

Overview

Monday, December 9, 2019 9:13 AM

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

Pathway: Primary PGCE

Word count: 3149

Link to One Note: https://uowtsd-my.sharepoint.com/:o/g/personal/1900128_student_uowtsd_ac_uk/EjdKk80A3pVKtmh3bPFq8yABGc142RDkJuqxggdFC-zJg?e=dr5Yqh

Targedau o'r aseiniad blaenorol / Targets from previous assignment:

	Targed/Target	Yr hyn yr wyf wedi'i wneud yn yr aseiniad hwn What I have done in this assignment...
Targed/Target 1	It would benefit the writer to ensure that the most appropriate words are selected for sentence structure and academic phrasing	When reading research journals and academic writing I have tried to ensure that I have used some of their academic phrasing within my own test.
Targed/Target 2	Demonstrate originality of thought and independence when making a recommendations for development	I believe that recommendations for development are my own originality as it is personal for my own development.

Example 1

Monday, 16 December 2019 14:40

Teaching & Core Learning	• Pit stops: • Have you used full stops/capital letters? • Put your finger on a full stop? • Those who havent grap a purple pen and correct it. • Model an answer on the board perhaps do an incorrect version on the board can they spot this? (MA, A)	• Children to write a paragraph of what they did over the half term. • ALN 2-3 sentences • ALN children to model their sentences • More abled children to include some wow words in their setances and include ordering words. • MA: 4-5 sentences approx. • Pit stop: (AFL) Children to read back their work and improve. (could you put ordering words in	• Writing books • Pencils • Sound mats • Ordering mats • Remind children to not swing on chair
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One AFL strategy that I believed work well within my class was the use of pit stops. I saw my class mentor use this technique regularly. As the children are only 5 and were beginning to write extended texts it was important to keep them on track with the success criteria to ensure they were focusing on the intended skill. If I saw one pupil not doing something on the success criteria it allowed me to stop them and recommend they check their work in relation to their success criteria. Pit stops also allowed me to eliminate any confusion of the topic, if a child was just sat there or a few children were asking the same questions then I knew I needed to explain something further.

Example 2

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WB: 4 th November 2019		
I can write a piece of news about my Half Term Holiday		
		
Hold Sentence	Fred Talk	Full Stops

Success Criteria for ALN and basic skills group

These ability groups would know what they want to write however, as soon as they were about to put pen to paper they would forget the sentence. The ability groups would also find it difficult to spell so the criteria stuck in their books would encourage them to push themselves and to try and spell the words independently.

Each ability group had a success criteria stuck in their book, the pupil then ticked off once they had done it throughout their writing. If I noticed that a child had missed full stops or capital letters This template encouraged children to take ownership of their learning and self assess using the tick boxes. This tool was useful because the children ticked the boxes if they felt like they had done each element correctly but also their more knowledgeable other could tick if they wanted to if they thought their partner had done what was expected. All children were familiar with these symbols and I found this worked best with year 1 pupils as they are still developing their reading skills.

WB: 4 th November 2019			
I can write a piece of news about my Half Term Holiday			
			
Finger Spaces	Capital Letters	Full Stops	Ordering words

Success Criteria for More able and Able group

As the Able group were capable I would use the same criteria as the More able to push the children to reach for the higher levels. Ordering words were something new for the class so it helped them having a visual to keep referring back to. Having a different success criteria to the lower ability groups worked well as they had something in their books that would challenge them further.

Example 3

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Time	Activities/Methodology/Key Concepts (Teacher's Role – including key teaching points, differentiation strategies and key questions)	Pupil Tasks (Pupils' role – including differentiation, engagement in formative assessment and homework)	Resources (including Health and Safety requirement)
Opening phase (with links to prior learning)	- Teacher to give input of activity in individual groups. - Teacher will introduce the Welsh question "beth wyt ti'n hoffi" and ask the children what they think it means. - Teacher should model how to answer the question using both "dw i'n hoffi... / dw i ddim yn hoffi..." "Think, pair, share" with your partner. Tell them one item of food that you like and don't like using "dw i'n hoffi... / dw i ddim yn hoffi". - Ask 3 or 4 children to feed back with the group. - Explain to the children that they are going to pick a item of food out	- AFL strategy- Think, pair, share. Children will discuss one item of food that they like and one item of food that they don't like. - AFL- Questioning. Children will be given time to answer questions about what food they like and don't like.	- Box. - Pictures of food items. - Print outs of the questions and the words to help them. - Beth sy yn y bocs song.

This is an example of AFL strategies within my lesson plan, I felt like the think pair share technique worked well within the lesson as it allowed the children to communicate their ideas to eachother. This AFL strategy was very popular with my placement school and the children responded well. When the children 'snapped back' to the front they all had something to discuss about the topic. I also ensured you include higher order questioning as suggested within blooms taxonomy.

Example 1

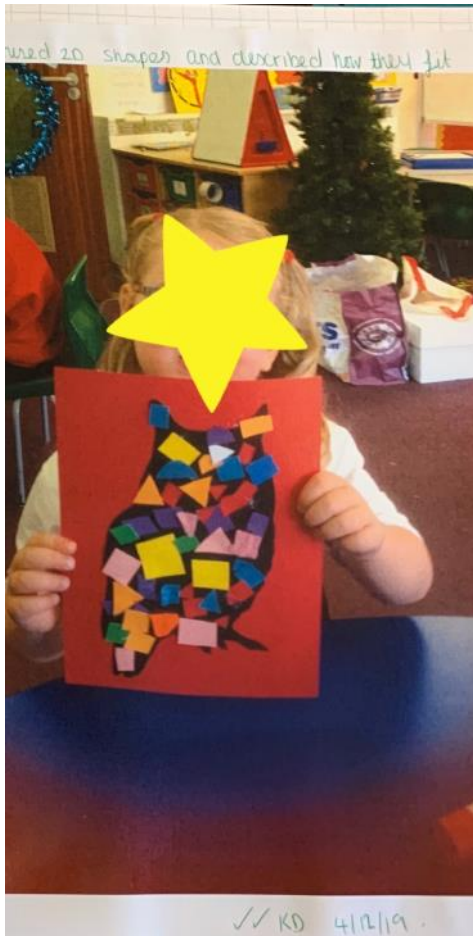
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The children were in a Numeracy lesson learning about 2D shape properties, using Top marks they were able to also use their digital competence and complete a maths game to show their understanding and matching these shapes. The game was enhance their digital competence as the children still have to work on their mouse skills as this was something they found difficult. However, the main focus of this task was to sort the shapes due to their properties to which we all discussed as a class.

Example 2

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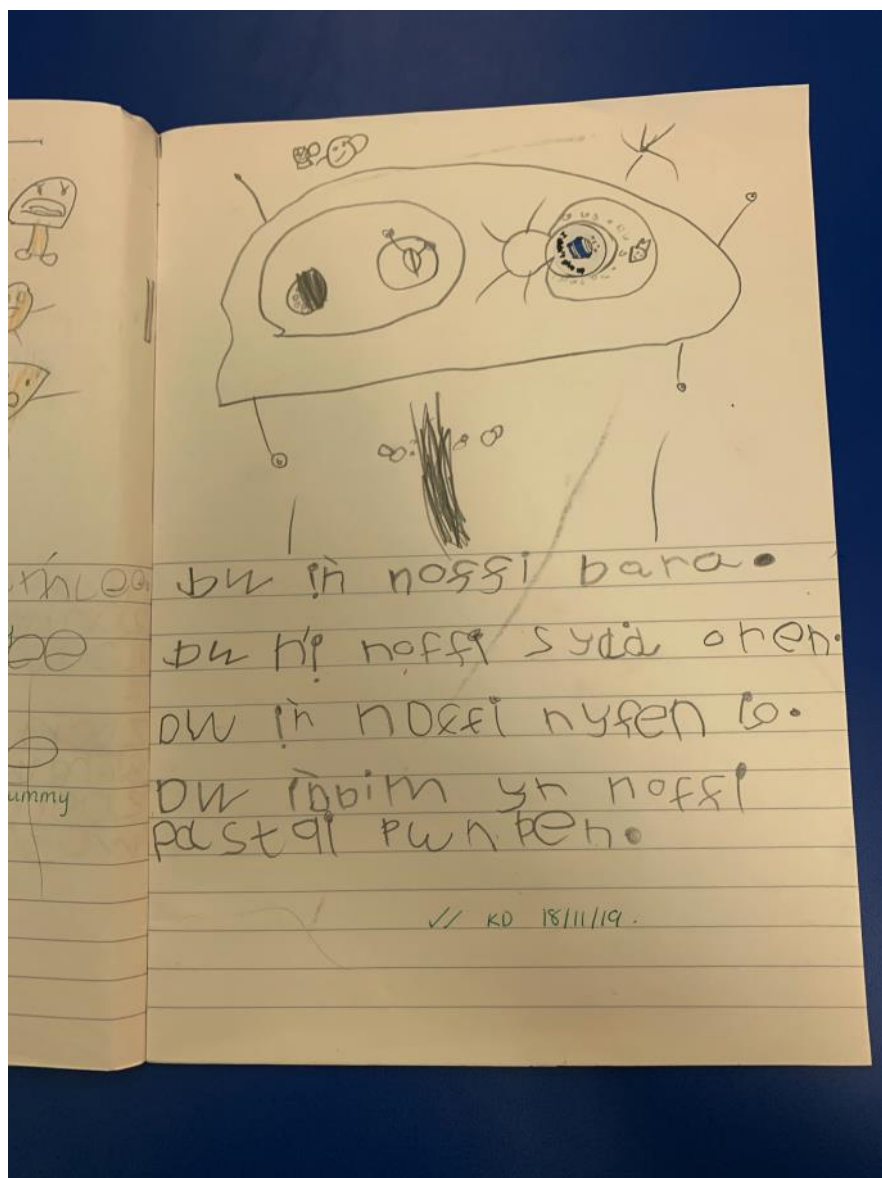


ART: The children then used their numeracy knowledge about shapes and decided which shapes best fit in the outline of the animal. By discussing the shapes in a different context it allowed them to gain a greater understanding whilst working on their fine motor skills of cutting and gluing.

The children showed a lot of engagement when completing this task as they were asking lots of questions and even asking how they could improve their animals. It was also important that when they finished their design they described to myself how they got the shapes to fit and to describe the properties.

Example 3

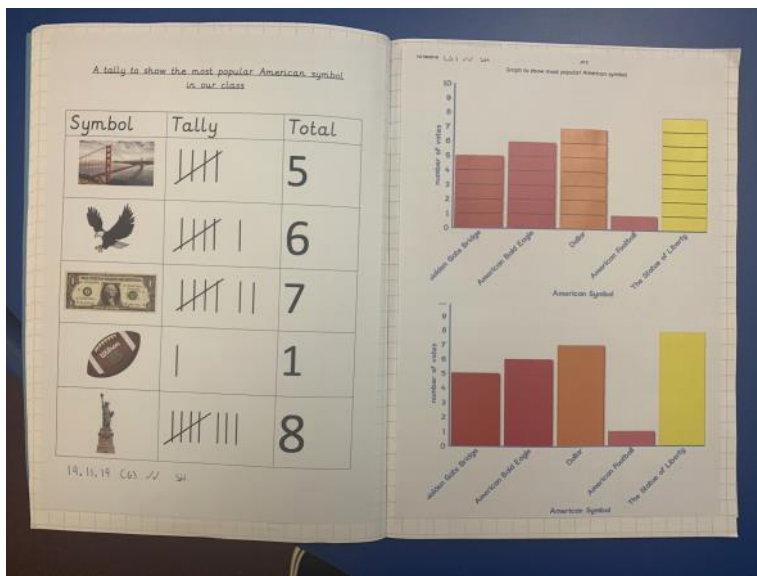
Monday, 16 December 2019 14:42



Whilst learning the term Beth wyt ti'n hoffi (what do you like) we enhanced the children's LLC by forming sentences about what they liked and disliked, pitstops were used to ensure that each child was using capital letters and full stops as this was a strong element we wanted to focus on with the children's writing skills.

Example 1

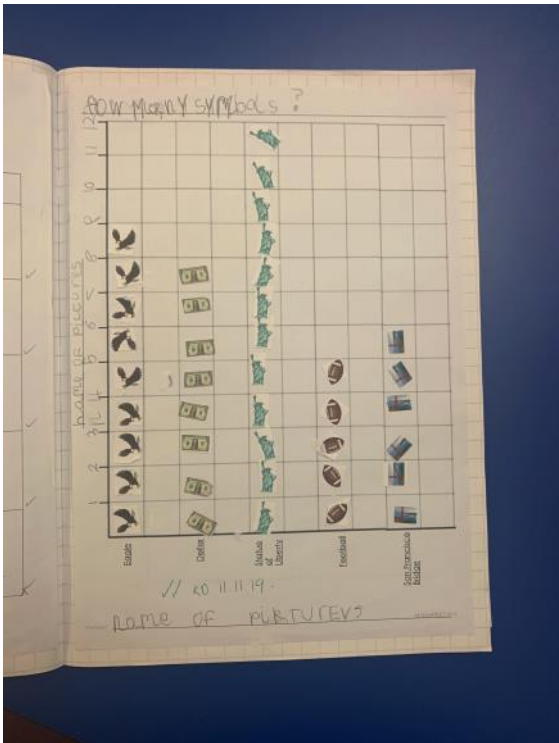
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Children initially started learning about data collection through the use of tally charts within their focus groups. To build on previous knowledge we converted this data in to bar graphs as a class. This allowed the children to see how we can use the same data but display it in different ways. This was important as it allowed to see data collections but in the form of bars and focus on the layout of a bar chart.

Example 2

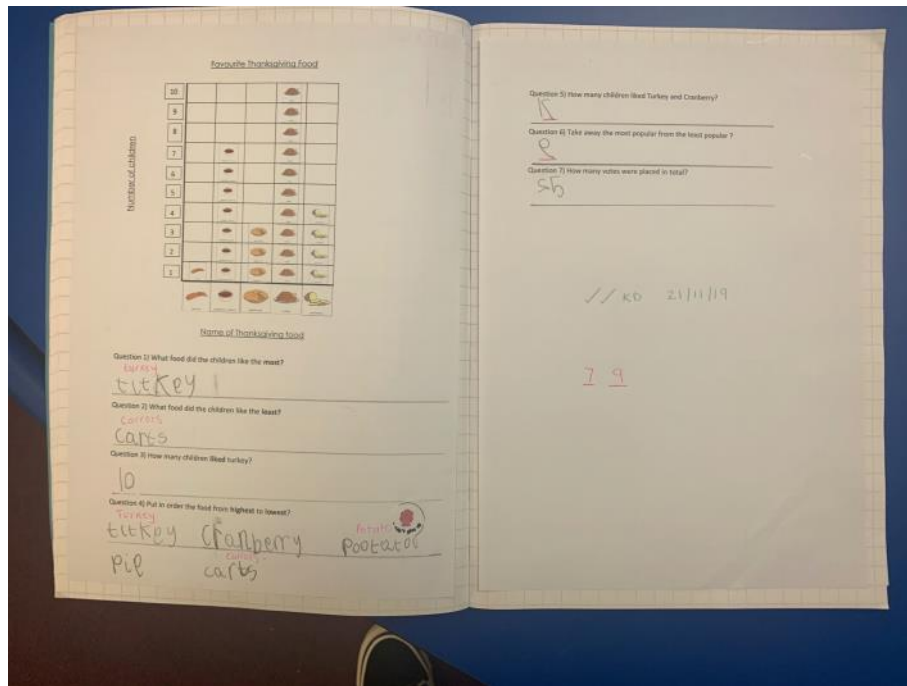
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After completing a bar chart we used the pupils tally chart results to create a pictogram, again building on previous knowledge but developing it in a different context. For the ALN and Basic Skills children the titles on both axis were pre labelled so the main focus on the task was sticking the pictures in the relevant column. The MA and Able children were increasing their knowledge about titles and where they go. This chart allowed them to increase their knowledge of the layout and the axis.

Example 3

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To ensure understanding of data collection and graphs, a comprehension allowed me to see what level the pupils were at. For the MA and Able children more questions were allocated in greater depth encouraging the use of adding and subtracting the unit totals together. The Able and additional learning needs children were introduced to the terms highest and lowest to extract information from the graph. This worked well having different levels of questions for each groups as it challenged them on what they have learned over the topic of data collection.

Critical Reflection (ESSAY)

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My professional teaching experience took place in a primary school that has a total of 582 pupils within the school. The ages within this school branch from three to eleven years old. To elaborate on the context of the children within the school it is useful to understand the needs of the pupils. According to Estyn (2018) there is currently 11 children with English as an additional language (EAL), 39 children have a statement for additional learning needs, and a small percentage (6%) have Free school meals (FSM) and 3% of children who are looked after (LAC). During this essay I will be looking at three of the pedagogical principles as suggested by Donaldson (2015) within education and reflecting how they have impacted my own teaching practice and reflect on progress made and how they were implemented within my teaching. It is also important to identify areas for improvement as part of my own professional progress.

As suggested by Donaldson (2015) assessment for learning (AFL) allows teachers and practitioners to understand awareness of how the child is learning and allows the teacher to gain instant feedback off the children. This allows the practitioner to see where their pupil is at, where they need to be and how to facilitate them there. It is suggested that regular feedback from the teacher, alongside consistent corrections if needed during a lesson is an effective teaching aid for the pupils learning, teachers could then use this information to change their delivery of the skill throughout the lesson. This is a benefit of assessment for learning as it eliminates the possibility of a child sitting there struggling as regular pit stops can be put in place to assist the child. Another benefit of this is that research shows that assessment for learning improves a learners performance in education by 60 percent (Black, William et al 1998., & William 2018). One form of AFL that encourages higher order thinking is Blooms taxonomy (1956). This hierarchical model can be seen as useful tool for teachers when thinking of what questions to ask to encourage deeper thinking. This technique can encourage the children not to just remember an answer but to develop it further and show understanding and progress through the stages (Bloom 1956).

During the beginning of PTE1 I would only use pit stops too close to the end and it would be a little late to look at any misconceptions within the lesson. After talking to my mentor, we came to a conclusion that this was to be a strong focus to improve on, we felt this was important due to the benefits it has on the pupils, but also on my teaching, I could then gain a clear understanding as to what level the children are at and allows me to change the focus of teaching if it was necessary (Grigg, 2015). Furthermore, during the lesson if I saw one child forgetting capital letters or full stops, I would then do a pit stop and get the pupils to look at their work and their partners. This encouraged children to check their work throughout and self-assess without singling out a certain pupil (Welsh Government, 2010). By using Blooms taxonomy within my lesson it allowed me to check how well the children understood the objectives of the lesson by the questions I asked. This tool provided the guidance I needed to encourage higher level thinking instead of just accepting a recall answer without advancing their learning further (Armstrong, 2016 & Bloom 1956).

The second form of AFL that I adopted within my teaching was the use of a Success Criteria. By sharing success criteria with the pupils, it eliminates the subjectivity of what makes good work as it is displayed clearly and they know what is expected by the teacher (Purves, 1993 & Hall and Burke 2003). It is suggested that pupils who understand the process of a success criteria show greater improvement of those who do not do this process (Grigg, 2015, & Fontanna and Fenandes, 1994). Black et al., (2007) states that success criteria's need to focus more on achievement in comparison to their last piece of work, rather than comparing the results to another students. This is something I used with my personal teaching experience as some pupils, even after pit stops would struggle with certain elements on the success criteria. I would then make sure that the next piece of work they did, would improve due to a stronger focus on that particular skill. The success criteria was decided at the start of the project and then a criteria was stuck in their books on the set skills so that the children could constantly refer back to it. The illustrative example was used in a literacy lesson which encouraged the children to check through their work and tick at the end if they felt they have met the success criteria. This was a good tool as it allowed the children to become more independent with their learning and check the work themselves. This made the expectations from myself completely transparent to the pupils (Black et al., 2007) as they knew what I was looking for within their work. As the children were only 5 years old it also encouraged the skills needed for peer and self-assessment as they ticked their partners criteria if they met it which enhanced their ability to scan work and make a judgement in relation to a criterion. Hattie (2007) suggests that the use of modelling and regular and insightful feedback is important in the essence of scaffolding. This worked very well within my professional teaching practice as I modelled an example of work that I had done myself, whilst leaving out all of the skills on the criteria, this allowed the children to correct the example and know what is and isn't expected within the finished piece of work. Although I felt like the success criteria was beneficial for self-assessment, I will progress this further by creating a success criteria with the pupils. By allowing the children to co-create a success criteria it could possibly make the pupils feel more independent of their learning as they have come up with the criteria themselves. By taking ownership of their learning and creating the criteria it could encourage the children to tick them off themselves in comparison to a criteria that the teacher has created for them and stuck in their books prior to the learning (Griggs, 2015).

The final example of assessment for learning was the use of think pair share. This technique allowed learners to think about the question that has been asked during their lesson, the teacher then will allow time for them to discuss with their partner and then share what they have discussed with the class. This allowed the children to verbalise their thoughts and to express what they are thinking and allowed myself as the teacher to see how they learn. Furthermore, think pair share worked well as it encourages collaboration amongst peers. The collaboration process as suggested by Kaddoura, (2013) encourages the learners to take greater risks within their learning such as answer questions in front of their peers, when perhaps normally they wouldn't and in result enhance their own learning. This is something I want to develop further within my own teaching, as I want to ensure that the pupils have enough time with this process to gather their thoughts and also have an adequate amount of time to share with their peers. In addition to this I will ensure that I will not rush to start the work so that the children benefit from this AFL technique. (Black et al., 2007 & Welsh Government, 2010).

The second pedagogical principle that I enforced within my teaching, as suggested by Donaldson in Success Futures (2015), was the use of cross curriculum responsibilities and giving children opportunities to practice this within their education. This means including elements of literacy, numeracy and digital competence within many different contexts and subjects. It is assumed that cross-curricular work is often described as a way of stimulating and enhancing creative thinking (Barnes, 2015). Kerry (2015) suggests that cross curricular teaching and learning, allows teachers and pupils to make relevant connections within their learning across many different subject areas. This allows the children to create links that perhaps wouldn't happen in subject specific lessons and apply the skills in different contexts. Teachers could do this by planning to do graphs on the computer thus linking maths and ICT. The benefit of this is that the children will enhance both their numeracy and digital competence at the same time. Estyn (2016) states that one way of creating cross curricular learning is having an overall theme to achieve interdisciplinary learning. By having an overall theme allows the teacher to still have a focus within their lessons whilst still having the cross curricular aspects (Savage 2010).

For example within my PTE the overall theme was America, as included within my illustrative evidence we chose to focus on Native America and the art that the Native Americans did in the past. This worked well as the children were excited to explore the different aspects of Native American art. We introduced properties of shape by using a game on the computers, all children showed aspects of learning due to visible engagement of the children and all of the pupils wanted to contribute to the lesson. This game enhanced the ICT skills but also allowed them to think about properties of 2D shapes.

The next step of this topic was to use the information that they had learned and create art like the ones they had seen previously. This lesson enhanced both their numeracy and art skills in a fun and creative way. I felt that it was important to link the two topics together as the children had only recently been introduced to the properties of shapes, by completing the maths element it helped them understand the purpose of what they were doing. If I was to do this lesson again with more time, I would encourage the children to upload their work to an application on the iPads and discuss what they have found out about Native Americans so that they are working on their oracy and digital skills as well.

The last illustrative example for cross curricular learning was the use of Welsh Literacy. During this task I ensured that I was using as many assessment for learning techniques to encourage the children to meet the success criteria. Although the main focus was improving their Welsh vocabulary it was also important to still improve their literacy skills. Although the subject was enhancing their Welsh skills we also set a criteria as ability groups on what was expected within their finished piece of writing. The criteria included the use of capital letters and full stops as this is something they needed to continuously work on. By using a bilingual approach in lessons like this, could enhance the pupils enthusiasm and enjoyment of the language, as it has not been isolated to a subject of its own and will not overwhelm the children. In result of this, the learning of Welsh and literacy will hopefully create an interest for the children to carry on with this throughout their education (Lovell, 2019 & Welsh Government 2019). By focusing on the Curriculum Cymraeg to learn about thanksgiving has enhanced their language skills, but also learning about the world which is seen as important to this curriculum (Welsh Government, 2003). I believe that the children responded very well to this lesson. through the use of AFL techniques, we could determine if the children were confident with the skills they have learned or if we needed to address these skills further. If I was to do this again I would ensure that there was more freedom in Think, Pair Share and allocate more time for detailed questioning as this is something myself and my class mentor believed I could have improved on within this lesson.

The last pedagogical principle that will be reflected is the importance of selecting resources that will build on previous knowledge. Donaldson strongly advises within this review that there is an importance for teachers to plan, set tasks and use resources that will develop previous knowledge, whilst also enhancing children's interest and engagement. Donaldson also suggests that these resources and the task should be as personalised as possible to each pupil as no child learns in the same way. Rosenshine (2012) suggests that the most useful way of children retaining information is to build on previous knowledge, this can involve different techniques such as having the background information accessible, this could be done by having handouts of the information, or related classroom displays. It is also seen as important that when building on the previous knowledge, the teacher builds on these experiences in manageable amounts not to overwhelm the pupils and to keep them engaged. Whilst also increasing their knowledge of their subject it is beneficial for the teacher to model what is expected and if the students get anything wrong or have any misconceptions, it is important that they have had help in correcting these issues during the lesson (Rosenhine, 2012 & Coe et al, 2014). Watson (1925 & 2017) released a behaviourist model on the importance of recall and regular short reviews of the previous lesson. This will allow the information to be stored in to a child's lifetime memory (LTM). By repeating and recalling the information within half a day, full day, week, month and half a year the recall will have a 100% accuracy rate. This is important as the pupils within primary education, as there are many different factors that can influence a child's mind for example: when they go home the information has the possibility of getting lost. By starting a lesson by touching upon the previous skill/topic, allows the pupils to see a link with the learning of what had been previously learned and what they are about to learn. The use of this pedagogy can create a sense of justification for the pupils as to why they are learning the skill that they are and the purpose of it. Another approach that focus' on prior knowledge and experience is constructivism. Phillips (1995) states that the knowledge that we have learnt previously allows pupils to use this and influence the new skill or topic. This then allows the pupils to create new experiences within their learning. This is important for each pupil to do as Mcleod (2019) states that information can either just be received and forgotten about later, or if the learning they receive is meaningful, then they will show understanding. Watson (1925) suggests that pupils will make useful and purposeful connections from their prior knowledge. By using a constructivist approach within my teaching practice during PTE, it allowed me to assist students in the linking process of information and allow them to interpret this information, both old and new in the way they see fit as each pupil is different and will store this information the best way they believe. By linking this model with Watson's behaviourist model of repetition it will allow them to create links and show understanding by using repetition (Piaget, 1936 & Mcleod 2019). Furthermore, by adapting these models and techniques will allow the children to reach the proximal zone of development (Vygotsky, 1978), this zone describes the area to which a pupil can solve a problem on their own and the zone to which they need assistance. If there is a balance of both then Vygotsky believes that these pupils will improve their development within their education.

During my PTE experience as included within my illustrative example, I ensured I was building on the pupils previous knowledge. Before my placement, the pupils had begun data collection and looked at examples of tally charts and focused on just the use of inputting data. To create the link between what they have previously learnt, we talked about the different ways they could represent this data. This then creates a purpose of the learning and the children can then mentally create the link. Progressing on from this, the children then created bar charts from the tally chart data. For the children who had Additional learning needs I ensured that resources for this task were suitable, assisted when necessary and asked questions so that there was evidence of learning taking place. When creating pictograms with the children I cut out all the symbols for them to stick in to their books. For the able and more able children I used relevant resources that I believed would enhance their learning whilst still building on their previous knowledge they had to learn about the importance of titles (HWB, 2019). For the basic skill pupils and addition learning needs pupils, it would have been easier to cut the symbols in to strips, so all they had to do was cut off the excess symbols that they didn't need. The children then only had to focus on the intended skill and not worry about individually gluing and sticking. I felt that for these children the engagement started to fall slightly as it was a time consuming process. However, the children could still link the knowledge with what was previously learned and enhance their learning.

Finally, the last illustrative example brought all of these skills together as they had to extract information from the text to show understanding. This was a nice way to tie up the project and the children enjoyed the use of a pre-existing graph. This piece of work allowed me to see if the prior knowledge was carried through and that the children's ability on data collection had grown. The children within my placement class could use what they have previously learnt about graphs and could bring it forward to what they were doing within the comprehension. This showed me that linking the topics together but advancing each time worked well as all the children felt like they understood, there was strong evidence of learning with pupil feedback and when I marked their work. All of the skills were met and they could personally reflect on what they had learnt.

During my first PTE I had plenty of opportunities to self-reflect through the use of a learning journal and weekly reviews with my class mentor. This helped me to realise what pedagogical principles I needed to improve and how I could do them in future lessons. It was interesting to see how I had already picked up on the points that I believed needed to improve such as allowing enough time to implement the AFL strategies that I had planned to do such as using Think, Pair, Share and allocating enough time for the pupils to communicate effectively. However, after researching the pedagogical principles I will ensure that I use some different techniques as I always tend to use the same ones and I think it will keep it interesting to change these techniques every so often. After reading texts of these different techniques and recommendations, I feel like it has made me more confident in trying out new things that perhaps my class mentor hasn't used with the class before. This is something I will take with me to my next placement and future career within teaching.

References

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- Armstrong, P., 2016. Bloom's taxonomy. *Vanderbilt University Center for Teaching*.
- Barnes, J., 2015. *Cross-curricular learning 3-14*. Sage.
- BLACK, P. and WILIAM, D. (1998). *Inside the Black Box: Raising Standards through Classroom Assessment*. London: King's College London, School of Education.
- Black, P. et al., 2007. *Assessment for Learning*, Maidenhead: McGraw-Hill Education.
- Bloom, B.S., 1956. Taxonomy of educational objectives. Vol. 1: Cognitive domain. *New York: McKay*, pp.20-24.
- Coe, R., Aloisi, C., Higgins, S. and Major, L.E., 2014. What makes great teaching? Review of the underpinning research.
- Donaldson, G. (2015). *Successful Futures*. [online] Crown, pp.29-30. Available at: <https://gweddill.gov.wales/docs/dcells/publications/150225-successful-futures-en.pdf>
- Estyn.gov.wales. (2016). *Cross-curricular themes that develop pupils' key skills | Estyn*. [online] Available at: <https://www.estyn.gov.wales/effective-practice/cross-curricular-themes-develop-pupils'-key-skills> [Accessed 5 Jan. 2020].
- Fontana, D. and Fernandes, M., 1994. Improvements in mathematics performance as a consequence of self-assessment in Portuguese primary school pupils. *British Journal of Educational Psychology*, 64(3), pp.407-417.
- Grigg, R. (2015). *How to be an outstanding primary school teacher*. 2nd ed. Oxon: Routledge.
- Hall, K. and Burke, W. (n.d.). *Making formative assessment work*. Maidenhead: Open University Press.
- Hattie, J. and Timperley, H. (2007) 'The Power of Feedback', Review of Educational Research, 77(1), pp. 81–112. doi: 10.3102/003465430298487. <https://hwb.gov.wales/storage/f8f9760c-64a1-48ea-80fd-db130ad9050b/a-guide-to-curriculum-for-wales-2022.pdf>
- Kaddoura, M., 2013. Think pair share: A teaching learning strategy to enhance students' critical thinking. *Educational Research Quarterly*, 36(4), pp.3-24.
- Kerry, T. ed., 2015. *Cross-curricular teaching in the primary school: Planning and facilitating imaginative lessons*. Routledge.v
- Lovell, A. (2019). *Wales wants to make the Welsh language part of every lesson under new curriculum*. [online] The Conversation. Available at: <http://theconversation.com/wales-wants-to-make-the-welsh-language-part-of-every-lesson-under-new-curriculum-120312> [Accessed 5 Jan. 2020].

McLeod, S. A. (2019, July 17). *Constructivism as a theory for teaching and learning*. Simply Psychology. <https://www.simplypsychology.org/constructivism.html2>

McLeod, S., 2018. Jean Piaget's theory of cognitive development. *Simply Psychology of Taxonomy of Educational Objectives (Handbook One*, pp. 201-207)

Phillips, D. C. "The Good, the Bad, and the Ugly: The Many Faces of Constructivism." *Educational Researcher*, vol. 24, no. 7, Oct. 1995, pp. 5–12, doi:10.3102/0013189X024007005.

Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.

Purves, A.C., 1993. Setting Standards in the Language Arts and Literature Classrooms and the Implications for Portfolio Assessment. *Educational Assessment*, 1(3), pp.175-199.

Rosenshine, B., 2012. Principles of Instruction: Research-Based Strategies That All Teachers Should Know. *American Educator*, 36(1), pp.12–19.

Savage, J., 2010. *Cross-curricular teaching and learning in the secondary school*. Routledge.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Watson, J.B., 1925. *Behaviorism*. Routledge.

Watson, J.B., 2017. *Behaviorism*. Routledge.

Welsh Government (2003). *Developing the Curriculum Cymreig*. Cardiff: HWB, pp.1-6.

Welsh Government (2010) - Why develop thinking and assessment for learning in the classroom? <https://s3-eu-west-1.amazonaws.com/hwb-live-storage/05/ae/7b/09/4ca143999dea481cd5d23846/why-develop-thinking-and-assessment-for-learning-in-the-classroom.pdf>

Welsh Government (2019). *Get to know Mathematics and Numeracy*. Cardiff: HWB. to know Mathematics and Numeracy

Wiliam, D (2018) *Embedded Formative Assessment – Unlimited online copied available via UWTSD library*