

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

This assignment is going to focus on the critical analysis of the relationship between teacher subject knowledge and effective learning and teaching in the primary school. Firstly, I am going to discuss the literature that is surrounding subject knowledge in primary schools, mainly having a focus on Schulman and The Knowledge Quartet. Secondly, I will base this assignment on my Professional Teaching Experience (PTE) and reflect on my experiences of teacher subject knowledge and how this affects learning and teaching in the classroom. In accordance with the BERA (2018) guidelines, I am not going to mention the school's name, the children's name or the staff's names due to ethical issues and confidentiality. Therefore I will identify the school as School X.

School X was 1 of 18 primary schools in Wales to pick up a recognising excellence award at a recent Estyn Awards ceremony. They received an ESTYN (2018, p.2) Recognising Excellence Awards. School X is situated in the City and County of Swansea lying some 6 miles to the North East of Swansea City Centre. School X has a capacity of 190 children who are from both the two local communities. 95.2% of pupils are achieving the expected outcome in the Foundation Phase areas of learning and there is a total of 50.1% free school meals. Throughout my professional teaching experience, I was in Reception class, in Foundation Phase, working with 4 and 5 year olds.

There is a new curriculum in Wales which was informed by Professor Graham Donaldson; 'Successful Futures'. This new curriculum that is evolving is replacing key stages with 'progression steps' and it provides a 'road map' for pupils. Successful Futures is available for feedback by 2019 and it will be used in Wales by 2022 for children aged 3 - 16. The whole aim of this new curriculum for Wales is to ensure that young people will be ready for their life. There will be a new digital competence framework introduced which includes the three cross-curricular subjects: digital competence, numeracy and literacy.

Within the new curriculum, there will be 6 areas of learning which will be:

- Expressive arts
- Languages, literacy and communication
- Health and well-being
- Science and technology
- Humanities
- Maths and numeracy

What does the new curriculum mean for primary schools? It means that there will be a focus on the areas of learning instead of subjects. This will allow schools to build on the Foundation Phase up to the middle of primary school. Teachers in Key Stage 2 will be able to focus more on creatively planning as they do not have to cover all the subjects.

What is it that teachers know that makes them special? Is it that they can care for children? Control large groups? Have subject knowledge? Educationalist Lee Shulman asked the same question and he came up with a way of describing this and he called it Pedagogical Content Knowledge (PCK). It was defined as “the second kind of content knowledge” (Shulman, 1986, p. 9). Lee Shulman was the President of the American Education Research Association back in the early 1980s and he was a man who was always thinking and learning. “Lee Shulman’s theoretical framework has had a substantial influence on research in preservice teacher education, and consequently, schools of education” (Mecoli, 2013, p.27). Shulman thought that one crucial aspect of teachers’ knowledge development is how they can develop and grow upon their subject knowledge, focusing on what they already know about a subject.

Content knowledge is how much knowledge you have of a subject. “Knowledge of the subject matter without consideration about teaching the subject matter” (Enqvist, 2016, p.3). To expand on Enqvist’s quote, he believed that as long as you have knowledge of what you are teaching, do not worry about how you are going to teach. Teachers need to be subject experts and this is their content knowledge. “Content knowledge consists of theories and principles of teaching and learning, knowledge of learners and knowledge of principles of classroom behaviour and management (Shulman, 1985, p.19). This links on to the important factor that teachers need to know how children learn and how to adapt their learning styles in the right way for each individual. “The striking thing between the relationship content knowledge and the quality of teaching was that the coefficients were far weaker than what we thought” (Berry, 2015, p.68). A great teacher has both content knowledge and pedagogical knowledge, however pedagogical content knowledge goes one step further. Teachers do not use the same technique on each student every day and they recognise mistakes children are going to make before they even make them; this is how teachers know how to teach with content knowledge. Teaching is not just telling people what you know, this is where pedagogical content knowledge comes in. “Isn’t there a missing planet between content and pedagogy knowledge that defines the essential missing aspect of teaching?” (Berry, 2015, p.89). Then the Pedagogical Content Knowledge (PCK) began.

In 1987 Schulman wrote a paper which focused on a model 'boxes floating on a page' to try to prove that there are different kinds of knowledge; meaning content knowledge and pedagogical content knowledge. However, PCK is now more commonly used throughout the world of education. What exactly is PCK? PCK is all about getting learners to grasp the content, have an understanding of it and to reason with the subject knowledge. "In the teaching and learning process, a PCK involves teachers' competence in delivering the conceptual approach, relational understanding and adaptive reasoning of the subject matter" (Puteh, 2014, p.12). Pedagogical Content Knowledge is how you deliver your subject knowledge to others. PCK is a kind of knowledge that is unique to teachers. "PCK is the combination of the rich knowledge of pedagogy and content together, each shaping and interacting with each other" (Loughran, 2012, p.201). It is a way of making knowledge accessible to learners. Shulman (Gudmundsdottir & Shulman, 1987, p.35) divided PCK into three categories:

1. Knowledge of the central topics, concepts, and areas of the subject matter that can be and are taught to students.
2. Knowledge of the different ways topics can be taught, and the pros and cons of each approach, which is influenced by general pedagogical knowledge.
3. Knowledge of students' preconceptions or misconceptions about the topics they learn, and knowledge of the topics students find interesting, difficult or easy to learn, which is influenced by the knowledge of students.

"PCK was the most powerful analogies, illustrations, examples, explanations and demonstrations. The most powerful ways of representing the subject that makes it comprehensible for others" (RCC, 2019, p.1). Pedagogical Content Knowledge is when what you know in a subject is transformed to teach through knowledge of concepts. "In addition, preservice teachers have been shown to find it difficult to articulate the relationships between pedagogical ideas and subject matter concepts" (Gess-Newsome & Lederman, 1993, p.202). Shulman said in order for a teacher to teach a specific subject, they must combine content with pedagogy. Shulman (1986, p.18) defined PCK as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding".

Shulman's theory of PCK is still quite narrow. Stephen Andrews who wrote an article called 'Teacher Language Awareness and the Professional Knowledge Base' in 2001 focuses on the relationship between Teacher Language Awareness and teacher knowledge. Andrews (2001, p.78) argues that the PCK defined by other researchers is too generic to demonstrate the uniqueness of language teaching. He believes "language is taught through language" (p. 78). In Andrews' (2001, p.87) article he stated that Shulman was particularly interested in the relationship between knowledge of content and

knowledge of pedagogy, leading him to coin the term PCK. This indicates that Andrews believes that having subject knowledge, content knowledge and language competence should play a big part in the PCK. Andrew criticises Shulman's PCK theory as he believed it should be made up of knowledge of pedagogy, curriculum, context and learners as well as teacher language awareness. In Grossman's (1990, p.70) clarification, he agrees with Shulman's theory on PCK and says that there are four central components for the PCK. These are the concept of teaching purposes, knowledge of students and student's understanding, curricular knowledge and knowledge of instructional strategies. Grossman's clarification is a most widely referred study. Dewey (1899, p.192) argued that the role of the teacher is to serve more as a facilitator than an instructor. "You may see a teacher deliver background content information, but then you would also likely see students working in groups" (Dewey, 1899, p.102). Unlike Shulman, Dewey believed that having background foundation content knowledge is enough for children to be taught. "Knowledge of subject matter is widely seen as being the core of a teacher's knowledge of the systems" (Thornbury, 1997, p.18). Thornbury believes like Dewey that having subject knowledge is the core to be an outstanding teacher. It does not matter how you teach it, subject knowledge is the key.

Teachers have the most important role in scaffolding children's knowledge and then understanding it. In Shulman's (1986, p.3) case study of the twenty-five-year veteran English teacher, it shows that she has clear content knowledge of how to read a book. She breaks reading skills into four sections. Level 1 is simply reading the book, translating it and understanding the meaning. Level 2 is still looking at the words but goes a bit deeper into what the words mean and what is it telling us. Level 3 is the level of interpretation and thinking deeper into why does the author do certain things that he does? Level 4 is called application and evaluation, where she says she gets the students to see how the book has any meaning for their own lives. This is where she uses Pedagogical Content Knowledge to deliver what she knows. She has the content knowledge as this is what she knows from the book and how to read, but now delivering it to children in this way, using four sections of reading is how she uses pedagogical content knowledge.

In Shulman's (1986, p.18) case study, it is clear that Colleen did not have sufficient and appropriate subject knowledge for the lesson she was teaching. This led to the children's learning being unsatisfactory. Even though Colleen had completed a master's degree in English and she expressed confidence in her subject matter, this was not the case. "If we accept that subject knowledge is important to successful teaching, what can we do to improve the knowledge we have?" (Enser, 2018, p.14). This quote suggests that

Colleen needed to look into her degree more outside of literature. This case study of Colleen showed that even though she had a lot of content knowledge in a particular subject that she was confident in, she did not have the pedagogical content knowledge to teach the children and to get them to have an understanding on the grammar side of the subject. Colleen lacked confidence in grammar which led her not being able to apply any effective pedagogy. "Good teaching depends on good subject knowledge and excellent pedagogical skills. You can't do it without being in possession of both" (Morrison, 2014, p. 8). It stated that Colleen looked like a different teacher during that lesson. "Students were not given opportunities to raise questions or offer alternative views" (Schulman, 1986, p. 18). The contingency part of The Knowledge Quartet is that teachers should always allow time for children to ask questions and teachers should always respond to learners' ideas and questions. Shulman points out how important reflection is for a teacher. It is looking back on things that you have taught and what learning has occurred. "Here again, it is likely that reflection is not merely a disposition or a set of strategies, but the use of particular kinds of analytic knowledge brought to bear on one's work" (Shulman, 1986, p. 19).

The Knowledge Quartet is a four-dimensional framework for the analysis of Mathematics teaching which was introduced by Rowland in 2003. This is a framework for Primary trainee teachers to visualise their knowledge in the planning and in the teaching. The Knowledge Quartet is split into 4 parts: foundation, connection, transformation and contingency. Every 4 dimensions are subcategories of what we judge.

Foundation is one of the four parts of The Knowledge Quartet. The foundation part outlines the understanding of the content and how it is being taught. It is being able to understand how children learn and how they can be taught, thinking about the different learning styles there are such as kinaesthetic, visual, auditory and sensory. It is the understanding of pedagogy. It is realising how to identify pupils errors and trying to think of the mistakes children can make before they make them.

Transformation is one of the parts of The Knowledge Quartet. The transformation part enables teachers to model, demonstrate or explain things in order for the learners to understand. It is identifying appropriate examples of work to show the children and using appropriate materials to support. The transformation part is to be able to ensure all the procedures and the concepts are completely understood.

Connection is one of the parts of The Knowledge Quartet. It is about making connections between different concepts and ideas. It is being able to build on prior

knowledge and allow that to make connections of future learning. It is being able to make progression steps and understand when these steps need to take place.

Contingency is one of the parts of The Knowledge Quartet. It is about responding to learners' questions, ideas and their difficulties. It is being able to offer alternative tasks if needed; always doing what is suitable and appropriate for the learners. It is also about being able to exploit opportunities to enhance learning and to maximise the learners potential.

Whilst I was on my PTE, I had experience of very limited subject knowledge and good subject knowledge. One lesson where I experienced limited subject knowledge was when I had to plan a lesson on Remembrance Day. It is important to build children into "ethical, informed citizens of Wales and the world" according to Donaldson (2015, p.12) and this is one of the four purposes of Successful Futures. Even though I knew the basics and what Remembrance Day was for, I was not aware of how much detail the children needed to be taught. This is when I noticed that my subject knowledge was lacking slightly regarding this specific topic. Despite the children are only 4 and 5 years old, they had a bit of background knowledge as to why we wear poppies and what for. I had to teach myself and learn about Remembrance Day in order for me to teach the children. This is when I realised how important subject knowledge is and how much detail you need to develop and know. I based my lesson on Expressive Arts of the area of learning suggested by Donaldson in Successful Futures (2015) as I got the children to create their own poppy for Remembrance Day using tissue paper, cupcake cases, buttons and glue. Donaldson (2015, p.12) outlined one of the four purposes as building young people to be "enterprising, creative contributors, ready to play a full part in life and work". (See appendix 1 for an example of a child's work).

How could I overcome this? This was a strong indication that having foundation content knowledge before going off to teach a lesson is vital. If I had more of a broad subject knowledge I probably would have felt more comfortable doing this from the start instead of having to teach myself the basics ready to teach the children.

For the majority of the lessons I taught, my lesson aims were also aimed at the digital competency framework suggested by Donaldson. For most of my introductions to a lesson I used the interactive whiteboard to get them hooked into the lesson. I am a lover of technology so anything to do with ICT I love. I have a lot of subject knowledge when it comes to technology as I have had experience with technology since I started Secondary school and now I use it everyday. I am able to use this confidently within the classroom and I am able to help others when they are having a technical difficulty using technology.

In my opinion I feel that if you are confident in a subject and you are familiar with it, then that will come across to your learners and you will have a positive impact in what you do for the learners. (See appendix 2 for lesson plan).

However, one lesson where I experienced good subject knowledge was when I taught the children to recognise coins and what their value is. This was my first lesson and I felt a bit nervous as it was on Maths. Maths is an abstract subject and a very important subject for all children as Donaldson (2015, p.12) wants children to be “ambitious, capable learners, ready to learn throughout their lives”. As I am aware of what the coins look like and I know their value, I was going into this lesson with a confidence boost as I knew what I was going to be teaching as I have background knowledge of it. I expected the lesson to go smoothly and that the children were going to understand, but I took that for granted. I struggled to explain the value of the different coins and how they are different. For example, the children thought that a 1p and a 5p were 2p as there were 2 pennies. I did not think of that mistake that they could have made. This experience is an example of when I had content knowledge, but I was not able to use pedagogical content knowledge effectively as I was unable to teach the children the subject in a way they were going to have an understanding. “It may be possible to see into how a teacher’s PCK develops by paying careful attention to how knowledge of pedagogy and knowledge of content combine”. (Loughran, 2012, p.192).

How could I overcome this? As I mentioned earlier, as a teacher I need to be aware of the obvious mistakes children could make. I was so happy that I thought I had a good lesson planned and good use of resources and tracking records that it was going to be good. Even though it was good, it could have been even better if I was aware of the simple mistakes children were going to make. When I spoke to my mentor about it, she said that is a common mistake as they just count the pennies, so to overcome a scenario like this again I could ask the class teacher beforehand if I need to be aware of any common mistakes.

Foundation

In my professional teaching practice, I used the foundation part of The Knowledge Quartet in my classroom. There were 4 different ability groups from the high ability group the ‘wizards’, to the lowest ability group the ‘elves’. The foundation part of The Knowledge Quartet focusing on how it is being taught and experience different ways of teaching to ensure different learners learn to the best of their ability. “As well as a strong understanding of the material being taught, teachers must also understand the ways students think about the content” (Coe, et al, 2014, p3). The way I adapted this in my

teaching was to allow the children who needed extra help to work through their work with an additional adult and with support. There was one child in my class and he was a kinaesthetic learner, he needed to be doing something practical in order to work. One lesson where the learning objective was to be able to count to 10, I got real life Christmas objects such as baubles and small Christmas trees so that this learner was able to find lessons fun and practical and therefore he would work to the best of his ability. "Teachers should master content material taught, how to teach it, and can interpret the students' thinking so that students easily understand the subject matter" (Juniati, 2017, p.3).

Transformation

In my professional teaching practice, I used the transformation part of The Knowledge Quartet in my classroom. For one of my lessons we were learning basic Welsh and how to sequence a story. This lesson had a link between Welsh and Literacy, Language and Communication. I read a book called Stori'r Nadolig to them and it was all about the nativity. I was in charge of preparing the lesson, demonstrating to the children exactly what we are going to do, selecting appropriate examples and materials for this lesson. After we had read the book together as a class and gone over basic Welsh I then had one group at a time to sequence the story from start, middle to end using pieces of the story that I had printed and muddled up. As they had never sequenced a story before, I showed them how we are able to work out what comes first, middle and last. I believe it is so important to show children appropriate examples and materials of work to support teaching. Modelling work to young children is so important, a lot of the children in my class were visual learners. They were able to work better and they had a better understanding of what they were supposed to be doing once they had visualised it.

Connection

In my professional teaching practice, I used the connection part of The Knowledge Quartet in my classroom. In one of my History lessons, I planned for the children to see how we change over time. I did this by having photos of myself so the children could see how I have changed over time. They loved seeing me and not a stranger, they engaged more with the lesson. A few weeks later, I taught another lesson on History about the olden days and I was fortunate enough to have a guest speaker come in and talk to the children on how life was back when she was a young girl. We reflected back on how people change as the guest speaker brought in pictures of herself when she was younger to now. I think it is so important for children to be able to build on prior learning and make connections with future learning as it rekindles their memory and repetition is so important for young children. "Re-reading and highlighting are among the commonest and apparently

most obvious ways to memorise or revise material” (Coe, et al, 2014, p.19). In my professional teaching practice, I was familiar with understanding progressive steps for children, as I marked their work, this allowed me to reflect back on previous pieces of work and to see what next steps were appropriate for them. “Specific practices like reviewing previous learning are elements of high quality instruction” (Coe, et al, 2014, p.6). I also completed a RAG rating tracking record for the children to see what the next steps were. (See appendix 3 for RAG).

Contingency

In my professional teaching practice, I used the contingency part of The Knowledge Quartet in my classroom. We took a trip to buy some materials and resources to make items for the Christmas Fayre and I asked them to share their ideas with the rest of the class. It is important to allow the children to have their input in any of the work that goes on in the classroom and allow them to ask any questions they want to ask. No question is ever a wrong question. Children are curious about everything around them and to everything that is going on, this is why sometimes you have to deviate from your plans you have done to ensure that there is effective learning taking place. One bit of the contingency part is being able to offer alternative tasks if needed and I did that in my classroom. As there is a range of different abilities in the classroom, work always differentiated. In my literacy lesson, I planned for the children to use whiteboards to sound out the picture and then write down the letters that make that word. However, for the low ability set, they had the first and the last letter already there for them so they just had to write down the middle letter. This is why it is so important that teachers are able to alter tasks and examples for the less able.

In conclusion, I believe I have focused on the critical analysis of the relationship between teacher subject knowledge and effective learning and teaching in the primary school. I outlined the literature by Shulman and The Knowledge Quartet and I have discussed how that had an effect on my Professional Teaching Experience and how I used some of their ways in my own experiences. I built upon my subject knowledge in the classroom whether it being good or very limited and I discussed how those issues can be overcome. “We must achieve standards without standardisation, we must be careful that the knowledge-based approach does not produce an overly technical imagine of teaching”. (Shulman, 1986, p.20). I believe that content knowledge is important, but if you know something it is not enough. It is the way you teach and how they understand what is being taught. Subject knowledge, content knowledge and pedagogical content knowledge are so important when it comes to teaching a class and for them to have a clear understanding of

what they are being taught. For my next steps in the classroom I am now more aware of the importance of having a deeper understanding into subject knowledge, content knowledge and pedagogy content knowledge. In the future I need to develop pedagogical content knowledge and allow myself extra time to develop my knowledge on a particular subject and make sure that I have 100% understood everything and see it from the learners point of view. Not everything that I think is easy or hard will be the same for the learners.

Appendices:

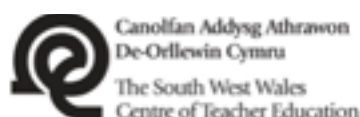
Appendix 1:



Appendix 2:

Name of Trainer: Elisha Hlack		Session ref: Afternoon	Date: 6/11/2018	Class: Reception	Foundation Phase Focus Plan
Personal Training Target:		Number of learners: 21	Age: 4-5	2d	
Ensure the children understand the activity by giving clear instructions.					
Learning objectives:		Create an artefact using art and craft skills.	Success Criteria: Have an understanding of how to create an artefact using crafts.	Meeting learners' needs:	Yes. Support given if needed.
Introduction/plenary tasks		Main activities	Resources/ Key Vocabulary/ Differentiation codes		Assessment for Learning (strategies and opportunities)
Introduction: - Introduce the reason and the importance of why we are going to be making a poppy for Remembrance Day. - Link to the photos of Remembrance Day. - Show them of an example of a poppy that I made myself using all the resources. - Get them to familiarise themselves with the different materials that are provided. - Get them to follow instructions correctly. Plenary: - Gather all the poppies that have been made and praise all their work. - Get them to evaluate on how they think they did. - Question and answer time to allow the children to ask any questions they may have. - Get them to evaluate on why we made the poppies.		Trainer focused task (purpose, outline of trainer's role and children's learning): - Get the children to create their own poppy. - Get the children to use different materials for the poppy. - Allow their creative side to show and use their imagination for their unique poppy. - It allows the children to build upon their creative development. Additional adult tasks (purpose, outline of additional adults' role and children's learning): - N/A - group work. Independent learning opportunities: - Use their art and crafts skills to create more poppies using other materials. - Learn why we wear poppies for Remembrance Day.	Resources: - Coffee filter paper. - Red paper tissue. - Big black button. - Stationary - Photos of Remembrance Day. Key Vocabulary / Welsh Vocabulary: - Poppies. - Red / coch. - Arts and crafts. - Remembrance day. Differentiation codes Word Bank- WB, Phoneme Chart- PC, Skeletons - Sk, Shared Reading- SR, Guided Reading- GR, Group Work- Gp W, Repetition - R, Visuals- V, Models- M, Learning Environment- LE. Time-T, Writing Frame-WF, Shared Writing-SW, Support-S, Paired Work-PW, Questioning-Qs, Guided Writing-GW, Talking Partners-TP, Sentence Starter-S St.		Self-assessment: - Use the traffic light system using smiley faces to see how they felt. Get them to colour in the face using green = found it easy, amber = found it a bit tricky, and red = found it difficult. Questioning: - Get the children to ask and answer questions about the different materials provided.
Curriculum coverage (range and skills): Experience art, craft, design. Explore and experiment with a variety of techniques and materials. Op W, R, V, M, S, Qs, T.					
Literacy (LNF): Listen to and carry out instructions.			Numeracy (LNF): Counting how many petals are on the poppy.		
DCF: Examples of the poppies using the computer and photos of remembrance day.		Thinking: Explore and experiment with a variety of techniques and materials	ESDOC: N/A		YCC: Colours of the poppy being used.

Appendix 3:



Tracking Record (C11a)

Name of Trainee: Elisha Flack

Class/Age of Learners: Reception / 4 and 5.

Subjects/ areas of learning:	Date: 13/11/18		Date: 21/11/18		Date: 22/11/18		Date: 28/11/18	
	L.O: Identify differences between ways of life at different times. Appropriate? Yes	Next steps for learners	L.O: Look at different representations of the past. (Guest speaker) Appropriate? Yes	Next steps for learners	L.O: To recognise the changes caused by time using the outdoors. Appropriate? Yes	Next steps for learners	L.O: To recognise the changes caused by time to themselves. Appropriate? Yes	Next steps for learners
Names of Learners	RAG rating		RAG rating		RAG rating		RAG rating	
A.B	G	1	G	4	G	7	G	10
C.B	A	2	A	5	A	8	A	11
L.B	G	1	G	4	G	7	G	10
A.C	G	1	G	4	G	7	G	10
H.C	A	2	A	5	G	7	A	11
T.D	G	1	A	5	A	8	G	10
A.D	A	2	R	6	A	8	A	11
A.F	G	1	G	4	G	7	G	10
P.H	G	1	R	6	A	8	G	10
R.H	G	1	G	4	G	7	G	10
S.H	G	1	R	6	G	7	A	11
M.K	G	1	G	4	G	7	G	10
H.M	R	3	R	6	R	9	R	12
H.M	A	2	A	5	A	8	A	11
C.O	A	2	R	6	A	8	A	11
E.R	G	1	G	4	G	7	G	10
L.S	G	1	G	4	G	7	G	10
K.S	G	1	G	4	G	7	G	10
G.T	G	1	G	4	G	7	G	10
A.W	G	1	G	4	A	8	G	10
O.W	G	1	A	5	A	8	A	11

Next step for learners:

1. To create a personal timeline of themselves how they have changed over time.
2. Develop their learning on how babies change to elderly people, maybe show a video clip of how we change with age.
3. Focus on the fact that things do change over time, get them to recognise what stages of life go in what order.
4. Develop their knowledge by looking at how people lived in Historian times compared to now. E.g. clothes, food and school.
5. Continue to look at different representations of the past using photographs and worksheets.
6. Focus more on what has changed over time, have a deeper understanding what time was like years ago. Show video clips.
7. Look into an experiment at how things grow over time, e.g see how a plant changes over time and what changes can they see happening.
8. Show development photos of how things grow over time, pictures of a seed, then a plan and then a tree growing over time.
9. Get them to focus on the changes in the outdoors by standing by the teacher so they cannot wonder and lose concentration.
10. Get them to focus on other people not themselves for a timeline, and see if they can place their ages in the correct order.
11. Develop their learning by discussing why a certain age comes first on a timeline, e.g why a baby first and why an elderly person last.
12. Focus on how we change over time, and have a deeper understanding about what specifically changes with ourselves and how we can see change.

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