

A critical analysis of the relationship between teacher subject knowledge and effective learning and teaching in the primary school.

Throughout this essay, I will be focusing on the relationship between teacher subject knowledge and effective learning and teaching in the primary school. I will consider the literature regarding teacher's subject knowledge (SK) and the impact it has on learning and teaching within primary schools by critically analysing different educational perspectives. Then I will evaluate and analyse my own SK during my teaching identifying how this impacted the effectiveness of the children's learning within my first Professional Teaching Experience (PTE) placement, with support from relevant research. I will identify ways of overcoming any arising issues to improve my future PTE. To maintain confidentiality of the school, staff and children will remain anonymous. The school will be referred to as School A and names will be initialled.

School A is a primary school of approximately 374 pupils aged three to eleven (Estyn, 2016). In School A '42%' (Estyn 2016:1) of children are entitled to Free School Meals which is increasingly above the average '20%' (Estyn, 2016:1). '47%' (Estyn, 2016:1) of their pupils have additional learning needs again significantly exceeding the general norm demonstrating deprivation (Estyn, 2016). For my PTE I was placed into a mixed Year One and Two class of 28 pupils, aged five to seven years old (18 males, 10 females). The class teacher and I were supported by a teaching assistant throughout my PTE.

Coe et al (2014) states effective learning and teaching are challenging. Teaching is deemed effective if the students' achievement levels are improved significantly in terms of future outcomes needed. However, SK is difficult to measure due to the components of great teaching being so diverse and differently understood (Coe et al, 2014). There are various components to effective teaching regarding SK (Coe et al, 2014). However, Shulman devises three main aspects for SK: Subject matter knowledge (SMK); Pedagogical knowledge and pedagogical content knowledge (PCK) by observing trainee teachers use and interpretation of learned theory to develop their teaching styles (Shulman, 1987).

Teachers play an integral role in effectively developing children's learning and understanding (Murphy, 2012). Two major aspects to the teacher's role which are significant to effective learning are their SMK and how this is delivered to ensure

children's understanding of the topic is correctly achieved (Murphy, 2012). Shulman, (1987) and Coe et al (2014) supports that teachers' SK is the framework of teaching and significantly impacts children's learning (The Holmes Group, 1986 and Carnegie Task Force, 1986). However, the way teachers approach delivering their SK and transferring it into an understandable manner to students is essential to their learning progression (Shulman, 1987 and Coe et al, 2014). Shulman (1987) and Coe et al (2014) states that despite the level of subject knowledge a teacher has they must have the ability to transfer this to meet all individuals' needs and abilities. It is vital for teachers to create passion and interest amongst children by understanding how children will incorporate and use SMK to develop their own perspective of the subject (French, 2005). Effective teachers should be able to develop understanding of any misinterpretations the students may have and know how to respond and overcome these misconceptions (Coe et al, 2014 and French, 2005).

As well as strong content knowledge, teachers must be aware of and use effective questioning throughout their lessons to confirm understanding is correct and to enhance student outcomes to ensure effective learning is present (Coe et al, 2014). It is implied that teachers must have strong knowledge in using effective questioning and assessment including when and how to use it within their learning environment. This is key to effective learning and can be used to clarify student's existing knowledge of what has been understood (Coe et al, 2014). By questioning, the teacher can use existing knowledge of peers to scaffold individuals' future learning and build an effective learning experience (Coe et al, 2014). It enables teachers to gain awareness and understanding of the pedagogical skills children have adopted through learning. This allows time for topic re-visitation and alternative approaches to be implemented to overcome any misunderstandings (Coe et al, 2014).

French (2005) argued that effective teaching is not ensuring that children achieve full marks on significant tests, but rather demonstrating quality responses to children's difficulties and challenges throughout learning. The teacher's response does not necessarily depend on their SMK being taught but more on their understanding, wider thinking and reasoning of any apparent queries (French, 2005). By teachers responding and modelling their thinking skills and persistence of developing deeper thinking to the topic, they are empowering the children to develop

inquisition. This encourages them to develop a desire for providing reasoning, strengthening their SK and understanding independently (French, 2005). However, Murphy (2012) believes that teachers with better understanding of SMK have more confidence when responding to any student questions or misconceptions. It is stated that teachers with better SK will be more adaptable to answering queries and will provide better responses (Murphy, 2012). Allowing queries to be discussed in lessons positively impacts students' learning experience to overcome any misunderstandings. This could positively influence the teachers experience by raising awareness of general misconceptions to which they can alter their teaching approach to avoid repeat incidence in future practice (Murphy, 2012 and Ma, 1999). Shulman (1987) supports this, stating teachers' self-reflection and teaching evaluation are key aspects of Pedagogical reasoning and action in enhancing student understanding and overcoming misconceptions. However, teaching is highly demanding leaving limited time for self-reflection from teachers and learners (Eraut, 1994).

The Knowledge Quartet considers the role of teacher subject knowledge in children learning effectively, focusing on mathematics. They focused on two aspects which was involved in Shulmans research: SMK and PCK (Shulman, 1986 *cited in* Rowland, Huckstep and Thwaites, 2003). The knowledge Quartet consists of four areas: 'foundation; transformation; connection and contingency' (Rowlands, Huckstep and Thwaites, 2003:97).

The foundation unit underpins the understanding of the trainee and beliefs of their classroom role, usually based on learned theory (Rowlands, Huckstep and Thwaites, 2003). Their understanding of their purpose enables them to undertake specific decisions in relation to pedagogy and their teaching principles previously deemed effective in theory (Rowlands, Huckstep and Thwaites, 2003).

Transformation involves how the trainees' knowledge is delivered throughout their teaching and lesson plans (Rowland, Huckstep and Thwaites, 2003). This unit is strongly supported by Shulmans theory. Shulman (1986) identified and emphasised the importance of teachers being capable of incorporating their own subject knowledge in a way that is accessible to their learners, to promote effective teaching. Therefore, the chosen teaching method utilised, and teacher's

understanding of their learners' capabilities and preferences is imperative, as well as great content knowledge. These aspects are crucial to accommodate learners' 'concept formation and language acquisition' (Rowlands, Huckstep and Thwaites, 2003:98). Teaching without these capabilities, learners may appear disinterested and develop misconceptions of the subject, inhibiting their learning and progression, therefore proving ineffective (Shulman, 1987 and Murphy, 2012).

Connection consists of linking the teachers' knowledge to the concept of what is required to be taught. This relates to the consistency of the planning and teaching demonstrated in lessons (Rowlands, Huckstep and Thwaites, 2003). The arrangement of activities and lessons must be considered to ensure that children are provided with sound understanding of primary topics or information which they can then use for future learning. By teachers using their SK they can consciously decide what information is primarily required to act as a base and scaffold future learning in other topics (Rowlands, Huckstep and Thwaites, 2003). This demonstrates that teachers can use their SK positively by teaching content with the intention that children can understand and adapt pedagogical skills in a cross curricular manner, promoting effective learning and enabling children to develop transferable skills (Rowlands, Huckstep and Thwaites, 2003).

The last unit is Contingency which includes all unplanned occurrences (Rowlands, Huckstep and Thwaites, 2003). This involves learners' responses to the lesson promoting wider learning opportunities not included in their lesson plans, where teachers must use initiative to answer any queries. This promotes children learning through independence and developing self-perspective from how the teacher has used their SK to teach specific topics and meet the curriculum learning objective (LO) (Rowlands, Huckstep and Thwaites, 2003). It is essential to consider children's ideas rather than dismiss their queries or stating they are wrong based on the teacher's SK. This could inhibit children's interest or passion for learning and could cause stress and low self-esteem. This prevents them voicing future queries due to assuming their thoughts are insignificant based on previous teacher reaction. This demonstrates teachers with deep SMK could sometimes be cynical resulting in ineffective children's learning (Rowlands, Huckstep and Thwaites, 2003).

The Knowledge Quartet can be supported by Askew et al (1997) research based on effective mathematical teaching. Askew et al (1997) identified that effective teachers demonstrated significant qualities in transmission, discovery and connection. Askew et al (1997) identified that children undertook effective learning when teachers could explain and demonstrate their SK in accordance to children's ability; children were given freedom to explore and tackle tasks independently and when teachers demonstrated links between children's existing mathematical knowledge to enable children to think independently and develop ideas creatively or through interaction. This was evident through pupil's performance improvement (Askew et al, 1997). Moreover, this emphasises that teacher's content knowledge is important, but it is not the most crucial necessity to effective learning. It is how the teacher uses their understanding of SK and transfers it to children to ensure they can then associate what they are learning in maths lessons to other areas of the curriculum or reality (Askew et al, 1997). A critique in education is not the SK of teachers but the level of subject knowledge transferred to children. Children have restricted awareness and understanding of how to use the content they have learned, where it has originated from and how to adapt or use it to overcome problems or produce evidence (Askew et al, 1997). This can be detrimental to those who become teachers as they can only then pass on their content knowledge with limited understanding to their learners, inhibiting progression and effective learning (Askew et al, 1997).

However, Shulman (1987) and Coe et al (2014) emphasise alongside SMK teachers require good classroom management to promote effective learning. To do this, challenging but achievable tasks and lessons must be set for all abilities within the classroom (Coe et al, 2014). Shulman (1987) outlines that teachers must have SMK of their lessons; they must sequence the material appropriately where children develop curriculum skills which they can interpret into reality in order to scaffold their future learning.

Using the example of teaching literature by reading a book, children can develop the skills set out by the curriculum and identify the moral of the story they are reading. The teacher breaks down the skills they need to understand first, forming a base or building blocks to ensure the children develop life long skills they can use in reality (Shulman, 1987). These building blocks include understanding the

meaning of words and the concept of what the writer is trying to inform the reader. This enables the students to develop their own perception of the story which they can then analyse and develop their own interpretations of and make connections to the real world. Allowing children to lead their own learning and to teach one another their interpretation of these stories is evident to be effective to learning regarding the case study outlined in Shulman's research of 'Knowledge and Teaching: Foundations of the New Reform' (Shulman, 1987:1). Furthermore, emphasising the importance of transmission, interpretation and connecting specific pedagogical skills and being able to overcome any inhibitors to learning are necessities to effective learning rather than teachers having quality understanding of the subject (Shulman, 1987). Shulmans (1987) outlines that teachers who demonstrate these attributes discussed previously have more significant impact when promoting effective learning and defines them as having great PCK. Shulmans strongly believes that PCK is far more significant than having SK alone. However, it is an aspect that teachers find challenging (Shulman, 1987). The teacher's views and attitudes towards the subject also impact student's learning. It is evident that a teacher who is passionate about what they are teaching will maintain engagement and interest from their learners (Shulman, 1987). To help maintain this engagement teachers must have understanding and awareness of any educational resources or materials which they require to deliver and teach their subject matter content (Shulman, 1987).

Throughout my PTE experience I taught various subjects. English was a challenge throughout my own academic experience, so I was apprehensive about teaching this due to low self-confidence of my ability and English SMK. Considering this, I spend copious time preparing my English lessons, however, my low self-confidence did show. I taught in accordance to the curricular LO "to identify and use text features" (Curriculum for Wales (CfW), 2015:20); 'to use connectives; to write compound sentences; use some ordering words and standard forms of verbs' (CfW, 2015:25) over a two week duration. After developing understanding of class abilities, I believed the lessons curriculum LO was too complex for children to understand. To encompass all abilities, I created a child friendly LO and simplified their success criteria (appendix 1). Shulman (1987) supports this as an effective teaching approach. By breaking down my own SMK into child friendly forms, this ensures understanding, accessibility and increases children's confidence. In turn, this

prevents misconceptions and children being overchallenged, instead developing a desire to learn and promoting effective learning (Shulman, 1987 and Murphy, 2012).

It became apparent children could not grasp some key concepts. With lack of knowledge of how to approach this I sought class mentor advice and simplifying my vocabulary became a new target. Replacing time conjunctions with connectives appeared significant to children's understanding. Over time children could define and identify the purpose of time connectives and other key features in preparation to writing instruction. Through preparation my SMK was strengthened, and good SMK was demonstrated throughout the lesson, which was successfully transferred to the children as they developed effective understanding of task set. This is evident through the class mentor's observation feedback commending age appropriate communication and stimulating resources incorporation key curriculum information (Appendix 7). Shulman (1987) emphasises teachers must be considerate of differentiation to maintain interest and engagement for learning to be effective. Teachers must have pedagogical skills and PCK to ensure their SK is adapted to meet all individuals needs and capabilities, rather than just having good understanding of the subject in relation to the curriculum (Shulman, 1987). My knowledge regarding needs and abilities of individuals was relevant and sufficient, emphasised through class teacher's comments surrounding good knowledge relating to differentiation of class ability and adaptations made to cater for this (Appendix 7).

To ensure children did not mis-understand the purpose and key features of and before creating their own instruction writing, I asked questions at carpet time. Children took turns to highlight the key features in the instruction text with support if necessary. Asking effective questions was beneficial to confirm correct SMK context was understood as children provided reasoning relating to the purpose for each key feature, demonstrating sound understanding (Coe et al, 2014).

The next step was making fruit kebabs. We made these prior to writing instructions so that children could identify and describe the steps they undertook in detail achieving an additional curriculum skill (CfW, 2015) involving equipment, ingredients and key elements such as times connectives and bossy verbs. This was evident throughout collaborative learning with peers. For example, H.H. stated "all ingredients need to be in a list". In response to ordering our process, C.M said, "First

we need to wash the fruit". To which I responded praise to the key feature and asked, "When and why do we use time connectives?". This open question promoted engagement in class discussion, evidently fostering deeper understanding from children demonstrating higher order thinking had been tested (French, 2005). High level of involvement in discussions is significant in effective learning according to constructivists (Rowland, Huckstep and Thwaites, 2003). The correct responses included through the reflection plenary demonstrated children's capabilities of meeting the curriculum LO and proving that my SMK was transferred in a child friendly manner. Reflection is emphasised as an important aspect of teaching and learning (Shulman, 1987). Once all concepts were fully understood we created instructions, written or typed using iPad app: book creator. Donaldson (2015) underpins that digital competency is a vital aspect in promoting effective learning and will be made compulsory in all subjects when the new Welsh curriculum is introduced. Through marking and reflecting on children's work it was evident effective learning was promoted, this being demonstrated in my RAG ratings (Appendix Two) by the majority successfully achieving the LO set in accordance to the curriculum.

Regarding mathematics teachings I felt my subject knowledge was substantial (appendix 3) Personally I thought the class would be able to achieve curriculum LO: 'recognise and understand odd and even numbers up to 20' (CfW, 2015:31) differentiated for the contrast in ability. I considered practical activities which could be undertaken by children to help them grasp the difference between odd and even. I carried out my lesson plan consistently demonstrating different methods we could use as a class to identify odd and even numbers. This involved drawing objects or using concrete objects for various numbers (Haylock and Cockburn, 2017), placing them in pairs to identify if they were evenly paired or have an odd object left on its own. These concrete resources included numicon or multi-link. Haylock and Cockburn (2017) identify that using concrete objects within maths was beneficial to support children to count correctly, proving effectiveness.

Despite my confidence in SK for this mathematical area, it became apparent that I struggled to transfer this effectively (Appendix 3). Being unable to transfer my own SMK to children resulting in my lesson being inaccessible and ineffective to children's learning progress, as outlined in the Knowledge Quartet (Rowland,

Huckstep and Thwaites, 2003). Children struggled to develop pedagogical skills to understand reasoning why numbers were odd and even in written form without physically seeing the shape of the multi-link or numicon (Appendix 3). This obstacle was unpredictable therefore I was without planned knowledge and means to overcome this. Shulman, (1987) emphasises that a key aspect for SK and effective teaching involves developing pedagogical skills. Shulman (1987) would critically reflect my SK in this area to be ineffective. Without development of pedagogical skills children were unable to understand the concept of PCK which was most significant to children learning effectively (Shulman, 1987). To overcome this obstacle and maintain interest I needed to return to basics, focussing on matching numicon to its written formation. As a class we used the whiteboard to form a table of odd and even numbers. Children chose a numicon shape, identified its property: odd or even with reasoning and placing within the correct column of the table and stating its written form (appendix 3). Once several numbers where in each table column children began to become aware of a continuous pattern, demonstrating own interpretation of the lesson and having pedagogical skills to identify patterns making links between theory and practice (Rowlands, Huckstep and Thwaites, 2003). This became apparent when I.T commented "Look! There's a pattern!". "Numbers with 1,3,5,7 and 9 at the end are odd" (Appendix 3:1). Providing praise, I then questioned the class if there were any other visible patterns. To which D.J replied "Yes, even numbers end with 2,4, 6, 8 or 0" (Appendix 3:1). As a class we used repetition through questioning and worksheets to promote children learning SK and properties of odd or even. This demonstrates children understand the concept of place value, number formation and made connections to which were odd or even. This enabled children to achieve or work towards both the curriculum and lesson LO, demonstrating effectiveness evident in RAG ratings (appendix 4). This proves that subject content knowledge alone without pedagogical skills such as transmission or connectivity is ineffective to children's learning (Rowlands, Huckstep and Thwaites, 2003).

Teaching about Remembrance Day was difficult as I was unaware of children's existing knowledge of this topic. I lacked confidence with my content knowledge and how to deliver this to tailor all children's needs, leading to unnecessary anxiety. Rowlands, Huckstep and Thwaites (2003) emphasised having a good understanding of the foundation of SK and curricular outcome positively

impacts effective teaching and learning, a key finding outlined in the Knowledge Quartet.

To help increase my confidence of SK I carried out background reading surrounding the topic, read advice from previous teachers regarding lesson approaches and spoke with the class mentor. This allowed access to a wider range of knowledge regarding best teaching practices or suitable teaching styles. The class teacher advised me of reliable resources they frequently use, such as Twinkl for extra activity support and for introducing topics. Shulman (1987) outlined the importance of being aware of others expertise, resources available surrounding specific topics and incorporating these resources into lessons and teaching to promote effective learning.

To introduce the topic, I used a book aimed at children aged 5-7 linking to the soldiers in world war one. Reading the book repeatedly enabled me to evaluate suitability of the story moral and vocabulary for my aimed audience which is essential according to Shulman (1987) to increase interest and engagement to students. Further, this ensured the book related to the curriculum LO of promoting knowledge of human successes that have impacted society (CfW, 2015). I read the book aloud, broke down the text and I asked effective questions throughout regarding vocabulary and morals. The purpose being to test children's existing knowledge and to monitor their understanding of the book. Shulman (1987) emphasises the importance of breaking down and structuring lessons in accordance to children's needs. This demonstrates I had understanding and awareness of children's ability and knowledge of vocabulary which is deemed essential to maintain children's interest and engagement, promoting effective learning (Shulman, 1987).

Children were given time throughout discussions to voice queries to me or peers to underpin and overcome any misconceptions apparent throughout the lesson. Various research studies observed that children enhance their learning effectively by querying, asking questions or discussing their own SK with others (Coe et al, 2014). This enables them to support others and become aware of other people's perspectives. Not only are children learning significant life skills through questioning, but they are also using other student's SK to scaffold and develop a wider understanding of the topic (Coe et al, 2014) whilst strengthening their PCK

which is the most significant aspect of SK according to Shulman (1987). Despite Remembrance Day being linked to 'Knowledge and understanding of the world' (CfW, 2015:41 I was also able to incorporate other subject skills into this lesson (appendix 5). Through questioning and discussions children were able to 'show understanding of what they have heard' (CfW, 2015:16) with reasoning and develop skills to 'contribute to discussion, keeping a focus on the topic and taking turns to speak' (CfW, 2015:17 and Appendix 5:1). This demonstrates the lesson showed cross curricular teaching which is deemed effective and the way forward in teaching and learning, according to Donaldson (2015). Donaldson (2015) would support this lesson as it consists of teaching Humanities and Expressive Arts which are two main areas of learning he identifies as significant. Throughout this lesson children developed empathy, understanding of key points about World War I and how this impacted the history of our country through collaboration and independently making something creative to express their gratitude for the soldiers. These are all significant skills which our children must develop according to Donaldson, as outlined in his 'Successful Futures' report (Donaldson, 2015:1).

The children actively participated by pretending to be soldiers in the war, ensuring learning was meaningful therefore increasing effectiveness (Barnes, 2015). Throughout I provided encouragement and empowerment to children which is essential to enthuse and motivate learners, according to Bruner (Barnes, 2015). They described the trenches by using visual and auditory aids of war effects, using their senses to develop empathy towards the soldiers. There was a positive response from the children, all were engaged and joined in with discussions where they shared reasoning skills and ideas. They listened to other's perspectives, promoting their learning through scaffolding which is essential to effective learning (Vygotsky, 1978). Through practical participation, use of resources and development of empathy used within my teaching, this enabled transfer of SMK into understandable means for children. This emphasises that my activities were correctly tailored to all abilities and effective to children's learning as they developed quality understanding, perspectives of this topic and how it impacted the current world. This is evident through my RAG ratings (Appendix 6) relating to the classes' response to comprehension activity about Remembrance Day. Most children achieved green, demonstrating minimal if any difficulty on completion to achieve

lesson LO. Having minimal difficulty implies that children gained good SK, pedagogical skills and PCK surrounding this topic demonstrating effective learning (Shulman, 1987 and Rowlands, Huckstep and Thwaites, 2003).

To conclude teachers' SMK is an important necessity to promoting effective learning. Teachers must have a foundation of knowledge of the topic before they can teach it (Rowland, Huckstep and Thwaites). However, it is argued that teachers with an extensive level of SMK may still struggle to demonstrate this within their teaching, meaning alone SMK is insufficient (Shulman, 1987). SK combined with other significant components highlighted throughout this essay, promotes good teaching and effective learning. Teachers must have a mixture of quality attributes such as SMK, pedagogical skills, PCK, classroom management and resources to create assessable educational opportunities for effective learning (Coe et al, 2014 and Rowlands, Huckstep and Thwaites, 2003). Both Shulman (1987) and the Knowledge Quartet (Rowlands, Huckstep and Thwaites, 2003) state that effective teaching involves transferring teachers own SMK in an accessible and understandable format which children can incorporate to learn effectively. Continuation of observational research enables identification of more current and effective attributes which can be utilised to improve teaching practice and enhance effectiveness (Shulman, 1987).

Wordcount: 4,343.

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Appendices:

Appendix One: Arc Reflection- Key features (Literacy).

Appendix Two: RAG rating (instruction Writing).

Appendix Three: Arc Reflection for odd and even numbers.

Appendix Four: RAG rating (odd and even numbers).

Appendix Five: Arc Reflection (Remembrance Day).

Appendix Six: RAG rating (Remembrance Day).

Appendix Seven: Teacher Observation Notes.

Appendix 1:

Arc Reflection Literacy Lesson.

Appendix 1: Arc Reflection - Literacy. Model Beirniad Wedi Adfyfyrio (BWA) Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 1st December 2018.

Digwyddiad critigol (Ffocws)/Critical incident (focus): Lack of understanding of key features for instruction writing

Profiad/ Experience	
Teimladau/ Feelings Beth yw eich teimladau ynghylch y profiad? "What are your feelings regarding the experience?"	Starting to worry that children still unsure of 'time conjunctions' despite numerous lessons on key features. Low confidence + self-esteem of overcoming issue (poor transferable skills)
Cofio a Deall/ Remember and Understand Allwch chi restru'r agweddau ar y profiad dysgu a aeth yn dda? "Can you list the aspects of the learning experience that went well?" Pa elfennau o'r profiad dysgu oedd yn siomedig? "What were the elements of the learning experience that were disappointing?"	Active participation-children were engaged + willing to join in. All wanted to take part. Use of questioning-beneficial to test understanding of knowledge of content and identified lack of understanding of 'time conjunction' - PROBLEM! Disappointing-Lack of personal knowledge and awareness of using different approaches of teaching key terms.
Gwerthuso a dadansoddi/ Evaluate and analyse Beth fyddwch chi'n codw'r un fath i sicrhau dysgu ac addysgu effeithiol yn y dyfodol? "What will you keep the same to ensure effective teaching and learning in the future?" Beth oedd achos yr elfen siomedig bwysigaf? "What was the cause of the most important disappointing element?"	-i would keep active participation-children were engaged taking turns to highlight the key features they understood (on point). - Use of questioning as I realized children were not grasping a specific key term. Disappointing; unable to make key terms accessible/suitable for children's capabilities.
Casgliadau a chamau gweithredu/ Conclusions and actions Beth yw eich atebion posibl i'r materion siomedig a nodwyd? "What are your possible solutions to the disappointing issues identified?" Beth ydych yn mynd i'w wneud nesaf? "What will you do next?"	Solution: After going to class teacher for guidance I am now going to introduce key terms with simpler vocabulary. e.g. instead of time conjunction. I will say time connective. Hopefully this will make their purpose of linking/sequencing the steps in the correct time order to children. Next step: Writing instructions- to ensure they understand the LO I will cut

Y profiad newydd / Transformed experience

their success criteria into small steps to help them achieve it. Eg:

- write a list
- use a time connects.
- use some bossy verbs.

Appendix 2: RAG ratings: Literacy.

Subjects/areas of learning: Literacy, Language and Communication.	Date: 26.11.18-30.11.18.	Date: 4.12.18-12.12.18 (changed vocab from conjunction to time connectives).	
	LO: To identify key features of instruction writing (based on activity completed before changing vocabulary).	LO: To write instruction on how to make fruit kebabs.	Learning Objective Achieved. (I)- independently. (TA)- with support.
	Appropriate? Yes.	Appropriate? Yes.	
	RAG rating		
Names of Learners			
IC			(I)- target: to use more time connectives.
LDMSD			(I)
JLE	Absent		(I)
DJ			(I)
RLM			(I)
EL			(I)
CM	Absent		(I)
LR			(I)
RW			(I)
LW			(I)
NB	Absent		(I)
AD			(I)
HD			(I)
JD			(I)
AE			(I)
HF			(I)
HH			(I)
PH			(I)
WL			(I)
LO			(I)
JP			(I)
EP			(I)
AS			(I)- Target: to use more time connectives.
BS			(I)
MC			(I)
IT			(I)
JB			(I)
LD			(I)

RAG rating:

Red = significant difficulty

Amber = some difficulty

Green = no difficulty

Appendix 3: Arc Reflection- Odd and Even Numbers.

Appendix Three: Arc Reflection - Odd + Even Numbers. Model Beirniad Wedi Adfyfyrio (BWA) Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 30th November 2018.

Digwyddiad critigol (Ffocws)/Critical incident (focus): Difficulty identifying written formation of odd and even numbers.

Profiad/ Experience	
Teimladau/ Feelings Beth yw eich teimladau ynghylch y profiad? "What are your feelings regarding the experience?"	-Disappointed in myself. I thought odd+even numbers would be straightforward to teach. Despite feeling confident - my delivery of the lesson had failed as children could not successfully identify odd/even number ~~without~~ without numicon. Going back to basics - I was apprehensive.
Cofio a Deall/ Remember and Understand Allwch chi restru'r agweddau ar y profiad dysgu a aeth yn dda? "Can you list the aspects of the learning experience that went well?" Pa elfennau o'r profiad dysgu oedd yn siomedig? "What were the elements of the learning experience that were disappointing?"	Going back to basics went well. Through creating a table children could match numicon with written form. Numicon was used to see if the number was odd/even by shape. The children created an odd column + even column, consisting of numicon + written form underneath. This was beneficial as children could visibly see a pattern. I.T. said "Look! ~~There's~~ There's a pattern! Numbers with 1,3,5,7 and 9 at the end are odd! D.J. said "Even numbers end with 2,4,6,8 and 0". Disappointing: previous delivery of my knowledge was ineffective. Should have taken more time to prepare + use best approach to use.
Gwerthuso a dadansoddi/ Evaluate and analyse Beth fyddwch chi'n cadw'r un fath i sicrhau dysgu ac addysgu effeithiol yn y dyfodol? "What will you keep the same to ensure effective teaching and learning in the future?" Beth oedd achos yr elfen siomedig bwysicaf? "What was the cause of the most important disappointing element?"	I will keep active learning. the same and get children involved in the introduction more. Repetition of tasks/questions to test understanding. Show various method written and visual methods using concrete objects to promote understanding of maths concepts.
Casgliadau a chamau gweithredu/ Conclusions and actions Beth yw eich atebion posibl i'r materion siomedig a nodwyd? "What are your possible solutions to the disappointing issues identified?" Beth ydych yn mynd i'w wneud nesaf? "What will you do next?"	Solution for delivery of Lesson: I will ensure I take consideration in my preparation. I will research all different methods or best practice in delivery of the topic content appropriate to children. I will ensure I start at the basics + use initiative to move forward in the lessons if needed. I should/will have less assumption that children will understand mathematical concepts + properties if they are unable to identify/recognise its written form.
Y profiad newydd / Transformed experience	

Appendix 4:
RAG Ratings: Odd and Even



Canolfan Addysg Athrawon
De-Orllewin Cymru
The South West Wales
Centre of Teacher Education

Tracking Record (C11a) Class/Age of Learners: Year One and Two
(Mixed).

Subjects/areas of learning: Mathematics	Date: 26.11.18-30.11.18.	
	LO: To identify odd and even numbers.	Learning Objective Achieved.
	Appropriate? Yes.	(I)- independently.
	RAG rating	(TA)- with support.
Names of Learners		
IC		{I}
LDMSD		{I}
JLE		{TA}
DJ		{I}
RLM		{TA}
EL		{TA}
CM	Absent	
LR		{I}
RW		{TA}
LW		{TA}
NB	Absent	
AD		{I}
HD		{I}
JD		{I}
AE	Absent	
HF		{I}
HH		{I}
PH		{TA}
WL		{I}
LO		{I}
JP	Absent	
EP		{TA}
AS		{I}
BS		{I}
MC		{I}
IT		{I}
JB		{I}
LD		{I}

Red = significant difficulty

Amber = some difficulty

Green = no difficulty

Appendix 5:

ARC Reflection: Remembrance Day.

Appendix 5: Arc Reflection of Remembrance Day. Model Beirniad Wedi Adfyfyrio (BWA) Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 6th November 2018.

Digwyddiad critigol (Ffocws)/Critical incident (focus): Remembrance Day Lesson.

Profiad/ Experience	
Teimladau/ Feelings Beth yw eich teimladau ynghylch y profiad? "What are your feelings regarding the experience?"	Very nervous-my first. topic introduction so was unsure of children's knowledge. Challenging to identify how much content to deliver and what teaching approach to use? Nervous of response to ICT task- life in the trenches-sensory and the WWI book.
Cofio a Deall/ Remember and Understand Allwch chi restru'r agweddau ar y profiad dysgu a oeth yn dda? "Can you list the aspects of the learning experience that went well?" Pa elfennau o'r profiad dysgu oedd yn siomedig? "What were the elements of the learning experience that were disappointing?"	Introduction went well-children understood vocab and moral of book well. Evident through questioning. Children fully engaged in practical aspect of the lesson where we acted like soldiers- they understood actions, feelings and what children experienced through their senses. Children developed cross-curricular skills- developed awareness of soldiers + WWI and its impact on today, developed confidence, oracy skills, sharing ideas, waiting their turn to speak. Through discussions, think, pair, share children were given the opportunity to scaffold from other peers. Children showed understanding through comprehension task (differentiated to suit ability).
Gwerthuso a dadansoddi/ Evaluate and analyse Beth fyddwch chi'n cadw'r un fath i sicrhau dysgu ac addysgu effeithiol yn y dyfodol? "What will you keep the same to ensure effective teaching and learning in the future?" Beth oedd achos yr elfen siomedig bwysicaf? "What was the cause of the most important disappointing element?"	Keep: use of active learning + try to get children to holistically be involved in the lesson-physically + mentally through questioning. Children led lessons- let children choose some activities in their learning. Children's ideas which we used were making poppies + designing their own paper plates for Remembrance of the soldiers. Effective questioning-re-use to test knowledge and identify and miss-understanding information. The activities used were appropriate to different abilities. All above were effective approach to involve children and deliver key findings in this topic whilst children achieved curriculum outcomes and skills.
Casgliadau a chymhellu/ Conclusions and actions Beth yw eich atebion posibl i'r materion siomedig a nodwyd? "What are your possible solutions to the disappointing issues identified?" Beth ydych chi'n mynd i'w wneud nesaf? "What will you do next?"	Issue: Shouting out. Solution: re-enforce the classroom rules and their importance. I also imitated teacher's techniques- 'Clapping' and children copy on. Give me five. I re-enforced positive praise to others alongside awarding class dojos which was beneficial to stop shouting out- only those sitting smartly with hands up get dojos.

Y profiad newydd / Transformed experience

Difficult vocabulary in book. was discussed with class and simplified into understandable terms for children.

Appendix 6:

RAG Ratings: Remembrance Day

Canolfan Addysg Athrawon
De-Orllewin Cymru
The South West Wales
Centre of Teacher Education

Tracking Record (C11a)

Class/Age of Learners: Year One and Two (Mixed).

Subjects/areas of learning: Knowledge and Understanding of the World/ Expressive Arts.	Date: 5.11.18-9.11.18	
	L.O: To understand when and why we celebrate Remembrance Day? Appropriate? Yes.	Learning Objective Achieved? (I)- independently. (TA)- with support.
	RAG rating	
Names of Learners		
IC		{TA}-on last question.
LDMSD		{I}
JLE	Absent.	
DJ		{I}
RLM		{I}
EL		{TA}
CM		{TA}- keep on task.
LR	Absent	
RW		{I}
LW		{I}
NB		{TA}
AD		{I}
HD		{TA}
JD		{I}
AE		{I}
HF		{I}
HH		{I}
PH		{TA}
WL		{I}
LO		{I}
JP	Absent	
EP		{I}
AS		{I}
BS		{TA}- on last question.
MC		{I}
IT		{TA}- on last question.
JB		{TA}- keep on task
LD		{TA}

Red = significant difficulty

Amber = some difficulty

Green = no difficulty

Appendix 7:

Class Mentor Written Feedback for Observation.

S1: Professional Values and Practice: Good

- Comments and Evidence
- Targets for improvement and suggested ways forward

Whole class introduction included learning objective and success criteria. You built upon previous knowledge of instruction writing and questioned pupils understanding of time connectives and bossy verbs. The majority of pupils were on task during the introduction. Use of practical resources such as real life examples of fruits they could use would have made the introduction more child friendly. The main activity was lovely with children (group of 6) writing instructions to make a fruit kebab independently before completing the practical activity. Most children were on task and engaged throughout. Many were able to explain clearly what they were doing. Activities geared to the process of writing/giving instructions were differentiated according to ability. Each group were given a task and nearly all children were able to explain their learning objective when questioned. Many children worked independently during the practical activity. You used thumbs up/down and success criteria for group plenary and self-assessment. There is evidence of your good ability to reflect on your own practice and its impact on learners in your file. You willingly accept advice and work towards identified targets. You have a lovely caring attitude and speak quietly and calmly to the pupils. Don't be afraid to stop them if they become too loud during teaching time.

S2: Knowledge and Understanding: Good

- Comments and Evidence
- Targets for improvement and suggested ways forward

It is evident that you carried out personal research to support planning, teaching and assessment effectively. The child friendly, fun text prior to this lesson to teach the key points of instruction writing was age appropriate. As a result, many children were able to relate to prior learning to achieve their learning objective. Your planning included an activity delivered by W.D and additional activities for enhanced provision in line with the topic. During the lesson introduction you used ICT to display your PowerPoint, and the work that the pupils would be required to complete in order to achieve their learning objective. This follows the advice given to you by your tutor. Targets/ways forward: - Continue to develop your ability to use ICT effectively to enhance the teaching and learning. Expand your knowledge of iPad apps to use to support learning.

S3.1: Teaching: Planning, Expectations and Targets: Good

- Comments and Evidence
- Targets for improvement and suggested ways forward

During the observed lesson, your introduction was short and concise. Work was clearly differentiated according to ability with some groups working independently. You independently planned for a range of learning opportunities, including use of indoor and outdoor spaces. Most children were engaged and appeared to be enjoying the activities. Target/ways forward: Ensure that you monitor activities outdoors as well as in the classroom or ask the TA to make regular checks.