

Can the use of no hands-up methods, such as the use of lollypop sticks, have a greater effect on pupil participation?

	Target	What I have done in this assignment.
Target 1	Develop your critical thinking about your practice in order to identify what needs to change in order to make further progress.	Had discussions with class mentor and did personal research into changes that could be made to enhance practice.
Target 2	Continue to develop your understanding of the pedagogical principles to improve teaching and learning.	Implemented a number of the principles within my teaching to ensure understanding and development.

Design, conduct and critically evaluate a close-to-practice research project (lesson study) focusing on the model of the transformative teacher in developing practice that has a positive impact on the learner.

Across PTE and my time within the classroom, one attribute that interested me and my personal teaching strategies and methods was that of pupil engagement and responses within the classroom. As I was placed within both a large sized classroom and a relatively smaller sized classroom, different techniques to gauge learners' concentration and engagement became a large part of my practice. Through personal research I found it very important in the need to research and test different techniques as there were many different methods that worked for the class as a whole. In my class, techniques such as counting down from a certain number for attention didn't work as successfully as clapping hands or copying gestures for example. Therefore, the need to research into various techniques became an interest to myself and the other teachers around me.

Consequently, through these different attributes, and similar feelings with my research partner, the research we decided to conduct was that of how different techniques such as no hands up methods work to ensure the participation and engagement of all learners. Through participating and completing this research, it meant that we could use what we researched within the classroom to benefit those pupils and our future teaching. Therefore, our research question is "Can the use of no hands-up methods, such as the use of lollypop sticks, have a greater effect on pupil participation?". For my class this meant ensuring that all pupils for one lesson understood that in order to answer questions for the lesson they had to wait to be asked by lollypop stick and that the use of hands up was not allowed. This was an element not experienced by many of the pupils prior to the lesson and was an element that had to be discussed to ensure understanding. The lessons in which this research took place were within my year 2 classroom of nineteen pupils and within a fellow student-teachers classroom within a different school of a year 4 class of twenty-seven pupils. The differences in the sizes of these classes were of an interest to us as we found it would be beneficial to discuss the differences and similarities found from the research.

Literature Review

In order to understand the use of no hands-up methods and its effects on pupil participation, I researched further into its background and common uses within the classroom through reading books, journal articles and government documents. As noted by Gow (2010) questioning pupils to show hands when they would like to answer is a standard routine and teaching strategy in most schools globally. In order to monitor the understanding of lesson content and ensure understanding in order to plan future lessons and how a certain topic must be taught, the value of conversations is of a high regard within a classroom (Holmberg and Muwwakkil, 2020). Therefore, the value of conversation within the classroom, means that the use of asking learners to raise their hands to answer a question has been a popular method in teaching for many years (Eastman, 2019). However as argued by Gow (2010) the use of hands up methods to answer questions within the classroom can cause problems for some particular learners for a number of reasons. One reason includes the belief that lower ability pupils may struggle with the hands up method as they may fear if they get the answer incorrect and consequently higher ability pupils are more likely to be picked to answer questions throughout all lessons. Simply put Eastman (2019) states that using hands up means that decisions about the learning of children are based upon a small number of confident learners and not of the whole class.

In order to ensure the participation of others around the classroom when using hands up methods, good questioning is key (Sangster and Overall, 2006). When asking pupils questions, it was researched by Rowe (1974, cited in Sangster et al, 2006 and Black, Harrison, Lee, Marshall and William, 2002) of the effects of 'wait time' has upon the learners and the environment. Researches have discussed that many teachers leave less than one second after asking a question and this could cause several different issues for learners. Learners could feel under pressure within this wait time and therefore some would participate less within the lesson for the fear on being unable to answer the question correctly or to a high of standard as others and feel embarrassed in front of the class and their peers. Some of these reasons can highlighted within the work of Professor Dylan William, who states that the use of banning hands up can have a positive impact upon learners (Gow, 2010) as it could potentially avoid causing stress for some within the classroom and will provide an overview of the engagement and development of all learners within the lesson and not only a small proportion.

The importance to carefully select techniques to ensure the engagement of pupils within discussions is crucial. Furthermore, both educational assessment and teaching styles must

be conducted in a number of different ways to ensure variety for a range of learners (William and Thompson, 2017). Many authors such as Fletcher-Wood (2018) note the use of lollipop sticks to ensure pupil understanding and engagement. The research goes on to state that through using the lollipop sticks to ensure participation and engagement, students could potentially engage further in a range of different learning objectives. Through discussion, each lesson is seen as an opportunity to let children discover more of their learning and their development within the classroom (Sangster et al, 2006). Through using the lollipop sticks and referring to different pupils throughout the lessons, less questions will be aimed at the same pupils. As stated by Spendlove (2015), many research studies examine that teachers ask many questions and within a single lesson around fifty to sixty questions can be asked. Through using the lollipop sticks less questions will be aimed at a specific group of pupils and teachers can move on with lessons targeting the whole class.

Through research also into the use of lollipop sticks within the classroom and the engagement and participation of learners, another area with high interest was that of Assessment for Learning (AfL). The concept of AfL and formative assessment was first developed and introduced by Dylan William and Paul Black (Christodoulou, 2016). As discussed by Black et al (2002) and Slavin (2014), AfL is any assessment in which the priority within its design and practice is to promote all pupils' learning. Naturally assessments exist to not only promote learning, but to also inform teachers and learners themselves what has been successfully learnt over any period of time and of any concerns within educational development (Sangster et al, 2006). Similarly, formative assessments are also considered important elements in enhancing pupils' learning (Black and William, 2009, cited in Martijn and Frans, 2018: 101). Through its positive attributes within a classroom, AfL has become a dominant discourse across both educational policies and teaching strategies across the world (DeLuca, Chapman-Chin, LaPointe-McEwan and Klinge, 2018). Its importance can be highlighted across classrooms and within teaching the class as a whole (Hayes, 2008). AfL is an element through formative assessment that is an ongoing and informal activity in which the teacher can react to how the class is responding to the lesson being taught and can change elements or its structure if required (Jones and Tanner, 2006). The importance of AfL not only enhances pupils learning but can also provide discovery within each lesson (Sangster et al, 2006).

Although a high number of literature and studies suggest the importance of AfL, limited amount of research has been conducted upon the response of pupils in accordance with AfL (DeLuca et al, 2018). However, many find it difficult to disagree with the concept that formative assessment has the ability to enhance pupils' learning as AfL is a fundamental

part of teaching. This can be seen within the New Curriculum for Wales as using AfL to cater for all learner is one pedagogical principle within the curriculum (Donaldson, 2015). In order to be successful within using strategies for AfL, such as the use of lollipop sticks, the effective use of questioning is crucial (Black, Harrison, Lee, Marshall and William, 2003). Through effective questioning techniques within the classroom, the engagement of learners can be noticed. Through questioning pupils and ensuring their involvement with the learning process, Hande, D'Souza and Kamath (2019) stress that pupils will retain and learn information at a larger scale. Therefore, high levels of student engagement and motivation are key factors in ensuring the success of pupils within a range of lessons (Marsh, 2012 and William, 2011).

Methodology

The methodology used within this research project was a lesson study. A lesson study, as described by Stepanek, Appel, Leong, Mangan and Mitchell(2007) is a professional development practice in which teachers collaborate to design lesson plans, teach and observe a lesson and in order to collect data on pupils learning. Through these lesson studies, teachers can collect observational data and notes in order to refine their practice (Bjuland and Mosvold, 2015). Norwich, Fujita, Adlam, Milton and Edwards-Jones (2018) expand on this noting that within a lesson study, teachers will focus on case pupils whilst planning, teaching and evaluating upon research lessons, and is therefore commonly used for professional development of teachers globally (Bjuland et al, 2015).

A Lesson study is also a form of action research. As noted by McNiff and Whitehead (2015), action research is both practical and has the ability to improve the practice of teachers (Dube, 2017). Gibbs et al (2017) expands on this stating that various action research approaches and techniques have the ability to identify strategies for curriculum and personal development within education.

In order to collect data within this lesson study, the methods of data collection used were reflection, non-participant observation and focus groups. When addressing the method of reflection, research had to be gathered prior to ensure understanding and the correct form of reflection would take place. Elliot (1998, cited in Baird, Fensham, Gunstone and White 1991: 165) states that most action research involves reflection on practice of some sort and as specified by Wilson, Shulam and Richert (1987, cited in Lowery, 2003:23), the process of reflection within an educational background can be simply seen as to what a teacher does when looking back at the teaching and learning experiences through evaluating the events,

emotions and happenings of that situation. Through reading various literature on the topic of reflection, many authors such as Power (2010), Procee (2006) and Baird et al (1991) stress the importance of reflection within the teaching profession as this is an attribute used to improve various elements such as awareness, knowledge and control over the classroom and its practice. As reflection can aid in professional development of teaching, it also ranges in a wide range of other advantages such as confidence, autonomy and self-efficacy for teachers (Lowery, 2002, cited in Lowery, 2003: 30).

Although being reflective has its advantages for both teachers and the classroom, some authors have suggested its process will only have positive impacts if carried out correctly and professionally. Procee (2006) stresses that if reflection is carried out correctly its improvement for teachers within the profession is of a positive impact, however if not reflected on in the correct manner no change will appear. The reflections for this research project were completed using a reflection sheet created prior to beginning the research. The reflection sheets for both my research lesson, and that of my research partners can be seen within the appendices following this write up. As noted above, reflecting, at times, can be difficult and therefore careful consideration and thought was required. It was important to discuss each element with my research partner and also compare upon their thoughts and feelings for the lessons as it was difficult to be critical upon my own teaching and the participation of the class.

Another method of collecting research used within this project was that of non-participant observation. Non-participant observation relates to when a researcher is watching and analysing but not playing an active role within what is being observed (Urquhart, 2015). As stressed by Cohen, Manion and Morrison (2005) the use of observational data is extremely popular within the research of educational elements as it can gather 'live' data and is therefore a powerful tool for gaining insight into a variety of situations. Fox (1998) stresses the importance of understanding that observation does not only include vision but includes all the senses, as it is more than collecting and analysing data from the observed environment. Although the attractiveness to use observational techniques may be high in terms of educational research, the need to have structure in terms of gathering data for analysis is paramount as some issues can be uncovered within its process (Fox, 1998). Problems can include participants within the observation trying to interact with the observer or behave in a different manner in accordance with an observer being present. For example, learners within the classroom may find it strange or a distraction if another adult is sad observing. Therefore, careful consideration and implications would have to take place to keep interactions to a minimal with the researcher (Phellas, Block and Seale, 2011). Another

issue that may occur with the use of observations is that of the differences between researchers. Different individuals may interpret things differently, hence careful planning and execution of planning must be undertaken (Fox, 1998).

In order to collect the non-participant observations, myself and a research partner took it in turns to observe our teaching within a specific lesson. Whilst I was teaching, my partner sat within the class to observe and took notes using the lesson study plans and additional information for context of the class such as lesson plan, details on the class and details on the pupils who would be observed. It was difficult having a non-participant element to the lesson as learners were keen to discuss their process within the lesson with the researcher, however through careful planning this was not an issue.

The final research method within this research project was that of a focus group following the lesson study, reflection and observation. A focus group, as described by Hennick (2014) involves a group of people focusing on a specific topic in an interactive discussion. The purpose of a focus group is to identify and discuss a range of different perspectives by a group of different people. Due to nature of focus groups, they have become increasingly popular methods for primary data collection (Kidd and Parshall, 2000). Advantages of using focus groups include the notion that when people are within a group, they may feel more confident when providing answers or giving their insight to a certain topic (Onwuegbuzie et al, 2009). Kidd et al (2000) expanded on this, noting that focus group members can also expand on one another's points or view or even challenge the opinion and feelings of others to a certain topic. Through having groups of people interacting about a topic, details and knowledge may appear that wouldn't have been discussed if they were on a one-to-one basis. However, it can be argued that some people may find it difficult within group situations and hold back from providing their insights to a topic (Hennick, 2014).

In order to conduct focus groups for the study, a sample of three pupils from the both classes were chosen in order to discuss the use of lollypop sticks and pupil selection with engagement within the lesson. This sample of pupils were chosen through the use of parental consent forms and ability grouping in order to get a range of feedback for the lesson and research question. This form of research was therefore collecting quantitative research as the feedback related to opinions and beliefs of pupils rather than numerical data.

Ethical Considerations

In order to do research within the classroom, ethical considerations were a heavy role within the planning and implementation to the research. Prior to starting the research project and collecting any data, an ethics form was completed and then approved by the Athrofa at University of Wales Trinity Saint David (UWTSD). Within the ethics form a range of ethical considerations were considered and decided upon, including the storing of information, parental consent and pupil consent. All data gathered for this study was stored safely and securely through the use of passwords and encrypted devices. Parental consent was also gained prior to starting any research within the classroom through the use of a consent form alongside an information sheet. Once parental consent was collected, pupils' consent was also ascertained if involved within focus group interview. Pupils were talked through the whole process and were given the opportunity to opt out if required.

Lesson Study Results and Analysis

In order to examine the results and literature surrounding both lesson studies in accordance with this research project, analysis of each lesson study is required. Within the first lesson study, taught by my research partner, the lesson took place within a year 4 class within a different school to my own of twenty-seven pupils. The lesson was based around a literacy task and pupils had to identify features of a script. This was a new topic for pupils and included a long introduction to scripts and their purposes within every-day life. Throughout the introduction pupils were questioned and were aware of the no hands-up methods that would be portrayed within the entire lesson. During the lesson introduction, the use of no hands-up worked well for the majority of the class and all were engaged and attempted to participate throughout. As this was a new topic for many of them, some pupils weren't as confident as they would usually be whilst participating to class discussions. Therefore, through the use of lollypop sticks, pupils felt less worried as they all felt as if they were all in the similar positions in accordance with their ability. Within this introduction, whilst sat on the carpet, some pupils were participating less due to the fact they weren't sure on the topic and consequently stopped engaging and had discussions of their own in the class with peers. On a positive note, the majority of pupils worked well in accordance with engaging and participating throughout the introduction to the lesson with the use of no hands-up methods as they were ready to engage and provide possible insights to the work.

During the lesson and whilst completing the task of finding features within a script, pupils were engaged, and the majority understood what they had to do. The use of no hands-up

methods played a role in the majority of the class when listening to the task and how they should complete to the best ability and therefore will be an element used throughout teaching within this particular class. When delivering plenaries, whilst observing, it was clear that some pupils did panic if their name was picked at random order and for some pupils it didn't work as well for their confidence within the class. However, with some individuals within the class, using lollypop sticks and being selected at random worked extremely well for them as they were being able to answer something that usually wouldn't have been asked before.

Following the lesson, a focus group discussion was held, where 3 pupils and researchers had the opportunity to discuss the elements of the lesson in which they found interesting, would like to change or had any other thoughts. All pupils worked well in providing their opinion and one key element that was highlighted was that of the pupils preferring hands-up methods due to the fear of getting some answers incorrect or feeling fear amongst peers. Learners also discussed how at times, when they do know the answer to a question and their name isn't picked at random, they can feel frustrated as they would like to share their knowledge with the rest of the class and teachers to show their ability. Another element that was discussed within the focus group was engagement within lessons. It was interesting to note that pupils said they felt as if they engaged more within the lesson and listened more carefully to instructions as they feared to get an answer incorrect or not be prepared for if their name was called through lollypop method.

In order to complete the next lesson study, elements such as confidence and pupil involvement within lessons had to be considered in order to ensure that all pupils were confident and not put under any unnecessary stress. Therefore, careful delivery of lessons and instructions had to be executed as pupils would have time to understand and deliver on their contributions within lessons. Careful consideration had to be conducted in accordance with the wait time for answers. As noted within the literature review, it can something be seen that teachers don't wait long enough for pupils to provide an answer, and this can cause distress for some learners. Therefore, waiting longer for answers from certain pupils had to be considered throughout the lesson. Explanations of the non-participant researcher had to be discussed also as pupils were inquisitive as to why another teacher was watching the lesson and to what purposes the teacher was watching. It was important that I gave detailed and simple explanations to ensure pupils didn't panic or question the research and to make sure they were happy to contribute. Consequently, changes in lesson plans had to be considered for the second lesson study to ensure all pupils understood the lesson and its changes.

For the purposes of the reader, the lesson in which lesson study two took place within, was a year two class of nineteen pupils. The lesson itself had a science and technology background, enhancing the skills of the pupils within problem solving and communication with partners to complete the challenge. The lesson blended the use of the terms' topic, Fairy Tales, and the fairy tale Jack and the Beanstalk. Pupils had completed work on Jack and the Beanstalk, and the activity included making a parachute for Jack to reach the bottom of the beanstalk safely with the use of a parachute. Pupils could relate the use of the parachute to an authentic context and prior to making their parachutes and testing out in front of the class, were invited to watch videos of parachutes in use to gain understanding on a real-life basis. At the beginning of the lesson, pupils were taught that during the lesson, if the teacher was to ask any questions the only answers were to come from the use of lollypop sticks and there was a ban on hands up. This is an element that was familiar to the class and therefore for the purpose of the research not a lot had to be changed within the lesson for the learners.

Within the introduction to the lesson, pupils responded well to the use of banning hands up and using lollypop sticks to answer questions and seemed engaged and participated well. Some individuals found it difficult and frustrating when they were not able to give an answer due to the use of random selection as noted within the transcription in the appendixes, however over time this reduced, and pupils were eagerly waiting for their lollypop stick in order to provide answers. Once on task and completing a mini-plenary and asking questions to ensure understanding, engagement and participation for the task, pupils found this difficult to respond to random selection and not be able to answer or ask questions whenever they wanted to. In order to overcome this problem, pupils were reminded of the banning of hands up for the one lesson and were expected to answer questions through the use of lollypop stick. This reminder worked well and pupils seemed confident moving forward within the lesson.

When completing the experiment, pupils' responses to lollypop sticks were not as responsive or as satisfactory in comparison to other times within the lesson. Due to the nature of the lesson being hands on and different to other lesson within the day, discussions with my class mentor and research partner indicated that the class were extremely excited and were eager to complete the experiment part of the lesson as this was something they'd worked extremely hard with one another to complete. Pupils were excited and also eager to complete their part to the lesson, and once their section was completed, their interests in others' experiments wasn't as of a high regard and therefore engagement and participation in the task began to decline.

To analyse the thoughts and feelings of learners towards the research within the lesson, another focus group was conducted with three pupils and myself as the researcher alongside my research partner who took notes. Similar comments were made by the pupils within the focus group to the other lesson study's focus group such as the issue of confidence and not wanting to answer incorrectly in front of peers. Interestingly, the higher ability pupil within the focus group, felt more confident when using the lollypop sticks, however got frustrated if their name wasn't picked due to wanting to share. The lower ability pupils within the discussion, stated how they felt nervous and preferred participating in classroom discussion when they were confident with the topic and how to answer specific questions.

When considering these elements within the lesson and moving on for future lessons with a similar context of banning hands up methods and increasing pupil participation, it will be necessary to continue the levels of engagement with the use of lollypop stick throughout lesson. More recognition for participation and engagement should also be addressed for the entire time of a lesson, rather than only focusing upon the introduction of the lesson. Mini plenaries would work well for these issues as pupils would have to contribute to conversation and class discussion in order to demonstrate levels of understanding. The use of challenges could be of good use for similar tasks, especially for the More Able and Talented (MAT) pupils, as pupils could work within teams through lollypop sticks and answers would not all be pressured upon one pupil.

When reflecting upon the experience within the classroom of both lesson studies, it was apparent that the use of banning hands up can have greater effect on improving levels of participation between learners and therefore the engagement of pupils within lessons. This was also highlighted within the work of Danso (2017) that demonstrates that the use of lollypop sticks and random selection of pupils sets an expectation for all learners to ensure they are engaged and participating within the lesson. Lollypop sticks and random selection of questioning pupils can also help teachers in noticing the understanding and ability of pupils within certain topics and is a useful tool in order to begin certain topics where not all pupils may be on the same level (Taylor and Parsons, 2011). In order to ensure pupil understanding of the no hands-up methods, pupils should be taught over a period of time through these methods as some weren't sure how to respond to questions or when to be completely participating however these are elements that could be improved over time.

It was highlighted within both lesson studies that levels of confidence impacted upon how pupils felt the lesson went with the use of no hands-up methods, and this was an element

discussed within numerous literatures around the topic. One example on this particular work is discussed by Crichton and Mcdaid (2016) who discuss the uses of AfL within the classroom to benefit both learners and their teachers. As written within this particular research paper, AfL approaches are argued to determine the need for teachers to notice learning behaviours within pupils in order to use these to open discussions and to provide challenge and further engagement. However it can be argued within a large class, filled with a huge range of abilities, this can sometimes be difficult for all learners as it is clear that all pupils learn in different manners and will therefore struggle if class discussions are not prompted to the correct ability and challenge for each learner. Heitink et al (2016) stress the difficulty of therefore providing class discussion that will meet the needs of each pupil within the class and their personal ability level.

Levels of engagement and participation, within both lesson studies, throughout the whole lesson did tend to decrease over the time of the lesson, and more focus was given towards the introduction class discussions rather than all discussion within the entire lesson. This was more noticeable within the lower ability pupils, who were then seen to distract other learners. One possible solution to this problem could be the use extension tasks and further challenge for some pupils within discussions whilst also targeting the rest of the class. As noted by Tarver and Curry (1989), providing challenge can at times be difficult within the classroom however recognising gifted learners and their needs is fundamental in aiding in the development of the class as a whole as many individuals work and learn better from one another.

Conclusion

Through evaluating the results of these lesson studies and their use within the classroom, it is clear that a number of findings have been uncovered and elements that could improve my personal teaching strategies have also been discovered. Although the research went well and findings were discovered, it is necessary to examine the strengths and limitations of the method and the overall process. A number of strengths came through delivering the lesson study, and one in particular was that of working with another research partner. Through having a partner to discuss and evaluate research, it was useful to compare with another opinion or observation in order to get an un-biased result. Another strength of these lesson studies was the use of using two different year groups. Through having the two-year groups, it was helpful in order to compare results and also analyse focus group interviews as the older pupils showed more understanding however the younger learners were eager to provide their feelings.

Although the lesson studies gathered a range of results and observations within the classroom, the study did have a number of limitations. The biggest issue was that of the timings. Due to only have the two lessons to observe and complete research, the findings could have been at a random order. It would have been useful to have a range of lessons, of different age groups, over time in order to analyse and to make sure the patterns found within the research were consistent. Another limitation was that of having a non-participant observer. Within the classroom, through having another adult, pupils were keen to discover what was happening and were, at times, less on task than usual and therefore didn't provide a real view of the classroom on a day to day basis.

Lesson study research was a good tool in order to reflect upon personal teaching, the teaching of another individual and to identify any areas of good teaching and work for further improvement in teaching. The research method is an element that will be used again over time and is useful for any ages within the education system. Working collaboratively to reflect upon practice and research attributes of teaching was an element found to be exciting and useful as it gathered the thoughts and opinions of another fellow student-teacher that ensured un-biased results.

The lesson study did aid in developing a new teaching strategy, that being the use of no hands-up methods and therefore this is something that will definitely be placed forward within further teaching practices. Through the use of no hands-up, it was clear that further engagement was had during lessons and pupils were participating at a higher level. Although the method will not work in all lessons, as a form of AfL it will be useful to use in order to examine and understand the level of learners and their abilities in a range of different subject areas. This experience was useful in terms of attempting new strategies and to discuss my teaching with a fellow student.

Recommendations

In terms of recommendations for this project the use of AfL strategies and a good standard of questioning techniques should be used in order to enhance the learning of all classrooms and its pupils. These findings will be undertaken to develop further practice through the use of effective research into AfL and its range of strategies. Further work with the research partner will also be used in order to identify any issues within teaching and to gather a non-bias opinion upon reflections.

If this lessons study was used again, changes would include a range of different lessons researching into the use of no hands-up methods and how this may differ with age or class size. Additional changes would be to include a range of different strategies for pupil voice within the research as this was a slight focus within the focus groups. Some individuals voiced concerns in accordance with confidence with the use of no hands-up methods and therefore careful consideration will have to be implemented for these particular pupils. Comparisons with other research work within the form of lesson studies should also be analysed to compare results and observations to ensure understanding and the correct methods within teaching are carried forward.

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