



ASSIGNMENT DETAILS AND FEEDBACK

SOUTH WEST WALES CENTRE FOR TEACHER EDUCATION

*Sections marked with * should be completed by module lead*

Student name:		Student P number:	1200764
Programme: *	PGCE Primary		
Module: *	The Enquiring Teacher	Module Level (6 or 7):*	7
Module code: *	M7X2152	Contribution to Overall Module Assessment (%): *	100%
Module Lead:*	Catherine Morgan		
Assignment Title:*	Write a critical and analytical essay that discusses your practitioner research 'lesson study' in relation to a chosen field.	Assignment No (x of x):*	1/1
Start date:*	09/01/18	Submission deadline:*	16/04/18
Return date of provisional marks & written feedback:*			

Referencing:	In the main body of your submission you must give credit to authors on whose research your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have read or quoted in order to complete this assignment (e.g. for books: surname of author and initials, year of publication, <u>title of book</u> , edition, publisher: place of publication).		
Submission:	All assignments must be submitted to Turnitin unless otherwise instructed by the Lecturer. Note: the Turnitin version is the primary submission and acts as a receipt for the student. Late submission of the electronic version of the assignment will result in a late penalty. Penalties for late submission: Up to one week late, maximum grade D. Over one week late, Refer. Only the Extenuating Circumstances Panel may grant an extension.	Date:	16/04/18
Module lead to tick to indicate if a hard copy version of the assignment must be submitted.*			YES
			NO ✓

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)	☐	☐	☐	☐	☐	☒
2. Intellectual Skills (Analysis)	☐	☐	☐	☐	☒	☐
3. Pedagogic and Professional Applications (Practical Application and Deployment)	☐	☐	☐	☐	☒	☐
4. Key Transferable Skills	☐	☐	☐	☐	☐	☒

PLEASE COMMENT ON AREAS IN WHICH YOU FEEL THAT YOU HAVE PERFORMED WELL	PLEASE COMMENT ON AREAS YOU FEEL THAT YOU NEED TO DEVELOP

Student's Name	1200764	Date	11.04.2018
Student's Signature	 		



PRIFYSGOL CYMRU

Y Drindod Dewi Sant

UNIVERSITY OF WALES

Trinity Saint David

How can we engage pupils in the Foundation Phase to use a self-assessment technique to enhance their understanding of the learning objectives?

The Enquiring Teacher (TET)

Level 7 (ECP7001)

Word Count: 16,482

Research Focus

This study arose from a personal interest that both researchers had in the field of self-assessment (SA). The opportunities provided by the professional teaching experiences, exposed the researchers to a vast amount of SA techniques. Despite this, there was significantly less SA used in the Foundation Phase, compared to that of Key Stage 2. This sparked an interest in the researcher to find out why there was little SA being used. In addition to this, research suggests that SA strategies are often implemented poorly across teaching and learning (DCSF, 2007). These factors created a desire to both satisfy a personal interest, potentially add to the literature and develop the researchers understanding of the topic at hand. Therefore, this research explored the children's ability to self-assess, while also critiquing the delivery of the lesson to professionally develop the teaching styles and techniques of the researchers in question.

Research Context

This study was conducted by two researchers in the region of South Wales, in a primary educational setting that caters for pupils aged three to eleven. The school is currently responsible for 507 pupils, built up of around 18.5% free school meals, a number which is below that of the Welsh and Local Authority average. Of this cohort, both researchers were engaged with two classes during their PGCE placement; therefore, due to accessibility and advantages, the research was also conducted in both these classes. The reception class included a total of 30 children, whereas the mixed age class included 23 pupils from year 2 and a further 3 children from year 3. It was not feasible for the two researchers to compile data on every child, and as such three focus children were selected from each class.

Through on-going discussions, it was decided that the research will focus upon the participants' ability to use a self-assessment exercise to describe their engagement with the learning objective (LO). The process of unpicking the goal of this investigation created three key questions; how we can engage pupils in self-assessment? what factors help them self-assess? and how can we improve our teaching to encourage self-assessment?

Literature Review

Personal interest in curricula research is a factor deemed important when undertaking any research. According to Wade (2001) the literature shows a positive relationship between interest and a deeper understanding of topic, attention to theory and increased learning.

Despite this, it was still fundamental to the research to consult the literature, provide evidence and contextualise the relevance of self-assessment (SA) within the Foundation Phase setting. To further this point, The Education Endowment Foundation (EEF, 2018) includes a Teaching and Learning Toolkit which is often used by practitioners to gain an understanding of the impact a specific teaching strategy may have on children. Nevertheless, this bank of data and research does not highlight 'self-assessment' as its own strand of positive impact on learning.

Arthur and Cremin (2014) explain that self-assessment is a strategy that is formed within the approach called Assessment for Learning (AfL). It is argued there are two key components to AfL: the type of feedback given to pupils to aid them in their learning and the targets which arise from this formative assessment (Arthur & Cremin, 2014). Boud (1995) would argue that self-assessment attempts to comply with both components making the learner an active and integral part to the assessment regime. Building on this, Andrade and Du state that "self-assessment is a process of formative assessment during which students reflect on and evaluate the quality of their work and their learning" (2007, p.160). The Welsh Assembly Government simplifies this definition by stating that peer and self-assessment is a shift from learners only understanding what they learn, to a process of how they learn. It is focused on engaging learners to make their learning explicit, rather than implicit, in an active learning environment (DCELLS, 2010).

Although the EEF (2018) does not highlight the importance of (SA), Black and Wiliam (1998) highlight the effect size of formative assessment as one of the largest intervention strategies in education. Furthermore, they suggest that effective strategies in assessment, leads directly to an improved structure of feedback which can aid pupil's attainment. What is interesting here, is that 'feedback' is one of the highest rated impact upon learning by the EEF (2018) at eight months extra learning through effective practice. 'Feedback' in the terms of AfL is a multifaceted procedure which is built up of many other components, for example, the EEF (2018) suggests that of this eight months learning, four are made up of formative assessment. Therefore, they conclude that research into the impact of feedback has given rise to the awareness of AfL which Black and Wiliam (1998) argue has led to the successful innovation of self-assessment. Despite this, the Early Years Toolkit provided by the EEF (2018) which analysis data purely on those below the age of 5, does not highlight feedback as an impact upon attainment. This would suggest the AfL component of feedback would also be disregarded and have no impact upon attainment. It is unclear however, whether this through a lack of evidence throughout the meta-analysis stage, or simply not deemed an impact towards children of this age. This study had the advantage of researching SA with children that were both below the age of five and above, and therefore allowed the researchers to see any distinguishing features between the two age bracket cohorts.

Assessment for learning provides the teacher with the tools to assess the pupils and decide the next steps which are required to push their learning forward (DCELLS, 2010). Griggs (2010) understands that SA in this matter, would be the importance of including both teacher and pupil in the process in an explicit manner, which is a process deeply ingrained in the Foundation Phase philosophy. The Zone of Proximal Development (ZPD) is a model created by Lev Vygotsky (1978), which follows a similar structure to AfL and could be argued to be one of its predecessors before the term AfL was coined. The Learning and Teaching Pedagogy document that is used to aid practitioners in the philosophy of the Foundation Phase, explains the importance of the ZPD and the understanding of the 'zone' where a child can go from doing a task or skill with help, to being independent (DCELLS, 2008). McNair (2004) suggests that all aspects of AfL will aid practitioners in progressing children through the ZPD and designing effective and manageable targets. However, AfL and SA are not simply implicit functions of the early years curriculum. The Foundation Phase Profile Handbook is a document produced to aid teachers in assessing children, and highlights the importance of aiding pupils with their own SA and target setting (DfES, 2017).

Griggs (2010) argues that AfL is now an ingrained governmental policy that runs throughout the whole education system within the United Kingdom. Furthermore, Black and Wiliam (1998) suggests that in previous years of education, too much of the emphasis revolved around the teachers rather than the learner. Despite this, the teaching style has shifted in recent years towards a child-centred, holistic education such as that of the Foundation Phase (DfES, 2015) and the new curriculum which is being designed by Professor Donaldson (2015). Griggs (2010) therefore suggests this shift is also seen within AfL with a greater push for self-assessment strategies to be developed throughout the education system. How to develop thinking and assessment for learning in the classroom is a relatively new document that outlines strategies to aid teachers in the governments desire for an increased quality and quantity of assessment strategies (DCELLS, 2010). Summarising this document provided three important factors of assessment; pupils must have a greater involvement in their assessment, children must be allowed thinking time when assessing their work or being questioned, and there must be a clear understanding of what is expected from the pupils to successfully assess their learning. In this document including 83 AfL and SA strategies, there is one method called 'traffic lighting' which shall be used for this research. 'Traffic lighting' is described as a 'successful' and prominent SA tool throughout schools in Wales and involves learners picking the colour green, amber or red in relation to the traffic light to evaluate their work (DCELLS, 2010).

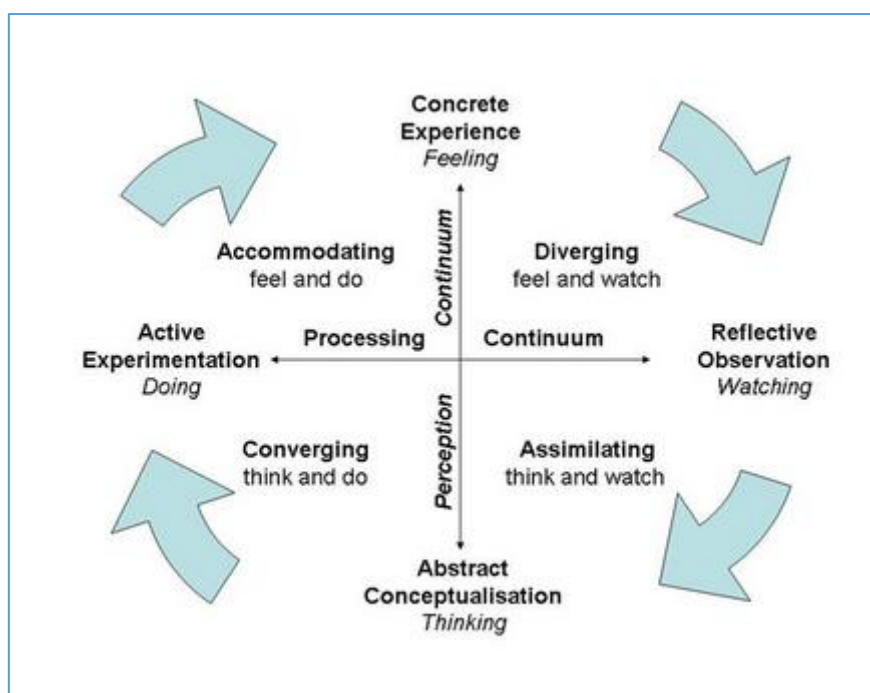
Methodology

The methodological structure of this research is based around a lesson study design, Ono & Ferreira, (2010) understands that action research is a fundamental part of a lesson study which is built upon the collaboration and progression of practitioner knowledge. Newby (2014) suggests that action research is used in cases to progress one's own delivery or service within a specific sphere, something which is popular amongst educationalists. Baba and Kojima, (2003) supports the use of lesson study within this context, explaining that it is an effective tool for teachers to connect the theory to the classroom environment and combine both factors to evaluate their teaching and make recommendations for future pedagogy.

Newby (2014) highlights a case study by Christina Bergendahl, whereby an action research method was used when looking into teaching styles. Here, Newby (2014) suggests that it was not simply the action research tool which provided Christina with her best practice example, moreover it was her ability to use an action research reflective model. Thus, this research undertook a two-part reflection model, the first of which included the structure of Schon's (1983) 'reflection-in-action'. Cohen, et al., (2011) suggest that action research is unlike that of other research structures which are stringent in their focus, as this design method is malleable to the changing environment. This means that practitioners can adapt the lesson as they choose fit and use Schon's (1983) model to make improvements during the lesson, rather than waiting to write the next steps which are already clear in the current lesson.

Reflection-in-action is not the only reflective practice included in this research, as the overarching reflective design will follow the four stage principles originally set forth by Lewin (1946) and mirror the model created by Kolb, adeptly named Kolb's learning cycle:

Figure 1. Kolb's Learning Cycle



(McLeod, 2017)

In relation to this model, the original interest through the lack self-assessment (SA) in the Foundation Phase set forth the first lesson study. One researcher took on the role of a non-participating observer, whilst the other taught. Following this concrete experience, there was a collaborative reflection and conceptualisation of lesson study 1 which then determined the changes required for the active experimentation or in this case, lesson study 2. Here, with the combination of Schon (1983) and Kolb's (1984) reflective models, the research will fulfil the principles of action research to provide both practitioners, with an improved theoretical and practical outcome.

Campbell and Norton (2007) highlight the benefits that can be seen from peer support throughout the reflection-on-practice stage (Schon, 1983), which can aid practitioners in their reflective capabilities. Considering this, it was deemed appropriate that a non-participating observer was present. An observational method allows the research to record participants in their natural environment and gain access to the real-life scenarios (Kumar, 2014). Punch and Oancea (2014) highlight the increase of validity seen within this setting as it allows the investigators to see the natural reaction of participants which may otherwise be different under an experimental or unfamiliar setting. Nevertheless, Cohen, et al., (2011) contests this simplistic notion, stating that the impacts of an observer can have negative implications on the results through the 'Hawthorne effect'.

This effect is explained by Blaxter, et al., (2010) as a change of attitude, behaviour or outcome of the participants due to being observed. Oswald, et al., (2014) experimented with reducing the Hawthorne effect and found that building a relationship to gain familiarity with participants was a factor that could help mitigate this issue (Bernard, 2006). All participants have already been taught by one researcher and would have been in regular contact with the other due to being in the same school. This along with an exploratory statement was used to help reduce this effect (see Appendix A).

Time was a prominent issue throughout this research, due to the small amount of time allocated for the research to be conducted and analysed. Matthews and Ross (2010) argue that in research which is restricted by time, observation is a poor choice of methods due to the length of its implementation. Cannon (2008) suggests this could have been avoided through the time effective method of a questionnaire. Cohen, et al., (2011) states the importance of considering participants when choosing a data collecting method; as such, questionnaires were not viable here due to the children's age. In addition, a lesson study design requires real time teaching techniques to be evaluated which is not feasible through a questionnaire.

According to Newby (2014) there are four sub categories of observation and non-participatory observations; this research shall focus on a non-participatory, unobtrusive observational approach whereby the participants are aware of the observer yet have little interaction with the individual. This was effective for this research, as both individuals were able to benefit from observing each other, which allowed them to gain "enlightenment and empowerment through an increased understanding of practice" (Campbell & Norton, 2007, p. 25). Newby (2014) explains that within this approach, a method of 'shadowing' can be utilised as an experimental learning tool to record behaviour and see the research approach from another perspective.

Extraneous variables are an issue which can arise with field and observational methods due to the lack of control of the environmental conditions (McDonald, 2005). This study as attempted to pre-empt one of these variables using the Leuven Scale of Active Engagement. Essentially, if participants are not engaged and learning, they will not be able to correctly self-assess their learning. As such, this was deemed a variable that needed to be calculated and mitigated before and during the lesson study.

This study utilises a non-probability convenience sampling technique which Newby (2014) describes as an effective tool to use when the population is small, and time is limited. This research shall predominately produce qualitative data through the field notes recorded by the non-observing researcher. Kumar (2014) brings to light the in-depth detail that can be gathered through this method, which can provide more meaningful and purposeful data. This

analysis of qualitative data is important to fuel the implementations that were required for lesson study 2.

To gain the purposeful qualitative data, the non-participating researcher would take down field notes throughout the lesson using a structure provided by the Welsh Assembly Government on observing children (see figure 2). These were however, only used in an attempt to guide the observation rather than a checklist; the final qualitative function of the research was gathered through a focus group interview. During this focus group interview, children were asked to self-assess their learning through the traffic light method with an explanation as to why they came to that decision. Ashbury (1995) describes this data collection method as an effect tool to gain a large amount of valuable data. Due to the scale and nature of the study, although the self-assessment was done in ability groups, only one individual out of each ability was chosen for observing so that data could be more easily managed.

Figure 2. Questions to consider when observing children

Exhibit 13.2 Questions to consider when observing children

- Are the activities too easy or too difficult?
- How are the children using the resources?
- Is there anything missing that the children need?
- Is sufficient time/space provided for the experience and consolidation?
- Are the children fully involved in the activity – if not, why not?
- How independent are the children in their learning?
- Are the children able to work/play alongside/in cooperation with other children?
- Do the children need practitioners' intervention?
- Has there been opportunity for sustained thinking?
- What needs to be done to move the learning on?
- Is there a balance of activities over time (indoor/outdoor, individual/group, etc.)?

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(DCELLS, 2008, p. 8)

The design of the lesson study 1 was to teach a simple lesson on counting numbers to 20, so that the children would have a clear objective for them to assess their learning (see Appendix B). To ensure that all aspects of the research were correlated efficiently, the study used a non-participant observer. This peer researcher used the observation sheet, (see Appendix C) to note down the engagement of the children, whilst also note taking any interesting information that occurred throughout the lesson. In addition, the non-participating adult would also give their opinion on the pupil's understanding of the lesson objective, and

then assess their understanding of SA. To conclude, the two researchers would then collaboratively reflect upon the teaching scenario to summarise the results and evaluate what happened. They would then progress to lesson study 2 (see Appendix D) with these recommendations in mind.

Ethical Considerations

The research undertook an extensive ethical consideration proposal (see Appendix E) before undertaking any research within the school environment. Therefore, the research worked within guidelines set forth by: The University of Wales Trinity Saint David, Research Ethics and Integrity Code of practice (2017), the BERA Ethical Guidelines for Educational Research (2011) and the EWC: Code of Professional conduct and Practice for Registrants with the Education Workforce Council (2017). This ethical proposal was signed by both a university mentor, and a senior mentor placed at the school and was thus sent for approval from the ethics team. This policy set forth the strict regulations throughout this research so that all data was collected anonymously and therefore there was also complete participant confidentiality.

The research also followed guidelines from The Children's Act (1989) and the United Nations Convention on the Rights of the Child (1990), to ensure that all children had the right to withdraw and voice their opinion on any matter without judgement or negative repercussions. Essentially, all children would be treated the same whether they choose to participate or not, so that their values, status, beliefs and interests were valued at all times (UNCRC, 1990).

Lesson Study 1

Lesson study 1 took place in a reception class of 30 pupils, it involved 1 participant from each of the higher (HA), middle (MA) and lower attainment (LA) groups which were set by the class teacher. The research carried out each lesson, with one participant at a time in a group of two other children from the same attainment grouping. The lesson objective required the children to count to a respective number in the correct order; this objective was differentiated between the three groups with the HA counting to 20, the MA counting to 15 or 20 and the LA counting to 10.

The lesson was split up into two activities, the first was used to develop the children's understanding of ordering numbers and allow them to recall their knowledge of counting (see Appendix B for more detail). Once the children had gained a chance to refresh their ability to order numbers, the researcher moved onto activity 2. This activity involved children making their way through an imaginary swamp and jumping on numbered lily pads in the correct order. If children stepped on the wrong number (lily pad) the teacher would shout splash and they would have to 'swim' back to their friends for safety. Black, et al., (2003) suggests that clear guidelines need to be apparent for children to self-assess themselves accurately. Based on this suggestion, the researcher teaching the lesson had hoped that a game such as this would help children gain a practical and visual understanding of whether they knew their numbers, and thus aid them to self-assessment.

While the above activities were taking place, the non-participating observer would note their engagement, and understanding of ordering numbers to compare with their SA. The final stage of this process was to explain to the children the traffic lighting system. In this scenario the traffic light system was explained as the following: green light means there is a solid understanding and ability to count all numbers up to the differentiated amount, amber means a partial understanding and ability to count to around half or above of the desired amount, and red light means the child was unable to understand the ordering of numbers and was only able to accurately order up to 3 or below.

The structure of the teaching in lesson 1 ran without any major flaws, each child that was observed was given an engagement rating of 'high' suggesting there were clear signs of engagement (**see Appendix F, G and H**) The next part of recording data came in the form of the focus group interviews; participant 1 was able to engage with the lesson to a high standard, repeat that the learning objective (LO) was to count to 10, and accurately give themselves an amber light. It was here that the researcher took on a reflection-in-action response based upon the work of Schon (1983); the pupil had clearly assessed themselves correctly but was unable to give an accurate description of why, and simply pointed to the lily pads. Therefore, the

researcher asked, “what about the lily pads made you think that you should have an orange light?” to which the child understood what the researcher was asking them and responded by stating they had not made it through the swamp because they do not know all their numbers.

Participant 2 and 3 of Lesson study 1 had quite a different outcome. Although both pupils were marked as having a high engagement throughout the whole lesson, they were unable to self-assess correctly. Participant 2 initially seemed to have a relatively good understanding of the LO, although as the SA progressed with prompts, they confused the objective with counting in 20's. Previous to the research, the class teacher was keen to show the researcher who had previously taught in the class, the progress the children had made with their numeracy. Therefore, they were shown a display of children counting in 2's, 10's and 20's; this created a comforting atmosphere for the introduction and provided a fluid transfer from this, to introducing the observer and what the lesson would entail. However, upon reflection both researchers believed it was likely that this factor had confused the child's explanation of the LO during the interview stage. What the investigators were unable to conclude, is whether the child had confused the explanation given, and internally understood the LO, or whether the children genuinely did not understand the LO.

Finally, participant 2 and 3 were unable to self-assess correctly. Participant 2, chose an amber traffic light which did not echo the understanding of the lesson which should have been red. When asked and prompted to give justification for this, the participant simply repeated the answer of the previous pupil and was unable to give any more detail. Participant 3 on the other hand, provided a very good explanation of the learning objective and was able to understand the process of making it through the swamp. Nevertheless, when it came to the SA focus group interview, participant 3 found the model of a traffic light extremely difficult. At first, they picked the red traffic light and explained that “it is my favourite colour”, this led the teaching researcher to explain the traffic light system once again, however this only sought to add confusion. The child then began to explain their knowledge of the ‘Green Cross Code’, explaining how to cross the road safely. After much explanation it was clear that this method of SA was too difficult for the child to understand, and they were unable to separate their knowledge of the road safety rules with that of the SA model.

Once the lesson was finished, the researchers sought out the guidance from Kolb's learning cycle to analyse and evaluate the data that had been presented. Firstly, due to the simplicity of the task, the first researcher only included an explanation of the LO, which both researchers believed was sufficient. However, upon reflection, it seemed that two of the children really struggled to understand what the researchers wanted from them when self-assessing. Thus, both individuals believed it was important to include an explicit success

criteria in the next lesson for the children to evaluate themselves against. The next factor that linked to this success criteria, was the use of a physical traffic light with the explanations of each light labelled alongside (see Appendix I). It was hoped through doing this, children would have a more concrete understanding of the traffic light in relation to SA rather than confusing it with the Green Cross Code. The next recommendation built upon the success of effective prompting techniques, both researchers argued that promoting, scaffolding and guiding the children to the right explanations yet still allowing them independence to give an honest answer, was an effective tool. Considering this, the researchers decided that it would be advantageous to the children if examples were given of each traffic light scenario.

Finally, both researchers were concerned with the impact other children were having on the privacy of the self-assessment tool. As explained, participant 2 seemingly copied the answer of the individual who went before them. This effect skews the results quite considerably, as the researchers were unable to gauge how well the child was able to self-assess, and left them with questions such as could they have self-assessed if they had done it individually? Or did they not understand the process at all? In respects to these concerns, the researchers decided that an independent self-assessment structure would be advantageous for the next lesson study to gain a better validity of results.

Lesson study 2 analysis

The second part of the lesson study took place in a year 2/3 mixed class of 30 pupils. The lesson followed a similar pattern to the first lesson in many aspects, with both involving mathematics. The lesson began with the researcher using a physical traffic light, with an example given for each light, e.g. green light requires every answer to be right. Once the understanding of the traffic light system was ensured with a thumbs up AfL strategy, the researcher moved on to creating the success criteria. This was a system the children were clearly used to, and with guidance and prompting from the teacher, participant 4 and 5 were able to build a success criteria (see Appendix J and K).

Participant 4 stated, "I like doing it with a 100 square" when asked about addition. Here they are beginning to form the understanding of the purpose of a success criteria which is to help the children reach the desired goal. This answer was then scaffolded and explained by the teacher and used as a possible success criteria tool. Participant 6 however, was able to build the success criteria without any prompting or aid from the teacher showing a proficient understanding of the principle of both addition, and the use of a success criteria (see Appendix L).

It was at this point that the individuals began to practice their addition skills through using the whiteboard with the researcher. Once again, this was used to develop the knowledge and understanding of the pupils to ensure they were able to recall the principals involved with addition. The researcher played first a game with dice, taking each number from the role until two, 2-digit numbers were available to add. All children were engaged at this point and as such, the researcher moved on to the addition work sheet that they needed to complete. The task here was simple, with an Easter egg theme, the children needed to find out how much each Easter egg was worth through an addition sum. Once they had completed this, there was then a printed traffic light on the worksheet for them to colour in. Taking on the advice from the last study, the researchers felt it important that the children were able to self-assess independently and at their own pace as they often finished at different times.

All participants had chosen the 'green' traffic light which accurately depicted the level of work they had completed. In all instances, the participants were able to reflect upon the success criteria and used it to explain how they had achieved their traffic light. Participant 6 took this a step further and was able to explain the success criteria, yet also state that "I used column addition, then looked, made sure, my work with the number square". Essentially, the child had used one part of the success criteria to complete the work, and then used the method of the 100 square to check their answers.

Overall, the researchers were very impressed with the results from the participants. Although these children were of an older age, they had responded perfectly to the steps that had been put in place from the previous lesson study. All children accurately self-assess and were in some cases, even able to independently explain, expand and give accurate justifications for their assessment.

Discussion of research findings

This research paper may add to the bank of literature on SA, yet this research had a specific goal of improving the practice of both researchers and giving them the experience of combining theoretical knowledge, with that of the practical application. Firstly, the theoretical background has shown the value and importance of formative assessment within the classroom, and the growing desire for effective self-assessment to be used throughout teaching (McNair, 2007; Arthur and Cremin, 2014; Donaldson, 2017). This is an issue which is not only impacting upon pupils, as a recent announcement suggests a further push for schools to follow a self-evaluation framework based upon best practice case studies (Williams, 2018).

The lesson study provided this research with a broad and detailed understanding of the components which are necessary for self-assessment to take place. The first component which quickly became apparent was the difficulty some children had in lesson study 1, to use the traffic light system. This unfortunately, should have been a foreseen issue as the Welsh Assembly Government Report on assessment suggests that traffic lighting with young children can often cause confusion (DCELLS, 2010). When investigating SA it quickly became apparent why; Piaget (1936) is a key psychologist who has provided many theories on the cognitive development of children. McLeod (2015) brings attention to Piaget's assimilation model, which is based on cognitive development and learning. This model suggests that children must use a process of accommodation when new information is learned that does not fit a previous definition or understanding of that process (schema). However, children may take time to accommodate this information before they are able to be at a state of equilibration or understanding. What was clear from lesson study 1, is that many children had been given the schema, and assimilated the information of road safety. Nevertheless, when the researchers came in and attempted to give the traffic light a different meaning and purpose, some children found it difficult to accommodate that knowledge in the short space of time.

What is fundamental here, is that Piaget's work is still recognised today and has been used to shape the Foundation Phase curriculum and pedagogy (DfES, 2015). With lesson study 2, children had previously used the traffic lighting system and were very proficient at it and although the researcher implemented a concrete traffic light, rather than an abstract thought, children understood the role of the traffic light easily. This then brings this paper to the next important feature which was overlooked somewhat in the design stage; the NFER (2012) suggest that practitioners need to be aware of the skill that is self-assessment. This is to say, that it is not a process which is bound by a developmental or cognitive age as this study may have assumed when starting out, yet rather it is an on-going skill which needs to be practiced, honed and perfected (Black & Wiliam, 1998). In light of this, it is arguable that children in reception were poorer at self-assessing due to their lack of practice rather than their age as a limiting factor.

Skill development of SA is a clear factor here within the research, however there are key components to self-assessing which can help improve SA. One of these factors which the researchers failed to implore correctly in lesson study 1 is that of a success criteria. Black, et al., (2003) recommends that pupils be given a clear goal to achieve with discrete explicit steps or targets to achieve that goal. Black and Wiliam (1998) argue that too often teachers include SA into their teaching without forming a success criteria, making it almost impossible for children to accurately assess themselves. This is a factor that was a great benefit to lesson

study 2 in comparison with 1, as children were able to use the success criteria when explaining their assessment choices.

There have been many implications and recommendations created from each of the studies, including that of prompting and concrete assessment tools in replace of abstract ones. Although possibly suggestive, yet backed up by research, the most important factors of SA are the use of a success criteria and time allocated to develop the skill of SA which should be an on-going process (Black & Wiliam, 1998; DCELLS, 2010; NFER, 2012).

Conclusion

On a personal level, this study has provided each researcher with a great bank of knowledge and practical experience in self-assessment (SA). In turn, this has arguably improved their professional development within the teaching profession and allowed them to gain a deeper understanding of both theoretical and practical principles of SA (Wade, 2001). With professional development being a key factor in the study, both researchers agreed that an observational method was advantageous to see each individual's teaching methods and evaluate how the children responded to that style. Despite this, the observational technique, although high in rich qualitative data, did have some major flaws regarding the research methods (Blaxter, et al., 2010). Due to time constraints, the study spanned over a three-day period, with three participants selected in each class totalling 6 participants for the study. Wellington (2000) understands that a small-scale study such as this, must be conscientious in the amount of data they wish to gather. In the case of this study, it was important that the researchers chose a low number of participants to look at in-depth, so that they could produce rich, yet not overwhelming data.

Data produced from this study was ideal for the timescale, scope and desired outcome, nonetheless, it has major drawbacks in relation to the wider field of research. As Newby (2014) explains, small scale studies often lack the ability to generalise their results to a larger population. This means that although the internal validity may have been high or acceptable, the external validity was extremely low and difficult to generalise to a broader population (Matthews & Ross, 2010). Furthermore, the Leuven scale was included into the research to remove the variable of engagement impacting on SA. However due to the small scale, it was not feasible to provide statistical data as the sample size was not large enough to provide valid data.

Focus group interviews were an effective way to encourage the similar teaching style that the pupils were used to, while gaining information about SA. Kumar (2014) argued that

this method allows for a large amount of rich data to be compiled, nevertheless the NFER (2012) suggests that there must be caution given to self-assessing in front of other pupils due to issues of embarrassment. Discomfort was not something that was picked up by either researcher during lesson study 1, however it is a factor that could have affected the results. In addition, participant 2 clearly took influence from those around them as they simply repeated an answer previously given. Due to this, lesson study 2 was created in a way that allowed the participants to self-assess in confidence, in the hope of reducing this impact.

The final drawback from this study was the issue of subjectiveness amongst researchers. Punch & Oancea (2014) state that observational research can often hold a subjective outlook as researchers will focus on one aspect and therefore miss a key feature which may affect or change results. Furthermore, Cohen, et al., (2011) highlights that how an individual may view a behaviour or action can be subjective to the way in which that person has interpreted it. In short, it may have been believed that a child has successfully self-assessed their work, however another individual may have interpreted that situation differently. The observational record attempted to deal with this issue as children needed to meet certain criteria before it was agreed that they had successfully or unsuccessfully self-assessed; criteria such as clearly understanding and achieving the learning objective in the eyes of the researcher, and then accurately describing why in relation to that level of work. Nevertheless, even this view of whether a child has achieved the learning objective could be seen as subjective, and therefore this is an issue that was hopefully reduced, yet by no means disregarded from the research.

Overall, it is believed that this study has provided the researcher with the tools to progress their practice and improve the quality of teaching given to pupils in this area. Through tools such as Schon's and Kolb's reflective model, the researcher has been able to not only improve their research, reflective and evaluative skills, yet also develop the ability to combine these tools. The Welsh Assembly Government suggests that developing effective thinking and assessment, "creates more independent, reflective and resilient learners" and is "one of the main aims of the revised National Curriculum" (DCELLS, 2010, p. 4). This viewpoint summarises that of this researcher and is a factor and endeavour that will always be acted upon as a teaching practitioner.

Recommendations

This lesson was an effective learning tool for this researcher yet was not without flaws. If the study was to be under-taken again to improve reliability, it is the view of this researcher that the following factors are taken into consideration. Self-assessment should not be viewed

as an age-bound factor, it is a skill and therefore requires practice to improve the results that can be seen from self-assessment. Based on the principle of being a skill that must be taught, the NFER (2012) suggests that involving children in peer-assessment first, before self-assessment takes place, is an effective structure to aid children when it comes to their SA. Secondly, a success-criteria or targets must be made explicit to the children so that they have a criteria to compare their work against. It is also fundamental with any teaching practice to understand your pupils, Black and Wiliam (1998) are supported by the Welsh government assessment strategy in that pupils respond better to certain styles of self-assessment at different ages. As a result of this, children at reception age should be using the thumbs up, down or middle approach when self-assessing, as the traffic lighting system was often confusing for them. As mentioned, SA is an ongoing skill that needs to be developed, and it was clear that the year 2/3 class had no issues with using the traffic light system. Therefore, future recommendations for them are to begin making comments on how they can improve, what their next steps for learning are and how they can now be challenged best. To conclude this paper, researchers and practitioners must see self-assessment as a tool which needs to be developed year on year to give children autonomy of their education, and allow them to build a reflective mindset which they can progress and use long into their adult life.

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Appendix A: Exploratory Statement

Explanatory statement

Bore da pawb!

Today myself and Mr. Davies will be in class to study everyone while they work. When I say study, I mean that I will be teaching you and Mr. Davies will be taking down notes on how everyone is doing. It is entirely up to you children if you would like to take part.

Now I will be taking a lesson like I have done in the past, Mr. Davies will be sitting back, watching and taking notes. The lesson should take.... just like a normal lesson and I will be working with groups just like we normally do, pawb yn diall?

Now the reason we are here today in class is because we are studying self-assessment. Now I don't expect anyone to know what self-assessment is, BUT, I will explain what that means in my lesson. Now if you choose to take part pawb, you will take part in the lesson and you will be asked questions just like you would if Miss. Hawes was teaching you. As well, three children will be asked to take part in an interview – all that means is Mr. Hughes will ask you questions about today's work that's all and Mr. Davies will write down your responses (answers).

As well pawb, there are no worries for you if you choose to be involved in this research project that Mr. Davies and myself are doing. Nothing will happen, it will just be like a normal lesson (except for Mr. Davies watching and some questions for three children). If ever you need to go to the toilet or have a drink, then all you have to do is ask. Also, if you do not want to take part in the lesson then you do not have to, I will not stop you, it is entirely up to you. Just treat it like a normal day in school. You were given a consent form the other week that your mams or dads should have signed (check for consent, hands up). Does anyone have any questions about what I've been talking about? If you have any questions at all children, then all you have to do is ask. I'll remind you again, that if you do not want to take part then you do not have to, but you will be missing out on the fun.

[21]

Introduction/plenary tasks		Main activities	Resources/ Key Vocabulary	Assessment for Learning (strategies and opportunities)	
Introduction Put numbers in order on the floor and go through the order with the children so that they can visualise and practice their numbers. (5 minutes)		<u>Trainee focused task</u> (purpose, outline of trainee’s role and children’s learning): This activity requires a close assessment of each child as it is crucial that I can accurately assess what number they can order to. In light of this, I will take smaller groups of 4. <u>Activity 1:</u> Play a game of hide and seek, where I will hide the numbers around the room and the children will need to find them and attempt to put them in order. This will allow the children to use estimation skills and develop their reasoning skill as the first few numbers will be difficult to estimate the location on the number line. Once they have began to fill the number line up, they can problem solve to see which numbers are likely to be in the wrong place and therefore need moving. This game has been used to give children a good understanding of ordering numbers and allow them to see what the finished product and ordered line looks like. (10 minutes) <u>Activity 2:</u> Now that the pupils have had a go at collabroatively creating a number line with the hind and seek activity, they will now inividually pick the correct numbers in order. This shall be done through an activity I call ‘The Swamp’. Here i have spread out lillypads on the floor in an almost random pattern that children will need to navigate across to get out of the swamp. They will begin at 1, then jump to 2 and so on. If they jump on the wrong number i will shout splash and they will have fallen in the swamp and therefore need to swim back to safety with the others. Once one person has made it through the swamp, or fallen in, the next person goes. (10 minutes) <u>Additional adult tasks</u> (purpose, outline of additional adults’ role and children’s learning):	Key Vocabulary • One more • One less • Order Resources: • Flash card numbers • Ipads • Lillypads	Thumbs up / down for understanding. Behaviour Management: • Who can show me good sitting. • Pointing out good sitters • Dojo points as rewards • Moving children • Sitting spots.	
Plenary Children will self-assess through traffic lighting (5 minutes)					
<u>Independent learning opportunities:</u>					
Curriculum coverage (range and skills) • experience a mathematically-rich environment that allows them to explore and develop mathematical concepts and language • Compare and order numbers to atleast 10.					

Literacy (LNF) • Speak audibly • take part in activities alongside others, with some interaction		Numeracy (LNF) See main activity. • use ordinal numbers to 10 in daily activities and play	
DCF • Using the iPad's to enhance the learning of ordering.	Thinking Follow the planned/process method	ESDGC N/A	YCC N/A

Appendix C: Observational Record

Participant Number:

Observational record

Name of teacher:	Name of observer:
Date of observation:	Length of session:
Subject:	Year group:

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity</i>	No concentration: staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities: Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	

Additional Notes on lesson:

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Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
Additional Notes:			

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
Additional Notes:			

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.

[27]

Introduction/plenary tasks	Main activities	Resources/ Key Vocabulary	Assessment for Learning (strategies and opportunities)
Introduction Some welsh counting. Put 100-square on the IWB. Ask children in Welsh what are the numbers on screen. How can we add 5? How could we add 9? What about 10? Or 21? (jumping two tens and adding 1). Remember - Welsh questions and commands.	<u>Trainee focused task</u> (purpose, outline of trainee's role and children's learning): Coch (ALN) – Intervention group. Glas (LA) – Numbers up to 30 with support. Worksheet. Melyn (A) – Numbers up to 50. Worksheet. Children to choose method and apparatus to answers questions. Gwyrdd (MAT) – Numbers below 100. Worksheet. Children to choose method and apparatus to answers questions. Use column method. <u>Additional adult tasks</u> (purpose, outline of additional adults' role and children's learning): NA.	Resources: Work books Pencils Rulers Purple pen Worksheet Numicon Counters/multi-link Number line Whiteboards Whiteboard pens Key Vocabulary: Add Adding Addition Plus '1, 2, 3...' more	Check understanding through questioning. Ask children if they understand – children to respond with show of thumbs. Traffic light work after completion . Observation.
Plenary Traffic light work. Ask the children questions related to TET research title (providing consent has been given and on-going assent is acknowledged).	<u>Independent learning opportunities:</u> NA. <i>Continuous provision:</i> Classroom based: Lego, craft area, home corner, reading area, classroom challenges. Corridor based: small world, cars, construction area, creative area, role play area, library.		

Curriculum coverage (range and skills)			
Mathematical development - transfer mathematical skills to play and classroom activities. Identify steps to complete the task or reach a solution. Select and use relevant number facts and mental strategies. Select appropriate equipment and resources. Use checking strategies to decide if answers are reasonable. Knowledge and Understanding of the World - describing what they have found out and offering simple explanations.			
Literacy (LNF) Express opinions, giving reasons, and provide appropriate answers to questions. Use simple subject-related words appropriately.		Numeracy (LNF) Coch (ALN) & Glas (LA) & Melyn (A) - solve one-step problems that involve addition, including missing number problems (extension), e.g. $7 + \square = 9$, using concrete objects and pictorial representations. Gwyrdd (MAT) – solve addition problems, using column method.	
DCF N/A.	Thinking Reasoning for choosing certain method to solve problem. Selecting the appropriate resources to help them solve the problem.	ESDGC N/A.	YCC N/A.

Appendix E: Ethics Form**APPLICATION FOR ETHICAL APPROVAL**

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

Full Name:					
Tick all boxes which apply:					
Member of staff:	☐	Student:	☒	Honorary research fellow:	☐

Faculty/School/Centre:	Yr Athrofa
Campus:	Townhill
E-mail address:	1200764@student.uwtsd.ac.uk
Contact Telephone Number:	07813572179

For students:			
Student Number:	1200764	Undergraduate	☐
Programme of Study:	Primary PGCE	Taught Postgraduate	x
Director of Studies/Supervisor:	Ceri Lewis	Research	☐

SECTION B: Approval for Research Activity

Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)		YES	☒	NO	☐
					Date
If Yes, please indicate source of approval (and date where known):	Research Degrees Committee		☐		
	Faculty Research Committee		☐		
	Other (write in) Module team		☒		28/02/18

Approval in principle **must** be obtained from the relevant source prior to seeking ethical approval.

SECTION C: External Ethical Guidance Materials

Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines.	
BERA (2011) BERA Ethical Guidelines for Educational Research (2011)	☒
University Guidelines UWTSD: Research Ethics & Integrity Code of Practice (2017)	☒
EWC Code of Practice (2017) EWC: Code of Professional conduct and Practice for Registrants with the Education Workforce Council (2017)	☒

SECTION D: External Collaborative Research Activity

Does the research activity involve collaborators outside of the University?	YES	☐	NO	☒
If Yes, please provide the name of the external organisation and name and contact details for the main contact person:				
Institution				
Contact person name				
Contact person e-mail address				

Where research activity is carried out in collaboration with an external organisation

Does this organisation have its own ethics approval system?	YES	☐	NO	x
If Yes, please attach a copy of any final approval (or interim approval) from the organisation				

SECTION E: Details of Research Activity

Indicative title:	How can we engage pupils in the Foundation Phase to use a self-assessment technique to enhance their understanding of the learning objectives?		
Proposed start date:	March 2018	Proposed end date:	April 2018
Purpose of research activity (including aims and objectives) Outline the purpose, aims and objectives of the research activity, including key research questions . Show briefly how existing research has informed the proposed activity and explain what the research activity will add and how it addresses an area of importance . (Maximum 300 words)			
The purpose of this study is to satisfy a personal interest in self-assessment, but to also add to the relatively low amount of research that includes self-assessment in the early years. While this researcher was in placement in the upper primary phase, he witnessed a varied amount of self and peer assessment. However, upon switching to the teaching age of foundation phase and reception children, there was significantly less self-assessment used. This was likely due to the age of the children, nevertheless it sparked an interest in this researcher to investigate whether learners could engage with self-assessment tools at this age, in relation to the learning outcome. Black, et al., (2003) argue that self-assessment requires students to comprehend both the learning objective and assessment criteria to assess their own learning. This was something that implemented consistently throughout the school where the research will be compiled, therefore the next stage is to discover whether pupils are able to self-assess in accordance with these factors. Spiller (2012) suggests that assessment which is controlled solely by the teacher reduces the learning capabilities of pupils, as they are less involved in the learning process. Nevertheless, self-assessment allows the pupils to take responsibility of their learning and therefore gain a greater understanding of the skill, topic or context in which they are learning. It is the wish of this researcher to carry out an investigation to see whether children can engage with self-assessment in the early years and link their learning to that of the criteria and learning objective which is always made explicit. Questions to be asked: 1. What do you think we have been learning about today?			

2. Could you tell me something about what you've learned today?
3. How well do you think did in today's lesson? (Response should mirror traffic light)
4. What colour do you think your traffic light should be?

Proposed methods

Provide a brief summary of all the methods that **may** be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. (Maximum 600 words)

Should include:

Non-participation observation – Whilst one researcher is carrying out the lesson and study with the pupils, the other will be observing and collecting data. As the lesson progresses, the observer will be gathering data regarding the children's engagement with the topic. This is crucial to the research, as to accurately self-assess one's own progress, there must be engagement with the lesson and learning objective. To ensure that engagement is tested accurately, the observer will be following the Leuven scale of engagement to record data. Therefore, in addition to this, the observer will also record the understanding of participants using a scale of; poor, adequate, good, or excellent.

Focus group interview – Here children will be worked with in smaller groups, to test their ability to self-assess linking to the learning outcome. Dudley (2014) explains that the focus group interviews should be completed at the first availability once the lesson is completed, in accordance with this, the researchers will progress to the focus group interviews as soon as the lesson has finished. Additionally, this process will take five minutes or less, due to the age and attention of the children (Dudley, 2014).

The group interviews will be done in two steps, first children will be asked what the learning outcome was, to ensure that they understood the aim of the lesson. Next, they will be asked to assess their learning, on how well they did, through a child friendly process or game. Once again, the observer will follow the same structure of measuring pupil's understanding of self-assessment through a scale of; poor, adequate, good, or excellent. In addition to this, the observation will be styled in a semi-structured manner; this means that the observer can follow the scales and structure written, but also have space to include qualitative information.

Data collection – The data collection will be predominately gathered via the observer and agreed with the other researcher at a further point. Through the scale of engagement, understanding of lesson and understanding or ability to self-assess, this research shall gather much quantitative data. Cohen, et al (2011) explain that quantitative data allows for the research to transform raw data into visually appealing format such as a graph or table, allowing data to be more easily read. This is advantageous to this study, as the quantitative data will allow the researchers to see patterns and trends that might be apparent from the lessons and understanding of children. In addition to this, qualitative data will be noted through an unstructured process, this data will be used in accordance with the quantitative data to compare

the use of self-assessment within the lesson. Newbury (2014) highlights the drawbacks of structured data collection tools that produce quantitative data, as they may miss crucial behaviours or aspects of the lesson which could impact results. Nevertheless, a semi-structure observation with qualitative data should overcome this problem and allow the researchers to compare the two types of results to conclude the study or create discussion.

Contingency plan – This research will be carried out on children from a mixed ability grouping. One from the higher ability (HA), middle ability (MA) and Lower ability (LA) groups. Totalling 3 children from each year group (reception and year 2/3). These three children will be selected previous to the start of the study, so that the researcher who is observing knows which individual to focus on. The contingency here lies within the ability grouping, as although participants will be chosen in hindsight for clarity, it is possible to change and choose any individual from that respective ability grouping.

(this box should expand as you type)

Location of research activity Identify all locations where research activity will take place.
This research will be carried out in the region of South Wales, in a school that educates for children from the age of three to eleven. The Estyn report of (2015) highlighted this school has having an estimated 476 pupils. The research will take place with children from reception and a year 2/3 class. In reception, there is a total of 30 children; the second class is compiled of 23 children from year 2 and 7 children from year 3. (this box should expand as you type)
Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural sensitivities or vulnerabilities of participants.
N/A. (this box should expand as you type)

SECTION F: Scope of Research Activity

Will the research activity include:	YES	NO
Use of a questionnaire or similar research instrument?	☐	x
Use of interviews?	x	☐
Use of diaries?	☐	x
Participant observation with their knowledge?	x	☐
Participant observation without their knowledge?	☐	x
Use of video or audio recording?	☐	x
Access to personal or confidential information without the participants' specific consent?	☐	x

Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	x
Performance of any acts which may cause embarrassment or affect self-esteem?	☐	x
Investigation of participants involved in illegal activities?	☐	x
Use of procedures that involve deception?	☐	x
Administration of any substance, agent or placebo?	☐	x
Working with live vertebrate animals?	☐	x
Other primary data collection methods, please explain in this box	☐	x

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

Who are the intended participants:	YES	NO
Students or staff at the University?	☐	x
Adults (over the age of 18 and competent to give consent)?	☐	x
Vulnerable adults?	☐	x
Children under 18?	x	☐
Prisoners?	☐	x
Young offenders?	☐	x
Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	x
People engaged in illegal activities?	☐	x
Others (please identify):	☐	x

Participant numbers and source

Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?

Number of children in class: 30.
3 children in interview focus group.
How will they be chosen (ability and gender).

The reception includes 30 children.
The research will focus upon 3 children from this class who will come from a mixed ability grouping. One child will be taken for a Higher Ability group (HA), one from the Middle Ability group (MA), and one from a Lower Ability group (LA).

The year 2/3 class includes 30 children.
The research will focus upon 3 children from this class who will come from a mixed ability grouping. One from HA, one from MA and another from LA.

Each child will be chosen randomly from each ability grouping using a random name generator.
this box should expand as you type)

Information for participants:	YES	NO	N/A
Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	x	☐	☐
Will you tell participants that their participation is voluntary?	x	☐	☐

Will you obtain written consent for participation?	☒	☐	☐
Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
If the research is observational, will you ask participants for their consent to being observed?	☒	☐	☐
Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☐	☐	☒
Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
If NO to any of above questions, please give an explanation			
(this box should expand as you type)			

Information for participants:	YES	NO	N/A
Will participants be paid?	☐	☒	☐
Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
If YES to any question, please provide full details			
(this box should expand as you type)			

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.

If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.

Full risk assessment completed and appended?

Yes ☐

No ☒

Risks to participants

For example: emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information

This research shall adhere to the safeguarding policies governed by both the UWTSD Research Ethics and Integrity Code of Practice (2017) and the school's personal safeguarding policy. Furthermore, this research shall uphold the integral principles set forth by the UWTSD to ensure research is honest, rigorous, transparent and open to communication with the correct care and respect taken with all participants. As such, assent and consent will be obtained from both the parents and the children to ensure that these principles are adhered to at all times.

Additionally, it will be the focus of this research to ensure that all participants are dealt with in a professional manner. This will include treating every participant in the same positive way, even if the participant decides they no longer want to take part. The BERA (2011, p.6) ethical guidelines and the UWTSD Research Ethics and Integrity Code of Practice (2017, p 3-4) highlight the importance allowing children to withdraw from the process at any point, as such, this research will follow these guidelines thoroughly to ensure all participants understand that they will have the right to withdraw. Following this, the research will incorporate the rights of the child documentation to ensure children understand their rights and therefore all steps will be taken to protect the values, status, beliefs and interests of the participants (UNCRC, 1990).

The participants will be under normal school conditions where the setup of the study will mimic that of an everyday lesson. Therefore, under no circumstances, will pupils be under emotional stress, physical or psychological harm. In addition, the research will take place in a safe, designated open learning area so the children feel safe and secure. Due to the nature of the research, there will be no deception used with participants, therefore through parental consent, and participant assent,

participants will be fully aware of the scope of the research (UWTSD Research Ethics and Integrity Code of Practice (2017)).

(this box should expand as you type)

If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities

N/A.

(this box should expand as you type)

Risks to investigator

For example: personal safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest

This research will be carried out in the classroom environment where both adults and children will be freely working and playing. As such, there will always be a member of staff or an additional adult present in the open and safe environment that the research will take place.

In addition, this research is being compiled with another adult who will be observing the lessons and thus, there will always be another adult present. Personal safety will be enhanced further by ensuring that all research is carried out in an open, easily visible area. At all time this research will consult and follow the BERA (2011) and UWTSD Research Ethics and Integrity Code of Practice (2017) regarding the safeguarding policy, while also adhering to the safeguarding policy that the school use.

To conclude, the research

(this box should expand as you type)

University/institutional risks

For example: adverse publicity, financial loss, data protection

This research will be conducted with true representation of the UWTSD Research Ethics and Integrity Code of Practice (2017) and therefore will follow the ethical principles so that research is honest, rigorous, transparent and open for communication, care and respect. Furthermore, the research will fully comply with the legal, ethical and professional frameworks set forth by all

organisations, authorities and any other stakeholders involved. This research falls in line with the UWTSD Research Ethics and Integrity Code of Practice (2017) responsibilities and as such will create research that is both beneficence and non-maleficence. In addition, the research shall follow the research data management protocol set forth in the code of practice to ensure that research records are accurate, complete, authentic and reliable and as such emulating the high standards set forth by both the UWTSD Research Ethics and Integrity Code of Practice (2017, p.9) and BERA (2011, p9)

To summarise there will be a high standard upheld with strong connections and partnerships made between the university and the schools in question.

The research will be conducted within the code of practice guidelines produced by the UWTSD and therefore results will be honest and just.

(this box should expand as you type)

Adverse outcomes

List measures put in place to limit any adverse effects or outcomes of research activity where appropriate. Include any emergency protocols.

The research is fortunate in that both researchers have actively taught in the environment where the data will be collected. This means both individuals have a solid understanding of the safeguarding policies, and health and safety processes.

Despite this familiarity the research will still ensure that all ethical, legal and professional frameworks are adhered to which are laid out in the UWTSD Research Ethics and Integrity Code of Practice (2017). As a result, the researcher will uphold a professional standard of work that has been consistent through the teaching placement and will follow into this research. Whether a teacher, or researcher, the same high standard will be carried out, with the priority always focused on the safety of participants.

(this box should expand as you type)

Disclosure and Barring Service

If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.

YES

NO

N/A

Has a DBS certificate been obtained?

x

☐

☐

SECTION I: Feedback, Consent and Confidentiality

Feedback What feedback will be provided to participants, how will this be done and when? Once the research has been finished, the results and entirety of the paper will be shared with the headteacher if requested by the school. On-going feedback will be offered to participants during the teacher, learning and observation cycle. (this box should expand as you type)
Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded. In preparation of this research, I will create an explanatory statement that informs the class teacher and participants of their right to withdraw from the research at any point. An explanatory letter will be created from the university to be sent to parents to and ensure all individuals involved understand what the research entails. Despite the informed assent being gained from the parents due to the children being under the age of 16, the UWTSD (2017) research ethics & integrity code of practice document highlights the desirability of gaining assent from both child and parent. This is difficult for this research to gain due to the ages of the children involved however, there will be a continual ongoing assent documented from all the participants involved. This means children will be aware of what the study is looking into and will have the opportunity to leave at any point. To ensure that there is no ambiguity with this factor of research, the continual assent will be gathered by the observer and lesson provider alike. If it is clear that the child is uncomfortable with the lesson at any point, the researchers will stop the lesson and that child will be able to leave without question. In addition, this child will receive no adverse consequences for leaving the study and will be treated the same as all other children. Due to the age of the children, informed consent will be achieved using a strategy such as 'thumbs up, thumbs down' whereby the study and lesson will be explained to the participants, and due to their young age, they will be asked to simply put a 'thumbs up' or 'down' to participate. This will then be linked to the on-going assent that will always be present throughout the study. (this box should expand as you type)
Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.

To ensure that participants are confident in their anonymity, this research will ensure no record of the child is kept. Instead labels will be used such as 'child 1', 'child 2', 'child 3' etc, therefore it will be impossible to identify participants via the documentation produced in this research (UWTSD, 2017). In addition, the schools name will not be mentioned and instead will be called 'primary x' to ensure that full anonymity is governed over the research location. The raw data that is produced from the research will only be accessed and available to the researchers involved in the study and will be kept on a password protected memory stick/cloud storage.

(this box should expand as you type)

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages (<http://uwtsd.ac.uk/library/research-data-management/>).

	YES	NO
Does the research activity involve personal data (as defined by the Data Protection Act)? <i>“personal data” means data which relate to a living individual who can be identified—</i> <i>(a) from those data, or</i> <i>(b) from those data and other information which is in the possession of, or is likely to come into the possession of, the data controller, and includes any expression of opinion about the individual and any indication of the intentions of the data controller or any other person in respect of the individual.</i>	☐	x
If YES, provide a description of the data and explain why this data needs to be collected: (this box should expand as you type)		
Does it involve sensitive personal data (as defined by the Data Protection Act)? <i>“Sensitive personal data” means personal data consisting of information as to –</i> <i>(a) the racial or ethnic origin of the data subject,</i> <i>(b) his political opinions,</i> <i>(c) his religious beliefs or other beliefs of a similar nature,</i> <i>(d) whether he is a member of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),</i> <i>(e) his physical or mental health or condition,</i> <i>(f) his sexual life,</i> <i>(g) the commission or alleged commission by him of any offence, or</i> <i>(h) any proceedings for any offence committed or alleged to have been committed by him, the disposal of such proceedings or the sentence of any court in such proceedings.</i>	☐	x
If YES, provide a description of the data and explain why this data needs to be collected: (this box should expand as you type)		

	YES	NO
Will the research activity involve storing personal data on one of the following:		
Manual files (i.e. in paper form)?	☐	x
University computers?	☐	x
Private company computers?	☐	x
Home or other personal computers?	☐	x
Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	x

"Cloud" storage or websites?	☐	x
Other – specify:	☐	x
For all stored data, explain the measures in place to ensure data confidentiality, including details of password protection, encryption and anonymisation:		
All data will be stored on password protected storage devices, however no personal data will be stored. Data gathered will be stored on a password protected and encrypted memory stick and also be used on a password protected laptop. This is in lines with the UWTSD Research Ethics and Integrity Code of Practice (2017), BERA Ethical Guidelines for Educational Research (2011) and Data Protection Act (1998). (this box should expand as you type)		
Will the research activity involve any of the following activities:	YES	NO
Electronic transfer of data in any form?	☐	x
Sharing of data with others at the University?	x	☐
Sharing of data with other organisations?	☐	x
Export of data outside the European Union or importing of data from outside the UK?	☐	x
Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	x
Publication of data that might allow identification of individuals?	☐	x
Use of data management system?	☐	x
Data archiving?	x	☐
If YES to any question, please provide full details, explaining how this will be conducted in accordance with the Data Protection Act (and/or any international equivalent):		
Data will be archived on completion of the assignment. Use password protected memory stick/cloud storage. (this box should expand as you type)		

List all who will have access to the data generated by the research activity:

Myself and student partner.

(this box should expand as you type)

List who will have control of, and act as custodian(s) for, data generated by the research activity:

I will be responsible for the data.

(this box should expand as you type)

Give details of data storage arrangements, including where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.

Data will be archived on completion of the assignment. Use password protected memory stick/cloud storage.

(this box should expand as you type)

SECTION K: Declaration

The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.

In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's [Research Ethics and Integrity Code of Practice](#)

Signature of applicant:



Date: 28.02.2018

For students:

Teacher / Senior Mentor:	Mrs. H Woodford / Mrs N. Bridgman
Signature:	
Date:	26.2.18

Supervisor:	Ceri Lewis
Signature:	
Date:	28.2.18

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (and have NOT completed Section H of this form) (where appropriate)
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Head of School.

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

You will be informed of the outcome of your claim by email; therefore it is important that you check your University and personal email accounts regularly.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

This form is available electronically from the Academic Office web pages:
<http://www.uwtsd.ac.uk/academic-office/>

Appendix F: Participant 1

Participant Number: **1**Observational record

Name of teacher: J.H.	Name of observer: A.D.
Date of observation: 27-3-18	Length of session: 20 mins.
Subject: Maths - Counting	Year group: Reception

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity.</i>	No concentration: staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	✓
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities: Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	

Additional Notes on lesson:	Engaged and taking part in lesson. Listening well and responding to questions. Enjoyed the ordering activity and the leap frog game
-----------------------------	---

Participant Number:

1

Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	Understood that the objective was to count to 10. and order numbers. Did not quite keep frog all the way to 10 on first attempt. same for second.		

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
		✓	
Additional Notes:	Traffic light chased - Orange. Understood that she did not make it through swamp so she chase the orange. Needed some prompting.		

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.

Appendix F: Participant 2

Participant Number: 2Observational record

Name of teacher: JH	Name of observer: AD
Date of observation: 27-3-18	Length of session: 20 mins
Subject: Maths - Counting	Year group: Reception

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity</i>	No concentration: staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	/
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities; Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	

Additional Notes on lesson:	Excitable, enjoyed taking part in the lesson and was enthusiastic. However, '2' was so excitable that observer is not entirely convinced '2' was 'absorbed' in the task.
-----------------------------	--

Participant Number: 2

Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
		✓	
Additional Notes:	Understood the objective; count to 20 ordering numbers. later confused the objective and said "count in 20's."		

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
	✓		
Additional Notes:	Traffic light chaser - Orange. Light chaser did not represent the level of work demonstrated. Supporting justification of colour choice echoed that of 2's peers ^{whose} ~~was~~ work was not of the same standard.		

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.

Appendix H: Participant 3

Participant Number: **3**Observational record

Name of teacher: J.H	Name of observer: A.D
Date of observation: 27-3-18	Length of session: 20 mins
Subject: Maths - counting	Year group: Reception

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity</i>	No concentration: staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	✓
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities: Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	

Additional Notes on lesson:	Engaged in the activity, enjoyed the tasks! Finding numbers and ordering and hilly-ped jumping Minor distractions to classmates
-----------------------------	--

Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
		✓	
Additional Notes:	Understood that the task was counting numbers to 20. Also, understood that she needed to walk through the hilly-ped in the correct manner. e.g. 1-2-3-4-5 etc.		

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
✓			
Additional Notes:	Traffic light chosen - Red. Did not reflect her work. Orange would have been more suitable. Confused with the system. Wanted to choose the red because she liked the work.		

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.

Appendix I: Traffic Light

Appendix J: Participant 4

Participant Number: 14Observational record

Name of teacher: <i>AD</i>	Name of observer: <i>JH</i>
Date of observation: <i>28.3.18</i>	Length of session: <i>30 minutes</i>
Subject: <i>Maths - addition</i>	Year group: <i>2</i>

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity</i>	No concentration: staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities; Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	✓

Additional Notes on lesson:	<i>very enthusiastic about the task. Able to get on with the work without support and engaged well with the success criteria. Good understanding of the work and was able to finish first.</i>
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Participant Number:

4

Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	With help from the teacher was able to build a success criteria. Requested the use of a 100 square - "I like doing it with the square 100". This was then prompted to be used as a success criteria.		

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	Understood the self-assessment framework - seemed to be 'nowed' by the traffic light. Used 'green' traffic light which is accurate to work produced. Able to also recall success-criteria to explain the justification for green light.		

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.

Appendix K: Participant 5

Participant Number: **5**Observational record

Name of teacher: <i>AD</i>	Name of observer: <i>JH</i>
Date of observation: <i>28.3.18</i>	Length of session: <i>30 minutes</i>
Subject: <i>Maths - addition</i>	Year group: <i>2</i>

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity</i>	No concentration; staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities; Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	✓

Additional Notes on lesson:	<i>Required no support with the work and was able to carry out the lesson in silence, focused on the task in hand. Appeared to enjoy the easter egg theme while ~~communication~~ completing sums.</i>
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Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	Able to use the success criteria to explain the work that was done. Prompted to explain what 'type' of mathematics was being completed. (Addition).		

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	Accurately self-assessed work. Understood the traffic light system. Was able to explain the reason for choosing 'green' traffic light, using the understanding of the method to justify the self-assessment. Very good understanding.		

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.

Appendix L: Participant 6

Participant Number: 6Observational record

Name of teacher: <i>AD</i>	Name of observer: <i>JH.</i>
Date of observation: <i>28.3.18</i>	Length of session: <i>30 minutes</i>
Subject: <i>Maths - addition.</i>	Year group: <i>2</i>

Leuven Scale of Active Engagement in Learning:

Level	Engagement	Examples	Tick (✓)
1	Extremely low: <i>The child shows hardly any activity</i>	No concentration: staring, daydreaming; An absent, passive attitude; No goal-oriented activity, aimless actions, not producing anything; No signs of exploration and interest; Not taking anything in, no mental activity	
2	Low: <i>The child shows some degree of activity which is often interrupted</i>	Limited concentration; looks away during the activity, fiddles, dreams; Is easily distracted; Action only leads to limited results	
3	Moderate: <i>The child is busy the whole time, but without real concentration</i>	Routine actions, attention is superficial; Is not absorbed in the activity, activities are short lived; Limited motivation, no real dedication, does not feel challenged; The child does not gain deep-level experiences; Does not use his/her capabilities to full extent; The activity does not address the child's imagination	
4	High: <i>There are clear signs of involvement, but these are not always present to their full extent</i>	The child is engaged in the activity without interruption; Most of the time there is real concentration but during some brief moments the attention is more superficial; The child feels challenged, there is a certain degree of motivation; The child's capabilities and its imagination to a certain extent are addressed in the activity.	
5	Extremely High: <i>During the observation of learning the child is continually engaged in the activity and completely absorbed in it</i>	Is absolutely focussed, concentrated without interruption; Is highly motivated, feels strongly appealed by the activity Even strong stimuli cannot distract him/her; Is alert, has attention for details, shows precision; Its mental activity and experience are intense; The child constantly addresses all its capabilities; Imagination and mental capacity are in top gear; Obviously enjoys being engrossed in the activity.	✓

Additional Notes on lesson:	<i>Good engagement with the work and was able to understand what was required in order to be successful.</i>
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Understanding of the lesson objective and success criteria (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	was able to aid the teacher in building the success criteria without any prompts. Suggested column addition as a method that could be part of the success criteria. Clearly understood the structure of a success criteria.		

Understanding of self-assessment (Tick one✓):

Unsatisfactory	Adequate	Good	Excellent
			✓
Additional Notes:	Good understanding of self-assessment – concrete / visual traffic light was not really needed for this child. Gave themselves 'green' which was accurately reflected in the work. Good explanation related to the success criteria – "I used column addition, then looked, made sure, my work with the number square".		

Ongoing assent checklist (Tick one✓):

Unusual behaviour; Any uncharacteristic behaviour	Constant distraction; Child may look towards the door or other children and withdraw in distance from teacher	Look of discomfort; If the child looks awkward or uncomfortable in the research setting or what the lesson desires of them

If child exhibits any of the above behaviour, they will be asked whether they want to withdraw from the study immediately.