

How can children's academic engagement be monitored through assessment for learning in key stage two?

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	Targed/Target	Yr hyn yr wyf wedi'i wneud yn yr aseiniad hwn. What I have done in this assignment.
Targed/Target 1	Ensure you synthesise and reflect - you have done this in a few places but in other places it could be further extended.	
Targed/Target 2	Be as specific as possible when making recommendations - this will allow you to show knowledge and understanding.	
Targed/Target 3	Please proof read your work as I am sure you would have corrected these prior to submission.	

Aim, focus and purpose of the research

It is widely acknowledged that assessment for learning is a key aspect of monitoring and improving pupil's academic achievement and levels of engagement (Black and Wiliam, 1998). The Welsh Government (2010) published a document on how thinking can be developed and how assessment for learning can be implemented successfully in the classroom. During my teaching practice, I have used a range of assessment for learning strategies in every lesson in order to recap on the children's prior learning, enhance engagement and progression, and to underpin the aspects that need to be considered in future planning. These key themes were identified in Donaldson's pedagogical principle where it is suggested that employing assessment for learning strategies enhance good teaching and learning (Donaldson, 2015). Some of these strategies will be focused on during the lesson study to enable the research question to be met. The aims of the research were to monitor children's engagement through the use of Assessment for Learning strategies, to observe how the children respond to assessment for learning strategies and to evidence how children's progress is identified through the use of assessment for learning strategies.

Research context

The research was conducted within two large primary schools in Cardiff. One two-form entry primary school and a three-form entry primary school both located within affluent areas of the city. Assessment for learning is widely implemented within my placement school, thus, the use of a number of strategies have been a constant focus underpinning my lesson planning. For the purpose of this research project, three lesson studies were conducted to evidence how different assessment for learning strategies can be used monitor children's academic engagement in key stage two. The children in focus were pupils from a year 6 class and two year 3 classes which will be referred to as year 3W and year 3M. The year 6 class has 30 pupils in which 6.6% of children have additional learning needs, as does year 3M. However, year 3W has 31 pupils with a significantly higher number of children with additional learning needs at 32%.

Overview of literature

Assessment for learning

Cowie (2012 cited in Ropohl and Ronnebeck, 2019) refers to assessment for learning (AfL) or formative assessment as a process in which teachers and learners can identify and respond to learning outcomes whilst the learning is taking place. Black and Wiliam (1998) support this by suggesting that assessment for learning is a process which enables children

to learn at double the rate. Estyn (2018) further support this by suggesting that if teachers successfully implement formative assessment into their lessons, children can learn at almost double the rate. AfL enables pupils to adopt an active approach to learning, allowing them to be innovative and engaged (Cambridge International Education Learning and Teaching Team, no date). Adopting Vygotsky's and Dewey's approaches to learning through activity has been suggested as being most helpful in establishing and extending a strong link between assessment and pupils' progression (Bredo, 1997 cited in Marshall and Drummond, 2007). Wallace (2009) views AfL as a constructivist approach to learning, further supported by James (2006 cited in Marshall and Drummond, 2007) who found that most of the work on formative assessment has evolved from cognitive constructivist theories of learning. Assessment for learning tools such as think, pair, share and feedback and targets from peers and teachers can be used to identify the learner's current position, and to move the learner onto their next step (Welsh Government, 2010). This relates to Vygotsky's (1980) Zone of Proximal Development (ZPD) which suggests that interaction between children can have a positive effect on their personal and academic development. In the findings from a study into AfL conducted by Black and Wiliam (1998), four key recommendations were suggested.

Questioning

The Welsh Government (2010) describes questioning as the 'driving force' to encourage and develop thinking in AfL within the classroom. One of Black and Wiliam's (1998) key recommendations was to allow children more time to think before answering questions. In relation to this, Payne and Scott (2017) suggest that allowing longer than a second to answer will see an increase in children willing to answer, and the quality of the answer will also increase; for questions aimed to encourage children to engage more, leave a wait time of ten seconds or more. Cambridge International Education Learning and Teaching Team (no date) further suggest that increasing the wait time aims to ensure that all learners are engaged, this also provides answers of a higher quality. Research has shown that some children are reluctant to put their hands up to answer a question so randomisers such as lollipop sticks are a popular questioning strategy in some classrooms. Bennett (2013) believes that some teachers have a no hands up policy in their classrooms and instead use lollipop sticks to generate an answer, this keeps all children engaged as no one knows who will be selected.

Feedback

Another of Black and Wiliam's (1998) key recommendations for implementing AfL is that it would be more effective for feedback to provide meaningful comments instead of just giving

a mark. Teachers provide feedback to, and receive feedback from pupils; it is essential that this feedback is used to inform future lesson planning with a focus on teaching and learning more effectively (Wallace, 2009). Payne and Scott (2017) further support this by suggesting that it is essential to provide meaningful feedback in order for pupils to progress. Feedback has previously been categorised as the strategy found to be most effective for improving learning in the classroom when implemented accurately (Education Endowment Foundation, 2018). Hattie (2012) found that effective feedback was the tenth factor out of 150 strategies to significantly improve learner outcomes. It is important to allow learners time to read and understand their feedback as soon as it is available to them and make one improvement from the suggestions; in order for the feedback to be formative, it is essential that the learner acts upon their feedback (Welsh Government, 2010). Wallace (2009) believes that analysing feedback from pupils is an essential factor that underpins the success of future planning; learners reflecting on their levels of understanding can be used to inform future teaching and learning.

Self-assessment

Self-assessment allows children to identify how they can improve their own learning (Wallace, 2009). In relation to Vygotsky's and Dewey's active approaches to learning in order to progress, Welsh Government (2010) believe that engaging in self-assessment consists of more than just identifying errors or areas of weakness as there is a requirement for learners to be active in their learning in order to progress. Black and William (1998) recommended that children should be given the opportunity to be involved in the design of success criteria and mark schemes in order for them to fully recognise what they need to identify in their work in order to successfully use self-assessment. Effective self-assessment encourages learners to engage more deeply into their learning and progression (NFER, 2012). This is further supported by The University of Reading (no date) who suggest that self-assessment encourages pupils to take responsibility of their own learning through engaging with different success criterion, thus allowing them to reflect and evaluate their learning. One of the main strategies fundamental to increasing levels of engagement in learning and achievement is self-assessment (Pintrich, 2000; Zimmerman and Schunk, 2004 cited in Andrade, 2009).

Lesson study design

As suggested by Dudley (2014), three case study pupils were selected to focus on during this research project. The pupils were selected at random and presented themselves as two higher ability pupils and a lower ability pupil. The participants were chosen at random as

they are not ability grouped in this school, however, they choose their own level of challenge through differentiation.

A lesson study was conducted in order to collect data related to the research question. The lesson study covered three lessons as I participated in this research project with two colleagues. Education Endowment Foundation (2017) describe lesson study as a professional development programme in which teachers work collaboratively in small groups to plan a lesson focusing on a shared learning outcome for all pupils. The Teacher Development Trust (2015) further supports this by explaining that during the lesson study process, teachers collaborate with each other in order to create lesson plans, interview some children involved and then observe each other to investigate how their ideas for the lesson work within the classroom. The teachers then proceed to share the data obtained from the observations and interviews so that other teaching professionals can benefit from it. Tsui and Law (2007 cited in SCITT, no date) explain that lesson study is an investigation of pedagogy carried out collaboratively by a group of teachers with a vision of improving teaching and learning. The data obtained will be triangulated in order to identify the consistency of findings collected from the different research methods used. The methods of data collection used were non-participant observation, semi-structured interviews and a reflection model. Triangulation in research refers to the use of more than one method to answer the research question (Heale and Forbes, 2013).

Observation is often highly valued as an effective research method (Caldwell and Atwal, 2005). A non-participant observation was conducted as the first stage of the lesson study. The lesson study saw colleagues focusing on three case study pupils. The observation was structured as an observation schedule was followed providing a clear focus for the research. The use of the Leuven scale of active engagement in learning (Laevers, 1997) was utilised in the observation schedule to monitor engagement and was supported by questions created for the purpose of the lesson study. Each child involved in the lesson study was scored 1-5 based on their level of engagement, 1 being the lowest and 5 being the highest. An advantage of using a non-participant observation as part of this lesson study was that the observer could solely focus on the case study pupils following the observation schedule without disruption (Coleman, 2013). One of the main limitations of using non-participant observation in research is that it is challenging for the researcher to see through what a participant observer would see when taking part which may limit the researcher's understanding (Wilson and Kidd, 2008). A further limitation of non-participant observation is that of the Hawthorne effect which refers to people being observed tending to perform differently when they are participating in research (Cherry, 2018).

The children selected to participate in the lesson study were also interviewed as a focus group in order to obtain further evidence towards answering the proposed research question. A semi-structured interview took place, following pre-prepared questions. Interviews create the opportunity for the researchers to obtain further data that may not have been accessed through the use of other qualitative data collection methods such as observation (Cohen, Manion and Morrison, 2000; Shaughnessy, 2007). Quad (2016) further supports this by suggesting that interviews provide an opportunity to collect information that cannot be directly observed. Interviews need to be conducted as soon as possible after observations to ensure the validity and reliability of the data collected (Cohen, Manion and Morrison, 2000). However, by using semi-structured interviews, there is the option to following the children's lead if their answers are not directly linked to the question which may enhance the chance of bias occurring (Bell and Waters, 2014). Although the three children will be interviewed as a focus group, some questions may need to be directed to each child to ensure that they are all given an equal chance to participate. Focus group participants may be reluctant to open up in this situation whereas in a different context such as an individual interview, they may be comfortable enough to discuss matters honestly (O.Nyumba et al, 2018).

To remove any potential bias from occurring, a reflection model created by the three researchers was created for the purpose of this research project (Appendix 1,2 and 3). Brookfield's four lenses reflective model (1998) was used as it allowed reflection from the perspective of myself and my colleagues involved in the research project. Dabell (2018) believes that Brookfield's lenses underpin and support effective teaching. Gibbs reflective cycle (1998) was also implemented to allow myself and my peers to create an action plan for future practice.

Qualitative research allows the data to be analysed through the use of an open-ended approach, thus the data can be analysed and linked directly to the research question and literature surrounding it (Cohen, Manion and Morrison, 2000).

Ethical considerations

Adhering to ethical guidelines is paramount in ensuring the rights of participants are addressed when conducting any research. Following the ethical guidelines set by BERA (2018) and keeping in mind the school and participants right to confidentiality and anonymity, the pupils observed during this research project will be referred to as 'Child 1, Child 2 and Child 3'. The data will be kept on an encrypted memory stick in which no one else can access. It was essential for all participants to be aware that they had the right to withdraw at

any point during the research process (UNCRC, 1996). This was clearly explained to the children involved in the research as well as their parents prior to conducting any research. Consent was sought from the school and parents of the children involved. It was vital for the parents to sign a consent form before any research involving their children was conducted (Appendix 11). Verbal assent was received from all children after a clear explanation of the research proposal and their rights as participants. All ethical considerations were adhered to throughout the whole research process as proposed by the UWTSD Research Ethics and Integrity Code of Practice (2019). The teacher-student power imbalance was also considered. As a student teacher researcher, the children may have seen me as an authoritative figure and may have felt that they had to comply with what they think the researcher wants.

Lesson 1 results and analysis

Lesson 1 was conducted in a year 6 class focusing on Child 1, a lower ability pupil (LA), Child 2, a middle ability pupil (MA), and Child 3, a more able and talented pupil (MAT). During the observation the engagement of the three case study pupils was measured using an observation schedule (Appendix 1, figures 1 and 4). Child 1's scores ranged between 2 and 3 on the Leuven scale of engagement for both the introduction and main body of the session, evidencing very little learning and enthusiasm throughout the lesson. Child 1 withdrew themselves from the lesson occasionally as they were disrupted a peer who found the task too challenging, supported by notes from the observation (Appendix 1, figure 7). The teacher identified that the task may have been too challenging for that child, thus changed the task for them and asked Child 1 to support them. During the interview, Child 1 identified talking partners as their favourite AfL strategy (Appendix 4). Child 1 expressed that the use of lollipop sticks made them feel nervous and under pressure, as did Child 2 and Child 3. Peer-assessment was not rated very highly by Child 1 who would rather a comment made by their teacher.

Child 2 scored mostly 3's on the scale of engagement, although there were some scores of 4 for certain parts of the session, evidenced on the observation schedule (Appendix 1, figures 2 and 5). Child 2 showed a high level of enthusiasm during the interview. Like Child 1, Child 2 stated that peer-assessment is difficult, and they would prefer a teacher to mark their work (Appendix 4). Praise was identified as an important factor during the interview. Child 2 expressed that praise builds their confidence and motivates them to get answers correct, this was agreed by the other case study pupils.

Child 3 was highly engaged throughout the whole session with their modal score being a 5 on the scale of engagement (Appendix 1, figures 3 and 6), also evidenced in the format of a graph (Appendix 1, figure 6). Child 3 believes self-assessment to be their favourite AfL strategy, and although they are not comfortable with the use of lollipop sticks, suggested that it is the fairest way of asking for feedback to questions (Appendix 4). Similarly to Child 1 and Child 2, Child 3 indicated that they don't like marking their peers' work and feel more confident receiving feedback from the teacher (Appendix 4).

The implementation of a reflective cycle proved to be beneficial for this research project. It allowed the researchers to not only reflect on their own lesson, observations and interviews, but also to reflect on our colleagues findings. The reflections outlined the key events of the lesson, what was good about the experience and what could be improved on for next time. A reflection of lesson 1 found that the assessment for learning strategies used were successful as evidenced in the observation and interview (Appendix 7). It was concluded that the majority of the children found the task too challenging so in the action plan for next time, all researchers agreed that the children could work with their peers in order to share the workload and use pupil voice to implement the AfL strategies that the learners are comfortable with. All case study children successfully met the learning objective and engaged in the lesson.

The three case study pupils focused on in lesson 1 concluded that they felt pressured by the use of lollipop sticks which can have a detrimental effect on their confidence, therefore making them less inclined to engage and participate in answering questions. The children suggested that instead of using lollipop sticks to generate feedback at the end of the lesson, they would prefer to engage in a quiz to recap their learning.

Lesson 2 results and analysis

Lesson 2 was carried out in a year 3 class with focus on Child 1, a higher ability pupil (HA), Child 2, a MAT pupil and Child 3, a MA pupil. Child 1's engagement score varied between 2 and 4 in the introduction of the lesson but scored mostly a 4 in the main body of the session (Appendix 2, figures 1 and 4). These scores are similar to that of Child 2 in lesson study 1 where both pupils scored very similarly for each point of engagement (Appendix 1, figure 2). Child 1 was engaging well with their peers and remained on task throughout the whole lesson which was evidenced in my observation notes (Appendix 2, figure 7). In the interview Child 1 stated that they don't feel nervous when the lollipop sticks are used. Child 1 stated that they like to please the teacher and receiving praise makes them want to work harder. Child 2 and Child 3 were in agreement with this.

Child 2's scores ranged from 3-5 on the scale of engagement, with 4 being the score that occurring the most within the main body of the session. Child 2's level of engagement scores were all 3's in the introduction to the session (Appendix 2, figure 2). Child 2 is a MAT pupil in year 3W but scored significantly lower than the MAT pupil, Child 3 in lesson 1 (Appendix 1, figure 3). Child 2 was evidently eager to please during this lesson, expressing no fear of answering questions and very willing to support their peers as discussed in my observation notes (Appendix 2, figure 7). During the discussion about AfL strategies used in the lesson, Child 2 expressed that they prefer the use of lollipop sticks as when the teacher chooses pupils to answer, Child 2 is chosen a lot and it sometimes frustrates them (Appendix 5).

Child 3 scored a 3 for each section of the engagement scale in the introduction of the lesson. This is identical to the score of Child 2 (Appendix 2, figures 3 and 5 and Appendix 2, figure 2). However, their scores were different in the main body of the session where Child 3 scored a 3 or a 4 for their engagement in the main task. These scores are also very similar to the scores of Child 2 in lesson 1 (Appendix 1, figures 2). Child 3 remained on task for the whole lesson but didn't appear to be engaging with their peers. Child 3 didn't appear very confident at first but during the interviews they had a lot to share. Child 3 agreed with the other case study pupils that praise makes them want to work harder to make the teacher proud (Appendix 5).

The reflection of lesson 2 found that not all children were challenged enough during the task. It would have been beneficial to have an extension task already in place for the children that finished well within the given time. However, all children successfully met their learning objective and engaged well within the lesson. It was concluded that although some children worked collaboratively, it could be further encouraged next time (Appendix 8).

The case study pupils in lesson 2 all felt that they preferred their work to be marked by a teacher as the comments are more meaningful and provide suggestions for improvement. All children were also in agreement that peer-assessment is not informative enough and that they sometimes found it hard to understand their peers feedback. Child 3 suggested that although it is beneficial to cover the same topic over a few lessons to build on their knowledge, it would be more engaging to complete different tasks every time as this lesson was similar to a task they had completed previously.

Lesson 3 results and analysis

Lesson 3 was conducted in another year 3 class focusing on Child 1, a middle ability pupil, Child 2, also a middle ability pupil and Child 3, a less able pupil. Child 1 scored a 4 in each section of the scale of engagement during the introduction of the session (Appendix 3, figures 1 and 4). These results were the same for Child 2, a MAT pupil who participated in lesson study 2 (Appendix 2, figure 2). Child 1's scores ranged between 3 and 5 in the main body of the session, with the modal score being a 4. Again, this was also identified when focusing on Child 2 in lesson 2. Child 1 explained that they liked talking to their partners to answer questions during the introduction as it is helpful to hear other people's answers. The teacher introduced a self-reflection method into this lesson by asking the pupils to identify which learning zone they were in for the duration of the lesson. Child 1 identified that they were in the stretch zone during the lesson but felt that they could challenge themselves a bit further next time (Appendix 10). Child 1 referred to praise throughout the lesson and praise given in overall feedback as a boost of confidence,

Child 2's level of engagement was slightly lower than Child 1 during the introduction of the lesson. Their score averaged between 3 and 4 and their engagement levels in the main task scored 3's for every section (Appendix 3, figure 3 and 5). When completing the main task, Child 2 appeared to be comfortable working independently but would engage with peers occasionally as seen in the observation notes (Appendix 3, figure 7). Like Child 1, Child 2 identified themselves as in the comfort zone when completing their task and during the interview they suggested that they could choose a higher level of challenge in their next task (Appendix 10). Child 2 suggested that they enjoyed talking to their partner during the introduction as they like being able to take their partner's answer and building on it where possible (Appendix 6). Child 2 justified the use of lollipop sticks by suggesting that there is no time to be disinterested in the lesson as there is no option to 'opt out' of answering a question if you're chosen. Child 2 explained that praise from the teacher encourages them to work harder.

Child 3 scored between 2 and 4 on the scale of engagement, similar to Child 1 in lesson 1 (Appendix 3, figures 3 and 6, and Appendix 1, figure 1). Child 3 appeared to be highly motivated for the duration of the task, scoring higher than Child 2 who was presented as a middle ability child (Appendix 3, figures 2 and 3). Child 3 enjoyed working collaboratively with peers with the same level of ability, also supported by the teacher. Child 3 felt as though they were in the comfort zone, although upon observation and after clarification in the interview, it was clear that this wasn't a true reflection as reflected in Appendix 9. Child 3 finds talking to their partner really beneficial as if they don't know the answer to the question, their partner may be able to help them. Child 3 expressed that sometimes the use of lollipop

sticks makes them feel nervous in case they don't know the answer, however they made it clear that they know that there is no implications if they can't answer the question, which makes them feel more at ease (Appendix 6). Child 3 described praise as a way of knowing that they have been successful.

The reflection of lesson 3 evidenced that the assessment for learning strategies were successfully implemented and encouraged the children to remain engaged throughout the lesson. All learners met the learning objective successfully and through the use of high-quality questioning, learning was progressed. Some children remained within the comfort zone during the lesson so it was suggested that next time it would be beneficial to create a higher challenge class for those children to further their learning (Appendix 9).

The evidence provided by the case study pupils during the interview suggests that self-assessment was their favourite AfL strategy. All three children felt that the use of lollipop sticks were important in making the questioning process fair. They demonstrated a sound understanding of assessment for learning strategies and why they are used in teaching. The teacher also implemented the use of self-reflection into this lesson by using the growth mindset learning zones. The children identified which learning zone they felt they were in during the lesson and used them to help decide which level of challenge they wanted to complete next time. This also informed future planning for the teacher. The 3 case study pupils presented a negative view of peer-assessment, as did the pupils in lesson 1 and lesson 2 (Appendix 6).

Discussion of research findings in relation to literature

After analysing the data, it was clear that all nine case study pupils thrive off praise given by the teacher as it encourages them to work harder and makes them feel successful.

Henderlong and Lepper (2002) believe that praise evidently has a positive effect on children and that a teacher's praise enhances motivation and self-esteem. Research by Robins (2012) further supports this by suggesting that praise from teachers will encourage children to work harder and to strive to achieve.

Although another of Black and Wiliam's (1998) key suggestions for AfL was to encourage children to assess each other's learning, the data collected during this research project concluded that peer-assessment was viewed as a negative strategy within AfL. There was sufficient evidence to suggest that the children had negative views of peer-assessment. Child 1, 2 and 3 from year 6 stated that they didn't like peer-marking and would feel more confident with teacher feedback. Child 1 from year 3W expressed that feedback from peers

was not informative enough and the comments aren't always clear. The focus pupils from lesson 3 also stated that peer-assessment can provide unhelpful comments such as 'make your handwriting better' (Appendix 6). Dunn (2011) explains that for peer-assessment to be done effectively must be able to help children to engage with and reflect upon the work of others and suggest how it can be improved. Dunn (2011) further suggests that peer-assessment is not perfect straight away and that children can be guided through by teacher modelling examples of what they should be writing in their feedback.

Across the data collected from both year 3 case study classes, it was evident that the children had positive views of the use of lollipop sticks as a questioning technique. They expressed that they provide a fair opportunity for everyone to answer and keep them engaged in the lesson as they could be asked at any time. They also explained that they don't feel anxious when the lollipop sticks are used as they know that there is no implications if they didn't know the answer. The year 6 children had opposing views and explained that they feel under pressure and uncomfortable when the lollipop sticks are used. However, the year 6 pupils agreed that lollipop sticks are a non-biased way of choosing pupils to answer. In agreement with all case study pupils, Dabell (2018) suggests that teachers implement the use of lollipop sticks to eliminate any bias. In support of the pupils from the year 3 classes, Dabell (2018) further suggests that lollipop sticks can be used to ensure that all children engage in the lesson. In contrast to this, Didau (2013) believes that teachers should treasure the power to select who answers questions and that the hands-up culture should be allowed to thrive.

There were a number of favourite assessment for learning strategies evidenced throughout the data collect. In accordance to this, self-assessment was the most popular. The 3 case study pupils from year 3M stated that their favourite strategy was self-assessment as it allows them to identify where they went wrong and what they need to do to improve next time and can set themselves targets to improve. Child 3 from year 6 also stated that their favourite strategy was self-assessment as they can reflect on their own work and reflect on their mistakes. Cambridge International Education Learning and Teaching Team (no date) suggest that self-assessment encourages learners to set their own goals for progression and be responsible for their own learning. Self-assessment is not only ticking boxes, but encouraging learners to actively take responsibility for their own learning (Welsh Government, 2010).

Strengths and limitations of the study

Although the observations and interviews provided the researchers with a real vision of how assessment for learning encourages engagement, there were also some limitations to small scale research such as a lesson study. As suggested by Dudley (2014) a typical lesson study consists of three lessons planned and observed with colleagues. It would have been more beneficial for the lesson study to include more lessons in which more assessment for learning strategies could have been implemented which may have made the findings more valid and reliable.

According to Bell (2005), any research method chosen for collecting data must be examined to identify its reliability and validity. However, Cohen, Manion and Morrison (2011) have argued that in some research methods, reliability is not always necessary, as a child may only demonstrate a certain behaviour once. The counter argument could be that as there was more than one researcher involved in this study, the data will be more reliable as the researchers can contribute their findings and should be able to highlight the similarities. As recommended by Ho and Kane (2013), the degree of reliability is increased when there is more than one observer.

Interviews can prove quite challenging for inexperienced researchers as a successful interviewer requires a number of skills. As the interviews were conducted with children from the researchers classes, there was a risk of power imbalance leading to potential bias. Partington (2001) argues that building rapport with the interviewee before the interview is crucial therefore, being known to them beforehand is beneficial.

The reflection model allowed the researchers to identify and emphasize the validity and reliability of the findings as the data from the observation was reflected on by the teacher, colleagues and by the children who were interviewed.

Conclusion

The findings of this lesson study evidence that children are more engaged when assessment for learning strategies are implemented into their learning as they need to be prepared to collaborate with peers, answer questions and take responsibility for their own learning, all of which were demonstrated within the observed lessons. These findings are supported by the Welsh Government (2010) who suggest that assessment for learning is key to developing thinking and engagement in the classroom. The observations and interviews demonstrated that successful implementation of assessment for learning has a positive effect on learning and engagement. Although the case study pupils had their own personal views of assessment for learning, their overall opinions highlighted the importance of questioning

techniques and their impact upon engagement, particularly through the use of lollipop sticks. Payne and Scott (2017) suggest that questioning is the most important technique for assessing learning through engagement; questions provoke thinking skills, engagement in discussion and learning and recall prior knowledge.

Although the research question was answered through the obtained data from the lesson study, due to the limitation of the sample size, the findings can't be generalised. However, if the research had focused on assessment for learning throughout the whole school then the data could have been generalised. Other researchers involved in this project chose their case study pupils on ability which can also be seen as being biased therefore the data would be unreliable and invalid for the purpose of generalisation.

Recommendations

BERA (2014) found that as part of on-going professional development and the ever-changing factors of teaching and education, it is beneficial for teachers to deepen their knowledge and understand by participating in research. This justifies the need for lesson study research throughout teacher practice as well as being introduced to teacher research as a student teacher. Lesson study is a form of action research which Streubert & Carpenter (2002 cited by Mohajan, 2018) describe as qualitative research that identifies actions to improve the practice of training and experienced teachers. Undertaking this research has allowed the researcher to identify the importance of continuing to research throughout their teaching practice in order to enhance professional development.

In future teaching practice, the researcher intends to continue to implement different assessment for learning strategies into teaching and learning to enhance engagement. With the findings from this research in mind, the researcher will focus on introducing high order questioning into future lessons through the continued use of Bloom's Taxonomy to formulate higher order questions. Hall (2019) suggests that Bloom's Taxonomy can scaffold children to answer questions at the highest level where they learn to synthesise and evaluate but can also be used to lower the level of questioning if required by the pupil. High order thinking questions allow pupils to further challenge themselves and to remain engaged in their learning (Oliver, 2011). Thus, if future research was required, there would be a focus on how children engage and progress through higher order questioning.

One of the schools involved in this research project requested a copy of the research findings which will therefore be shared with them. The findings will enable the school to

implement any of the strategies that evidence effective practice and to identify the importance around assessment for learning.

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