discussion between the students (Cambridge Assessment International Education [Online]). This was especially useful in the classroom when trying to facilitate deeper thinking amongst the pupils as well as whole class engagement as any of the pupils could have potentially been asked something and so were required to think.

Practical lessons in science were also used as a method of assessment for learning in this study where the assessment came in the form of assessing their ability to follow a scientific method and get a complete set of results within the given timeframe. It is also a way to assess what practical skills the pupils have in terms of the manner in which they carry out an experiment and if it is done in a safe way. Assessment for learning in a practical lesson of a formative nature can be very useful for the pupil's learning as it provides a more holistic view of what can be done to make it more effective (Sedumundi, 2016). Following one of the practical lessons, the pupils had to analyse their results deciding which indicated the best result using numeracy skills and what that meant for the experiment. This was a type of formative assessment as it was useful in informing the teacher of their understanding of the underlying concept of the experiment through reflection via some mathematics; to see which fuel burnt best and observe what makes a good fuel.

Looking at the second pedagogical principle concerning the implementation of literacy, numeracy, and digital competency skills in to Science lessons, the most difficult aspect of this to include in the lessons discussed in this study was the digital competency. This is due to the lack of equipment necessary to fulfil the criteria for the digital competency framework within the school the professional teaching experience took place in. Improving pupil's literacy skills in science is commonly done through the media of scientific planning and writing; writing methods, predictions, hypotheses, and conclusions using key scientific terms and reasoning. During a lesson that was based on a general overview of the topic of sound, key terms were introduced to the pupils along with their scientific definitions such as amplitude and frequency. These were then recapped during the next lesson with an extended writing task where students had to answer questions using the terms that were introduced to them along with the ideas that come with them. This was done to give them a better understanding of how the key terms relate to the sounds we hear in everyday life. In doing so it also promotes discussion using everyday language to describe the ideas. This is known as double talk and it can lead to an improved understanding of the concepts by the pupils (Daw, 2013).

Another example of the implementation of literacy skills in the science lessons concerned with this study was scientific reading; reading and researching about current research topics in science. This was done in a lesson that introduced astrophysics and the universe to year 7 pupils where they had to pick one of the planets of the solar system and do online research creating a poster of their findings in the process. Reading in science allows pupils the chance to explore scientific concepts on a variety of levels informing them through a different medium of how science relates to their lives (Seddon, 2017). During the research lesson, it was found that the creative atmosphere of the classroom was enhanced when the pupils were given freer rein with how to go about doing the work.

Numeracy skills in science, particularly physics lay the foundations for how we learn. They are embedded in the physics curriculum as they are what we use to describe the world around us. Implementing numeracy skills into the lessons that were physics and chemistry based was less complex than incorporating them in biology lessons. In a biology lesson that covered a topic investigation of the human sense of touch, pupils had to perform a touch test on each other in pairs recording how many points of contact they felt on different parts of their bodies. Doing this several times provided them with enough results to construct a graph of which body part was the most sensitive allowing them to numerically analyse the results further. Biology appears to be more literacy and description based as opposed to numerically based. By incorporating numeracy in it we move the focus of the instruction from description based more towards problem based (Sorgo, 2010). This can benefit the pupils learning as it provides a more varied approach in the instruction, allowing more opportunities to learn something in a different way. Enhancing pupil's numeracy skills in biology could also have an impact on the other sciences; since they are mainly problem-based disciplines, it further reinforces their ability to tackle problem-based tasks which can carry over into everyday life. This links into the third pedagogical principle outlined by the new curriculum of making our pupils more able problem solvers, creatives and critical thinkers. During the teaching experience and due to the nature of science lessons, the instruction was based more on problem solving and critical thinking than creativeness as these seem to be more aligned with the science curriculum. Critical thinking development can be seen in a lot of the comparative aspects of science. For pupils to achieve the higher levels in their work certain criteria must be met; for example, to achieve a higher level in their scientific method planning, pupils must come up with two methods for an experiment deciding between them and justifying why one is the better of the two. This is where the critical thinking is developed where they use scientific reasoning to justify their thoughts. A team-taught lesson that was delivered during the teaching experience contained two different methods for a year 8 class doing the touch test investigation. This allowed pupils to see how there can be more than one way to perform an experiment to get the same desired result, but it also informed them of two different methods they could compare to get a higher level and develop their critical thinking skills. Furthermore, it was a useful differentiation tool to keep the whole class working at the same pace and occupied. The development of a pupil's ability to plan scientifically is important as when pupils get to college if doing science, they seem to have little understanding in the way of the concepts and terminology used when doing scientific planning (Saughnessy, 2017). In developing their critical thinking skills, pupils will also develop better-informed problem-solving skills due to enhanced skills in scientific justification.

Recommendations for development:

In order to develop the effectiveness of the teaching practice with regards to the pedagogical principle outlined in this essay of implementing assessment for learning practices, one has to incorporate a larger variety of methods to assess for learning. It gives pupils more opportunities to show where their strengths lie and this way, the chances of success for each individual pupil are improved and supported (Tomlinson et al, [Online]). This could also have a positive impact on pupils learning as they could become encouraged in lessons by playing to their strengths. In terms of development towards the pedagogical principle of enhancing pupil's literacy, numeracy, and digital competency skills, more attention needs to be directed towards finding opportunities for developing digital competency. In doing so, pupils could become more digitally competent in a world where technology is developing very quickly, but also it helps to develop according to one of the four purposes laid out in Successful Futures (2015); to become more 'enterprising, creative and critical thinkers' (Welsh Assembly Government, 2018).

Looking at the final pedagogical principle, developing its implementation for the practice of

teaching requires more creative approaches to the lesson planning and learning taking place. In doing, it will also improve their critical thinking skills (Ofsted, 2010). The three skills of creativity, problem solving, and critical thinking acquired by the pupils are indirectly linked in the way that improving on one can have a positive impact on the other two. It also means that if all three are incorporated in lesson planning, it can lead to a much more effective learning atmosphere in the classroom.

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