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Assignment Title: Critically reflect on your pedagogical progress demonstrated through required elements of the Professional Learning Passport, identifying a specific area for professional development and justifying next steps for improvement

	Target	What I have done in this assignment...
Target 1	Provide more specific detail from your observation, and link your literature to the specific elements of what you saw.	When picking the element of pedagogical practice to focus on for part 2 of this assignment, I tried to pick an experience that I felt I would be able to find sufficient literature for to convey the points that I wanted to share and to enable me to produce a research-backed assignment. I have also tried to find a broad range of literature to show the scope of what I have looked at, and to obtain different views and understandings of the content.
Target 2	You don't always need to include page references when you're not quoting directly. See p6 of the UWTSD Harvard guide for more details.	Before submitting this assignment, I made sure to look at the UWTSD Harvard guide to clarify what needed to be included in in text citations and the

		reference list at the end of the assignment. I also made sure to fully check the referencing software that I use, to make sure that all references and citations had the same formatting options.
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Part 1: Professional Learning Passport

Bridging 2 Reflection

Meet

Tystiolaeth / Evidence	Adfyfyrio / Reflect
This was an online Teams meeting with the rest of my network group. Both the Network lead and Mentor were present in this meet, as well as other student teachers across primary and secondary courses. This session focused on introducing us to our second bridging event, which focused on AfL strategies and their implementation in the school environment. During the session, we had to come up with a range of AfL strategies that could be included under each heading. This was done collaboratively in groups, and shared with the rest of the network. In preparation for the 'Test' phase of the bridging event, I needed to pick a technique that I could implement into my classroom, and report back my findings to the rest of the network on the 'Share' day (25.11.20).	I feel that this session was helpful, as it enabled me to find out about some techniques and strategies that I was unaware of. I felt that by hearing about these other strategies that I could think of ways that they may be adapted to better suit the children that I am working with in Foundation Phase. Some strategies that were mentioned were ones that I felt were familiar (sharing the success criteria with children throughout the lesson), whilst others were newly introduced to me (variation on face stickers was using traffic lights instead). Some strategies I was already doing, and did not realise that they were an AfL strategy until it was mentioned by someone else (using a variety of open and closed questioning). As a result of this 'Meet' day, the following techniques are the ones that I chose to implement in the classroom. Quality of talk and quality of questioning: Secret squirrel. Sharing success criteria with others: using a mini whiteboard to share the criteria, whilst having the children to cross it off once it had been used. Peer and self assessment: showing their thumbs during/after a task. Quality and use of feedback: What went well; even better if.

Test

Tystiolaeth / Evidence	Adfyfyrio / Reflect
Throughout the 'Test' phase, I made sure to try out all of the techniques mentioned above.	<u>Quality of talk and quality of questioning: Secret squirrel.</u>

Some techniques were easier to implement multiple times and with multiple groups, whilst others were more difficult to implement more often due to the content of the work covered during the period. <u>Quality of talk and quality of questioning:</u> <i>Secret Squirrel.</i> This was used as a plenary task after completing work on shapes. This was played 3 times on the same topic (once with each group). Mini whiteboards were used for this game, and children had to answer closed questions on what they had learnt about shapes. <u>Sharing success criteria with others:</u> <i>Mini whiteboards that had the success criteria on and children were able to cross off the criteria when finished.</i> This technique was used multiple times over the 'Test' period. Children were tasked with creating fact files, (one on a T. rex, and a second on a dinosaur of their choice). Success criteria was used as the headings that had to be included in their fact file. Each group was also able to experience this technique twice. <u>Peer and self assessment:</u> <i>children showing their thumbs during and after a piece of work.</i> This technique was implemented multiple times a day, both on the carpet and during group work sessions. Children got used to this technique by the end of the test phase. It also provided opportunities at the end of a piece of work for me to ask children why they felt the way that they did. <u>Quality and use of feedback:</u> <i>what went well; even better if.</i> This technique was used once during the session, after a feedback session on the fact files that students had created. This was done as a class, and we discussed what was good about our fact files, and how we could make them better next time.	Children in a mixed group of higher ability and middle ability seemed to really enjoy this game as a recap. They worked well in pairs, and had enjoyed the fast paced nature of the game. They also got to do a variety of things in the game, including draw shapes, write numbers and write words. I am unsure if this is the first time that the game has been played with the students, but I would like to try this technique again in the future. In contrast, the game did not work as well with another middle ability group. The children were confused about the concept of the whiteboards, despite the purpose of them being explained in multiple ways and with multiple examples. As a result, the same questions were asked in a Think, Pair, Share format, which obtained better results. Next time, I think that I would give each pair multiple whiteboards, so that they were still working as a team, but could write their own answers down to remove any animosity between individuals. <u>Sharing success criteria with others:</u> <i>Mini whiteboards that had the success criteria on and the children were able to cross off the criteria when finished.</i> This technique appeared to work very well with the children, and they enjoyed being able to cross off the criteria as it was worked through. Having the criteria at the front of the group made sure that we could all see what would be coming next in our fact file, and also enabled me to make sure that I was keeping a good pace with the group. Having it at the front also meant that children who had finished the fact that we were looking at were able to move onto the next fact that they would be required to find on the information sheet. I would like to use this technique again, and see if it remains as effective at keeping children on task if it was implemented with them creating their own success criteria.
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	<u>Peer and self assessment:</u> <i>children showing their thumbs during and after a piece of work.</i> I felt this way quite an easy way of judging how a child felt about the task that they were completing/had just completed. My only concern with this technique is that children may say something different to how they actually feel because of the people that are around them. Once children had shown their thumbs to me, particularly during group work, I was able to ask them why they felt the way they did about the work that they had completed when I was marking their work. Some examples of things children said when they felt confused or unhappy with the work included: not fully understanding a particular piece of the work; not understanding the difference between two pieces of information that we had learnt, or not liking a picture that was used in their work. <u>Quality and use of feedback:</u> <i>What went well; even better if.</i> I don't think that this technique was as effective as it could have been. I tried to make the technique as a simple as possible for the class that I was with, but I am unsure if the concept itself was too difficult for them. I also don't think that I explained the technique as well as I could have done to the children. After asking some children to share their fact files with the rest of the class, I collectively asked children what they thought was good about the fact files that they had made. I gave some examples, including that they found good information and headings, and a few children were able to come up with a few specific suggestions relating to what had already been said. For the even better if, a few children again had suggestions, including drawing a picture instead of sticking one in for next time.
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Share

Tystiolaeth / Evidence	Adfyfyrio / Reflect
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For the 'Share' day, I created a powerpoint presentation to share with the rest of the network group on two of the strategies that I used. The strategies that I chose to share were Secret squirrel and using the mini whiteboards as success criteria. After sharing my presentation, I was provided with some useful advice on how I could improve the techniques that I had chosen, particularly the Secret squirrel game. I also got to hear about everyone else's findings from their bridging days during this event.	I got some nice comments on the techniques that I had chosen to present from the network lead and a University lecturer, and some good advice on what I could do to improve them both. The main comments about the Secret squirrel game that I took away included giving each child in the group a whiteboard even if they are working together, as this would help to reduce any confrontation and still let children keep their independence during the task. Whilst listening to everyone else's work, I was able to identify some other techniques that may work in the class that I am in or in the future. These included using traffic light cards instead of thumbs up or thumbs down for children to show how they are feeling with different elements of a task, and the different ways that people displayed the learning objectives and success criteria to the class.
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DGB/SKD

Llythrennedd / Literacy

Evidenced by an asset? ✓

Point 1 in box.

After completing a skills self assessment in University, I found that one of the literacy areas that I needed to improve on was my understanding of the terminology used when talking about grammar. Whilst I was familiar with the different elements that make up a sentence and how different elements are used, I wouldn't have felt overly confident in my ability to teach these concepts to a class. I was able to find information on Grammarly.com relating to the different types of grammar that are used, as well as additional information on punctuation that I am less familiar with, such as semi colons and possessive apostrophes. I found both of these resources to be extremely useful, as they explained the concepts clearly, and provided examples that were easy to understand. The resources were also very detailed, and I was able to find out more information than I initially had set out to find. I was also able to find information on grammar through BBC Bitesize. I felt that this would be a good resource to use as it is commonly used by children to aid in the teaching and reinforcement of topics. I also thought that it would be a good way to see how someone might teach the concept and definitions of grammar to children, so gave me some ideas of how I could go about this. During week commencing 08/02/21, I taught Key Stage 2 children how to write a fictional legend. I found that previously covering this content was beneficial, as I felt more comfortable when teaching that I was going to identify different elements correctly and therefore provide the children with correct terminology and definitions.

Rhifedd / Numeracy

Evidenced by an asset? ☐

N/A

Cymhwysedd Digidol / Digital competence

Evidenced by an asset? ✓

Point 3 in box.

During an in-class day with my class mentor, I was shown how to use both Flipgrid and Explain Everything. For some sessions, I feel that Flipgrid will be more appropriate. For lessons that require explaining of content, I can use Flipgrid to film a narrated PowerPoint. I have also been able to use Flipgrid to show children a demonstration of how to follow written instructions, as I was able to have the instructions in a Word document on half of the screen and a video of myself following them on the other half. Explain Everything is more like a whiteboard, which I feel will be beneficial for teaching the children maths due to the ability to write numbers and equations much more easily on tablet devices or using a computer mouse. Explain Everything also has the option to voice record along with what is being shown on screen, meaning that I would be able to talk the children through the content that I am teaching them and provide reasoning as to why I am completing something. Having a variety of tools available to teach the children means that I am able to find ways that best suit the content that is being taught at the time.

Gwybodaeth bynciol / Subject knowledge

Evidenced by an asset? ✓

Point 2 in box.

During PTE1 Block 2, I was able to teach children in the class about Science. The area of Science that was focused on for these lessons was Physics, with the topic being about forces, friction and air resistance. When I was at school, I did not feel that Physics was my strongest area of Science, and I used to find it difficult to grasp the concepts that were being talked about in the lessons. In order to both put a lesson together for the children, and feel comfortable enough in what I was teaching the children I needed to complete my own research into the topic. To do this, I used a variety of websites that are referenced in this document. Initially I was able to find information on the topic of forces as a whole, and over time when my lessons in the topic became more focused, I was able to add to this document with more detailed information. I do feel that the variety of websites that I used to find information were helpful, and covered a broad range of target audiences. BBC Bitesize broke the different concepts and areas down into smaller chunks that were able to be easily described, and the content that was provided was described in a child friendly way. The School Run was another website that provided lots of fantastic information on the topic. I was able to gain lots of additional information from this website about forces, as well as some ideas that could potential be used in a classroom environment to

demonstrate what was being covered in the lesson. After finding out more information, I felt much more comfortable in being able to deliver the content to children. I would still like to do further reading on the topic, to make sure that I could cover all elements in the classroom and remove any potential misconceptions that I may have.

Datblygu'r Gymraeg / Welsh Language Development

Evidenced by an asset? ☐

N/A

Safonau/ Standards

Professional Experience Template 1: Progression in Maths with the topic of time

Pedagogy Standard: Refining: Differentiation

What did you do and why?

This experience focuses on a series of Maths lessons provided to a year 4 class during PTE1 block 2. The topic that I taught during these Maths lessons was time. I initially felt that time would be a nice topic to cover, as I feel that it is more 'game-like' to teach as it does not necessarily involve the basic mathematical operations (Tomlinson, 2017). I also felt that it would be an appropriate topic to cover when lessons with this class were asynchronously taught online, meaning that the content that I felt they needed to know could also be shared in differentiated videos for each group every day (Tomlinson and Moon, 2013). It was also suggested to me by the class teacher that I try and pick a topic that strayed away from the basic mathematical operations, as they had just completed a relatively sum-based topic the week previously.

The videos produced each day were differentiated by group, in order to suit group ability and tasks set (Winebrenner, 2003; Tricarico and Yendel-Hoppey, 2012; Parsons, Dodman and Burrowbridge, 2013). Red (MA) and Green groups had access to one video, whilst a separate video was available for children in Blue (LA) group. All videos had the same structure to them (Domen *et al.*, 2020). Videos started by sharing what aspect of time children would be looking at that day, and what the learning objectives for the lesson would be (Tomlinson, 2017). The both the learning objectives and the content covered in the videos changed daily, and allowed children to build on knowledge that they had been able to develop the previous day/s. Children were reminded of both the minute hand and the hour hand in each video, along with the colours that they would be for them to differentiate them (which were kept the same in each video to avoid confusion). Children were shown examples of adding clock hands to the clock when reading a written time, as well as examples where children had to work out the time based on what the clock hands showed. When producing the videos, I made sure to narrate to the children what I doing, why I was doing it and what it ultimately meant for the task (e.g. I'm going to draw the minute hand, the blue hand, towards the 12, because the time that we need to show on the clock is an o'clock time. I'm going to draw the hour hand, the red hand that is smaller than the minute hand, pointing towards the 5, as we can see that we need to show 5 o'clock on the clock face) (Nurmi *et al.*, 2012; Tomlinson and Moon, 2013). The videos produced were between 2-4 minutes long. Children also had access to these videos throughout the week, as they always had access to previously completed assignments on Microsoft Teams. In order to avoid confusion for children, separate assignments were created for Red/Green and Blue groups. This way, children only had access to the video and worksheet specific for their group, to avoid becoming overwhelmed by the number of links on the assignment .

Blue group were provided with a different worksheet each day to Red and Green group (Parsons, Dodman and Burrowbridge, 2012; Tomlinson, 2017). The content of Blue group lessons was

different to the content taught to Red and Green groups. The areas of time that were looked at throughout the week by Blue group were o'clock times, half past times and quarter past/quarter to times. Lesson 3 (Wednesday) allowed children to consolidate their knowledge on o'clock and half past times, as these had been taught on separate days. The types of worksheets produced for Blue group included a matching exercise where times needed to be matched to clocks, drawing the hands on clocks from the time written on the page (these clocks were larger than the clocks for Red and Green) and identifying an activity that children could do at specific times.

As well as differentiating the work for this group by having different types of activities on the worksheets, work was also differentiated by adding voice notes to each of the introduction pieces for children to listen to, using larger clocks when children were expected to draw and using a larger sized font on the page.

Adding voice notes to the worksheets ensured that all children were able to engage with the work that had been set that day. All children who completed the work for Blue group were at different stages of the Read, Write Inc. program, meaning that they would have difficulty in reading the instructions for the task if there was no adult or support system around. The use of voice notes ensured that they would be able to physically hear what they were expected to do in the task, therefore allowing them to complete it to the best of their ability (Lawrence-Brown, 2004; Fahsl and McAndrews, 2012).

I also chose to create the clocks on the page larger for this group in activities that allowed them to draw the hands onto the clock (Fahsl and McAndrews, 2012). My class mentor had mentioned that some of the children in these groups had difficulties with motor skills, so by making them larger they did not have to be so precise with drawing lines onto the clocks if they chose to complete them on the computer. It was also beneficial for the children who decided to print the work and complete it physically, as by making the templates larger allowed them to have less to focus on at one time (Frankling, Jarvis and Bell, 2017). Using a larger font enabled me to make any writing that was on the page clearer and easier to read for all children in the class. As well as applying to written headings and instructions, this also applied to any time labels that the children needed to use on the page (Fahsl and McAndrews, 2017).

Red and Green groups lessons looked at 15 minutes intervals, minutes past times, minutes to times and 24 hour clock. The worksheets for these groups consisted of drawing hands onto clocks that were obtained from a written time and writing down the time shown on the clock. The challenge questions for these groups were differentiated, and included thinking of activities that could be undertaken at a time of their choice, matching a 12 hour clock time to an analogue clock (lesson 3; the day before it was formally taught) and converting 24 hour clock times into 12 hour clock times, and vice versa (Beecher and Sweeny, 2008). Challenge questions were mainly differentiated between the two groups by the type of task that the children were expected to do (Tomlinson, 2017). The worksheets for these groups were differentiated from each other by the order that clocks were put in on the page, the font size used, the type of challenge questions that were provided and the amount of challenge questions provided (in some cases). Due to both groups covering the same content, I did find it harder to differentiate between the two groups.

Altering the order that clocks were placed onto the page was one method of differentiating the work between the two groups. Whilst the clocks provided for Green group were in more of a set order (question order: o'clock, quarter past, half past, quarter to), the question order for Red

would be more mixed up, encouraging them to think about more of the aspects that had been covered in the video as opposed to logically following the sequence provided. This provided an additional element of challenge for Red group, and encouraged them to think and work out the questions that were on the page more than simply following the order pattern that the questions were in. When differentiating challenge questions, I tried to make sure to provide different types of questions for both Red and Green groups. With Green group, I was able to encourage them to identify their own times and an activity that may occur at those times for the challenge question on the first day, whilst I was able to provide Red group with a few short word problems to raise awareness of time being used in a real life situation (Ruys *et al.*, 2012). Whilst there was an overlap on certain occasions in regards to the activities not being completely different, I was able to differentiate them by changing the wording or the number of questions that groups had to answer. The best example of this can be seen on Thursday's lesson on 24 hour time, where I provided Red group children with a broader range of 24 hour times to convert to 12 hour times than Green group.

When these lessons were online and I was not in the Hub, I was available all day for children to ask any questions or to provide help in any way that would be beneficial to the children. I also made sure to mark work in the evenings so that children were able to look back at their feedback the next day and have the opportunity to make any corrections necessary for their improvement.

When in the Hub, I was able to work directly with children (Guay, Roy and Valois, 2017). I was able to explain certain aspects to them if they were confused. I had also prepared a game for the children to use in the Hub, which involved a series of clock faces with the hands already printed on them. Children were able to guess what time was on the clock, or they could match the time shown to one of the pre-printed times. Alternatively, children were able to use the pre-printed times to draw the corresponding hands onto a blank clock face. This method was undertaken the most by children in the Red and Green groups.

The blank clock faces were also a useful provision for the children in Blue group when they were required to draw the hands onto the clock face for part of their task (Rosenshein, 2012; Guay, Roy and Valois, 2017). Children in the Hub were able to draw the answer directly onto the clock face instead of on screen, and I was able to mark their work directly with them and make a note that it had been completed online.

The standards that this experience supports are: progression in learning (Pedagogy: advancing learning); differentiation (Pedagogy: refining teaching); taking responsibility for self (Leadership) and evaluating the impact of changes in practice (Innovation).

Justification for the above standards

Progression in learning

I feel that progression in learning occurred throughout the week with this topic. Children in Red and Green groups were able to expand their knowledge on time beyond analogue clocks and 5 minute intervals to both 12 and 24 hour digital clocks. Blue group were able to recognise quarter past and quarter to intervals with increasing confidence by lesson 4. Children also had access to the videos that they had watched throughout the week, meaning that if they did feel that they were confused or stuck on a certain aspect, they were still able to revisit the video to help them

(Rosenshein, 2012). I also made sure to focus on a small aspect of time each day, so that children were not overwhelmed in one go, and made sure to provide children with opportunities that they could use to recap and revisit what we had learnt in the week (Rosenshein, 2012).

Differentiation

During this series of lessons, I was able to differentiate a range of factors for the benefit of the children that I was working with (Tricarico and Yendel-Hoppey, 2012; Tomlinson, 2017). As the sessions were delivered asynchronously, I was able to prepare and film different videos based on the content that children in different groups would be completing that day. As a result, Blue group was able to see one video, whilst Red and Green were able to see a different video (Parsons, Dodman and Burrowbridge, 2013). I also made sure to differentiate how I spoke about aspects that were the same in some videos to make sure that all children would clearly be able to understand what was being talked about. I was also able to differentiate the worksheets that children completed during the tasks. Whilst Blue group had matching exercises and some drawing of hands and writing of times later on in the week, Red and Green groups were able to draw clock hands and write clock times from the beginning of the week (Guay, Roy and Valois, 2017). Children in Red and Green also had varied challenge questions, including identifying a time and thinking of an activity that they could complete at that time, and converting between 12 and 24 hour clock times. There was also differentiation in how provisions were provided for children (Lawrence-Brown, 2004). Blue group typically had spoken instructions as a voice file on each of their worksheets, so they were able to hear the instructions as well as read them (Beecher and Sweeny, 2008). Children present in the Hub also had access to laminated clock cards. Whilst children in Red and Green groups used these cards to match times to clock faces or draw hands on for a friend to answer to test them, children in Blue group used these clocks to draw the clocks shown on screen to aid their understanding.

Taking responsibility for self

When planning these lessons, it was the first time where I had been given completely free choice over what I could teach the children. From the idea of teaching time to the planning and delivery was all my input with comments from my mentor as to how I could improve or make changes where appropriate. I was quite proud that I had the opportunity to take full responsibility not just for a single lesson, but for a series of them. I also feel that responsibility of self was best demonstrated this week in the videos that I produced. When creating them, I made sure that the visuals that are included are clear and I have explained why I have placed hands in certain places to make it easy for the child viewing to understand (Domen *et al.*, 2020). I also feel that the language and way I described different elements of the videos was also appropriate for the children. I made sure that I marked the work completed by children in a timely manner (aiming for the same night, but if this was unachievable then it would be marked the next morning) so that children had an opportunity to improve on what they had done or know they were doing the right thing before continuing on (Valiente *et al.*, 2008).

Evaluating the impact of changes in practice

I had some valuable conversations this week with my class mentor into how I would be able to better differentiate my work. I found out about that differentiation does not just cover and apply to difficulty of work, but the types of provisions that you provide in order to make the work more

accessible and equitable for every individual in the room (Tomlinson and Moon, 2013; Deunk *et al.*, 2018). Hearing this advice from this perspective was invaluable to me, as I would never want to produce something that was unintentionally inaccessible for someone. From these conversations, I was able to make the writing bigger on worksheets, add voice notes to worksheets and produce aids that could be used in the classroom to benefit individuals (Lawrence-Brown, 2004; Fahsl and McAndrews, 2012).

What have you learned?

During this experience, I learnt about taking the time before planning to think about how I would like a series of lessons to go. As I was able to lead the planning for this topic, I needed to identify which aspects I felt would be most important for the children to learn and define in which order I felt that they would be beneficial for the children to learn. Taking the time to plan a block of lessons like this meant that I could develop a general structure for my first lesson, and adapt it for the other lessons that I was planning to teach for the rest of the week. I feel that this made my lessons flow much better, and they did not feel as disjointed when planning compared to stand alone lessons. I think that this has benefit for the learners as well, as they are able to become increasingly familiar with how I choose to present topics for their learning.

I have also been able to obtain advice this week from my class mentor about how to differentiate the work for Red and Green group. As they were learning the same aspects, I found it difficult to differentiate their work, apart from providing less for Green group. When speaking with my class mentor, they mentioned that I could differentiate the work by how it was set out on the page, mainly by how I ordered the different clock times on the page. This is something that I had looked at and altered throughout the week to make sure that they were suitable and provided some additional difficulty for those in Red group.

What next?

I found this experience to be particularly useful, as it was the first time where I have been able to plan for daily progression in a single subject area. As the lessons took place over a week, I was able to identify the elements that I felt the children needed to know by the end of the week, and segment the learning over the course of 5 days.

I also found the discussions this week with my teacher about varying differentiation through the provisions that I provide to be particularly useful. I had previously thought that the main way of differentiating work was through difficulty or the amount of questions, but I have learnt that differentiation can come in the form of provisions as well. This was demonstrated throughout the week where I made sure to produce a different video for Blue group compared to Red and Green groups, and by including voice notes on the worksheets for Blue group so that they did not have to read all of the instructions on the page. When in the Hub, I was also able to provide differentiation through laminated cards. Whilst blank cards were used by children in Red and Green groups to draw hands onto a clock to test a friend or themselves on what they had learnt, children in Blue group were able to use the same cards to physically draw the clock hands instead of working them out on screen. This is something that I want to continue to develop over the course of this placement, as I feel that accessibility towards lessons is very important, and those small changes can make the difference in how well a child may do in a task.

I would also like to do some further reading on differentiation via provisions. I feel that this would provide me with other ways in which I could alter my lessons to benefit all who would be present, and that having some evidence that supports this idea of developing children would be beneficial for me as a professional.

I look forward to having an opportunity to share what I have learnt in regards to different provisions with other people who are in my network. There may be individuals in the network who already differentiate their work by provision as well as difficulty, but there may be other people like myself who did not realise that altering these provisions counted as differentiation. Other people may have also not realised the impact that these small additions to work may have for children, so I would also like to share this with them to benefit their own practice, as well as gaining some other differentiation methods off others.

Professional Experience Template 2: Sequences in an outdoor environment (lesson)

Pedagogy Standard: Advancing: Blended learning

What did you do and why?

This experience was an outdoor lesson with the children in the Foundation Phase class that I have been working with. I was leading the session on looking at patterns and sequences in the outdoor environment. These sessions were split over 2 days, to allow the children to reinforce and practice what had been learnt during the first session. The work that children completed outside was also linked to their indoor maths lessons that I was also leading, which were focusing on 2d shapes. A combination of both of these was used later during this week and the following week in enhanced provisions.

Session 1

The whole session took place outside, and was the first time that children had been formally introduced to the concept of a pattern or a sequence. All children were stood around the log circle, where I had pre-printed sheets consisting of different patterns that they could potentially make as examples. I had also asked the children questions about what patterns they could think of after clarifying what they were. I made sure to discuss the success criteria of the task with the whole group, and clarified the task before putting the children into groups. Children also recapped the rules of being outdoors before they were sent to complete their task, which was to create a pattern of their own.

Whilst children walked around in their groups, I made sure to walk around the area, so that I could observe children and answer any questions that they had when completing the task. If a group finished their task before we were due to finish, an extension task of creating a second pattern with additional objects was set to aid in reinforcing their knowledge.

At the end of the session, some groups were given the opportunity to share what they had created. As a class, children were asked what went well and what could we do differently for next time. I made a note of their suggestions, to make sure that they could be used as the success criteria for the follow up lesson.

After the session, I had a discussion with my class mentor as I felt that there were aspects of the lesson that could be improved upon. I was given some suggestions on how to do things differently, which I utilised in the follow up lesson. Some of the suggestions included physically making a pattern in front of the children, going around each group to make sure that they had understood the task before starting and periodically calling all children back in to reinforce the task and keep them on task.

Session 2

This lesson took place the following day. When all children were around the log circle, we completed a short recap on what we had done the previous day. This included going over terminology again. To demonstrate what a pattern was, I used natural items such as sticks and leaves in front of the children. I also used individuals of the class to help create the pattern. After creating the initial section that was to be repeated, I asked different children in the class what item should come next. These individuals were then asked to come to the front to continue the pattern. Once all the class understood the purpose of the task, we went over the success criteria that had been discussed the day before. Outdoor rules were also clarified before the children were sent to stand in their groups from the day before.

Once in their groups, I made sure to go around each group to make sure all children understood the task. I also gave each group a small challenge that was specific to them and their ability group. Children were then sent off to complete the task. I made sure to walk around all groups to check their progress and answer any questions. I also periodically called children back to make sure that they fully understood the task.

At the end of the session, I made sure that there was time for all groups to be able to show the pattern that they had created during the session. We briefly spoke about the success criteria from the beginning of the session.

The standards that this experience supports are: four purposes for learners (Pedagogy: advancing learning); blended learning experiences (Pedagogy: advancing learning); progression in learning (Pedagogy: advancing learning); reflection on learning (Pedagogy: influencing learners) and enabling improvement (Collaboration).

Justification for choosing each standards

Four purposes of learning

This task allowed children to develop the purposes "ambitious, capable learners", "enterprising, creative contributors" and "ethical, informed citizens", which are mentioned by Donaldson (2015) and the Welsh Government (2020). Children were allowed to develop into "ambitious, capable learners" (Donaldson, 2015) by interacting with other members of their group to create a piece of work suitable for the task and supporting other individuals by explaining the task or

elements that they are unsure of. The children were allowed to develop into "enterprising, creative contributors" (Donaldson, 2015) by being able to use a different media to complete the set task and make creative decisions about the natural items that they found to decide what they would use create their final pattern. The children were able to develop into "ethical, informed citizens" (Donaldson, 2015) by being made aware of the different behaviours that they needed to express in the natural environment to keep themselves safe and take care of the environment, as well as respecting the opinions and feelings of others in the group whilst undertaking the task.

Blended learning experience

Instead of teaching the children about patterns inside the classroom, I chose to teach them about patterns and sequences in an outdoor environment, where children were able to physically create patterns with a range of natural objects (Coates and Pimlott-Wilson, 2019). As well as being able to develop the understanding of patterns and sequences, the children were able to creatively express themselves with the natural items that they could find, as well as develop an understanding of behaviour in an outdoor environment and the importance of fairness in group work tasks (Coates and Pimlott-Wilson, 2019; Bird, Harte and Ballard, 2020). The content covered in this session was further developed in the indoor classroom setting later in the week, through the use of a continuous provision exercise focusing on patterns.

Progression in learning

I feel that this is demonstrated as there were two sessions for children to develop and use their knowledge of sequences and patterns. During the first session, children were introduced to the concept of sequences and patterns, and were able to have a go at making them for the first time. They were also encouraged to think about patterns that they were already familiar with, and at the end of the session, what they could do to make the patterns that they created better. For the second session, children were more comfortable explaining what a pattern was and participating in creating a class pattern as an example. The children were also able to make patterns quicker than they had done the day before, and when given an additional challenge to complete for their task (such as use yellow leaves in your pattern, or make sure your pattern has 4 different items) they were also able to complete this (Lawrence-Brown, 2004). Having the second session so close to the first one also ensured that the children were able to build on the knowledge that they already had, as well as reinforce it.

Enabling improvement

As this lesson took place during a teaching placement, I was observed by the class mentor throughout. During each session, the class mentor had access to my learning journal, where they made notes on areas that I did well during the session and areas that I could improve upon (Duijnhouwer, Prins and Stokking, 2012). After each session, I was also able to have a discussion with my class mentor, who went through the points that they had wrote down in my learning journal in more detail, and provided me with actions or examples of things I could do to improve (Bell and Aldridge, 2014). These could be small actions, such as being aware of where I was standing or thinking of alternate ways that I could show an example (Singh and Mabasa, 2016). I made sure to enact on the information that I was provided with, and this was noted in my learning journal for the second session.

Reflection on learning

This occurred at the end of the first session, where children were asked which parts of making a pattern went well, and what they would do differently to make their patterns better for next time. The suggestions that they came up with were noted down, and I was able to use these as the success criteria that we would use for the next session (O'Leary, 2017). In session 2, children were initially able to reflect on what we had learned the day before, reinforcing this with a physical example of what a pattern was. As each group had been given an additional short task to complete alongside the main task, they were able to reflect on this at the end when we looked at each group's patterns. The children were also able to reflect on how they felt about the task, by using their thumbs to show their feeling towards it (Wiliam, 2018). This was independent of what they had learned during both sessions.

What have you learned?

From session 1, I learned how important it is for children to have a physical experience of a task or concept in order for them to fully understand it. I thought that having pre-prepared cards of patterns would be a useful tool for showing the children what a pattern was, but I found that after speaking to my class mentor that physically creating a pattern in front of them would help them to understand the concept much better, as well as chanting what came in the order. Having children take part in making the pattern was a much more effective method in session 2.

I also learned about how important it is to clarify what I am trying to say in the simplest way possible. I felt that I was providing the children with more information than they needed, which I needed to reign in for them to get the most out of the experience. I also feel that I was able to work on changing the language that I use when working with this age group, to ensure that they were able to understand what I was saying.

I also learned about the importance of repeating instructions throughout the task. I found that some children focussed on some aspects of the instruction more than others, whilst others may have been talking through certain parts of the instructions. Repeating them throughout the task ensures that no child is left out of what they should be experiencing, and should know what would be expected of them throughout the task.

Obtaining advice from my class mentor after the first session was also helpful. I found that by having someone observe me meant that they were able to see the areas that I needed to improve on, and were able to provide me with advice on how to best overcome or gain control of a situation.

What next?

As a result of this experience, I would like to take more time to think of examples that would better illustrate what I am trying to show the children. Although what I initially had planned felt like an appropriate way of showing the children what I expected of them during the task, I quickly realised that having the children physically see and experience what I would like them to would be a more effective way of getting them to understand the concept. In future, I would like the examples I use to be more hands on if appropriate, or more visual if they can not be hands on.

I would also like to ask for greater clarification on things if I am not completely sure. There were certain elements of the task that I was not sure if I was correctly explaining or using the correct terminology for, but was a bit embarrassed about asking for clarification on.

During this week, the children also learned about 2d shapes and their properties during indoor maths sessions. As a result, I planned to combine both the work on patterns and sequences from these sessions and the work on 2d shapes into a continuous provision activity, to further reinforce the concepts. Based off what I have learned, I will also make these continuous provision activities more hands on, so that the children can better relate to them.

Professional Experience Template 3: Using Turtle (JIT5) with a Foundation Phase class

Pedagogy Standard: Influencing: Learners Leading Learning

What did you do and why?

This experience focused on using the JIT5 program Turtle with a Foundation Phase class. I led all of the sessions that took place for this lesson, from the initial introduction to working with groups of children so that they were able to experience using the program. Due to the number of children that I was able to work with at a time in the groups, the same lesson was taught to different groups over 3 days. Due to the content of the lesson, a variety of AoLEs from the 2022 Curriculum were covered, including science and technology, expressive arts and maths and numeracy.

The introduction to the lessons was a whole class activity. Children were sat in front of the interactive whiteboard, where a brief discussion took place about what would be covered in the lessons, the lesson objectives and the success criteria. These were again mentioned when completing the group task with each group. Throughout the introduction, the interactive whiteboard was used to show the children the initial steps that they would need to complete to access Hwb and JIT5. To make sure that the children were fully involved at all points, I made sure to describe the step that would be taken, so that a child was able to come to the front to demonstrate. An example of this was saying to the children that we need to log in first, so I need to find a rectangle with a word that starts with 'l' inside it. A child would then come to the front and press the correct button. This was done for all steps up to opening the Turtle page in JIT5. There were also small reminders on where children could find their log in information, and why they should be the only ones to see the information.

When on the Turtle program, we collaborated to make a large square on the page, so that children had an idea of the controls that were being used. Terminology such as forward and backward was used and corrected if children said up or down. I also made sure to include say the direction options in Welsh, to introduce some new words to the children (Mae'r pili pala yn symud ymlaen? or mae'r pili pala yn symud yn ol?) [the butterfly moves forwards? or the

butterfly moves backwards?]. Once the square had been made, I made sure that children were aware of the importance of saving their work at the end, as well as logging off once they had finished using the program and the iPad. To ensure that the children were familiar with the process, I did a quickfire game of how to get back onto the program, where I pointed at different children and asked them about each step that got us to Turtle.

The children were able to complete the work on iPads. I found that children needed help to log into Hwb, either as some of the letters were written differently to how they usually saw them (capital letters) or they were unsure of how to access certain signs or numbers. Once signed in, all children were able to access the Turtle program. In order to make sure that the children were comfortable with the controls that were to be used, I was able to put different backgrounds on the interactive whiteboard through Turtle that were like games. An example of one background was a rocket ship that had to be moved across different planets with the controls, and each planet would have a flag on once it had been crossed over with the sprite. After a recap of the other buttons that were on the screen (delete button, save button etc.) the children had a time period where they were able to create a design of their own. During this time they had free choice to create anything on the application, and most were able to change the line colour or the sprite to personalise the work even more. Throughout this part of the lesson, I made sure to stress to the children that they were not able to do the task wrong, and that any mistakes they felt they had made could be easily fixed.

At the end of the session, I made sure that all individuals in the group were able to share what had been created with each other, by showing them how to play back how they had created their work.

There was also differentiation in this session, as I made sure to spend longer playing the game like backgrounds with some groups in order to ensure that they fully understood the different controls that they needed to use in order to create their work.

The standards that support this experience are: managing the learning environment (Pedagogy: refining teaching); challenge and expectations (Pedagogy: influencing learners); listening to learners (Pedagogy: influencing learners); learners leading learning (Pedagogy: influencing learners) and Welsh language skills (Professional learning).

Justification for the above standards

Managing the learning environment

Throughout the teaching of these lessons, any child that was not being worked with was able to go around the continuous provision areas. Whilst I working with groups of children, I needed to make sure that other children in the classroom were being respectful of each other, following the class and school rules and were behaving in appropriate ways (Korpershoek *et al.*, 2016). If children were not behaving appropriately, I was required to leave the group I was working with to sort out any situations. Typically, this was asking children to carry on with their activities quietly or go to an area where they were able to complete an activity (Piwowar, Thiel and Ophardt, 2013). This was one of the targets that had been set by my class mentor for the week, as I felt that it was an area that I needed to improve in.

I was also able to manage the environment by making sure that one of the options for continuous

provision activities was the use of iPads for children to continue using Turtle if they chose to. Many of the children worked with during the lessons enjoyed the activity, and wanted to be able to practice using the program more throughout the rest of the week.

Challenge and expectations

In the lesson plan attached to this experience, I decided to approach the task for the lesson in different ways depending on the ability group that I would be working with at the time in order to challenge the children (Parsons, Dodman and Burrowbridge, 2013). For one group, the challenge was to put the sprite on a harder mode. This prevented the sprite from moving as they pressed the directional buttons, and meant that they had to press play before the sprite moved. This meant that these children had to think a few steps ahead when pressing the buttons, and by pressing play they could see if they had done it right (Fahsl and McAndrews, 2012; Tricarico and Yendol-Hoppey, 2012). For other children, the challenge was more focused on ensuring that they felt completely comfortable with using a new piece of software. In order to do this, we played games using the backgrounds on the interactive whiteboard to start them becoming familiar with the controls (Lai, Zhang and Chang, 2020). To increase the difficulty for this group, one child was present on the floor, and had to give verbal cues to a partner stood at the interactive whiteboard on how to move the sprite between two locations (eg. child on the floor would ask the other child to move two steps forward).

Listening to learners

After the first introduction to the lesson, the subsequent introductions were led by the children. This was a way of reinforcing what we had previously covered, as they would tell me each of the steps that needed to be completed in order to log onto Hwb and access JIT5 and Turtle. When I went over the controls with a group, I was able to ask them how they felt about the controls and was able to use this information to gauge whether they needed any more support before they moved onto their own piece of work. Based on feedback that I received from the children at the end of the lesson, I decided to ensure that more iPads were charged so that children were able to access Turtle to continuing practicing on the program as a continuous provision activity. Lots of the children had wanted to spend longer on the program, and this way they were able to work with their friends and peers on improving their skills.

Welsh language skills

One of my ongoing targets throughout this placement has been to increase the amount of Welsh that I use during my lessons. I felt that it would be appropriate to use Welsh when I was teaching the children about the different controls in Turtle. When showing them an example on the whiteboard, I made sure to ask the children which direction the sprite should go in Welsh with actions to aid in their understanding of what I was saying, before saying the same phrase in English to clarify what I had meant. After doing this a few times (the introduction was repeated over the 3 days, with a different shape/background used), the children had started to pick up on the Welsh phrases, and some were responding back with the Welsh instead of the English. In order to work out the Welsh words that I needed, I was able to utilise my own prior knowledge of Welsh from school for sentence structure, Duolingo for some of the animals/options that a sprite could be and Ap Geiriaduron Cymraeg for words such as move, turn and specific directions.

Leaners leading learning

This occurred throughout the task. Throughout the initial introduction, children were able to say were to verbally express and demonstrate the order that certain elements needed to be completed in in order to gain access to the application that was being used for the session. In order to ensure that children had full understanding of the controls that would need to be used to complete the set task, I also made sure to play small games on the interactive whiteboard. Children were able to chose these games, and all were able to come up to the whiteboard to physically press the buttons. Children also told the others in the group what they were doing before they pressed a button, which was something that I had not asked them to do, but was beneficial for the learning of the others. Another game aspect that was played with the children involved one child stood at the whiteboard to move the sprite, whilst another child was sat on the floor giving them directions of what to do. This enabled a child to practice giving precise instructions to another individual, whilst this individual was able to practice their understanding of directions as well as their understanding of the controls. When children were completing the individual element of the lesson, I also found that they were asking their peers on how to do certain elements before asking me for help.

What have you learned?

In order to prepare for this lesson, I needed to practice using the Turtle application through JIT5. By practicing the application before I used it to teach the children, I was able to identify how to instruct the sprite to move, how to make the task more challenging for individuals, how to access some small games that the children could play to get used to the controls and how to personalise items such as the line colour or sprite to make the experience more personal to the children.

I was also able to experience the difficulties of teaching children with technological aspects. I had to complete the lesson in smaller groups than I had previously worked with, due to issues with the connectivity of the iPads to the internet. The lessons also took longer to start than other lessons, as I needed to help children find letters/numbers/symbols on the keyboards in order for them to sign into Hwb to access the program we would be using, or read out certain letters so that they were able to find them easier.

In contrast, I was very impressed with how quickly the children became familiar with the controls in order to move the sprite. I feel that this was aided through the use of the small games that I had been able to find at the start of the lesson, which made the task feel less like work and more like a fun, interactive experience.

What next?

I would like further practice using some of the other programs that are available through JIT5, as I can now understand why these programs are favoured by Foundation Phase teachers for use in work. I found that the controls in Turtle were simple to use and easy to explain to the children. Being able to do a greater variety of work using the programs that are available through JIT5 will also benefit the children, as they will be improving their DCF skills, promoting the four purposes

through learning and developing skills that can easily be transferred to Microsoft programs when they move onto Key Stage 2.

After the lessons had been taught, I also made sure that the iPads that had been used throughout the taught sessions were fully charged, as this meant that children who were interested in continuing to practice using Turtle were able to do so as part of the continuous provision activities that were offered.

Part 2: Critical Reflection

Word count: 2,123.

Introduction

Differentiation can be observed in a range of classrooms and education establishments around the world (Connor *et al.*, 2009; Nurmi *et al.*, 2012; Ruys *et al.*, 2013; Little, McCoach and Reis, 2014; Guay, Roy and Valois, 2017; Deunk *et al.*, 2018). The main purpose of differentiation, also termed differentiated instruction, is to adapt any lessons or work provided to the needs and capabilities of the learners being worked with (Tricarico and Yendol-Hoppey, 2012; Parsons, Dodman and Burrowbridge, 2013; Tomlinson and Moon, 2013; Domen *et al.*, 2020).

Differentiation also enables teachers to promote different values towards their learners, supporting each of the four purposes that were put forward by Donaldson (2015). Through differentiation, learners can experience a range of ways to process and present information, participate in experiences and interactions to further develop their academic and personal skills, and undertake challenges in a variety of contexts (Fahsl and McAndrews, 2012; Tomlinson and Moon, 2013; Donaldson, 2015; Domen *et al.*, 2020).

During placement, one of my ongoing targets was to improve and develop my use of differentiation, particularly using resource provision in separate groups. This target was mentioned by the class mentor, who provided me with suggestions as to how resources could be differentiated to best support and challenge the learners being worked with. Whilst I understood the importance of differentiation, I was previously unaware of the extent of benefit that learners obtain from differentiated provisions and resources. When implementing differentiation through this format, I had noticed a change in engagement and performance in pupils, which had also been observed by Danielsen *et al.* (2010) and Nurmi *et al.* (2012).

As a result, this discussion focuses on differentiation, with points raised about how it can be used in the classroom in the context of groupings and resources. Actions that can be taken forward as a result of this discussion are focused on in the conclusion.

Critical Discussion of Chosen Aspect

Being able to differentiate the set work and provisions for learner need is a predominant focus in primary and elementary schools, where many classes encompass a broad range of learner needs (Beecher and Sweeny, 2008; Dixon *et al.*, 2014; Pourdana and Rad, 2017; Lai, Zhang and Chang, 2020). Dixon *et al.* (2014) mentions how there are a minimum of three ability groupings being worked with in a typical classroom setting, with the most common groups of children being less able, more able, children with additional learning needs (ALN) and children working at their grade level (Babad, 1993; Winebrenner, 2003; Lawrence-Brown, 2004; Santamaria, 2009; Nurmi *et al.*, 2012; Tomlinson, 2017). The use of tiered instructions and adaptive teaching to differentiate tasks in heterogenous classroom environments allows a whole-class environment to be maintained, where no learner is perceived as superior or inferior in ability than others (Beecher and Sweeny, 2008; Tomlinson and Moon, 2013; Dixon *et al.*, 2014; Pourdana and Rad, 2017; Lai, Zhang and Chang, 2020).

By providing differentiation to all learners in the classroom by whichever means necessary, teachers are able to ensure that all learners have the opportunity and required support to both reach the aims of the lesson and further develop their own academic skills (Lawrence-Brown, 2004; Hattie, 2012; Tricarico and Yendol-Hoppey, 2012; Tomlinson, 2017). The use of differentiation has also been observed to reduce the attainment gap in classrooms, schools and wider areas, ensuring that all learners have the best chance at success when leaving the education system (Beecher and Sweeny, 2008; Muthomi and Mbugua, 2014).

Regarding the groupings mentioned above, it should be mentioned that these are typically identified by the class teacher, with the exception of children identified as having an ALN (Hornstra *et al.*, 2015; Domen *et al.*, 2020). This can potentially alter the amount of support that a child receives in the classroom, either due to the teacher's own view on differentiation or the support that the teacher perceives the student to need (Babad, 1993; Danielsen *et al.*, 2010; Tobin and Tippett, 2014; Frankling, Jarvis and Bell, 2017; Hornstra *et al.*, 2018; Domen *et al.*, 2020). Some researchers, such as Babad (1993) suggest that overly supporting one group of learners can be detrimental to both their own learning and the classroom environment, particularly if opportunities or resources for progress are not provided to other students at the same time (Lawrence-Brown, 2004; Little, McCoach and Reis, 2014). This was observed by Nurmi *et al.* (2012), who identified that learners who underachieved in an assessment were provided with more support via teachers and resources to reach a specific level than higher achieving learners were provided with, preventing them from further developing their skills or understanding (Tomlinson, 2017).

Whilst grouping may be beneficial for teachers when delivering differentiation in some instances, such as providing children with voice recordings, larger text or toolkits in order to complete set literacy tasks, their use may not always be appropriate for the needs of every learner in the lesson (Winebrenner, 2003; Lawrence-Brown, 2004; Fahsl and McAndrews, 2012; Tomlinson, 2017). The use of differentiation through grouping demonstrates a controlling method of teaching (Hornstra *et al.*, 2015; Domen *et al.*, 2020). Some learners may be suited to be differentiated as either more or less able in all curriculum areas to receive the correct support and resources for their needs, but this approach may be detrimental to learners who have different capabilities in different curriculum areas (Babad, 1993; Santamaria, 2009; Nurmi *et al.*, 2012; Tomlinson and Moon, 2013; Tomlinson, 2017).

Using flexible groupings as an alternative to fixed ability groupings ensures that all learners have access to the correct amount of support required for the specific curriculum area being covered at the time (Winebrenner, 2003; Lawrence-Brown, 2004; Fahsl and McAndrews, 2012; Dixon *et al.*, 2014). As well as maintaining the whole-class environment that ensures learners are not defined by their groupings, differentiation through flexible grouping enables teachers to implement self determination theory (SDT) in their classrooms (Beecher and Sweeny, 2008; Pourdana and Rad, 2017; Hornstra *et al.*, 2018).

SDT can be supported through resource differentiation and tiered instructions, allowing learners to make their own decisions on how to best be supported and complete a set task based on the provisions given during the lesson (Fox and Riconscente, 2008; Danielsen *et al.*, 2010; Tomlinson and Moon, 2013; Hornstra *et al.*, 2015; Guay, Roy and Valois, 2017; Domen *et al.*, 2020; Lai, Zhang and Chang, 2020). Allowing learners to demonstrate autonomy in this way has been found to be beneficial for their motivation, engagement, and academic improvement (Danielsen *et al.*, 2010; Hornstra *et al.*, 2015; Hornstra *et al.*, 2018). Learners are also more likely to feel in control of their learning as a result and develop an increased sense of self-competency due to them feeling that their teacher has enabled them to make the choice on how they will best complete the set task (Winebrenner, 2003; Vygotsky, 1986, cited in Fox and Riconscente, 2008; Danielsen *et al.*, 2010; Hornstra *et al.*, 2018).

An example of SDT being completed in practice may involve learners having the option to create a poster, a newspaper article, or a physical model and presentation of a volcano in a geography session to show what they have learnt during the topic. To support differentiation in these set tasks, scaffolded toolkits or differentiated explanations may be provided to best support all learners (Tricarico and Yendol-Hoppey, 2012; Tomlinson and Moon, 2013; Hornstra *et al.*, 2015). This ensures that at least one task option will appeal to learners, allowing them to

demonstrate different skills, interests and knowledge in way that suits them and is still valid compared to other methods (Lawrence-Brown, 2004; Ruys *et al.*, 2013; Tomlinson and Moon, 2013; Muthomi and Mbugua, 2014; Tomlinson, 2017).

Enabling learners' autonomy when choosing how to present a finished piece of work is one strategy identified by Tomlinson and Moon (2013) as a method of incorporating differentiation into lessons. Other strategies that Tomlinson and Moon (2013) identify for use in lessons include differentiating the type of content that learners are taught in a lesson, how the content is presented during the lesson and the environment and resources used to support their learning Tomlinson (2017).

Increasing task differentiation and accessibility through resource use is a prominent method of classroom differentiation (Winebrenner, 2003; Beecher and Sweeny, 2008; Frankling, Jarvis and Bell, 2017;). This moves away from the idea of providing entirely separate tasks for different learner groups in the classroom, instead providing differentiated task explanations or resources that either support learners to reach a specific level or provide sufficient challenge to further their learning (Lawrence-Brown, 2004; Rosenshein, 2010; Fahsl and McAndrews, 2012; Rosenshein, 2012; Parsons, Dodman and Burrowbridge, 2013; Guay, Roy and Valois, 2017; Lai, Zhang and Chang, 2020). Examples of differentiated task explanations in practice may include showing a class or group different ways to solve a maths problem through equations or drawings, or having an external speaker to cover a specific topic (Beecher and Sweeny, 2008; Hattie, 2012; Rosenshein, 2012; Pourdana and Rad, 2017; Lai, Zhang and Chang, 2020). Examples of resource support for learners may include the provision of audio textbooks instead of physical materials or providing a task that focuses on developing a skill appropriate for the learners' ability (Lawrence-Brown, 2004; Beecher and Sweeny, 2008; Fahsl and McAndrews, 2012; Hattie, 2012; Tomlinson, 2017).

Tailoring differentiation through these methods ensures that all learners in the classroom can be accommodated during the lesson planning stage (Hattie, 2012; Tricarico and Yendol-Hoppey, 2012; Tobin and Tippett, 2014; Deunk *et al.*, 2018; Lai, Zhang and Chang, 2020). As well as having positive impacts on academic improvement across the class, differentiation planning can also have positive impacts on the relationship between teachers and their learners due to their needs, abilities and interests being considered from the start (Rimm-Kaufman *et al.*, 2003; Danielsen *et al.*, 2010; Nurmi *et al.*, 2012; Hornstra *et al.*, 2018; Domen *et al.*, 2020).

Considering differentiation in advance also prevents teachers from teaching to one specific ability group in the lesson (Ruys *et al.*, 2013; Pourdana and Rad, 2017). This aspect of practice can have a negative impact on learners of all abilities, due to the danger of alienating those finding the work taught either too challenging or not challenging enough (Lawrence-Brown, 2004; Ruys *et al.*, 2013; Tomlinson and Moon, 2013; Little, McCoach and Reis, 2014; Pourdana and Rad, 2017). Providing learners with insufficient or no differentiation can result in negative implications on their progress and has been observed in learners identified as more able and less able (Babad, 1993; Santamaria, 2009; Danielsen *et al.*, 2010; Hattie, 2012; Nurmi *et al.*, 2012; Little, McCoach and Reis, 2014; Tomlinson, 2017; Deunk *et al.*, 2018).

Conclusion

The use of differentiation in classrooms has a range of benefits for both teachers and learners (Connor *et al.*, 2009; Hattie, 2012; Tricarico and Yendol-Hoppey, 2012). Whilst conducting research, I have been able to identify different elements of practice, the environment and resources that are able to be differentiated in order to best support and encourage learners with any tasks set (Beecher and Sweeny, 2008; Parsons, Dodman and Burrowbridge, 2013; Tomlinson, 2017).

Researching this topic has enabled me to develop a greater familiarity with some of the Professional Teaching Standards (Welsh Government, 2019), specifically the standards relating to “Differentiation” (p. 25), “Wider reading and research findings” (p. 48) and “Listening to learners” (p. 37). A wider range of differentiation techniques that could be used in future classroom practice have also been identified as a result of this research (Lawrence-Brown, 2004; Tomlinson, 2017).

One differentiation method I would like to integrate into future practice is providing learners with different ways to complete a task (Tomlinson and Moon, 2013). This method allows learners to display their understanding of the lesson in a way suitable for them (Frankling, Jarvis and Bell, 2017). Whilst additional differentiation would be required before starting the task to accommodate all abilities, learners could demonstrate other skills alongside the content taught in a piece of work, promoting a holistic approach (Winebrenner, 2003; Santamaria, 2009; Fahsl and McAndrews, 2012; Parsons, Dodman and Burrowbridge, 2013).

I would also to make use of a broader range of differentiation resources in lessons (Connor *et al.*, 2009; Tomlinson, 2017). I was able to identify a variety of new ways to best differentiate resources in the classroom due to this research, including using audio and visual cues as an alternative for some learners instead of written work and the use of games or practical tasks as an alternative to written work (Lawrence-Brown, 2004; Fahsl and McAndrews, 2012; Parsons, Dodman and Burrowbridge, 2013; Tomlinson, 2017).. Implementing these resources into lessons would improve the overall accessibility of any lessons that I teach, therefore ensuring that all learners can reach their maximum academic potential (Dixon *et al.*, 2014; Lai, Zhang and Chang, 2020).

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