

A critical evaluation and the identification of next teaching and learning steps focusing on a case study of an individual learner or a group of learners, based on an observed critical incident.

1. Introduction

This assignment aims to assist one's own teaching practice by utilising Tripp's (1993) critical incident theory. To do this, one aims to write a reflection of a critical incident from observations made on the bridging experience. Reflection on critical incidents should improve one's understanding of why incidents, events and teaching techniques occur in the classroom. Tripp (2012: 24) defines a critical incident as "some event or situation which marked a significant turning-point or change in the life of a person or an institution". For an incident to become 'critical' there requires an evaluation and analysis in order to create a judgement. To formulate a critical incident, one has to describe the incident in detail as the incidents needs to be reviewed. Figure 1 demonstrates an example of how to formulate a critical incident.

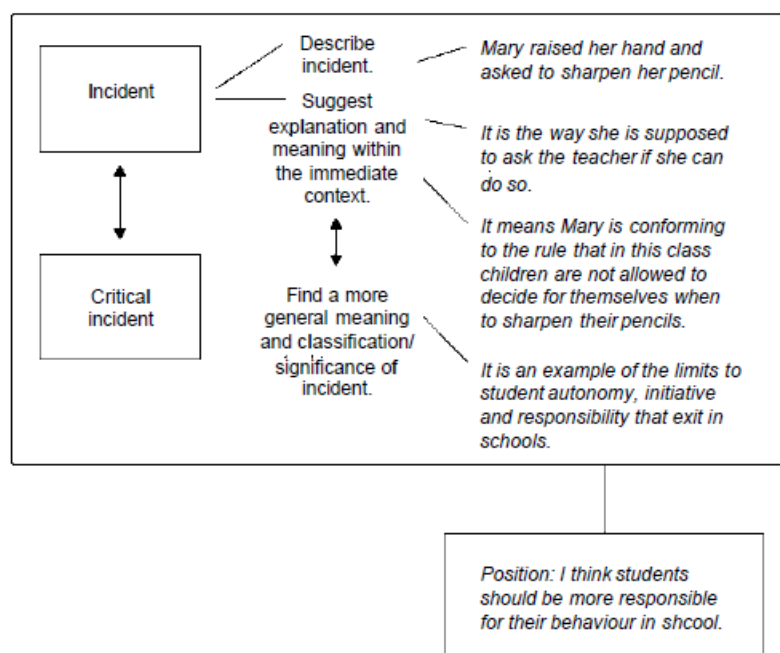


Figure 1. Example of a critical incident (Tripp, 2012)

Finlay, (2008) defines reflective practise as “learning through and from experience towards gaining new insights of self and practice”. Reflective practice allows one to evaluate their own performance. Reflective teachers can recognize an event, apply a blend of educational ethics as well as their personal values and beliefs, in order to improve or justify their actions towards a certain objective (Schon, 1987; Zeichner and Liston, 1996; Jay and Johnson, 2002). Reflection also bridges the gap between the theory, and teaching practice. Allen, (1997) states that there is a consensus that reflective practice leads to professional growth.

This assignment will firstly discuss lesson observations, research methods and then how the critical incident is linked to Donaldson’s (2015) four purposes of the new curriculum. Following this, a review of the literature around questioning and pupils’ misconception will be outlined. Finally, one will evaluate the critical incident in order to form a judgement and build upon one’s professional development.

2. Observation

Due to one’s Disclosure and Barring Service application not being completed in time for the bridging activities, one was not able to view the lessons in person. Excerpt videos on YouTube of different lessons were therefore utilised. Each video was five minutes long. The first lesson was year 10 English (KS4) where the aim was to explore characterization in Inspector Calls. The video presented the beginning of the lesson starter. In this, the teacher explained the brief of the January exam and then proceeded to recall knowledge from the previous lesson. The pupils were arranged in bands (A-C) with those in the same band sat on the same tables. The lesson was conducted indoors with a mixed ability range of pupils.

The next video showed a year 10 science lesson (KS4) in which pupils undertook a magnesium-oxygen experiment in a laboratory. During the lesson, the teacher explained the brief of the experiment. It was unclear in the video whether or not the class was of mixed ability. Most of the pupils were engaged and answered questions appropriately. A few pupils talked amongst themselves while the teacher spoke; pupils also talked when the class had to write down the brief of the experiment. However, every pupil immediately wrote down information when the teacher asked them to.

The third lesson's topic covered weather and climate with a year 7 geography class (KS3). To begin with, the teacher introduced the topic and asked the pupils for the collective geographical term for rain, sleet, snow, hail. The class was made up of mixed ability pupils. The pupils were new to the school and were engaged throughout. Each pupils' body language was positive and it was evident that they were keen to learn.

The final video was of a year 8 maths lesson (KS3) where the teacher recapped the work the class completed on powers. The lesson began with the teacher asking the pupils to quickly answer questions that were on the board. The difficulty of questioning increased as the lesson progressed. It was unknown if the class was mixed ability or similar abilities. Pupils were smiling and their positive body language suggested their enjoyment of the lesson.

2.1. Methodology

2.1.1. Observation Models

Diagrammatic methods involve the use of sociograms which accurately match interactions in a social context. Travers and Milgram, (1969) found that people are connected by six degrees of separation. Sociometry revealed the strength of people's relationships (Moreno, 1960). A sociogram of a system network analysis for pupils in a class (Cohen et al., 2011) can be seen below in figure 2, and shows 'stars', 'dyads' and 'triads'. 'Stars' are pupils who will be interacted with the most often, perhaps referred to as 'popular kids' in laymen's terms. 'Dyads' are sets of two pupils who choose to work with each other in a pair. Similarly, 'triads' are sets of three pupils who choose to work together in a small group.

Tracking involves an observer tracking pupils relative to each other as they move around in their environment. One of the advantages of tracking is that it can begin at any time of the day and can last however long the observer wishes. The observer can view pupil's interests and how long they can concentrate during different activities.

Pie charts and bar charts are an effective way of displaying diagrammatic data. They are easy to read, often colourful and useful for viewing a large amount of data at one time. However, preparing data for the charts can be time-consuming.

Time sampling involves recording events for a particular time period. This method of observation is useful if the observer requires to know events in chronological order (Cohen et al., 2011). The observer can use event sampling to tally the number of events that take place. This is a beneficial way of the observer noting particular teaching styles they may wish to replicate or explore further. Event sampling can be difficult to note down as incidents tend to happen quickly and can be difficult to predict. Snapshot sampling is an observational method carried out at a fixed point in time. Snapshot sampling involves only noting down events that have occurred only and not any subsequent events.

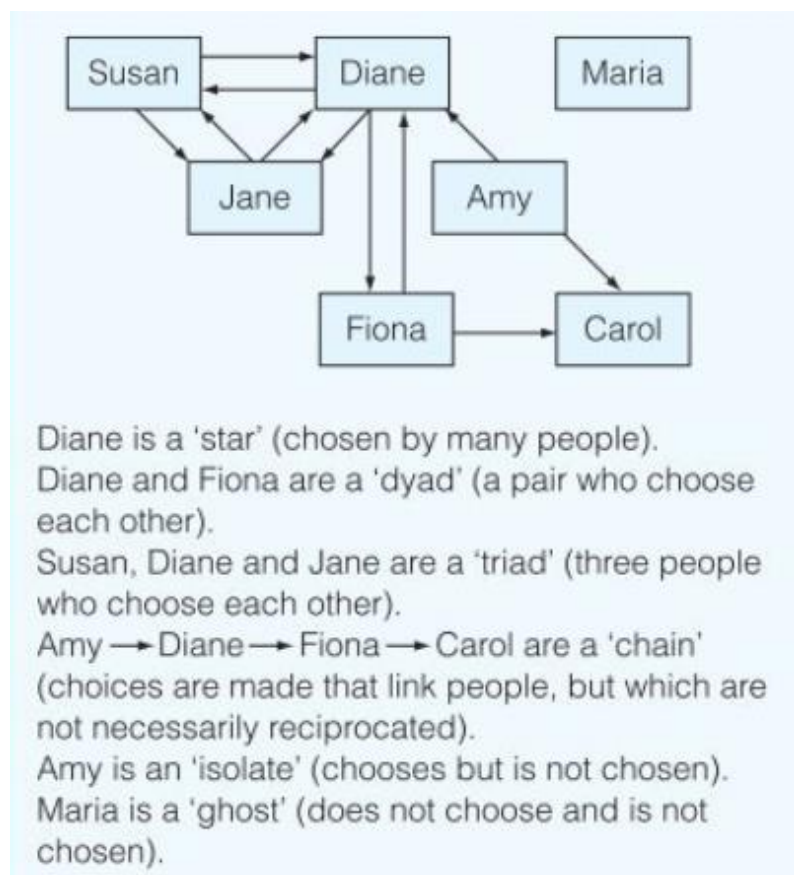


Figure 2. Sociogram of a system network analysis for pupils in a class (Cohen et al., 2011)

A written comparative study compares individuals, events or teaching techniques in order to distinguish similarities and differences between them. Anecdotal methods are short and less formal ways of noting an incident, or of techniques used. One of the pitfalls of anecdotal writing is that it is not academic. Cohen et al., (2011) suggested that a structured plan would be more beneficial if one were to know what they were looking out for prior to an observation. This approach would be more time efficient and would allow the observer to focus on the small details that one may miss if unprepared. On the other hand, Cohen et al.,

(2011) suggested using a less structured system when observing there and then. Both approaches have benefits and pitfalls. A structured approach is time-consuming to prepare but quick to analyse, whereas an unstructured approach is quicker to prepare but longer to analyse.

Portage is a developmental checklist and can be useful to note a pupil's current set of skills and needs. Profiling is a useful way to quickly establish a profile of a learner or event. Pre-coded checklists can be used to track the physical, mental and emotional development of pupils.

2.1.2. Rationale Behind the Observational Model of Choice

One intends to use the structured written method as it allows to concentrate on a particular critical incident in detail and in a systematic way (Tripp, 2012). One intends to focus on questioning therefore will be monitoring the questions asked by the teacher. This will be to see how the situation unfolds and will allow the use of numerical data, tallying and comparing the question styles. Event sampling will be utilised to preserve a tally of the types of questions asked. The use of structured writing will allow to prepare a tally sheet prior to the observations in order for one to focus on the details of the critical incidents.

2.1.3. Strengths and Weaknesses of the Critical Incident/Case Study Methodology

Tripp, (2012:25) stated that "Critical incidents tend to be 'typical' rather than 'critical' at first sight, but rendered critical through analysis". Reflection and evaluation of incidents allows for the observer to develop a judgement of the event, and the opportunity to justify or suggest action plans. Case studies are snapshots of an entity that one decides to focus on. In this case, one viewed a small portion of various lessons. A case study approach allows for a more in-depth investigation. Case studies emphasise reality and are normally easy to understand; they bridge the gap between theory and practice. Disadvantages of case study methodology is that one may not see the whole picture. A critical incident may occur however the observer may not know if there were any prior prompts for the incident, or how the incident was resolved. This can cause observational bias.

2.2. Critical Incident Linked to Donaldson's Four Purposes

During a year 10 Science lesson (KS4) (2a and 2b in the appendices), the pupils were tasked to write a prediction of a magnesium – oxygen experiment. As the class was writing, one student told the teacher that he did not understand what he had to do. The teacher then asked him a series of questions to help him understand. The teacher began using higher order 'how' questions but the student still did not understand. The teacher then broke down the 'how' question and turned into a series of lower order 'what' questions. The student then began to answer the 'what' questions correctly, so then the teacher asked the 'how' question again and the student was able to answer it. This incident has demonstrated the importance of structuring the questions appropriately in order to gain maximum understanding.

Donaldson's four purposes of the new curriculum for Wales are "ambitious, capable learners", "enterprising, creative contributors", "ethical, informed citizens" and "healthy, confident individuals". To begin with, the teacher asks a higher order 'how' question in a way that aims to test the pupil. This targets the "ambitious, capable learners" (Donaldson, 2015). Underlying that purpose is a need to "question and enjoy solving problems" (Welsh Government, 2020). When the pupil understood what he had to do he was able to explain the main concepts. This allowed him to complete the experiment and therefore "undertake research and evaluate critically what they find" (Welsh Government, 2020).

By the teacher enabling the pupil to get a grasp of the concepts, he could then "connect and apply their knowledge and skills to create ideas and products, think creatively to reframe and solve problems, identify and grasp opportunities, and give off their energy and skills so that other people will benefit" (Welsh Government, 2020). These underlying purposes align with "enterprising, creative contributors" (Donaldson, 2015).

The pupil could use the knowledge gained from questioning to "find, evaluate and use evidence in forming views" and "engage with contemporary issues based upon their knowledge and values" (Welsh Government, 2020), thus achieving the "ethical, informed citizen" purpose (Donaldson, 2015).

The outcome of the questioning allowed to pupil to "build their mental and emotional well-being by developing confidence, resilience and empathy, knows how to find the information

and support to keep safe and well, have the confidence to participate in performance, form positive relationships based upon trust and mutual respect and also, face and overcome challenge” (Welsh Government, 2020), therefore achieving the “healthy, confident individual” purpose (Donaldson, 2015).

3. Literature Review

3.1. Questioning

Questioning is a key part of a lesson and is used by almost every teacher. They can be directed at individuals, pairs, groups or the whole class. Questioning has three main purposes; to check understanding, to assist in recalling prior knowledge and to deepen pupils’ thinking (Enser, 2019). Other purposes include encouraging motivation and problem solving, supporting pupils to learn from each other, to challenge beliefs and values and also to control student behaviour.

The overwhelming majority of the literature suggest that to be successful in engaging students to think and regurgitate prior knowledge, a high amount of questioning is needed in a lesson. Indeed, Rosenshine, (2012) believes through studies of teacher performances, teachers who asked more questions, were more successful in deepening pupils’ understanding of a topic. This was backed up by Enser, (2019) who exemplified how questioning is a key pedagogical tool. High amounts of questioning can be found by Kissock and Iyortsuun (1982), who observed a teacher during a micro lesson of 10 minutes and tallied 30 questions asked in total. Morgan and Saxton (1991) observed a teacher asking up to 400 questions a day. On the other hand, Larson and Lovelace, (2013) argue that excessive questioning can undermine learning and lower the quality of student answers. Larson and Lovelace, (2013) also suggested that when teachers continue to ask “rapid-fire” questions, the detail and quality of the questions deteriorates. Instead, they suggest that teachers should focus on quality and purpose, even if it meant asking fewer in total. Further research would be required to validate that piece of research however.

Questions can be classified depending on the interaction between student and teacher. Open questions are questions that force pupils to think and closed questions are used to recall prior knowledge or respond with a pre-determined answer.

Open and closed questions are useful in differentiation as one could use more simple closed questions for lower level pupils and use open questions to push MAT pupils. The ratio of open-closed questions is important as it establishes the learning environment in the classroom. One would therefore think that open questions should dominate so that pupils are pushed to think to become “ambitious, capable learners” (Donaldson, 2015). Indeed, Brubacher et al., (2019) claims that children feel more appreciated and listened to when asked open questions. On the other hand, Kerry (1998) discovered around 60% of questions asked were recall questions, 12-30% behaviour management style questions and around 4% of questions being higher order, open questions during his lesson observations.

The development of questions from closed to open can be established using Bloom’s Taxonomy. Bloom & Krathwohl, (1965) classified various types of questions into levels, with the lower level questions requiring little thinking or to recall prior knowledge, to questions that require evaluation of ideas and concepts that inevitably form judgement. Figure 3 provides a visual aspect to the above information.

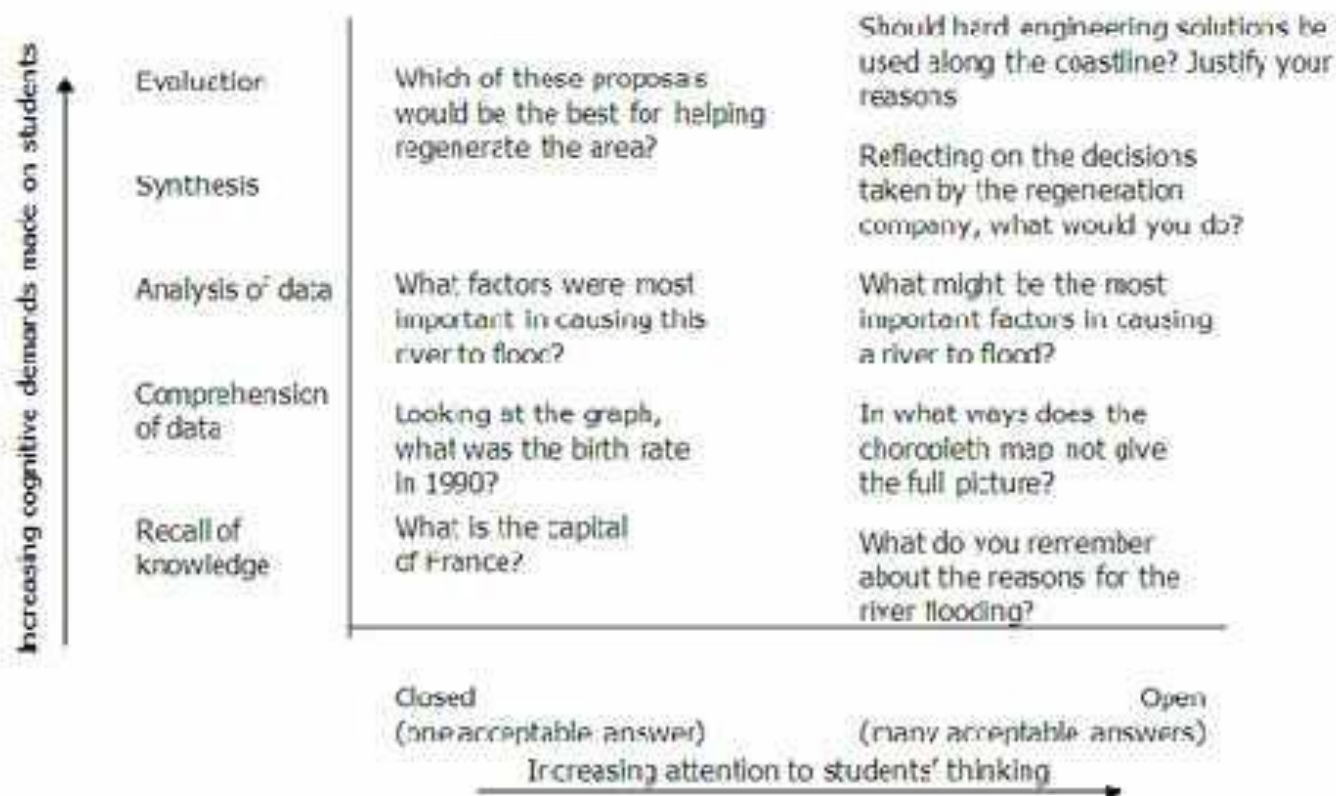


Figure 3. Original Bloom’s Taxonomy linked with cognitive demand (Roberts, 1986)

The use of Bloom's Taxonomy as a questioning framework provides teachers the ability to form a series of questions designed to their purpose. In 2001, the idea of Bloom's Taxonomy was revised and moves away from the "educational objectives" (in Bloom's original title), which steers to a more dynamic notion of classification. The authors of the revised taxonomy use verbs and gerunds in order to highlight this dynamism. This is shown in figure 4 below.

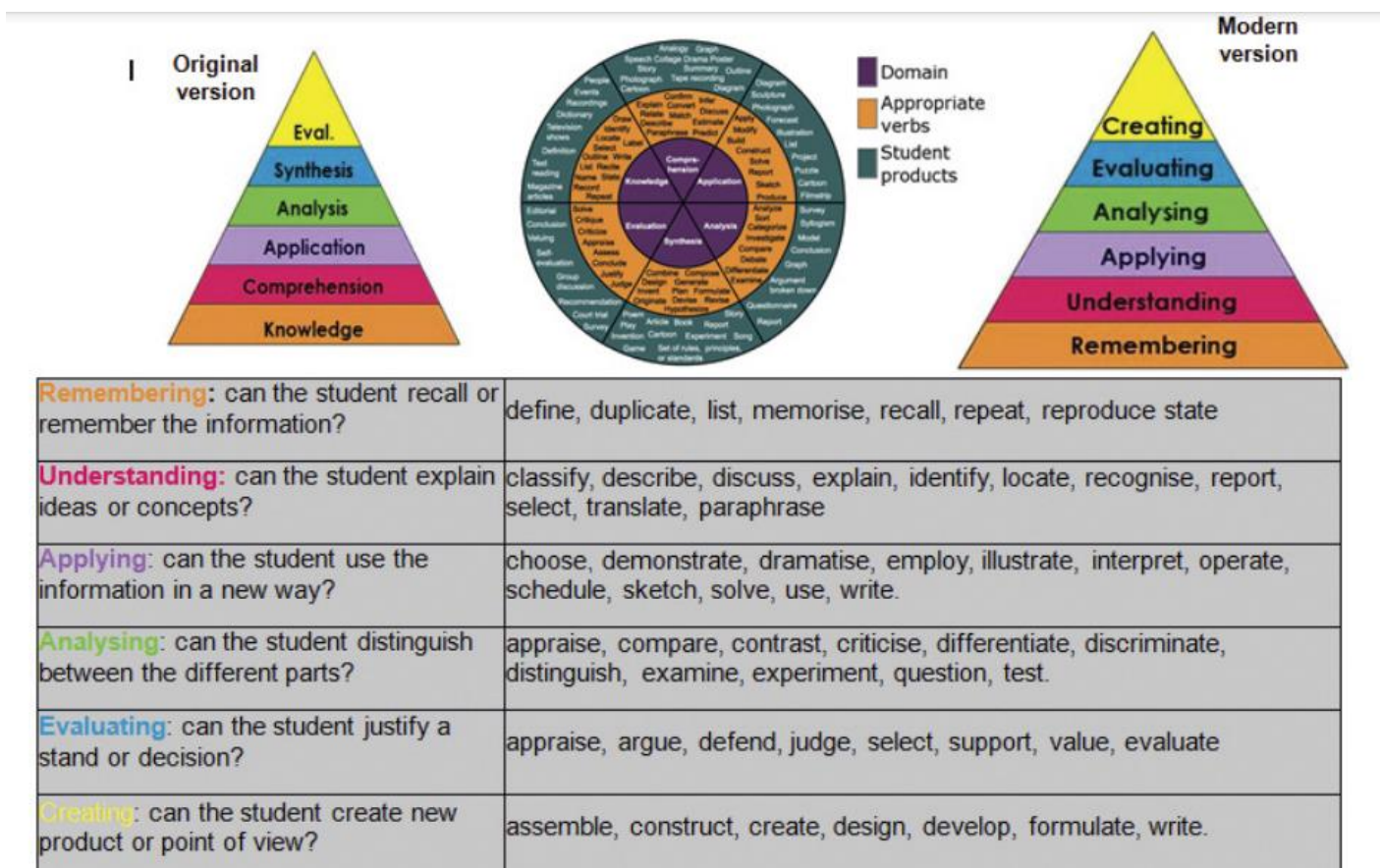


Figure 4. Revised Bloom's Taxonomy with the verbs added to provide a more dynamic classification (Powell, 2018)

Bloom's Taxonomy provides a framework for the type of language used to ask questions in the classroom. Conscription style questioning, where the teacher calls out a pupil and asks them to respond, is a useful way to get pupils involved and to motivate them to learn (Lombardi, 2019). Teachers can praise pupils when they answer a question correctly. Praise is particularly useful when it is directed at individuals who lacks confidence. Kerry, (1998) suggest that these pupils tend to stick to the back corners of the classroom with the pupils who want to be noticed and are keen to be involved are normally sat at the front and centre. Teachers that are aware of this and ask conscripting questions, can ensure a greater

level of engagement and learning by all in the classroom. On the other hand, if teachers select a pupil who genuinely does not want to answer a question but gets picked anyway, that pupil may feel intimidated and will make their anxieties worse. On the other hand, if a teacher knows particular pupils who are eager to be involved, but denies them the opportunity to answer questions, that can lead to frustration (Powell, 2018).

The conveyance of questions is important as they need to be asked clearly and given enough time to respond to. Black, (2004) states that if the pupils are not given sufficient time to think and form a response, they generally offer one-word answers, which is then briefly rewarded if correct, but brushed away if incorrect. Rowe, (1986) states that pauses after questions usually last around one second on average and therefore cannot generate suitable discussions of ideas. Instead, Rowe, (1986) suggests to leave a pause after a question of around three seconds to ensure time for thinking and high-quality discussions.

The accuracy and completeness of pupil thinking can be challenged by using socratic questions. Such questions move from the one worded closed question to more important for learning discussion type questions (Alexander, 2017). Once a closed question is asked, the follow-up questioning can address one of the six purposes from Allison and Tharby, (2019). These six purposes include, “classify pupil thinking, probe assumptions, demand evidence, consider alternative viewpoints, explore implications and question the question”. Each purpose will be determined by what the pupil responded to the original question with, and what the teacher is looking for. The pupil should have a deeper understanding, and more developed answer, about the concept they were discussing once the purpose has been met (Enser, 2019).

3.2. Pupils' Misconceptions

Misconceptions can arise when teachers question pupils. Misconceptions can form through personal beliefs through the way people perceive information (Schommer, 1990). Some might argue against this and state that beliefs may not predict teaching practice (Haney et al., 2002; Widodo et al., 2002) and is instead a complex relationship, with many variables influencing teachers' teaching behaviours.

Teachers' beliefs can influence their tolerance level when it comes to dealing with misconceptions. Teachers who are more tolerant are more positive towards misconceptions. They thought to perhaps consider misconceptions as an alternative view on a concept. However, tolerant teachers still insist for the misconception to be rectified (Abd Rahman, 2004). Teachers who are less tolerant and more confrontational, are more negative towards misconceptions (Abd Rahman, 2004). Less tolerant teachers believe that misconceptions are flawed and not useful for every day uses. These teachers believe that the best way to deal with misconceptions was to act confrontationally as they would quickly diminish (Abd Rahman, 2004). There are some teachers who are less aware of the misconceptions and also the issues surrounding misconceptions in everyday life (Abd Rahman, 2004).

There are various techniques that are designed to identify pupil misconceptions. For example, pupil interviews (BouJaoude, 1991; Osborne and Gilbert, 1980) allow pupils to provide their detailed understanding of a concept. They are however, time-consuming to conduct, record and analyse, and also may produce bias results depending on the personnel present in the interview (Marshall & Rossman, 2006). Multiple-choice assessment is the more popular choice (Ingram & Nelson, 2006), due to its large sampling capability and mechanical scoring (Kirbulut and Geban, 2014). There are disadvantages to this style too. Multiple choice tests do not provide the explanation for the choice of answer. The answer may be correct but the reason behind it may be mistaken. Due to the above drawbacks, researchers developed a two-tier multiple-choice assessment where pupils would complete the usual multiple-choice questions and then the second part contains a list of possible explanations for their answers (for example, Odom and Barrow, 1995; Tan et al., 2002; Treagust, 1986). Peterson et al., (1986) suggests that two-tier tests are a good way of understanding the reasoning behind the pupils' answers. On the other hand, Hestenes and Halloun, (1995) claims that the two-tier assessment "cannot differentiate misconceptions from lack of knowledge". Three-tier tests have since been developed where pupils are given the opportunity to state if they are sure of the answers to the first two tiers. Three-tier test work well with a large sample of pupils (Kirbulut and Geban, 2014), and as well as conduct the two-tier objectives, three-tier tests can differentiate misconceptions from lack of knowledge (Pesman and Eryilmaz, 2010).

4. Reflection/Evaluation and Next Steps

To be an effective teacher that makes a difference to pupils' lives, I have to be good at reflecting and evaluating my practice. I will evaluate the critical incident witnessed during my observations, and then identify the next steps that I would take in that situation. For this evaluation I will be using the Gibbs, (1988) model, due to the model being simple to use and enabling a clear reflection. This evaluation will aim to inform my own professional and learning development. The Gibbs model is made up of six sections; Description, feelings, evaluation, analysis, conclusion and action plans (figure 5).

Description – what happened?
Feelings – what did I feel about it?
Evaluation – was it a positive or negative experience?
Analysis – what sense can I make of the experience, where does it fit within my personal development?
Conclusion – what else could I have done?
Action plan – in a similar situation what would I do now?

Figure 5. Gibbs, 1988 reflection model (Quinton and Smallbone, 2010)

4.1. Description

Having already described the critical incident (refer to section 2.2 of this report and also 2a/b in the appendices), I will focus more on the rest of the model.

4.2. Feelings

As the teacher was addressing the pupil, I felt worried that the pupil would not understand the level of her questioning right after he said that he “did not have a clue”. As the teacher understood this and adapted her questioning, I felt relieved that the pupil was able to

answer her lower order questions. It gave the pupil the confidence to answer the higher order question and then to ultimately understand what he was meant to do.

4.3. Evaluation

The experience was largely positive. At the beginning, the teacher asked a higher order 'how' question which turned out to be too advanced at that time for the pupil. Positively, the teacher did not ask too many questions at one go, and did not interrupt or talk over the pupil during his responses. It was easy to tell that the teacher was listening to the language used by the student and adapted her questioning to suit him. During the course of the conversation, the teacher was beginning to understand where the pupil was in terms of subject knowledge. She therefore she adapted her questioning and broke them down to simpler 'what' questions. When the teacher did that the pupil was able to answer her questions, and had the confidence to answer the higher order 'how' question.

4.4. Analysis

At the beginning the teacher either misjudged the level of subject knowledge of the pupil or was testing the pupil's subject knowledge. This could be caused by the teacher not knowing the pupil enough to understand his level of subject knowledge. The observation was conducted via a YouTube video and there was no information about how far into the academic year this lesson took place. The lesson may have only been the first or second that teacher has had with that class and was yet to become familiar with the pupils. If this was in fact the case, the teacher showed to be a quick learner as she was able to judge how to adapt her questioning accordingly, in order for the pupil to understand the task.

4.5. Conclusion

The emerging theme from this evaluation has been the importance of the type of questioning used to understand where a pupil is at in their subject knowledge. To begin with, the teacher was unsure of the subject knowledge of the pupil therefore asked a higher order question and the pupil could not answer it. The teacher was then able to break down the question so that the pupil was able to answer correctly. They then used that knowledge to ask a higher order question. This ultimately allowed the pupil to understand what he had to do.

4.6. Action Plan

If I was the teacher involved. becoming familiar with my pupils and their subject knowledge would be a priority. Also, I would ask 'what' questions to trigger knowledge in students who are confused, building up with higher order questioning once prior knowledge has been triggered. The avoidance of further confusion for the pupil should also allow more time for me to assist other pupils as opposed to solely focusing on one pupil. This would allow engagement and learning for more pupils, and also inform my own professional development.

5. Conclusion

This assignment has discussed how important reflective practice is on one's progression of professional development. To do this, one has used the Gibbs reflection model to analyse the critical incident that occurred in the year 10 science lesson. The critical incident involved a pupil not understanding the brief of the task set and the teacher therefore used questioning to gain an idea of the pupil's subject knowledge. Once subject knowledge was understood, the teacher then adapted her questions accordingly and the pupil was able to proceed with the task. The questioning sequence displayed examples of the four purposes of the new curriculum and also, demonstrated a practical element of the literature review.

This experience has enabled one to develop the progression in learning aspect of pedagogy by understanding how learning develops in slow steps and is built on prior knowledge.

Furthermore, reflection on learning has been achieved through reflecting on the behaviour of the teacher and student in the critical incident. This assignment has developed one's ability to critically explore research more widely and thus progress professional learning.

While this experience has been worthwhile, the observation section was brief. By viewing YouTube videos, one had the luxury of replaying the video time and again. This is not realistic in practice as one is only able to view an incident in person once. This may have caused an unrealistic view on the critical incident. Also, the video did not provide the full picture of the school, how far into the academic year the lesson was conducted and if the teacher knew her pupils at all. On the other hand, by viewing the incident more than once,

one was able to note down the incident in great detail than might have been otherwise, creating a more in-depth analysis.

6. Appendices (1000 words)

(1a)

Year group, subject:

Year 10, English, KS4

Lesson details: (Context and focus -/AoLE/subject- is it near start of end of unit of study? Indoors/outdoors? Ability range? Any particularly relevant information).

The 5 minute video presented the first part of the English lesson, where the teacher explained the brief of the January exam and then proceeded to recall knowledge from the lesson prior.

The lesson was conducted indoors with a mixed ability range of pupils. The class was mixed gendered. The pupils were arranged in bands (A-C), with the pupils with same band sat on the same tables.

Classroom culture

(What is the classroom 'vibe.'? What do attitudes, dispositions, behaviors towards learning seem like at this point in time?)

The classroom behavior was excellent. The pupils were engaged and answered questions appropriately. When the teacher asked to write down information, every pupil did so immediately.

Objectives

(What happens in the environment that communicates the purpose of the experiences? What can be observed regarding the way lesson activities relate to these purposes?)

In this lesson, the pupils labelled a picture of a famous figure with information that was important to remember for the exam.

Direction

**(What can be observed that helps learners understand what they are engaging in?
What in the environment helps them understand how to achieve well)?**

On the board there was information that explained what was expected for each band. This allowed the pupils to focus on writing the correct information in a way that met the targets set for each band.

Access and challenge

**(What can be observed in the environment that enables engagement of learners?
What can be observed regarding levels of challenge?)**

Each table had a picture of the famous figure, there was also writing on the board, assisting each table ways of improving their grade. The task involved recalling knowledge from the lesson prior which may be challenging for some pupils who were not engaging in the prior lesson.

Assessment

(Can anything be observed about how student's existing knowledge is used? Can anything be observed regarding the development of knowledge during or after the experience)?

The only form of assessment was a Q+A at the start of the lesson, when the teacher wanted to recall knowledge from the previous lesson.

Specifics / Critical Incidents

(Are there moments which cause you to consider aspects of practice when you come across them in future teaching)?

The researcher was focussing on questioning throughout the research and made a tally of all the questions asked within the video. In total, 7 questions were asked in the 5 minute video...

2 'How' questions

3 'What' questions

1 'Why' question

1 'Anything else?' question where the teacher required more information.

(1b)

Details relevant to the research context. Date/time. Age/Stage of group. People involved. Contextual information from field notes.	The observation was conducted by watching a YouTube video; therefore, the date and time were unknown. The year group was year 10 and they were studying English at level KS4. The class was a mixed ability class and also mixed gender.
<i>What happened? A detailed description of what you observed and what thoughts on pedagogy and practice occurred to you as a result, looking towards your research.</i>	The teacher asked a question on how the famous figure was linked. The pupil gave a reasonable answer, however, the teacher responded with a dismissive "ok" and then quickly asked another pupil the same question. The teacher's response could perhaps have been more sympathetic and could perhaps try and get more out of the pupil or direct the pupil to the answer the teacher was looking for. The has demonstrated the importance of scaffolding to assist pupils in developing their answers and therefore has proven to be a fundamental pedagogical technique.

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(2a)**Year group, subject:**

Year 10, Science, KS4

Lesson details: (Context and focus -/AoLE/subject- is it near start of end of unit of study? Indoors/outdoors? Ability range? Any particularly relevant information).

The 5 minute video presented a magnesium-oxygen experiment within a science lesson. During the lesson the teacher explained what the pupils had to do to conduct the experiment. The lesson was conducted indoors in a laboratory. It was not obvious in the video whether it was a mixed ability class or not. The class was mix gendered.

Classroom culture

(What is the classroom 'vibe.'? What do attitudes, dispositions, behaviors towards learning seem like at this point in time?)

The classroom behavior was good Most of the pupils were engaged and answered questions appropriately. A few pupils talked amongst themselves occasionally while the teacher spoke and pupils also talked when the class had to write down the brief of the

experiment. When the teacher asked to write down information, every pupil did so immediately.

Objectives

(What happens in the environment that communicates the purpose of the experiences? What can be observed regarding the way lesson activities relate to these purposes?)

The purpose of the experiment was to test if magnesium and oxygen would react, if it did, how would it react. In order to conduct the experiment, the teacher went through how to operate the apparatus. The teacher went round the class and asked if they could predict what was going to happen.

Direction

(What can be observed that helps learners understand what they are engaging in? What in the environment helps them understand how to achieve well?)

On the board there were questions which related to the prediction that the pupils had to make. Each answer would formulate part of the prediction and after the pupils had answered every question, the prediction would be complete.

Access and challenge

(What can be observed in the environment that enables engagement of learners? What can be observed regarding levels of challenge?)

In front of the pupils, were Bunsen burners. For health and safety, the pupils had to be engaged and listen to the teacher's instructions so that there were no injuries. The challenge was that there was no certain outcome of the experiment, therefore the pupils had to think how the experiment could go.

Assessment (Can anything be observed about how student's existing knowledge is used? Can anything be observed regarding the development of knowledge during or after the experience)?	
The only form of assessment was a Q+A at the end of the video clip where the teacher checked that the pupils were learning earlier in the lesson.	
Specifics / Critical Incidents (Are there moments which cause you to consider aspects of practice when you come across them in future teaching)?	
The researcher was focussing on questioning throughout the research and made a tally of all the questions asked within the video. In total, 9 questions were asked in the 5 minute video...	
4 'How' questions 2 'What' questions 1 'Why' question 1 'Will' question	

(2b)

Details relevant to the research context. Date/time. Age/Stage of group. People involved. Contextual	The observation was conducted by watching a YouTube video; therefore, the date and time were unknown. The year group was year 10 and they were studying Science at level KS4. The ability of the class was unknown. The class was a mixed gender.
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information from field notes.	
<i>What happened? A detailed description of what you observed and what thoughts on pedagogy and practice occurred to you as a result, looking towards your research.</i>	When the pupils were asked to write down their predictions for the experiment, one student mumbled to himself that he “does not have a clue”. The teacher heard him and asked him a series of question to help him understand. The teacher began using ‘How’ questions and the student still could not answer the questions correctly. The teacher then broke down those ‘How’ questions and turned them into ‘What’ questions. The student then began to answer the questions correctly. Once the student knew the ‘What’ questions, the teacher began asking the ‘How questions again and the student was able to answer them. This research has demonstrated the importance structuring the questions in order to gain maximum understanding.

(3a)

Year group, subject:

Year 7, Geography, KS3

Lesson details: (Context and focus -/AoLE/subject- is it near start of end of unit of study? Indoors/outdoors? Ability range? Any particularly relevant information).

The 5 minute video presented the first part of the Geography lesson, where the teacher introduced the topic of weather and climate. The lesson began with the teacher asking the pupils for the collective geographical term for rain, sleet, snow, hail. The pupils didn't know and the lesson carried on with the teacher asking the pupils to write down what the weather was like the night before a then showed a satellite image explaining what happened. The lesson was conducted indoors with a mixed ability range of pupils. The class was mix gendered.

Classroom culture

(What is the classroom 'vibe.'? What do attitudes, dispositions, behaviors towards learning seem like at this point in time?)

The classroom behavior was excellent. The pupils were new to the school and were engaged throughout. The tried to answer questions correctly but could only answer a couple. When the teacher asked to write down what the weather was like the previous night, every pupil did so immediately. Each pupil body language was positive and was evidence that they were keen to learn

Objectives

(What happens in the environment that communicates the purpose of the experiences? What can be observed regarding the way lesson activities relate to these purposes?)

In this lesson the idea was to get the pupils familiar with the term 'precipitation'. As a starter the teacher asked the pupils to write down what the weather was like the previous night and supported that with a satellite image.

Direction

(What can be observed that helps learners understand what they are engaging in? What in the environment helps them understand how to achieve well)?

The teacher put a satellite image on the board to help visualize what the weather was like the night before. She then explained each type of precipitation using the image.

Access and challenge

(What can be observed in the environment that enables engagement of learners? What can be observed regarding levels of challenge?)

The teacher began straight away with the question of 'What is the collective term for rain, sleet snow?' to see if anyone knew or who had heard of that term before. Later on, the teacher asked who was level 4, 5 etc and adjusted the questioning accordingly. The pupils had to write on a piece of paper what the weather was like to instantly engage them in the lesson.

Assessment

(Can anything be observed about how student's existing knowledge is used? Can anything be observed regarding the development of knowledge during or after the experience)?

In the short time, the teacher used Q+A to test knowledge. Firstly asking for the collective term for rain, sleet and snow, then moving on to questions about the weather shown on the satellite.

Specifics / Critical Incidents

(Are there moments which cause you to consider aspects of practice when you come across them in future teaching)?

The researcher was focussing on questioning throughout the research and made a tally of all the questions asked within the video. In total, 12 questions were asked in the 5 minute video...

3 'How' questions
 7 'What' questions
 1 'Why' question
 1 'Anywhere else?' question where the teacher required more information.

(3b)

Details relevant to the research context. Date/time. Age/Stage of group. People involved. Contextual information from field notes.	The observation was conducted by watching a YouTube video; therefore, the date and time were unknown. The year group was year 7 and they were studying Geography at level KS3. The class was made up of mixed ability pupils and also mix gendered.
<i>What happened? A detailed description of what you observed and what thoughts on pedagogy and practice occurred to you as a result, looking towards your research.</i>	At the beginning of the lesson the teacher asked the pupils if they knew what the collective geographical term for rain, sleet and snow. One pupil answered incorrectly. The teacher then asked the question again and another pupil answered the question incorrectly. The teacher then asked a specific pupil to answer and he also answered the question incorrectly. The teacher then said that they will come back to that question after they have gained more understanding of the topic. This finding has highlighted the importance of knowing your classroom before asking specific content knowledge questions.

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(4a)**Year group, subject:**

Year 8, Maths, KS3

Lesson details: (Context and focus -/AoLE/subject- is it near start of end of unit of study? Indoors/outdoors? Ability range? Any particularly relevant information).

The 5 minute video presented the first part of the maths lesson, where the teacher recapped the work they did on powers. The lesson began with the teacher asking the pupils to quickly answer the questions on the board. The lesson then progressed to more difficult questions on powers and the pupils this time were allowed to use calculators. The lesson was conducted indoors, it was unknown if the class was mixed ability and the class was mix gendered.

Classroom culture

(What is the classroom 'vibe.'? What do attitudes, dispositions, behaviors towards learning seem like at this point in time?)

The classroom behavior was excellent. The pupils were engaged throughout and answered all the questions correctly. Pupils were smiling and the positive body language displays that the pupils were enjoying.

Objectives

(What happens in the environment that communicates the purpose of the experiences? What can be observed regarding the way lesson activities relate to these purposes?)

The purpose of this lesson was to build on the pupil's knowledge on powers. The lesson began with simple questions that pupils could answer without the need of a calculator in order to recall knowledge from the previous lesson. The questions then became more difficult so that the pupils had to use calculators.

Direction

(What can be observed that helps learners understand what they are engaging in? What in the environment helps them understand how to achieve well?)

After the pupils answered the first set of questions, the teacher began showing the workings out of each answer. He then told the pupils to write down the workings out in their notebooks.

Access and challenge

(What can be observed in the environment that enables engagement of learners? What can be observed regarding levels of challenge?)

It was obvious to see that each set of questions got harder as the lesson went on. In the beginning the questions were at a level where all the pupils could work out the answers in their heads. As the lesson went on the questions got more difficult and most of the children were using calculators by the end of the video

Assessment

(Can anything be observed about how student's existing knowledge is used? Can anything be observed regarding the development of knowledge during or after the experience?)

The first set of questions on the board were to test understanding from the previous lesson. As the lesson went on, the questions became harder and the teacher set a fixed

amount of time for the pupils to complete. After the time had elapsed, the teacher would then ask a student for the answer.

Specifics / Critical Incidents

(Are there moments which cause you to consider aspects of practice when you come across them in future teaching)?

The researcher was focussing on questioning throughout the research and made a tally of all the questions asked within the video. In total, 3 questions were asked in the 5 minute video...

- 1 'How' question
- 2 'What' questions

(4b)

Details relevant to the research context. Date/time. Age/Stage of group. People involved. Contextual information from field notes.	The observation was conducted by watching a YouTube video; therefore, the date and time were unknown. The year group was year 8 and they were studying Maths at level KS3. It was also unknown whether the class was a mixed ability class or not and the class was mixed gendered.
<i>What happened? A detailed description of what you observed and what thoughts on pedagogy and practice occurred to you as a result, looking towards your research.</i>	The teacher asked a pupil to complete 2 to the power of 5. The pupil said that he didn't have time to complete that question. The teacher then made the student answer the question there and then. The pupil gave a random number as he didn't know the correct one. The teacher then asked the pupil next to him who then answered the question correctly. This demonstrates the importance of knowing your class and who to ask the more difficult questions to in order to keep challenging them.

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