

Overview

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Assignment Title: A portfolio which illustrates a critical reflection of progress made on the planning and implementation of three pedagogical principles.

Pathway: PGCE Secondary

Link to OneNote: https://uowtsd-my.sharepoint.com/:o/g/personal/1900475_student_uwtsd_ac_uk/EiVfBr88hc1ItlCZRlAUqFEB_iq7vYlXlc0OBRmZonxN8Q?e=Tk8Exa

The following is a portfolio of evidence for three pedagogical principles from the first half of my professional teaching experience. Each piece of evidence has been annotated with a small amount of evaluation with regards to the success of it and some suggestions for future practice. Following the evidence in the portfolio is a critical reflection, in which the evidence is reflected on in more detail and some literature is discussed. In the final tab of this portfolio, there is a list of references.

Good Teaching and Learning means Employing Assessment for Learning Principles

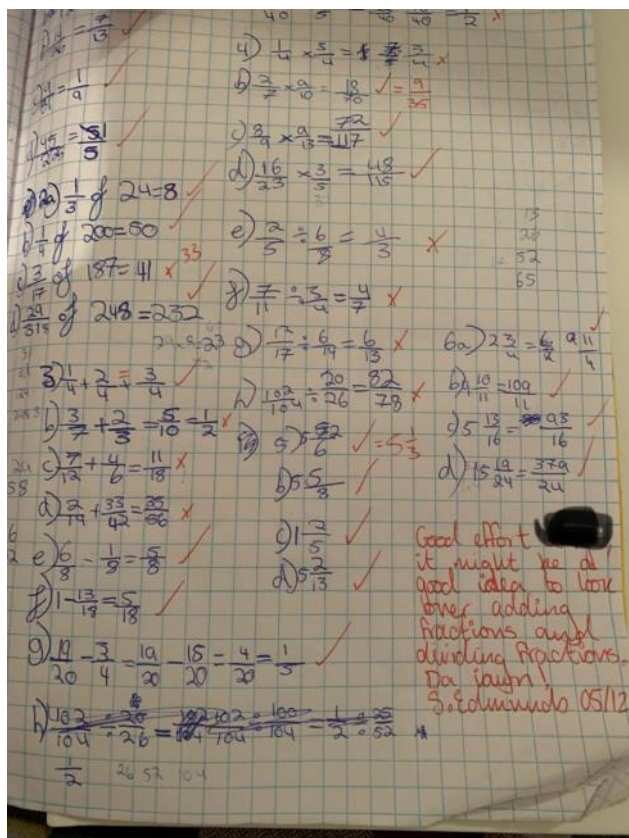
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1) Part of a lesson plan where mini whiteboards were used as a form of AfL

Plenary	(MULTIPLE CHOICE QUESTIONS APPROX. 5 MINS.)	(MULTIPLE CHOICE QUESTIONS APPROX. 5 MINS)	
	- Put the question on the board – ask the pupils to read through carefully and write down which they think is the correct answer on a mini whiteboard - Tell the pupils to put their boards up when they're done – ask a pupil to explain why they've put their answer - Ask if anyone can spot what the others have done wrong – if they can't see it tell them	- Read through the question on the board carefully - Write down which answer you think is correct and hold your mini white board up - Make sure you understand your answer so you can explain why you chose it - Think about why the other answers are incorrect	- Chance and Probability PowerPoint - Mini whiteboards - H&S: Make sure all bags and coats are under desks to avoid a tripping hazard

This was a plenary used at the end of a lesson in which a lower ability year 8 class was introduced to some probability. The reason I used mini whiteboards was because I wanted to check the understanding of the whole class rather than just a few individuals answering and the class teacher said this was a good and engaging way to do so with this class. I also used multiple choice questions because some of the answers were common misconceptions. I wanted to see if any of the pupils had developed these misconceptions so I could deal with them as soon as possible. I felt that using this was fairly successful because all the pupils participated and it opened up discussion to combat misconceptions that had occurred. However, I am aware that with multiple choice questions the pupils can just guess, so if I were to do it again I might not use multiple choice and see what answers the pupils come up with themselves.

2) A piece of homework from a pupil which has been marked



This homework was set to a higher ability year 9 class after all the work on fractions in the scheme of work had been completed. I marked in this way because it was how I had seen marking done before, and I felt like it was a convenient way of marking while meeting the school's marking policy. This made me aware of what had and had been understood in the class, and any questions that had been answered poorly by the majority of the class I could go

over again. But this did not necessarily cater to individual's needs. For future marking it might be more beneficial if I give an example of how the questions should have been answered when a certain question isn't answered well so the pupils have a model answer to follow when going back over it.

3) A part of the learning journal in which my questioning was praised

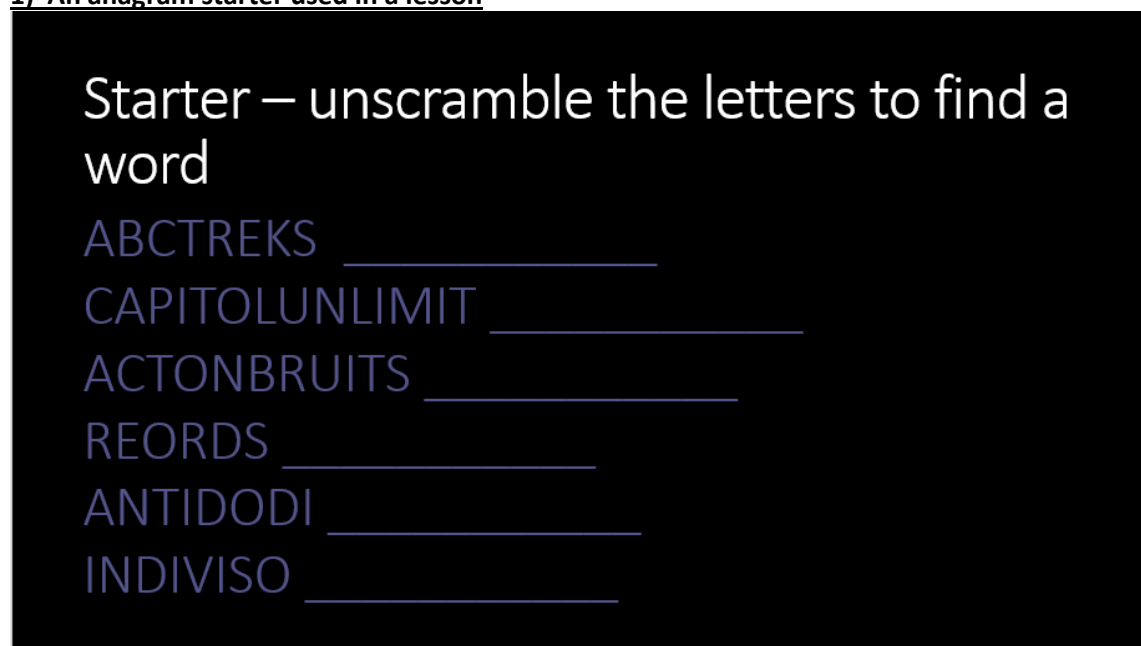
A photograph of a handwritten note on lined paper. The text is written in blue ink. The first line reads "Good 'how' questions when going through". The second line reads "starter.". The third line begins with a blacked-out redaction, followed by "answer led to good discussion. T".

This was a comment left in my learning journal in a lesson I taught with a top set, year 7 class. The questioning was praised because I made pupils explain what they were doing rather than just giving the answer. Using questioning to check understanding has been something of which the importance has been emphasised during my time on placement so far, meaning I have tried extremely hard to develop the quality of my questioning. I felt that this was useful for checking understanding because I could check that pupil's methods were correct. This also meant that pupils couldn't just rely on their friend's answers if they didn't understand. I do, however, appreciate that this isn't a good way of monitoring the entire class because there is only enough time to ask a few pupils.

Good Teaching and Learning Regularly Reinforces Cross-Curriculum Responsibilities, Including Literacy, Numeracy and Digital Competence, and Provides Opportunities to Practice them

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1) An anagram starter used in a lesson



I used this as a starter with high ability year 7 class. I felt like this was good to promote literacy because of the anagrams. It allowed the pupils to think for themselves about the words, while also promoting key mathematical terminology that they would be using in the lesson. I believe this was successful because the pupils were engaged and it encouraged discussion about the different words and what they meant. If I were to do this again, I would plan to have the pupils who finished it quickly to create their own mathematical anagrams as I believe this would further develop their literacy skills and it would be a useful form of differentiation for the different levels of literacy in the class.

2) An anagram starter used in a lesson

GET YOUR BRAIN IN GEAR

EXAMPLE
DITDIONA can be rearranged to make ADDITION

TASK

Work out the following Mathematical anagrams:

CNERTAI	Certain
YIKLEL	Likely
NEVE HEANCC	Even Chance
PIEIMOSBSL	Impossible
TOOMCUE	Outcome

I used this as starter with a lower ability year 8 class. Similarly to before, this worked well because the pupils were able to think for themselves. They used literacy skills that they may not have been thinking about going into the lesson. Again, if I do an anagram again, I will have the pupils to make a mathematical anagram by themselves to encourage even more literacy. Also, the literacy skills are fairly weak in this class, so I do not feel like I gave the learners in this class enough time to process and complete the task. In future I will make sure I plan to give more time to the learners in the class when it comes to literacy-based activities.

3) Part of a VAT lesson, promoting literacy and numeracy

You see your favourite book in a shop.
It costs £10.00 including VAT. How
much would you be paying if you bought
it?

This was used with a lower ability year 8 class. This was good for cross-curricular responsibilities because it promoted both literacy and numeracy. It involved reading and interpreting the key information from the words in the question, but also applying the information in a mathematical context. I used this question because it felt like it was appropriate to use worded questions in a lesson about VAT since it is something that is used in real life and it seemed to be done a lot from looking at examples of VAT lessons. In future lessons, I would like to plan to use questions like this more often to help pupils further develop these skills. If appropriate, I would like to prepare at least one worded question for every lesson to aid the literacy and numeracy cross-curricular responsibilities.

Good Teaching and Learning means Employing a Blend of Approaches Including those that Promote Problem Solving, Creative and Critical Thinking

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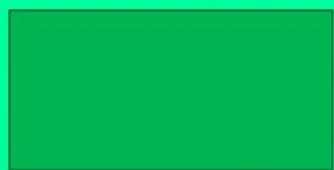
1) Part of a reasoning lesson

Your task...

- You have 40 one-metre long sections of fencing



- What is the largest rectangular area of land you can fence off?



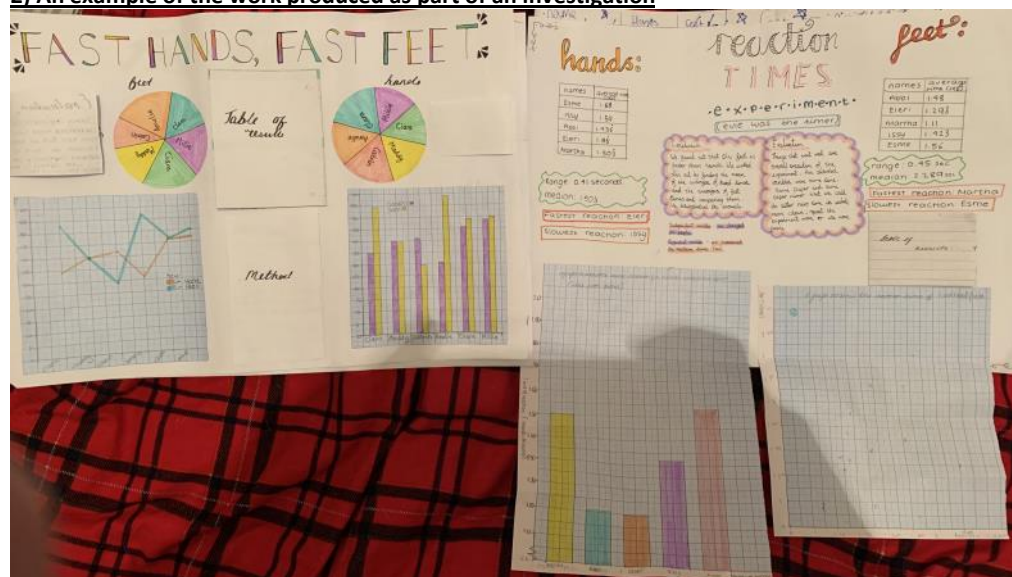
- Now imagine you can build your fence against a wall.



- What would the largest rectangular area you can fence off now?

This was used with a high ability year 7 class. This task was done because I only see the class once a fortnight, so the class' usual teacher suggested that when I see them I do reasoning/problem solving tasks based on the topics they had been taught previously. It went well because the pupils were engaged with the task and were able to think for themselves and participate in discussions with their peers. It encouraged pupils to think critically and helped develop problem solving skills because they had to try to solve the problem with a limited amount of information. If I were to teach this lesson again I would think about having the pupils ask some questions they want answered rather than answering questions I had prepared for them to be able to solve the problem, which would in theory further develop their critical thinking and problem solving skills.

2) An example of the work produced as part of an investigation



This was done with a middle ability year 9 class, where the class was working in groups. The investigation took place over the space of a week, and the pupils had to think about what they thought was the most appropriate way to measure hand and feet reaction time to find out if there is any sort of correlation between the two. They also had to consider what a good way of representing this data was, hence the number of graphs and tables. Due to the fact that every group approached the task differently, I feel like it really helped in promoting creative and critical thinking because they had to come up with their own ideas and evaluate their decisions. Also, because it was an investigation there was little input from me via direct teaching, so I feel it developed the pupils' problem solving skills. If I were to do this activity again I wouldn't let the pupils choose their groups because I believe that not all of the groups worked to their full potential. I would instead plan the groups out and have the learners work

in them groups. If I did this again I would also share the success criteria with the class, so every group is aware of what they are aiming for.

3) A problem solving task

 • How many cans high is this stack of cans? 5 • A shopkeeper wants to make a display like this but 10 cans high • How many cans does the shopkeeper need to make the display?	 • How are you approaching the problem? • Is drawing all of the cans out an efficient method? • 100 is a square number. Can the cans be arranged in a way that shows this? • What is the nth term for a sequence like this?
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This task was done with a middle ability year 8 class. Similarly to the first piece of evidence, I did this because I only see the class once a fortnight, so it has been suggested that I do engaging activities with them that use what they have been taught rather than teaching them something new. This has also been suggested because the behaviour of the class is relatively poor, so an engaging task is useful as a form of behaviour management. I feel like it had limited success because the class seemed divided in the sense that some were on-task and some weren't. This could be because I don't know the class well and they don't know me well, meaning I may have pitched the lesson at the wrong level and they don't see me as their 'proper' teacher. So, to help in the future I intend to observe some of their lessons to get to know each other more. I also will read more about problem solving activities to try to find out what is the most engaging and most appropriate for the class' ability.

Critical Reflection

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As a teacher, it is important to reflect on one's practice in the classroom. Shandomo (2010) says that reflecting on classroom experiences lets teachers reconstruct and recreate what they learn from their own teaching practice. Reflecting allows teachers to be more thoughtful of the critical nature of a learning environment, meaning that a suitable context can be created for learning. Reflection comes with the learner's needs at the forefront, rather than the teacher's. So, this critical reflection shall see some self-reflection on the three principles in Donaldson's 'Successful Futures' (2015) evidenced in the portfolio. Effective teaching and learning are rooted in, but not limited to, the three pedagogical principles focused on. The three pedagogical principles have a variety of literature that investigates the effectiveness of them, and this literature will be discussed. The literature will then be kept in mind when self-reflecting.

It appears to be the case that formative assessment within a lesson is useful to check learners' understanding, particularly when it is interesting. For example, Wiliam (2018) states that using mini whiteboards as a way of formative assessment is good because it encourages student engagement while being able to monitor the understanding of all the learners in the class. This is then developed to say it is valuable because it allows for the teacher to adjust the lesson to cater to the learners' needs. This seemingly displays that mini whiteboards allow good teaching and learning in a classroom because the lesson can be adjusted to create optimal learning conditions for the learners through the adjustments made after the assessment, allowing them to work in their zone of proximal development. Barton (2018) has a similar view as he believes that formative assessment for learning is important for distinguishing between what a teacher has taught and what a learner has learned. This could relate to the fact that even if a lesson went well and had huge student engagement, the learner's may have understood very little. Despite this, Wiliam (2018) has also noted that a limitation of using mini whiteboards and formative assessment is that the value of the evidence and adjustments is greatly dependent on the quality of the questions asked. This could mean that the questions cannot be too easy because all the learners should be able to answer them, but also not difficult to the extent that they are inaccessible.

Predominantly, the literature discussed through this critical reflection appears to have the stance that the way in which marking is undertaken in schools has several flaws. Black et al. (2003) notes that though marking is generally conscientious, it often does not offer ways of improving the work so the learner can move forward. Sutton (1995) has a similar view by stating that in the early years of her own practice she fixated on the presentation and cosmetics rather than the knowledge and understanding. While this seems to suggest that marking is a pointless exercise, the main emphasis looks to be that teachers should not just tick or cross the learner's work. It appears that the teachers should instead act on the work they have marked and address the learner in a manner that will assist in the advancement of their knowledge. Nevertheless, Barton (2018) offers that marking is useful for identifying any issues or misconceptions that the learners have developed. This may provide the teacher with an opportunity to deal with misconceptions that have appeared with most of the class, or even to talk to individuals if the majority is fine.

Assessment for learning can overlap with other good pedagogical practice. The Welsh Government (2010) says that assessment for learning can be used to put more attention on the procedure of learning rather than focussing solely on subject knowledge. This could relate back to what Wiliam (2018) said about quality of questions because if decent questions are asked not only are the learners having to put more thought into their answers, but they also have to demonstrate that they know how they have reached their response. So, this might mean that asking the learners to explain may help in avoiding 'lucky guesses'. Didau (2014) also believes that, regardless of how well questions are thought out, they do not necessarily assess learning well because forgetting happens alongside learning. Thus, potentially implying that questions, and formative assessment, only assess a 'snapshot' of

learning, being at the time the questions are asked.

Cross-curricular responsibilities are important, but some literature implies that it should not be forced into a lesson. Ward-Penny (2011) says that putting something cross-curricular into a lesson should transfer and synthesise knowledge, skills and understanding, enhance pedagogy and have a positive impact on the experience for the learner. This could mean that different cross-curricular activities should only be put into a lesson if there is a connection between it and the topic being taught. However, this does not necessarily mean that cross-curricular responsibilities should not be regularly reinforced in every lesson. It instead may mean that more thought should go into establishing a relationship between the lesson and the cross-curricular responsibilities. Webster (2013) has the view that when cross-curricular activities are done appropriately they can boost independent learning skills, which is like Ward-Penny's opinion. Contrasting though, Webster believes that it is rare that cross-curricular activities take place in secondary schools and that a way of combating this is looking to primary schools for inspiration. This could be due to primary schools having a more holistic approach to teaching, thus meaning secondary school teachers could draw inspiration from them. However, a limitation of this may be that it is not transferrable to secondary schools since most secondary schools teach subject-specific lessons and the cross-curricular activities used in primary schools may not relate to the secondary school curriculum.

Literacy looks as though it is a big priority in terms of cross-curricular responsibilities. Educational Endowment Foundation (2019) emphasises that literacy is essential in the learning of all subjects taught in secondary school and in real life, for example to be able to read and interpret questions, use key terms or to hold conversations. While all cross-curriculum responsibilities are important, this could mean that literacy has a more direct impact on learners' everyday lives. So, it may be the case that literacy should have more of a focus than numeracy and digital competence because literacy allows learners to access more in lessons and life. Savage (2011) opposes this in the sense that he stresses the importance of the skills developed through all cross-curricular responsibilities, not just literacy. From this, it is possible that while the impression is created that literacy is used most within a real-life context, the skills developed from all cross-curricular responsibilities are used equally. Consequently, this may mean that an equal amount of importance should be placed on every cross-curricular responsibility.

Problem solving in schools frequently has a focus on transferrable skills. Care, Scoular and Griffin (2016) state that the skills gained from activities that involve problem solving and critical thinking are crucial for employability, but also imply that assessing the development of these skills is difficult. This may suggest that while subject-specific knowledge is important, it is useful for learners to understand how the skills they are developing in school are used within the real world. It also might mean that it is often assumed that the skills are developed from these activities, whereas it could be more beneficial for there to be a form of formal assessment of them. Liljedahl, P. et al. (2016) say that learners who succeed at problem solving are more likely to be able to transfer a recognised procedure to another, even when the context is unlike. So, this could have the inference that a form of assessing the skills established through problem solving is to give the learners more problems that involve the same skills, but completely change the context. Those who adapt have been successful, those who do not need to spend more time developing their skills.

It looks as though critical thinking and problem solving can promote cognitive development. For example, Pill and SueSee (2017) found that learners were able to use and synthesise previous knowledge to find original and innovative solutions to problems, thus leading to cognitive development. This might mean that a blend of direct teaching and problem solving is most beneficial for learners because they may need to activate prior knowledge and apply it to different problems. If there is no prior knowledge, learners may not be equipped with the skills they need to solve problems and think critically. It was also noted that the teacher acts as a facilitator of critical thinking in lessons, which could mean that problem solving often allows collaboration to occur. The implication from this could be that a plethora of skills and cognitive development occurs due to problem solving activities in class. However, it is

important to note that a limitation of this study is that it was conducted in a physical education lesson meaning the findings may not relate to other subjects.

Problem solving, creative and critical thinking can influence learners and how they deal with the real world outside of school. OECD (2019) says that the practice of problem solving, creative and critical thinking within school helps learners to see and understand different perspectives, be aware of the limitations of people's views and transform thoughts into inventive solutions. The connotation from this could be that the skills developed through these activities will help all learners in later life, both with the pathway they decide to take in life and to assist them with their integration into society. Groupwork seems to be looked at positively in terms of prospects too. Vygotsky (1930) says that social interactions assist in the development of humans, seemingly implying that groupwork should be encouraged in lessons. Countering this, learners do not necessarily stay on-task if they can interact with each other, meaning little cognitive development would occur.

Before the self-reflection, some context about the school in which the placement took place shall be given using the information provided by Estyn (2019). The school is an English-medium school in South Wales. The learners in the school age from 11 to 18, but in this critical reflection only KS3 shall be discussed. Approximately four percent of the learners are eligible for free school meals, around eight percent have at least one special education need and roughly two percent do not have English as their first language.

When I think about the way I have implemented formative assessment strategies in my practice, I feel as though I have generally been successful, and the first piece of evidence illustrates this. Using mini whiteboards for formative assessment seemed to be useful, as is backed up by what Barton (2018) and Wiliam (2018) have said about formative assessment. I thought this was a particularly successful form of assessing what the learners had learned and understood because the learners had to answer individually and everyone had to show an answer, I did not accept learners showing nothing. I do, however, appreciate that a restriction of this activity was that it was multiple choice. The learners may have guessed the answers, thus meaning that it is difficult to know what they learned and what needed to be gone over again. So, I believe it would be more useful for me to evaluate what the learners have learned in the future by still using mini whiteboards to encourage full class involvement, but not to give multiple choice questions. If I give multiple choice in future, it may be a good idea to make the learners justify their answers by writing explanations on the mini whiteboards too.

Considering the marking I have done, I think that what I did had limited success, as is evident by the second piece of evidence. While the marking highlighted *what* learners could improve on, I gave no guidance for *how* they can improve, which is like the criticism of marking that Black et al. (2003) and Sutton (1995) mentioned as discussed previously in this critical reflection. I personally feel like this is not a demonstration of good pedagogy. While it was successful in the sense that I could gauge the overall understanding of the learners in the class, when I mark in the future, I will make a conscious effort to offer feedback on *how* to improve, rather than just *what* to improve. Not only do I think this will help the learners in aiding their understanding, but I believe it will help me to see more clearly what is worth going through with the entire class again. Despite the negative stance I have taken with my marking, I do believe the praise I used is good. I believe praise makes learners more confident and, therefore, more willing to learn.

Questioning has been a form of formative assessment that has been stressed during my time in school. It has been emphasised that 'just an answer' should never be accepted from a learner, they should always have to explain to demonstrate their understanding, which is similar to what Wiliam (2018) has suggested about quality of questions. While I initially struggled to question learners, I feel that I now do this well. I also tend to use much more open questions than closed ones now. The comment in my learning journal, the third piece of evidence in the portfolio, was the first time I had been commended for my questioning. Since then, I have had only positive feedback for my questioning. Moving forward I will

continue in the same manner but make sure I question as many learners as possible to check the understanding of as much of the class as I can because I am aware that a limitation of questioning is that often the more confident learners' voices will dominate, meaning quieter learners may be struggling without me noticing. To combat this, I may use a name generator to pick learners at random. I also acknowledge Didau's (2014) view, but to combat this I might question about previously taught content regularly to continuously check understanding.

While I am reflecting on my implementation of cross-curricular responsibilities in my practice, I believe it is important to state that I believe I have done very little to meet a good standard promoting digital competence, and thus I am limited in what I can discuss about it. Although, as a result of this self-evaluation, I am going to make a more conscious effort to promote digital competence in lessons and help learners develop these skills. I have conferred with my mentor about ways to do so, and we both felt a decent way to begin do this is by using iPads in lessons because they are versatile in the activities that can be done on them.

I feel like I have been successful in using a lot of literacy. For example, I feel like unscrambling anagrams in lessons, such as evidence one and two, is beneficial for the learners. I believe this because it involves learners using literacy skills that they probably wouldn't think to use normally, but it also is a good way of introducing the learners to key terminology, which is an idea that Educational Endowment Foundation (2019) put forward. For the most part, the learners have enjoyed unscrambling anagrams as a starter activity. Although I feel like unscrambling anagrams in lessons has mostly positive, I appreciate there have been limitations. For instance, the learners may not immediately see a link between the anagrams and the lesson which is comparable to the idea Ward-Penny (2011) suggested about 'forcing' cross-curricular activities into lessons. This sometimes leaves the learners in a state of disengagement and can also have a knock-on impact for the remainder of the lesson. I will continue to use starter activities like these because I feel they are a significant part of the lesson, but to improve their implementation in the future I will make sure there is a more obvious link between them and the lesson's content to ensure that learners are involved optimally, maybe by stating that they are key words.

Worded examples in lessons, such as the third piece of evidence, have been highly effective for literacy and numeracy. It promotes literacy due to the learners having to read through the question and select what is useful to them and numeracy because it provides an authentic context for the learners to work in. Learners are often enthusiastic about and engaged with worded questions as they seem to appreciate the challenge they provide in comparison to 'standard' questions. This seems to help with making a link between the subject content and literacy, as Ward-Penny (2011) said was important, but also develops some independence through the understanding of questions, which Webster (2013) proposed was a useful skill to develop through cross-curricular activities. I have realised, however, that learners who are weaker with their literacy skills sometimes struggle to access these questions. So, when I use worded questions in my future lessons, I will think of ways of differentiating the questions, like using scaffolds or differentiated sheets, to support the learners who have a lower ability in reading to ensure that all learners can access the questions.

I have taught a number of problem solving lessons in which the learners must use their previous knowledge and skills they have developed in lessons to answer a series of questions. In these lessons the amount of information given to learners is usually limited. To display this, the first and third piece of evidence in my portfolio gives only key information so the learners must think carefully about what they are doing to answer the main questions. These lessons generally work well for learners because they are engaged with the lesson and can discuss with their peers about what they think the best approach is to the questions, which often develops numerous skills simultaneously as Pill and SueSee (2017) proposed. Nevertheless, in this style of lesson I have found it difficult to monitor which learners are on task and which ones are not. To combat this curb in future lessons, I intend to 'chunk' the lessons more by taking feedback from a variety of learners at different intervals to check that they are thinking logically about the tasks and to confirm that they are remaining on-task.

Using group work to support creative and critical thinking worked well in my lesson for the most part, apparent by the second piece of evidence. The learners appeared to enjoy the opportunity to collaborate while investigating and most learners gave me the impression that everyone in the group contributed to the task. The output was a poster and all the groups were creative in the way that they presented their data, with each group showing it in a slightly different way, which is similar to what OECD (2019) said. The difficulty with this task came in the form of keeping certain groups on task. I believe I created this difficulty myself by letting the learners select their groups. In this case almost all learners chose to work with their friends, but unfortunately this did not seem to equate to the finest working conditions for every group. So, when undertaking groupwork in future lessons I will pick the groups carefully to try to guarantee that all groups work well together.

Through this critical reflection, numerous successes and areas to work on have been acknowledged. Ways of improving the areas to work on have been considered, with the literature deliberated helping to make better informed decisions in the forthcoming placements. The biggest area identified for improvement was the implementation of cross-curricular responsibilities, particularly digital competence, but even the successes had their limitations. I intend to use the ideas discussed throughout in my future practice.

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