

Student Self Evaluation Form

This section repeats in brief the common assessment criteria detailed on previous pages. The *extent* to which these are demonstrated by you determines your mark. Using these criteria, tick the box that best indicates the level of achievement you feel you have achieved with regard to each of them.

Common Assessment Criteria Applied	REFER		D	C	B	A
	OUTRIGHT FAIL	UNSATISFACTORY	SATISFACTORY	GOOD	VERY GOOD	EXCELLENT
1. Subject Knowledge and Understanding (which includes using research-informed literature and knowledge and understanding of the subject)					X	
2. Intellectual Skills (Analysis)				X		
3. Pedagogic and Professional Applications (Practical Application and Deployment)				X		
4. Key Transferable Skills					X	

PLEASE COMMENT ON AREAS IN WHICH YOU FEEL THAT YOU HAVE PERFORMED WELL	PLEASE COMMENT ON AREAS YOU FEEL THAT YOU NEED TO DEVELOP
• Depth of literature throughout. • Successful and straightforward data collection. • Identification of pupils' thinking skills against Skills Framework. • The lessons followed the planned structure. • Able to make an informed conclusion and identify the limitations and recommendations.	• Deeper analysis of results against research. • More critical of literature – less descriptive. • More relevant literature review. • Writing too much – could have been more precise in the points I was trying to make. State point, analyse, move on.

ECPP7001

THE ENQUIRING TEACHER

'How can exploratory talk be developed through different ability groupings in a Key Stage 2 lesson?'

Student no: 1702288

Group 4

Word count: 6488

Research Aim

During the PTE experience there were times where group discussions or tasks were set, such as a series of DT lessons where groups designed and built their own moon buggies, as well as the 'think, pair, share' Assessment for Learning (AfL) strategy being implemented. Within my Year 5 class the children were already sat in ability groups and so naturally engaged with others at a similar level to themselves, but during the DT lessons I mixed the groups to be made up of a mixed ability.

Reflecting on this I deliberately mixed the groups with the consideration of ability levels – so that all abilities could mix to offer varied ideas. This reflection in action mirrors Schon's (1983) work, as I reflected on previous conclusions towards ability levels with the aim to promote better learning during the task. With these varied instances of same ability and mixed ability groups, I became curious as to how ability groupings can influence the interactions and contributions that the children provide.

Research Context

As previously mentioned, my class is already organised into 5 tables of same ability groupings – higher, middle, lower – although the class teacher commented that there are further 'micro-groups' where the abilities are more closely grouped; 1 lower, 1 middle-lower, 1 middle, 1 middle-higher, and 1 higher. There are 29 children in the class with the school being a small, rural school situated in the Neath Port Talbot County. My research partner taught within a Years 4 and 5 class of 35 pupils where there were no ability groupings (besides 1 lower group). The school is also a small school situated in Swansea. We discussed the differences between our classes and pondered over the effect that the groupings might have, especially when working together in discussion tasks. I informed my partner that I would often have to provide stimulus to the lower ability groups to think of things to say and I spent a lot of my time around those tables whilst the higher ability groups were able to discuss amongst themselves. On the other hand, however, I acknowledged that this could be detrimental as the higher ability groups received less of my input. This led to the question that my research partner and I arrived at; how can exploratory talk be developed through different ability groupings in a Key Stage 2 lesson? We want to discover how we can make more informed decisions when grouping our children for tasks in future lessons, promoting more probing and exploratory interactions.

Literature Review

This area of inquiry led me to research further work regarding talk and interaction, especially peer to peer. Mercer (1996, 2008), in collaboration with other researchers, observed the importance and quality of talk and dialogic interactions. Mercer explained that the theoretical approach is rooted within the works of Vygotsky (1978; Mercer & Wegerif, 1999), whom emphasised the importance of a more knowledgeable other to scaffold learning within the 'Zone of Proximal Development' – the zone between what a learner may accomplish independently and their potential development. These interactions within the zone are what will allow the learner to meet potential development and, when the learner is accomplished at the desired skill, then the scaffolding can be removed to allow the skill to be completed unaided in future instances (McLeod, 2012). The role of a more knowledgeable other is significant to this research's lesson study as it involves the target children working both in same ability and mixed ability groups, and how it impacts their exploratory talk. This will be discussed further in the next section. However, Mercer & Wegerif (1999) acknowledged that to research the role of talk specifically amongst children they needed to go beyond Vygotsky theoretically and methodologically.

Dialogic interactions are key to support learning when it occurs between teacher and pupil as well as pupil and pupil (Rojas-Drummond, Torreblanca, Pedraza, Velez & Guzman, 2013) as it allows the joint construction of knowledge (Wells, 1999; Mercer & Littleton, 2007; Mercer & Howe, 2012). Between the teacher and pupil a three-part exchange tends to occur; teacher initiation (often a question), pupil response, and follow-up feedback (Mehan, 1979; Sinclair & Coulthard, 1975). This an asymmetrical exchange as the teacher is leading the interaction and is in a position to hold control over the interaction (Mercer & Dawes, 2008). Amongst pupils, the interaction tends to be symmetrical in that it is less formal and doesn't follow the conventional rules. Interruptions are common, anyone may ask a question and it is acceptable to disagree with opinions (Mercer & Dawes, 2008). Educational settings require talk amongst pupils to be valuable and productive, for language to be used as a social mode of thinking (Mercer, 1995), although Wegerif and Scrimshaw (1997) contest that little was found when empirical research was actually carried out. Additionally, Mercer (1996) argued that communication *between* learners had not been examined extensively in relation to building knowledge and understanding.

Mercer (1995) presented three distinct types of talk; disputational, cumulative, and exploratory. Disputational talk can be confrontational with individualised decision making, with much disagreement. Cumulative talk “is characterised by repetitions, confirmations and elaborations” (Mercer & Wegerif, 1999, p. 85) and whilst the speakers build positively on what is said, they are uncritical in their affirmations, letting the conversation flow around and beyond themselves. Exploratory talk provides more critical yet constructive assertions that challenges speakers and provokes further thought, invoking them to deconstruct and justify the points that they are making. Here, “knowledge is made more publicly accountable and reasoning is more visible in the talk” (Mercer & Wegerif, 1999, p. 85). The usefulness of exploratory talk is supported by Gillies (2015) who referenced the work of Wegerif, Mercer, and Dawes (1999), Rojas-Drummond, Perez, Velez, Gomez, and Mendoza (2003) and Rojas-Drummond and Zapata (2004). All observed improved problem solving and reasoning skills amongst those who had been taught to use exploratory talk, outscoring control groups.

Gillies (2015) argued that exploratory talk does not spontaneously happen as children need to be taught the ‘ground rules’ before they engage. Exploratory talk requires providing reasons to statements and so if a child is showing disagreement blindly without justification then the talk could lean towards being disputational and thus learning is halted (Rajala, Hilppo & Lipponen, 2012). This leads to questions regarding the mastery and involvement of the pupils who have learned exploratory talk. Rajala et al. (2012) suggested the need to address the asymmetries of peer exploratory talk study, with Lipponen, Rahikainen, Lallimo, and Hakkarainen (2003), Dillenbourg (1999), Linell (1990) and Linell, Gustavsson, and Juvonen (1988) all exploring the issue.

It is also important to address the research regarding grouping children as it tends to be a very divisive and contradictory area (Ireson & Hallam, 2001). In recent years there has been an expectation from the UK government where education policy expects a greater use of structured ability grouping (Wilkinson, Penney & Allin, 2016) and is often witnessed with regard to mathematics and English. Many researchers (William & Bartholomew, 2004; Ireson & Hallam, 2001; Slavin, 1987) claim, however, that despite this emphasis on grouping there is actually little evidence to suggest that there is a positive correlation of pupil achievement.

Furthermore, there is suggestion that this can lead to negative learning experiences where teacher expectations may be skewed (Dunne & Gazeley, 2008) which in turn limits the opportunity for lower ability and attainment children can access more challenging work. Additionally, negative self-perceptions can develop with the children (Hallam & Deathe, 2002; Ireson & Hallam, 2001; Boaler, 1997a, 1997b). On the contrary, there are arguments that grouping of 'gifted' children with amendments to the curriculum to increase the quality of their education can be beneficial (Preckel, Gotz & Frenzel, 2010; Hattie 2002).

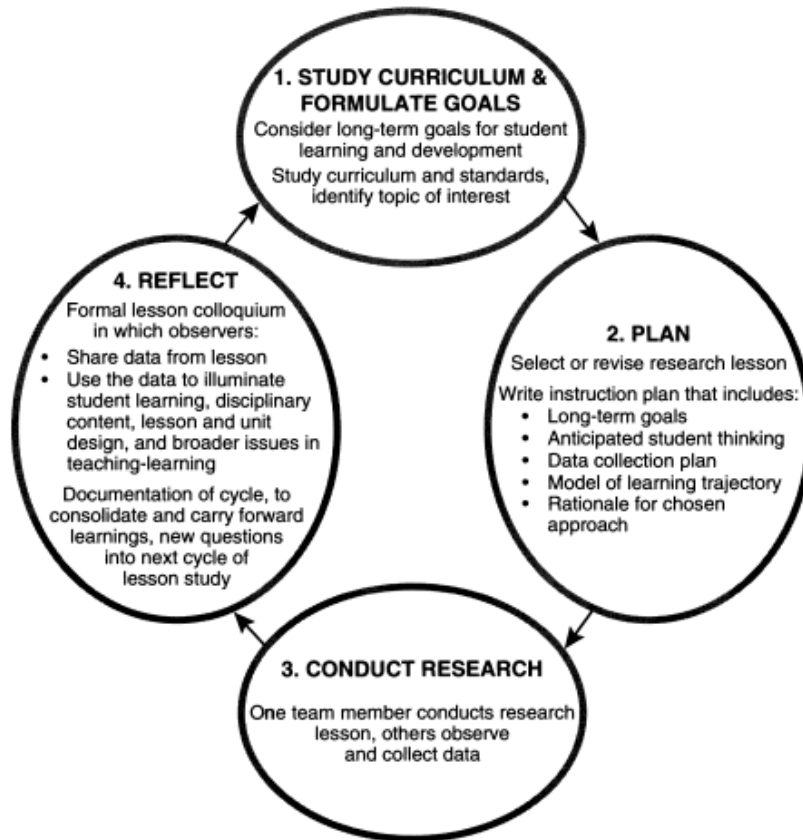
Lesson Study Design

The research relies on an implementation of action research, specifically lesson study. Action research is a form of social research that occurs within the field being analysed with the overarching aim to improve the situation of the participants (Greenwood & Levin, 2007). In this instance, an area has been identified to examine in more detail in order to interpret the results and go on to improve the social context. Action research differs from many other research methods that seek to understand phenomena as the action researcher aims to implement the change that benefits both the researcher and the participants (Baskerville & Myers, 2004). Therefore, the action research facilitates the understanding of better teaching methods to aid and enhance the learning for children; both the teacher (researcher) and participants (children) are benefitting from the process. As previously mentioned, lesson study is the arm of action research from which it is enacted.

Lesson study emerged in Japan as a form of professional development whereby a 'research lesson' is taught and observed by a group of teachers who record in detail the teaching and learning that occurs. Following the lesson, the teachers congregate to share the data and reflect upon the lesson and learning and teaching more broadly (Lewis, Perry & Murata, 2006). Many key educational innovations and improvements have been attributed to lesson study (Fernandez, 2002), as well as the improvement of elementary education in Japan (Lewis et al., 2006) and has become a useful tool that now appears across the United States and other parts of the world. Dudley (2015, p. 5) supported that lesson study is improving teaching and learning, going on to further improve schools as a whole and raise

standards through “the simple sequence of collaborative reflective practice”. Lesson study typically follows the following cycle (Lewis et al., 2006);

Figure 1.



The diagram illustrates the direction of this study, firstly an area of interest and further pursuit was identified – exploratory talk and how pupil groupings can cultivate more valuable talk. Next, the lesson (Appendix 5) was planned collaboratively before it will be conducted in both schools. Finally, a reflection (Appendix 6) upon the lessons and data collection will take place where the data is discussed alongside how it can inform future lessons.

The structure of the lesson and data collection will begin through a random selection of three target different attainment pupils and sorting the class into similar attainment groups and mixed attainment groups. The first lesson will be taught whilst the observer travels around the classroom monitoring each group and recording data for the same amount of time to ensure a fairness of the research. This does bring limitations in that the observer may miss discussion points being made by a target pupil when observing a different group, although this is the approach that has been

deemed most appropriate to tackle any bias with one particular attainment group. Following the lessons a semi-structured focus group interview with the target children will take place, before a discussion of all of the findings between researchers so that the following lesson can be prepared. The second lesson will be taught following identical structure to the first with the improvements then implemented. The teacher and observer roles will be reversed.

The observational notes will be made using an observation checklist (see Appendix 1) where a tally will be made when the specific talk characteristics are being demonstrated by the three target children. This is a form of structured observation as it is being made against a predetermined 'schedule' which gives a reliability towards the observations as the characteristic is either observed or it isn't (Bryman, 1988). However, this calls for clarity between researchers so that a consistent understanding is developed towards what constitutes each characteristic. For example, distinction will be needed between whether a child is being competitive in discussion or whether what they are saying is challenging the others yet justifying why as these characteristics define different types of talk. To ensure this consistency there will be a discussion of the characteristics so that each has the same understanding.

This type of data collection falls into the domain of quantitative as it assumes many of the features that Hammersley (1992a) and Halfpenny (1979) outlined; hard, fixed, and concerned with behaviour. Again, tallies will be made (hard and fixed) to measure how often the children partake in the discussion types that are being observed (behaviour). Avoiding the dismissal that quantitative data *only* concerns numbers, verbal interpretations are often included by researchers to make sense of the statistics (Silverman, 2014). In this case, the following focus group interview (as well as the interpretations made to inform the planning of the next lesson) will be used to make sense of the data to inform the planning of the following lesson. However, some qualitative features do exist as there is a concern to find the *how* of the phenomena – to make meaning and give a 'voice' to the participant and give the data a more humanistic approach (Silverman, 2010). According to Marshall and Rossman (1989, p. 111) it is "the process of bringing order, structure and meaning to the mass of collected data". The interviews will provide an opportunity for this pupil voice as the children reflect on the outcomes of the lessons.

As told by Silverman (2014, p. 316), “Asking people what they think and feel appears to have an immediacy, even ‘authenticity’” which can be absent in naturally occurring data. By having the participants speak about their thoughts and feelings during the research then it helps to complete the picture for researchers. A researcher may note a behaviour and interpret it individually, but the interviews allow a different scope to understand how the participants viewed what happened. This may provide a clearer basis of interpretation. This method of data collection was selected primarily due to the speed findings would be gathered following implementation (Vaughn, Schumm & Sinagub, 1996). Questions have been prepared although the interviews will be semi-structured so that “the interviewee’s responses shape the order and structure of the interview” (Esterberg, 2002, p. 87). This avoids a rigidity that would restrict pursuit of further inquiry should the opportunity arise. The sample of three target children was slightly purposive in that one from each attainment group was needed as well as needing the children to be capable to contribute to the lesson interview (Rabiee, 2004; Vaughn et al., 1996), although the selection of individuals within these attainment groups was random.

A spreadsheet will be created to analyse the data so that the both lessons can be viewed simultaneously. From this, it will be clear to note whether the alterations that were made following the first lesson had any effect upon the second. A summary of each comment made by each child during the interviews will be made instead of direct transcriptions due to the time constraint and the conclusions of the research being straightforward (Stewart, 2006). This will lean towards the denaturalism mode of the transcription continuum where idiosyncratic elements of speech are not included (Oliver, Serovich & Mason, 2005). Although denaturalised transcriptions still aim for a verbatim speech depiction, they are more concerned with the substance of the interview – the meanings and perceptions. The focus groups are to provide clarity on the data already collected rather to infer meaning behind what is said and therefore exact transcription is not entirely necessary. They will follow ‘Type A’ design, as an Individualistic Social Psychology Perspective where “the role of participant interaction is to elicit the prevailing range of beliefs, opinions, or preferences regarding a program or policy” (Ryan, Gandha, Culbertson & Carlson, 2014, p. 4), in this instance the preferences and interpretations about the groups that the children worked in.

Following the first lesson, an Assisted Reflective Conclusions (ARC) model will be completed as a “reflection-on-action” (Rolfe, 1997, p. 244) to inform the next lesson. Understanding what went well and what will need improving will allow conclusions to be drawn, following Gibbs’ (1988) and Kolb’s (1984) recommendations to put what has been learned into practice.

Ethical Considerations

The inclusion of children as research subjects led to stringent ethical considerations to ensure the safety and wellbeing for all involved. In preparation of the study, I read the BERA guidelines (2011) and the current university code of practice (UWTSD, 2017) to ensure I developed a sound understanding of the need to protect the children and maintain integrity of the research. Prior to conducting any research, both parental consent and pupil assent was collected which outlined the purpose and methods of the study. The children were also explicitly told on the assent form and verbally that they hold the right to not participate or withdraw at any point of the study with no consequences to their decisions. No incentives were provided to those who participated, with all children treated equally whether they were participant or otherwise. Despite the study being non-intrusive I have taken steps to ensure that the participants feel comfortable – conducting the lesson within the normal school day and the interviews on site in a room familiar to the pupils, with doors open and another adult (my research partner) in the room. This consistency of procedure and careful selection of surroundings is important (Legard, Keegan & Ward, 2003) can help to produce more valid results (Snape & Spencer, 2003).

Interview questions were designed to be open and not leading towards any viewpoint or bias allowing a more honest yield of data. The legal requirements towards the storage of data have also been followed by both my research partner and I, following local council guidelines – using only a password protected computer and a password protected cloud to store data. Additionally, we complied with the safeguarding and health and safety policies of both schools, making ourselves aware of the procedures to follow in the instance that a child disclosed any sensitive information.

Results and Lesson Analysis

Lesson 1

The lesson was planned with the strict motive to promote discussion amongst all of the children with the lesson objective being – ‘Can I contribute to a group discussion to build an argument?’ It involved a scenario to discuss whether an accused individual was guilty or not guilty, with evidence supporting both parties being drip fed to the children throughout the lesson. There was no definite answer or verdict so the children could use the evidence to support their points. The aim was so that children could support their arguments using the evidence, though others who disagreed could utilise the contradictory evidence to challenge. In providing contradictory evidence to all points, we hoped that it would stimulate the children to develop their own ideas and explore reasoning. It is worth noting from the outset the three target children from the first lesson; Libby (lower attainment), Jade (middle attainment), and Jack (higher attainment). The intentions were met as the children discussed amongst each other passionately. I was able to observe each group, with children often looking to me and arguing their point as if to convince me or prompt me into reinforcing their point or provide a definitive answer. In this case I would redirect them to tell their group as opposed to me.

Initially in the groups of same attainment, only Jack used exploratory talk predominantly, with Libby using an equal amount of exploratory and cumulative talk, whilst Jade didn't use express any exploratory talk. However, the observer did note that Jade contributed very little to the discussion often demonstrating passive behaviours. When the groups were changed to mixed attainment, every child contributed more discussion especially of an exploratory nature. Libby's main use of talk was exploratory (significantly increased), Jade used cumulative talk predominantly (although did show an instance of exploratory), whilst Jack's use of exploratory talk almost tripled. All children agreed during the interview that they had sufficient opportunity to share their arguments during the lesson. Both Jack and Jade explained that they preferred working within the mixed groups as they both felt that they were able to share more of their points, Jade acknowledging that she did not speak much and perceived that she contributed more within the mixed groups (although she scored the same tally from both groups). All of this information,

especially the tallies made by the observer, are testament to engagement taking place.

During my own observations of the children, there was another child within Jack's same attainment group who was particularly disputational and could have been perceived as overbearing which could have been a factor towards Jack's interpretation of how much he was able to express his opinion. Jack also referred to this, explaining that it was the other pupil who he was mainly disputing. Interestingly, Libby preferred working in the same attainment group, commenting that everyone was "more considerate", "spoke one at a time", and it was "more fair". This is noteworthy as Libby's use of exploratory talk almost doubled within the mixed attainment group, yet she perceived the first group as more receptive. During the interview she commented that everyone held the same opinion in the mixed group (as opposed to different in the same attainment group) which could suggest that new arguments were presented in line with her thought processes and therefore provided more opportunity to reinforce what she thought. All three children mentioned that it was the evidence that reinforced their opinions as opposed to what others said, but Libby did change her judgement during the lesson although mentioned that it was due to the evidence rather than an argument that someone else made. Additionally, as the lesson went on, the children began to further their judgements and build upon the evidence that was provided. For example, Libby interpreted that the lesson's character – Steve – seemed too young to have a son when no information about his age was provided. This links to the Skills Framework (Welsh Government, 2008) where Libby considered the evidence and demonstrated entrepreneurial thinking to develop her own idea.

In Jack's instance of almost tripling his exploratory talk, he informed us that there was always one person in both groups who held a different opinion to him and recognised that the smaller groups gave him more chance to get his points across. That there was always someone to dispute his claims could have been a significant factor towards his increased usage of exploratory talk and, what made the type of talk noteworthy was that he explained that he used the evidence to support his claims – something which I can attest to when speaking with groups. Even when reminding him of alternative evidence to encourage the discussion, Jack would always refer back to the evidence that had led his thought. This, again, evidences

the thinking skills he used outlined by the Skills Framework (Welsh Government, 2008).

Jade was the anomaly with regard to her tally, with only one instance of exploratory talk and her total tallies the same in both groups. She amassed the following (Pupil 2);

Figure 2.

School 1	Attainment Groups				Mixed Attainment Groups		
	Disputational Talk	Cumulative Talk	Exploratory Talk		Disputational Talk	Cumulative Talk	Exploratory Talk
Pupil 1 (L)	0	3	3	Pupil 1	1	0	8
Pupil 2 (M)	1	3	0	Pupil 2	0	4	1
Pupil 3 (H)	2	2	5	Pupil 3	2	0	14

Despite the data being very limited, her disputational talk seemed to transfer to exploratory when joining the mixed attainment group. The inference can then be made that where Jade was uncritically challenging other points of view in the beginning, she began to make points that were relevant to the topic when in the mixed attainment group. She delivered an independent contribution even though she otherwise mostly repeated the ideas of others in the group.

As we found that the children were more interactive when in mixed attainment groups, we speculated whether to keep the groupings the same for the second lesson or choose mixed groupings from the start. We decided to keep the groupings the same as the first lesson and swap them around again at half way but felt it was important that the pupil voice also directed the research and next lesson to improve teaching and learning (Flutter & Rudduck, 2004). Lewis and Porter (2007, p. 223) explained that “the viewpoint of the child is essential to investigating and therefore understanding a given context” and so in consulting the children through interview, not only could it help to develop the next lesson, being treated as active responsible members of learning organisations can motivate them further (McIntyre, Pedder & Rudduck, 2005).

Libby suggested that instead of simply informing the groups that a new piece of evidence was being handed out and doing so, she would have preferred if the information was explained in more detail – effectively providing more scaffolding.

She mentioned that she did not understand some of the words, whereas if she had then it could have helped her to understand the evidence better and aid her judgement and arguments. Moreover, we took into account whether everyone in the group was engaged. For Jack in the mixed attainment group, it was primarily him and another involved in the discussion so going forward we aimed to ensure that the groups were more on task as whole. The increased scaffolding was put in place to tackle the issue, as it could have been a lack of understanding which led to those others who were less engaged. To solidify my understanding of the lesson, I completed an ARC. Reflection is embedded within action research and necessary to continue professional development (Sharp, 2012) and was key to determine the factors that influenced the lesson. For example; when Jack was faced with strong disputational talk, Jade who was not as involved, and Libby who suggested more teacher-input. Along with recognising how the discussion was shaped when there was disagreement within a group or unanimous agreement, I was able to unpick the aspects that could be tailored to allow for a greater accomplishment of the lesson objective that would benefit the learning for *all* children.

Lesson 2

Proceeding into the second lesson, my research partner and I decided that prior to handing each piece of evidence out to the groups, it would be explained in detail to avoid the misunderstanding that Libby was faced with in the previous lesson. By doing so we hoped to provide complete clarity so that the arguments that the children formulated were fully informed, so that they were able to consider all of the information and analyse it correctly. Also, before explaining the evidence my research partner posed questions to the class so that they could share their thoughts to a wider audience which would also allow children to hear views from others outside of their groups. Self-explanation can improve understanding (Chi, De Leeuw, Chiu & LaVancher, 1994; Webb, 1989) so in allowing the children the opportunity to share, they will have to make sense of the information first. Explaining the evidence provided a scaffold that allowed the children's learning to move around the scaffold and build towards more thinking and knowledge construction.

As mentioned earlier, the groupings were kept the same as the first lesson where we began with similar attainment groups and then split to mixed attainment

groups. The three target children were Finley (low attainment), Sarah (middle attainment), and Emily (high attainment). Finley expressed that he liked that everyone had different points and suggested that the lesson wouldn't have been as good if everybody agreed. He especially liked the lesson *because* he had to argue his points. This suggests that he recognises that cumulative or passive talk would not have productive towards the lesson, that there would have been little thought provided to arrive at an end verdict and in turn limited learning. The second lesson slightly differs from the first in that all three pupils predominantly used exploratory talk when working in their similar attainment groups, yet they also demonstrated other talk characteristics. Emily was the only one to speak disputationally, although had a low tally of cumulative talk compared to Finley and Sarah (see Figure 3). She was observed in one instance as being overpowering without justification. In the interview, Emily told us that she would try to find a point that would invalidate the points of somebody else who disagreed with her which was a successful approach as she admitted to changing someone else's mind with this. This evidences her oracy skills where Emily was able to consider the evidence and speak in such a way to change the way of thinking of another pupil. The other pupil was then required to consider the ideas and judge against any bias (Welsh Government, 2008).

Figure 3.

School 2	Attainment Groups			Mixed Attainment Groups			
	Disputational Talk	Cumulative Talk	Exploratory Talk		Disputational Talk	Cumulative Talk	Exploratory Talk
Pupil 1 (L)	0	2	5	Pupil 1	1	2	8
Pupil 2 (M)	0	3	4	Pupil 2	0	6	4
Pupil 3 (H)	1	1	4	Pupil 3	0	1	9

We can see that Emily was engaged throughout, furthering her exploratory talk when she joined the mixed attainment group. Sarah was the only child not to increase her exploratory talk, instead increasing her cumulative talk. Like in lesson one, the middle attaining child predominantly used cumulative talk working in mixed attainment groups. She informed us that the mixed attainment group was split so was good for everyone to debate, yet her reason for preferring this group was because her friend was in it. She did attest that the boys in her first group were overpowering, yet when this had been removed in the other group she remained uncritical. We can only speculate whether the presence of a friend may have been a factor toward her contributions and discuss it further in the next section. Finley

attributed his furthered use of exploratory talk to numerous factors. Firstly, those in the mixed attainment group offered more points and wanted to argue their points against his. Secondly, there was one less pupil in this group so there was more opportunity to talk. In being challenged more, Finley was required to consider the information in order to contradict it and respond. His tally represents the moments where he was critical, used the evidence, and did not simply accept what was being said to him to dispute his argument. This is important because it contrasts Sarah who was cumulative in these situations.

Discussion

The results illustrate that the total amount of talk increases by each pupil when they are working within mixed ability groups, whether it be disputational, cumulative, or exploratory. Pierce and Gilles (2008) informed that a way to specifically encourage exploratory talk is to encourage new perspectives. This could correlate to the results in the mixed attainment data as the children will have moved from building a base of argument in their similar attainment groups towards new groups with new perspectives that have been established prior. However, Emily commented that she preferred the same ability group because they “had much better answers and more of an opinion”. In the mixed ability group, Emily informed us that there was only one other child – also high attainment – who presented her with good points to disagree with so she was able to argue back and forth with her. This relates to what Vygotsky (1978) explained when regarding the role of the more knowledgeable other to progress learning within the Zone of Proximal Development. It could be that only the other higher attaining child was able to challenge her in this instance. This shares similarities to Jack who, although felt more challenged in the mixed ability group, there was still another child to debate with. However, if the higher attainment children felt this way then we must acknowledge how the lower attainment children tallied high results of exploratory talk.

The findings can be indicative of Ireson and Hallam's (2001) assertions that selection and similar ability groupings tend to benefit those in higher attainment groups whereas unselective and mixed ability groupings benefit those in lower attainment groups as the lower attainment children scores significantly increase,

albeit along with the higher attainment groups. It can be seen that the lower attainment children have seemingly benefited from working in a mixed attainment group but so have the higher attainment children, even if Emily did not acknowledge it. Libby and Emily were the only children to comment that they preferred working in the similar attainment groups which actually contradicts research that reported that children enjoy lessons more when grouped with others at a similar level (Kulik & Kulik, 1982a). These distinctions and contradictions reinforce Ireson and Hallam's (2001) research that, on the whole, ability grouping has little impact on overall attainment. Rather, the opportunity for children to speak freely – asymmetrically – widely offering opinions with interruptions present allowed deep engagement. This enjoyment stems to the motivational importance of inquiry (Wells & Ball, 2008) as for Dewey (1938), a key function of inquiry was to generate opportunity for purposeful dialogue so that children can develop ideas and gather information that they want to share.

The similarities of the data between Jade and Sarah is noteworthy as both demonstrated inattentiveness and a reluctance to critically discuss. Felmlee and Eder (1983) argued that group ability level does indeed influence attentiveness with peer influence being a factor. They reported that “students who became inattentive due to boredom or other reasons often engaged in certain disruptive or distracting behaviours” and name talking to other group members as one. The matter that both children did provide exploratory features to their talk could discount the notion that they were unaware of the ‘rules’ of critical discussion or exploratory talk (Gillies, 2015; Mercer et al., 1999) as both my research partner and I had already provided input and questioned the children on how to produce meaningful arguments. For our respective lessons we emphasised the importance of supporting arguments with reasons so that when opinions were generated, the children were able to produce critical, evidenced points. Here, the Thinking Together approach (Rajala et al., 2012) to establish the ‘ground rules’ was implemented with the aim of facilitating the exploratory talk (Rojas-Drummond et al., 2003; Wegerif et al., 1999).

Overall, the mixing of attainment showed to be contributory towards better, more critical discussion amongst the lower and higher attaining children, with not much effect on the middle attaining children (despite their total amount of talk increasing and Jade going from zero to one expression of exploratory talk when

joining the mixed group). It could reinforce the research that there is, in fact, little significance towards attainment grouping.

Conclusion and Recommendations

Before making any judgement towards how the research can contribute to future lessons, it is important to address the limitations within this study. There are both areas of the data collection methods and findings that could be improved if the study was to be implemented at a future time. Firstly, the sample size of six children in total is very small and too insignificant to start making concrete generalisations. Although the research is quantitative in nature by wanting to spot the trend of when the most exploratory talk is being expressed, smaller groups or patterns of interaction can still yield significance towards understanding of social processes (Lamont & White, 2005). The findings incline towards there being a connection between mixed attainment groups and increased discussion, and a greater expression of exploratory talk amongst lower and higher attaining pupils when in the mixed group but it would be wildly irresponsible to claim this is the rule for all children, classes, and schools due to many other factors or the research being circumstantial.

In addition, this research was conducted against time constraints with regard to the data collection. Choosing focus group interviews were beneficial as they provided an informal context to help the children feel at ease, where a conversational approach was encouraged for the children to build on each other's responses so group dynamic could emerge (Silverman, 2014) and provide a natural environment to maintain rapport (Esterberg, 2002; Patton, 1990). Individual interviews may have been a better alternative to generate more authentic responses without inferences from other children. For example, Jade mentioned in her interview that she double checked evidence and used it to support her arguments yet the data contradicted this. It may have been a simple misinterpretation but in the presence of others who had contributed well and were also honest in their interviews, it is possible that Jade may have been mirroring their answers. Conversely, there is the risk that the child would provide responses that they perceive us as researchers wanted to hear which is why it was explained beforehand that we are open to any responses and there would be no consequences. In the case of having more time, a naturalistic

transcription approach would also be recommended to provide as much detail as possible. This would improve the reliability of the research as every utterance can be accounted for rather than relying on the interpretations of the researcher but, Silverman (2014, p. 89) stated that “the aim is to arrive at an agreed transcript, adequate for the task at hand”. Both sets of transcription notes were shown to each researcher and agreed upon that they were a fair representation of what was shared and portrayed during the interviews and are attached within the Appendices (Appendix 2).

I believe that many of the lesson amendments and interventions that were made going into the second lesson were beneficial towards the understanding for the children and also us as researchers. Going forward it would be much more beneficial to explain terms to children before they encounter them, especially in discussion based activities. This would only enhance the discussion rather than simply dropping the evidence onto tables to avoid halting discussion. Although Wells (1999) spoke of children organically using the technical terms from labelled diagrams regarding building cars when in collaboration groups, as opposed to adults presenting and defining the terms, I feel that it is different in the case of this lesson as children can infer what one word means if it is labelling an object. In this research context it was important that the children understood terms such as ‘insurance’ when a car had received a bump such as in the scenario. Understanding the terms would give the children more confidence to speak out on the issue. Additionally, it was useful that we provided opportunities for children to share their arguments with the rest of the class as it helps them to see their work from a new perspective and “how to lead their audience through an abbreviated version of their own learning journey” (Pierce & Gilles, 2008, p. 45).

For future lessons I would mix the children from the beginning for discussion activities and facilitate through the interventions that were mentioned. The findings pose an interesting point as to whether reversing the order of the groupings would have any impact upon when children return to their attainment groups, and if the impacts change if the children are already accustomed to being sorted according to attainment or not. Otherwise, mixed groups may remain as the constant as they have shown to increase talk amongst some pupils (in this study specifically). The lesson process has provided an insight into the specific variables that I can alter to

enhance learning, being reflective following a lesson to identify the specific areas that I can address. This can not only make teaching more effective but more efficient (Dudley, 2013) I have also benefitted from listening to and using the pupil voice to inform lessons. I will aim to incorporate the pupil voice to seek their views as a collaboration as opposed to occasional feedback (Flutter, 2007) as it can lead to a more informed and impactful teacher voice (Lincoln, 1995).

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Appendices

Appendix 1 – Observation Checklist

	Pupil 1	Totals	Pupil 2	Totals	Pupil 3	Totals
They are disagreeing with the others in the group and making their own decisions.						
They are not offering constructive criticism.						
They are competitive rather than co-operative.						
Their responses are over powering with no justification (Yes it is! No it's not!).						
They are just accepting and agreeing with everything being said.						
They are sharing ideas but in an uncritical way.						
They are repeating the ideas of others.						
They are responding very quickly without thinking about the answer.						
They are asking questions to gain clarification on a point made by someone else before responding.						
They are challenging the ideas of others and justifying why.						
They are contributing to and building on what others have said.						
They are welcoming and respecting the ideas of others, even if they disagree with what is being said.						
The points they are making are relevant to the topic.						

Appendix 2 – Interview Notes

Lesson 1:

- All enjoyed lesson
- Better group/able to share points better with; Jade – 2nd group (Nearly everyone agreed with her, spoke more in 2nd group). Jack – 2nd group (got to speak more), Libby – 1st group (everyone was more considerate, spoke one at a time, more fair)
- Jack – 1st group louder, 2nd quieter. Even though it was louder, still talking about the topic and arguing about the topic. Arguing points with one other pupil in particular from the 1st group.
- Libby – 1st group – different opinions. 2nd group – all had same opinion but were still discussing.
- Jade – 1st group everyone had the same idea but in 2nd one pupil disagreed.
- Jack – preferred that it was a smaller group (just him and another pupil providing discussion in 2nd group), more chance for him to get his points across. In both groups, one pupil thought not guilty whilst everyone else thought guilty. Always one person in both groups that had a different opinion. Gave a lot of chance to discuss and get points across.
- Jack – would look at the rest of the evidence to argue the points of others. Looked for evidence that contradicted specific points made by someone else.
- Libby – would use evidence to reinforce to others why she thought Steve was guilty.
- Jade – double checked the evidence and used it to argue points from others.
- All used evidence to support arguments.
- Jack – kept same opinion all the way through.
- Libby – changed mind. Thought the character looked too young to have a son, used her own interpretation to come to a conclusion. Used evidence to come to her judgement. One other pupil did argue with her but she referred to the evidence again to support.
- Jade – changed mind due to evidence.
- Jack – thought there would be a final verdict. Would have preferred a final answer – guilty/not guilty.
- Libby – would have preferred if the evidence was explained before being given to groups.

Lesson 2:

Lower Attainment pupil (LA)

Middle Attainment pupil (MA)

Higher Attainment pupil (HA)

Did you enjoy the lesson?

All pupils said they enjoyed the lesson

LA – I liked the lesson as we had to argue our points. I liked that everyone had different points. It wouldn't be as good if everyone agreed.

Did you feel like you made good points?

LA – I couldn't make up my mind, I kept changing between guilty and not guilty

MA – I changed my mind from guilty to not guilty.

HA – I thought he was guilty all the way through.

Which group did you work better in?

LA – Second group (mixed) as certain pupils were shouting in the first one so I couldn't get my point across. They were talking over me so I couldn't say my opinion.

MA – I liked the second group (mixed) because my boyfriend was in it (do friendship groups have an impact?). Second group was able to give me better ideas.

HA – I preferred the first group (same ability) as the group has much better answers and more of an opinion. The second group were really quiet and didn't give me any ideas or didn't argue against me. Only **pupil A** (another HA pupil) gave good answers in my group. She disagreed with me so it was fun to argue our points against each other and everyone else in the group didn't talk to us much.

What was different about the groups?

LA – Different for me as first group (Same ability) just messed around but the second group (mixed ability) offered more points and wanted to argue their points against mine.

MA – First group (Same ability), there were only two girls and the boys overpowered us by just saying guilty. The second group (mixed ability) argued their points more, half thought guilty half thought not guilty so it was good as we were able to debate instead of everyone agreeing.

HA – First group (Same ability) were explaining their answers a lot more and offering more conversation but the second group (mixed ability) was just me and **pupil A** and no one else was saying much.

What made you change your mind? Evidence or the talk?

LA – The evidence. When the son gave the statement.

MA – Same, the evidence.

How could we improve the lesson?

All pupils wanted an answer at the end. This was the same as the previous lesson.

LA – I would like to do more work about courts to understand it more. Work with people who are not friends so we can make more friends.

MA – Act it out – make it real with a jury and judge.

HA – same as above but the jury should be able to put their hands up and offer points one at a time so everyone has a chance to speak.

Size of the groups?

LA – We only had 5 in our second group compared with 6 in the first. This was better as we had more room and were able to talk more about what we thought. It would be good if we just worked with a partner to start with then went into bigger groups as this gives us time to have a think about what to talk about.

MA – I think it was perfect. If there were any more then it would be hard to hear and if there were less it might be harder as there is less to talk about.

HA – If the groups were bigger people might've felt left out. I would like to work in talk partners to discuss my ideas then split the class into those who think guilty and not guilty and we can just argue as a class against each other.

What did you do if you disagreed with someone?

MA – I would just say no and explain why I don't agree.

HA – I would try to find a way to say something back to make their point invalid. I managed to change someone's mind doing this.

Did you ever not say a point you thought?

All pupils said they felt confident sharing their points.

Appendix 3 – Interview Questions

Padding-in introduction – did you enjoy? What went well? Didn't go well?

1. Which group did you feel better sharing your points with? Why?
2. What was different between the groups?
3. How did you back up your points if you agreed or disagreed?
4. Did anybody change your mind? Did you change anybody else's mind? How did you/they do it?
5. How could I improve this lesson if I taught it again? What could I do differently or keep the same?

Possible Q's to stem off;

- Which group do you think gave better points? Why?
- Which group did you feel more comfortable in?
- Which group did you feel better sharing your points with? Why?
- Did you feel like you made good points?
- Which group do you think you made better points with? Why?
- Did you feel like your points were listened to?
- Did you agree or disagree with any points?
- If you disagreed, did you share why? Or give a different point of view?
- Do you think discussion groups are useful to talk about different topics?
- Did you keep any thoughts to yourself? Why?
- Did anybody change your mind? Did you change anybody else's mind? How did you/they do it?
- How do you think the lesson could have been better?
- Do you think another set of groups would give better arguments? How would you sort these groups?
- Do you think you would have been able to say as much if there were more/less people in the group?
- What sort of questions did you ask in your groups? Were they answered?
- How comfortable did you feel making your points in both groups? Which was better?
- What did you do when you disagreed with somebody?

Appendix 4 – Assent Form

Year 5,

Mr Henry is going to be teaching a lesson to find out how he can make his lessons better in the future. Mr Henry will have a partner, Mr Evans, who will be in the classroom to watch how the lesson is going.

No information about you (name, age, class) or the school will be shared with anybody other than Mr Henry and Mr Evans.

You do not have to participate if you do not want to.

You can drop out at any time – we won't mind!

We will ask 3 children some questions about the lesson when it has finished. The 3 children will be chosen at random.

Please write your name and circle one of the smiley faces to let us know if you are taking part:

Name: _____



I **do** want to take part.



I **do not** want to take part.

Appendix 5 – Lesson Plan

			1B
Session Plan – Key Stage 2			
Name of trainees: Daniel Evans and Callum Henry		Session ref: Lesson 1 - 27/03/18 Lesson 2 - 28/03/18	
Personal target(s) in relation to QTS: S3.1.4 - Team teaching. S3.2.1 - Monitor and assess the lesson and use this to inform planning.			
Year group: Year 5	No. of learners: 29	ALN: n/a	
Additional Adults:	TA to facilitate discussion		
Learning objective(s): Can I contribute to a group discussion to build an argument?		Success criteria: Vote guilty/not guilty on post-it notes Support arguments Respect other opinions and arguments	
Links to previous learning: n/a Curriculum coverage (range, skills)			
Oracy <i>Listening</i> - listen to others, asking questions and responding to both the content and the speakers' viewpoints <i>Listening</i> - Contribute to group discussion, taking some responsibility for completing the task well <i>Collaboration and discussion</i> - express opinions about topics <i>Collaboration and discussion</i> - build on and develop the ideas of others in group discussions <i>Speaking</i> - explain information and ideas, exploring and using ways to be convincing			
<i>Literacy(LNF)</i>		<i>Numeracy (LNF)</i>	
See above		N/A	
DCF	Thinking	ESDGC	YCC
N/A	Asking questions. Activating prior skills, knowledge and understanding (oracy, reading skills & problem solving). Gathering information ("evidence"). Generating and developing ideas. Valuing errors and unexpected outcomes	N/A	N/A

	(evidence that contradicts what they originally thought). Entrepreneurial thinking. Thinking about cause and effect and making inferences. Thinking logically and seeking patterns. Considering evidence, information and ideas. Forming opinions and making decisions.		
Key vocabulary(English/Welsh): English: Evidence. Opinion. Talk. Listen. Explain/support. Welsh: Da iawn. Bendigedig. Barod, Dwylo y fyny. Dwylo y lawr. Sefwch yn dawel. Eisteddwch yn dawel. Gwrandewch.			

Time	Session activities, organisation and management	Key questions & Assessment for Learning opportunities
10 mins	Introduction Discuss LO & success criteria – a problem to solve. Give scenario - I am back today to find out if you can help with a problem. Sarah had a scratch on her car. Thinks it was Steve as he was parked next to her in the car park. Sarah noticed that Steve had one too. Give post-it notes (pink) to chn, write a reason and vote guilty or not guilty and stick on board. Split into groups (ability groups) Discuss the topic. Half way through – vote again using post it notes Then swap groups around Debate again Vote last time at end of lesson	Resources Witness statements per group Evidence per group Post it notes Paper for notes PowerPoint with witness statement and evidence Questions Follow up evidence with questions; Is this a reliable source? Can we trust the evidence? Have you supported your arguments? Why? Did you change your mind?

		• What made you change your mind? (Evidence/discuss) AfL Post-it notes Questioning Allow thinking time
	Main activities Children to discuss the scenario with their groups. Encourage them to support arguments & disagreement is ok. Everyone must offer an opinion – respect even if different. Immediately provide evidence #1 (in favour of Sarah). ~5 mins Evidence #2 (Steve). ~5 mins discussion. Evidence #3 (Sarah). ~5 mins Evidence #4 (Sarah) After a few mins of more discussion - vote again on post-its (yellow) to put on board. Split into mixed ability groups and give evidence #5 Again, assess how discussion is going and drip feed the evidence to each group.	

	Prior to closing the lesson, have the chn vote on post-its (green) for the last time and place on board. Evidence; Steve is Guilty 2) A member of public saw a car that looked like Steve's reversing into the space next to Sarah's car and the driver was on his phone. 4) The claim was for bumping into someone else's car, so Steve has a history of reckless driving. 6) CCTV footage from the scene yesterday showed Steve entering the car park driving very fast. 8) The scratch on Sarah's car and Steve's car are the same size and closely match each other. Coincidence? 10) There was blue paint on Sarah's car. Where could this have come from? Steve is not guilty 1) Steve says the scratch happened last year. Do you believe him? 3) Steve has proof that the scratch on his car happened last year as he claimed from his insurance. 5) CCTV footage from last year's incident showed that Steve swerved into the road to avoid a dog and skimmed a car parked on the other side of the road. 7) Steve's son was with him all day and gave a statement saying his dad never hit Sarah's car. 9) A member of public said they saw Sarah bump into a wall before driving into the parking space.
10 mins	Plenary Bring discussion to a close. Ask each group their collective thoughts. Unanimous agreement? Who disagreed? Why?

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Appendix 6 – ARC

Model Beirniad Wedi Adfyfrio (BWA)

Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 27/03/18**Digwyddiad critigol (Ffocws)/Critical incident (focus):** Lesson study #1: How can exploratory talk be developed through different groupings in a KS2 lesson?

Profiad/Experience	
Teimladau/Feelings <i>Beth yw eich teimladau ynghylch y profiad?</i> <i>"What are your feelings regarding the experience?"</i>	The lesson was successful, children enjoyed it and I was able to deliver every piece of evidence to the children. There was sufficient time and smooth procedure. Mostly all children were on-task and engaged with the topic. The three target children were present and my research partner was able to observe them all adequately, gaining data for each child to go forward and inform the next lesson. This was a relief and pleasing.
Cofio a Deall/Remember and Understand <i>Allwch chi restru'r agweddau ar y profiad dysgu a aeth yn dda?</i> <i>"Can you list the aspects of the learning experience that went well?"</i> <i>Pa elfennau o'r profiad dysgu oedd yn siomedig?</i> <i>"What were the elements of the learning experience that were disappointing?"</i>	• The lesson was enjoyable for the children. We had prepared the lesson well with enough resources to keep the children stimulated. There was constantly evidence available to keep the children 'on their toes' when they felt that they had reached a conclusion. • Plenty of data was gathered – we had already established interpretations of our criteria so that characteristics could be recognised and tallied. • Children were engaged and keen to argue their points. • Most children referred to the evidence and supported their arguments. • The children were respectful of each other and there was no ill-discipline. • Some children formulated their own thoughts and built upon evidence to provide new points. • The children were honest in their interviews and all of them contributed. • Of the children was not very engaged – although this was not entirely a bad thing as we could still recognise this as data to go forward. • Some children veered into discussion with other groups rather than sharing with their own. • There was a dispute amongst the lower attainment group as to who gets to read the evidence cards. • Some of the children did not understand some of the terms on evidence cards.

Gwerthuso a dadansoddi/ Evaluate and analyse <i>Beth fyddwch chi'n cadw'r un fath i sicrhau dysgu ac addysgu effeithiol yn y dyfodol? "What will you keep the same to ensure effective teaching and learning in the future?"</i> <i>Beth oedd achos yr elfen siomedig bwysicaf? "What was the cause of the most important disappointing element?"</i>	• We will keep the groupings as similar attainment and then mixed attainment so that the children can build on what they establish in their first group. • We will aim to pass on every bit of evidence, or ensure an equal weighting of evidence from both sides so that bias is avoided. • Teacher input will remain at the start to discuss with the children what constitutes a good argument/debate (i.e. supporting points). • A cause of some distraction could have been the actual classroom layout. Many tables were very close to each other and therefore other groups were in close proximity. • There was no explanation of the evidence cards prior to handing them out, the aim was for the discussion to develop organically so the cards were placed onto tables after a certain amount of time. This left some children without explanation about what some terms meant. This could have limited some opportunity for discussion.
Casgliadau a chamau gweithredu/ Conclusions and actions <i>Beth yw eich atebion posibl i'r materiaon siomedig a nodwyd? "What are your possible solutions to the disappointing issues identified?"</i> <i>Beth ydych yn mynd i'w wneud nesaf? "What will you do next?"</i>	• For lesson study #2, each piece of evidence will be explained before being given out. This will ensure everybody understands to promote more discussion. • We will identify how the groups will be split and to what areas of the classroom. • The teacher for the next lesson will provide more scaffolding to again ensure that everyone understands. They may pose questions to children as a 'devil's advocate' to provoke thinking with the children. • The teacher will allow opportunity for different children to share their opinions to the rest of the class throughout the lesson (before new evidence is explained and provided) as opposed to at the end of the lesson as was done today.
Y profiad newydd / Transformed experience	