

The Enquiring Teacher (ECP7001)

How does randomised questioning affect children's wellbeing in a Key Stage Two classroom?

Student: 1800158

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Research Focus

UNICEF (2013) considers British children to have poor wellbeing and Howard *et al.* (2017) believe they are amongst the unhappiest worldwide. By passing the Wellbeing of Future Generations Act (Welsh Government, 2015), Wales has committed to safeguarding children's wellbeing in decisions made by public bodies. Furthermore, Donaldson (2015) proposes that in the forthcoming Welsh curriculum 'Health and Wellbeing' should be an 'Area of Learning and Experience' (AoLE) which engages children and allows them to thrive at school, and feedback on the curriculum reform (Welsh Government, 2017) suggests that social environments and children's confidence impact upon their ability to learn. These sources frame children's wellbeing as a timely issue which aligned with my personal interest to make wellbeing a natural focus for this research. In this study, 'wellbeing' is defined as an individual's state of health, comfort or happiness.

Research Context

During our teaching practices, myself and my research partner observed that some pupils regularly volunteered to answer questions whilst others were consistently reluctant. This generated our research question: 'How does randomised questioning affect children's wellbeing in a Key Stage Two classroom?'. 'Randomised questioning' is an assessment tool which selects a random pupil to answer a question using a random name generator. Clarke (2008) distinguishes between Assessment *for* Learning (AfL) as a formative device for informing pupils about their next steps for progression and Assessment *of* Learning (AoL) as a summative test. We employ randomised questioning as an AfL technique, but in a different context it could be used for AoL.

The research was undertaken in two primary schools in South Wales. School A has 235 pupils (Estyn, 2012) whereas School B has 180 pupils (Estyn, 2018). School A considers 32% of pupils to have additional learning needs (ALN) (Estyn, 2012); School B identifies 22% of pupils as having ALN (Estyn, 2018). In School A 24% of pupils are entitled to free school meals (Estyn, 2012) versus 50% in School B (Estyn, 2018); statistics from both schools are above the Welsh average. Our research took place in a Year 6 class of 36 pupils in School A and a Year 5/6 class of 25 pupils in School B. Classroom questioning is routine for these children but is usually based upon children volunteering answers.

Literature Review

As the literature base regarding randomised questioning is limited, I have read books, journals and government documents on assessment and wellbeing to locate my study within existing knowledge. Recent research suggests that many children throughout Europe have low

wellbeing. Notably, a large-scale survey of 11,387 Icelandic children by Palsdottir *et al.* (2012) indicated that 12.7% of boys and 7.2% of girls experienced “bad” or “very bad” wellbeing at school. Reflecting this trend, Stasulane (2017) proposed that many children from 11 European countries, including the U.K., experienced low wellbeing, stress and anxiety at school due to pressures to achieve academic success. Additionally, Fitzpatrick *et al.* (2014: p.277) interviewed 719 teachers and 222 parents in Ireland who considered that schools are not ‘helping children to be well’. In Wales, 1 in 10 children requires support for mental health issues (Welsh Assembly Government, 2012), Danby and Hamilton (2012) found that educators in North Wales felt promoting children’s wellbeing transcended their capabilities and was jeopardised by pressures to improve educational standards, and Donaldson (2015: p.1) advises that the new Welsh curriculum should uphold children’s ‘future success and wellbeing’. The scale and breadth of these studies, globally and locally, justify my research focus on wellbeing by demonstrating that safeguarding children’s wellbeing is my responsibility as a prospective teacher. By examining one area of my practice, this research should enable me to consider my impact on children’s wellbeing and identify how I could modify a specific AfL strategy to best support pupils.

Milkie and Warner (2011) attribute children’s low wellbeing to increased frequency of formative and summative assessments during the last 50 years. However, wellbeing is suggested as being increased by AfL techniques which challenge children and allow for constructive feedback. In particular, Hattie (2012) highlights challenge and feedback as essential components of effective AfL, with feedback having an effect of +0.79 on learning gains (nearly twice the average +0.4 effect-size of interventions). The findings of the Assessment Reform Group (1999) correlate with Hattie, identifying effective feedback as the quintessential element for motivating pupils through AfL, with the Welsh Government (2010) suggesting that feedback raises pupils’ self-esteem and confidence, which promotes their progress and wellbeing. In the context of my research, this highlights that whilst feedback is an important feature of AfL, this could influence the validity of our data collection as it may directly impact pupils’ wellbeing.

Dweck (2006) suggests that whilst society strives to protect children’s wellbeing by sheltering them from failure, allowing children to fail and providing constructive feedback may enable them to thrive. Likewise, Clarke (2008) emphasises that challenge and effort enhance wellbeing when mistakes are used as learning opportunities, whilst consistently giving children work within their comfort-zone may cause children to believe they can only be successful when they find tasks easy. However, through his identification of a ‘Flow Matrix’ (Appendix A), Csikszentmihalyi (1997) suggests pupils’ emotional responses to a task depends on the relation between the level of challenge and the child’s perceived ability. The matrix implies that challenge is necessary for engaging learners but if the task is too challenging, learners may experience worry or anxiety, or if the challenge is too low, it may cause boredom or apathy. Both outcomes pose a threat to wellbeing. Contemporary research by Stasulane (2017) reinforces this; their interviewees experienced stable or heightened wellbeing when their learning environment provided challenging experiences which they felt reflected their own abilities. This reading suggests that the level of challenge we incorporate into our randomised questioning may impact upon children’s wellbeing. Furthermore, it suggests that educators’ and children’s perceptions regarding academic ability could influence learners’ emotional responses when they are challenged.

Hattie and Timperley (2007) propose that AfL should develop a child’s metacognitive abilities rather than being limited to a specific task. Black (2015) highlights the importance of AfL for allowing children to reflect on their learning as being greater than their development of core skills in reading and arithmetic. Contrastingly, Andersson *et al.* (2019) argue that such skills underpin a child’s metacognitive ability, so more able and talented (MAT) pupils are most likely

to benefit from feedback. However, [Wiliam \(2007\)](#) believes feedback is often too trivial to improve metacognition and thus has minimal impact on children's wellbeing or academic progress. Our feedback could therefore impact pupils' wellbeing beyond the context of the lesson. Furthermore, this reading suggests that children's academic abilities can influence their responses to randomised questioning via their teacher's feedback. Reflecting this, it would be useful to select case pupils of differing abilities, yet the nature of randomised questioning denies this possibility, presenting a potential limitation of this study.

Several pedagogues consider that questions are not evenly distributed amongst pupils in class, meaning that responses may not be indicative of whole-class understanding. Particularly, [Wragg \(1997\)](#) found that pupils situated in a v-shaped arc in front of the teacher answer most questions, whilst [Hattie \(2012\)](#) and [Clarke \(2001\)](#) concur that MAT pupils answer many questions as they are less inhibited by fears of making mistakes in front of their peers. However, [Perrenoud \(1991\)](#) suggests that participation does not represent a child's capability to answer questions but their personality, with some pupils preferring as little verbal participation in lessons as possible despite being capable of answering. Randomised questioning overcomes such barriers to distributing questions as each child has an equal probability of selection. We will also address questions to the whole class first, before a pupil is selected to respond. [Margutti \(2006\)](#) advises that non-addressed questions invite all pupils to become potential addressees, creating an inclusive learning environment where children feel valued and their wellbeing remains intact. However, my reading also suggests that this approach is atypical, so the novelty of it may affect the reliability of our data.

[Clarke \(2001\)](#), proposes that teachers frequently leave an inadequate amount of wait-time, typically under two seconds, between posing a question and expecting an answer, meaning only pupils who can decode the question rapidly can formulate a response. [Black et al. \(2004\)](#) similarly found that most teachers wait less than one second for responses before answering the question themselves or asking another. [Black and Wiliam \(1998\)](#) suggest that the reason for this is that periods of silence in the classroom are deemed wasted learning time, but [Black et al. \(2004\)](#) highlight this as necessary thinking time for children to develop and clarify their answers before contributing them. In the context of our study, it appears that leaving inadequate wait-time may influence children's willingness to answer questions and consequently, their emotional responses to this. [Clarke \(2001\)](#) identifies five seconds wait-time as optimal, so we will adhere to this when undertaking our research.

[Hattie \(2012\)](#) suggests that when the classroom climate lacks trust, most pupils feel unable to answer without judgement if they answer incorrectly. The Cambridge Primary Review (2010) attributes this to peer pressure whereas [Leighton and Gomez \(2018\)](#) found AfL only enhances learning outcomes if pupils feel comfortable identifying their errors and trust their teacher. This suggests that building trust with their peers and teacher may enhance some pupil's wellbeing and academic progress. [Lavis \(2014\)](#) likewise considers there to be a clear association between children's low wellbeing and poor pupil-teacher relationships. [Roufelder et al. \(2018\)](#) also found that pupils' perceptions of their teachers impacted upon their ability to regulate their emotions when facing challenges in the classroom. As trainee teachers, we are familiar figures in our respective classes and have developed relationships with pupils based on 'mutual trust and respect' in accordance with QTS Standard 1.2 (Welsh Government, 2009: p.5) so this should not present a barrier to pupils participating in randomised questioning. The impact of peer relationships on the classroom climate is harder to regulate, therefore we will consider this during our observations and record any incidents of peer-pressure or peer-support.

[Dweck \(2006\)](#) and [Black and Wiliam \(1998\)](#) suggest that when external, tangible rewards are offered for answering questions, pupils will strive for these rather than be motivated by any

intrinsic desire to learn. [Clarke \(2001\)](#) similarly indicates that pupils' self-esteem is not built through rewards, praise or sanctions, but by meeting challenges, adding that rewards often focus on MAT pupils or those with learning or behavioural needs. [Stasulane \(2017\)](#) suggests that grades become a fetishized form of reward when children solely focus on achieving them and emphasise that feedback should not quantify children's success. Therefore, we will not offer any rewards for participation in this research or responses to questions.

The reading I have undertaken supports our research question by suggesting that AfL can impact the wellbeing of children, who are depicted as suffering from an epidemic of low wellbeing. The literature highlights that wait-time, feedback, classroom climate, distribution of questions and metacognition may influence how questioning impacts pupil's wellbeing. Furthermore, the research appears to suggest that questions should be challenging if they are to motivate and inspire learners, thus boosting their wellbeing and self-esteem. My reading has revealed that our own teaching practice will inevitably influence the quality of the data we collect as each decision impacts pupils' wellbeing.

Methodology

The methodology used is lesson study (LS) research. In LS, researchers collaborate to consider a specific aspect of their practice by undertaking a research lesson containing the targeted intervention, observing the responses of a selected sample of 'case pupils' and reflecting upon the impact of the intervention after the lesson ([Dudley, 2015](#)). The lesson is then tailored in response to the data collection and repeated with a different class. [Dudley \(2014\)](#) describes how LS has been used effectively in the U.K. to analyse the effectiveness of different AfL approaches, which supports its use as the methodology for our research.

[Oppenheim \(1992\)](#) warns of researchers introducing bias into their study through their choice of case pupils, yet the [Department of Education \(2009\)](#) emphasises the benefit of selecting case pupils of differing academic abilities, backgrounds and/or genders. Due to the research focus, our case pupils will be selected in the lessons by a random name generator ([Appendix B](#)) rather than by the researchers. If the pupil selected does not have parental consent to participate in the research aspect of the lesson, they will still be expected to answer the posed question as this is part of their learning, but no data will be collected. The process will be repeated until three consenting and assenting pupils have been selected and observed.

[Dudley \(2015\)](#) and [Xu and Pedder \(2015\)](#) concur that a benefit of LS is that it allows practitioners to reflect on and adapt their teaching practice immediately. This reflects QTS Standard S1.1. ([Welsh Government, 2009](#)) which determines that teachers must understand the needs of all learners and maximise their potential – LS gives pupils a voice which helps teachers to better understand their pupils' needs and change their practice, so children learn and progress. This correlates with [Cajket and Wood \(2015\)](#) who suggest that LS is the optimal approach for trainee teachers to improve specific elements of their practice. [Xu and Pedder \(2015\)](#) consider a further benefit of LS to be peer-support as it gives teachers greater confidence in trialling new classroom interventions. [Pedder \(2015\)](#) likewise emphasises that teaching is often an isolating profession and LS makes collaboration explicit.

However no methodological tool is perfect and [Xu and Pedder \(2015\)](#) identify drawbacks of LS including: it is time-consuming, it places additional demands on teachers' workloads and that it can be challenging for teachers to critique and refine established elements of their classroom practice. [Dudley \(2014\)](#) also suggests that traditional LS, originating in Japan, should be adapted to include an interview with the case pupils to ascertain their perspective

on the lesson, so that teachers are not imposing their views onto the children and potentially altering the data collected.

The methods of data collection we have used within our LS are: reflections, non-participant observations, semi-structured focus group interviews and exit questionnaires. Brookfield (2002) proposes that researchers reflect through their own, children's and colleagues' experiences, and through critical literature. These 'Four Lenses' form the basis of our reflection proforma, with Gibbs' (1988) 'Reflection Cycle' (Appendix C) structuring our self-reflections.

Our observation schedule defines specific aspects to observe and uses established frameworks, such as the Leuven Scale for Wellbeing (Laevers, 1994 – Appendix D), through which to identify certain behaviours related to the case pupils' wellbeing. Laevers (1994) categorises wellbeing from [1] where the child shows signs of significant distress to [5] where they show signs of elation. If the child is observed to be [1] they are considered to have very low wellbeing, or if they are [5] their wellbeing is deemed to be high. The Leuven Scale allows us to collect an element of quantitative data to support our qualitative observations. Sharp (2009) considers the use of pre-established scales to structure observations a positive factor as it allows for standardisation of otherwise idiosyncratic behaviours so that patterns can be noted. However, Thomas (2011) considers this to be a drawback as human behaviour is unique and cannot be split neatly into sections. Moreover, Cohen *et al.* (2011) note that participants can act in a specific way because they know they are being observed due to 'The Hawthorne Effect'. Whilst observation is useful for providing an eye-witness account of events, Bell (2010) and Dudley (2014) emphasise the need to triangulate observation with other approaches, such as interviews, to substantiate findings.

Sharp (2009) suggests that interviewees must fully understand the question and the interviewers must fully understand the response if an interview is to be purposeful, with McCormick and James (1988) also noting that children may not know the answers to questions if they are framed in a particular way. Our interview is semi-structured, so we have predetermined questions to ask but retain flexibility to ask for clarification or additional information as appropriate. Bell (2010) and Thomas (2011) emphasise the adaptability of this approach as its main benefit, yet Oppenheim (1992) argues changes to question wording may increase interviewer-bias. Milgram (1963) found that people often feel obligated to be obedient to authority-figures and do what authority-figures want them to do; this may reduce the reliability of interview responses as the interviewer may hold a position of authority over the interviewees. Cohen *et al.* (2011) similarly note that power is significant in interviews, which correlates with Sharp (2009) who suggests that the interview's main challenge is to not appear as an authority-figure or teacher to their interviewees. As we are familiar classroom figures to the case pupils being interviewed, there is a risk that our role may influence pupils' responses to our questions. We aim to mediate this by encouraging children to answer honestly and by conducting interviews outside of the classroom context.

Ethical Considerations

This research adheres to guidance by BERA (2018), EWC (2018) and UWTSD (2017), and been approved by an ethics committee following an application for ethical approval. BERA (2018) states that the privacy and autonomy of participants must be upheld; the confidentiality of participants and schools is maintained in this assignment, and exit questionnaires are anonymised, so we will not know who gave each response. Participants' rights to informed assent and refusal to participate in research (Frankfort-Nachmias and Nachmias, 1992) is also upheld and parental consent has been given for all case pupils (Appendix E).

The case pupils are randomly selected to answer questions, so we cannot choose which pupils participate. Wragg (1997) suggests oral questioning is the most common form of assessment in primary classrooms, therefore we are examining standard classroom practice which is familiar to the children. No rewards will be distributed for participation, reinforced by reading which suggests rewards influence pupils' responses to questioning. We aim to minimise any potential harm to pupils by implementing a 'phone a friend' option, meaning pupils can seek peer-support at any time. Furthermore, children will be provided with an information sheet (Appendix F) before the lesson to inform them of our research purposes.

BERA (2018) considers the need to safeguard all individuals involved in research, including researchers. We will safeguard ourselves by ensuring that school-staff are always present and that doors remain open during interviews with pupils. Our need to collect data may conflict with pupils' rights to agency and assent. To mediate this, both research lessons will be taught in the morning, allowing time to repeat the lesson with different participants in the afternoon if required.

Lesson Study One: Results and Analysis

These findings indicate how randomised questioning affected pupils' wellbeing in two lessons taught in Welsh primary schools and are not generalisable to other contexts. Our reflections (Appendix G) are distributed throughout the following results and analysis.

Observations (Appendix H)

Pupil 1 is mid-attaining, Pupil 2 is low-attaining and Pupil 3 is MAT. Pupils' attainment is noted because the literature suggests this may impact children's wellbeing during questioning.

Pupil 1 maintained eye contact with the teacher, but also displayed negative behaviours including a closed posture, fiddling with their clothing and rocking on their chair. Consequently, the observer placed them at [2] on the Leuven Scale of Wellbeing (LSW) (Laevers, 1994).

Pupil 2 used the 'phone a friend' option. They avoided eye contact with their teacher and peers, giggled 'nervously', had a flushed face and clenched their fists. This suggests Pupil 2 felt more discomfort than Pupil 1, but their wellbeing is also [2] on the LSW, suggesting the LSW may have limitations as it does not clearly indicate a child's wellbeing in comparison to peers.

Pupil 3 answered straightaway whilst lounging in their chair with legs outstretched. They smiled and used expression and gesticulation. Pupil 3 was rated as [4] on the LSW, suggesting their wellbeing was higher than the other case pupils' during randomised questioning.

Interview (Appendix I)

Case pupils drew and explained pictures of themselves when they were selected to answer (Appendix J). Pupil 1 explained they felt 'happy but scared' and played with their fingers; Pupil 2 felt 'happy and nervous' so held their hands; Pupil 3 felt 'under pressure' yet their picture appears to reflect our observations. Pupil 1 and 2's feelings of happiness juxtapose our observations which suggested they experienced low wellbeing. Likewise, Pupil 3 twice described feeling 'under pressure' yet was observed as having high wellbeing. All pupils rated themselves as '3 going into 4' on the LSW, further contradicting our observations. We considered that observer-bias, the children's metacognitive potential to reflect on their reactions or the time elapsed between the intervention and the interview may have contributed to these discrepancies.

Pupils 1 and 2 preferred randomised questioning to volunteering answers. This was surprising as our observations suggested they had experienced low wellbeing during randomised questioning. Pupil 1 thought randomised questioning was fair, because otherwise the same pupils frequently get chosen to answer. Pupil 2 considered that pupils do not get bored so 'actually try'. Neither response directly considers wellbeing but shows the whole-class participation of randomised questioning was important for these pupils.

To improve randomised questioning, Pupils 1 and 2 suggested increasing wait-time to 10 seconds, and all pupils believed different question-types would be beneficial. We adapted the next lesson following this feedback.

Questionnaires

80% of pupils liked randomised questioning and Fig. 1 demonstrates the most popular reason for this was that 'everybody gets a turn to answer so it's fair'.

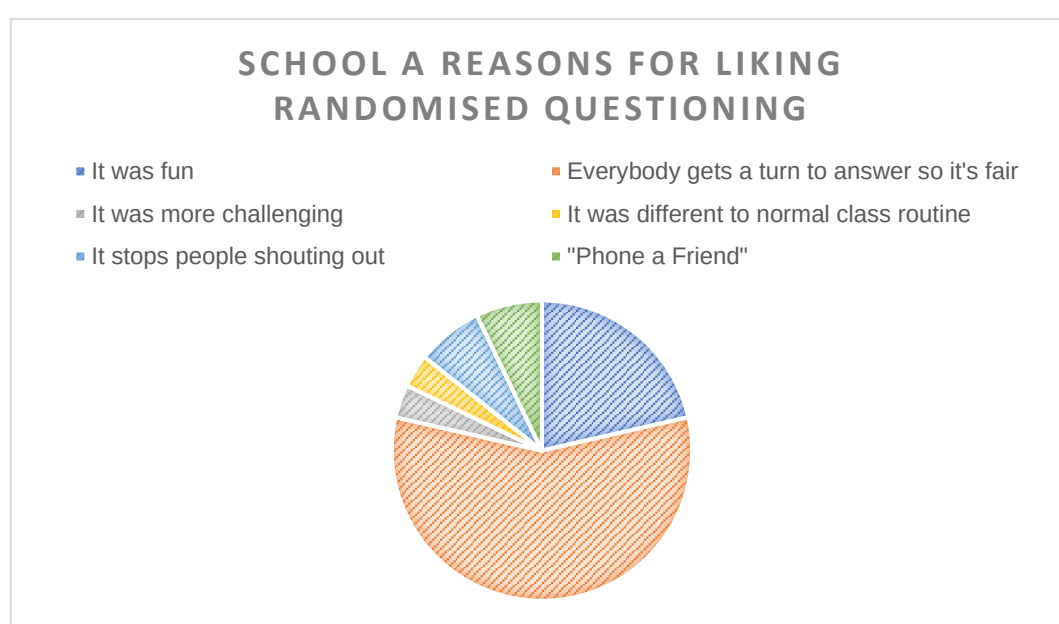


Fig. 1. Reasons given for liking randomised questioning.

20% of respondents disliked randomised questioning and Fig 2. presents reasons given for this. The joint most-popular responses were that not everybody had an opportunity to answer and that it made them feel nervous, which indicates that randomised questioning may negatively impact some pupils' wellbeing.



Fig. 2. Reasons given for disliking randomised questioning.

Although 20% of respondents disliked it, only one pupil responded that randomised questioning made them feel '☹️' – sad, anxious or upset (see Fig. 3). 2 pupils responded '😐' – it had no impact on their emotions. Most pupils responded '😊' - happy, confident, proud or excited. As 88.9% of pupils responded '😊' this suggests that randomised questioning had a positive impact on most children's wellbeing in the lesson. 8.9% more pupils felt '😊' than liked the intervention, suggesting that for some pupils, their reasons for disliking randomised questioning were unrelated to wellbeing.

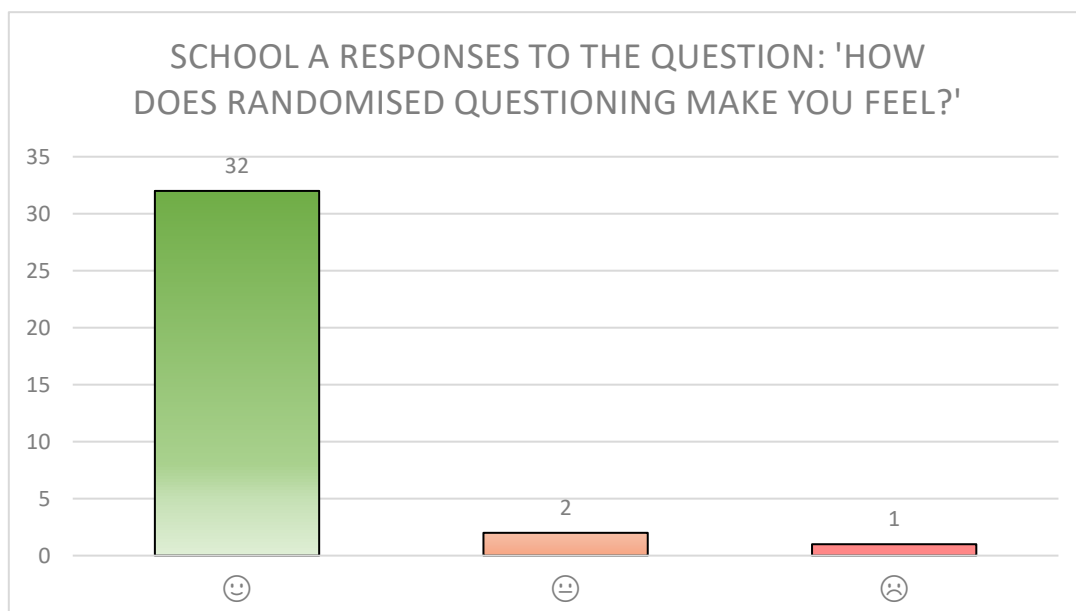


Fig. 3. Emotional responses to randomised questioning.

Analysis

The triangulated data is contradictory. The interview and questionnaires suggest that whilst some pupils disliked randomised questioning, few considered it to diminish their wellbeing. Conversely, our observations determined randomised questioning may have had a negative impact on two case pupils.

We identified ways to refine our research tools for Lesson Study Two. We considered that the interview required revision, as pupils struggled to answer the question: 'How did you feel when you were selected to answer?'. We will provide a word mat in School B to support pupils' feedback and ask additional questions as necessary to clarify pupils' responses. We are wary that this may increase interviewer-bias and weaken the integrity of the data but consider it essential to fully comprehend pupils' views. A limitation of our observations was that the observer lacked familiarity with the class so struggled to locate and record pupils' initial reactions to being selected to answer, in the next lesson we will therefore ensure the observer has a class seating plan.

Our observations of case pupils' wellbeing against the LSW conflicted their perceptions. This may be due to the limitations of the LSW for measuring wellbeing in our context or factors which impact the child's ability to reflect on their wellbeing. In the next lesson we will use randomised questioning in the plenary rather than introduction to reduce the time between the intervention and interview.

Lesson Study Two: Results and Analysis

Observations (Appendix K)

Pupil 1 is middle-attaining and speaks English as an additional language (EAL), Pupil 2 is MAT and Pupil 3 is middle-attaining. None chose to 'phone a friend'.

When selected to answer, Pupil 1's body language changed. They faced the teacher yet spoke quietly and had a closed posture. The observer noted that Pupil 1 relaxed once they knew their answer was correct. Pupil 1 was placed at [2] on the LSW.

Contrastingly, Pupil 2 smiled, maintained a relaxed posture, opened their arms and did not hesitate to answer so the observer considered them 'confident'. Pupil 2 was rated [5] on the LSW.

Pupil 3's body language did not change before, during or after being selected to answer. Throughout they were relaxed, leaning on the table and appeared 'confident' when answering, yet they were playing with a pen and not engaged. They were rated [3] on the LSW.

The range of responses against the LSW in this lesson were diverse, indicating that the impact of randomised questioning on wellbeing is varied and unique to individuals. In contrast to Lesson Study One, the LSW appeared to reflect differences in pupils' reactions to randomised questioning.

Interview (Appendix L)

As in School A, during the interview pupils placed themselves at a differently on the LSW than the observer. Pupil 1 and 2 considered themselves to be at [3] whilst Pupil 3 rated themselves as [4]. Pupil 1 said they did not feel any pressure and 'just wanted to get on with it', Pupil 2 felt that they did not show any emotion and Pupil 3 said that they went "yes" under the table' and gestured punching the air. This further contradicts our observations which present Pupil 2 as having expressed significant positive body language and Pupil 3 not behaving as they describe. This suggests the observer may have missed or misinterpreted pupils' responses, or that pupils may not have remembered or realised their reactions. We considered whether our authority as teachers may influence pupils' answers as they may have felt unable to make negative remarks about randomised questioning. Nonetheless, the interview responses given suggest randomised questioning did not negatively impact pupils' wellbeing.

In comparison to School A, these pupils could express their feelings about questioning with support from a word mat. Pupil 1 felt 'calm', Pupil 2 felt 'excited and nervous' and Pupil 3 felt 'calm and brave'. This suggests the intervention had little impact on the wellbeing of Pupils 1 and 3. We asked Pupil 2 to elaborate and they explained that they felt nervous when the names were being chosen but excited to be picked. This could suggest that, for Pupil 2, randomised questioning had a positive impact on her wellbeing because she was selected, but had she not been selected she would have only experienced feeling 'nervous' which may negatively affect her wellbeing. This implies pupils' reactions to randomised questioning may depend on whether they are selected – a limitation of our research is that we only interviewed children who had answered questions so neglected to explore the feelings of other children in depth.

The pupils' drawings of their reaction appeared to suggest different emotions again (Appendix M). Pupil 2 explained "I was excited, I sat up straight, I was scraping my teeth and my legs were shaking, my toes were scrunching, my hands were moving and playing with my hair." The LSW proposes this demonstrates 'low' or 'extremely low' wellbeing, yet Pupil 2 considers it to show excitement. We clarified this through follow-up questions and she confirmed that this represented her excitement and nothing else. This further complicates our understanding of her wellbeing, as her described body language suggests that her wellbeing is low, yet she considers it to demonstrate that it is high.

To improve this lesson, Pupil 1 suggested an 'ask the teacher' option to supplement 'phone a friend' and decrease pressures on the nominated friend if they do not know the answer. Pupil 2 proposed asking the child if they would like to answer and Pupil 3 considered that questions could be explained in more detail, so children had a clear understanding of the teachers' expectations. No child mentioned wait-time as a concern, suggesting that increasing it to 10 seconds mediated this issue from School A.

Questionnaires

84% of respondents liked randomised questioning, 4% higher than School A. Fig. 4 collates the responses given for this, the most-popular being that it was fun (the second most-popular response from School A), suggesting that the intervention may have had a positive impact on many children's wellbeing. The second most-popular answer was that different people got to answer, reflecting that the distribution of questions was, again, important to several children.



Fig 4. Reasons given for liking randomised questioning.

16% disliked randomised questioning; 50% suggested this was because not everybody gets to answer (see Fig. 5). In typical classroom questioning, unless the number of questions matches or exceeds the number of pupils then not everybody would get to answer, suggesting this may be an issue with questioning strategies generally. 25% of respondents said that they did not understand randomised questioning, showing a deficit in our explanation of this.

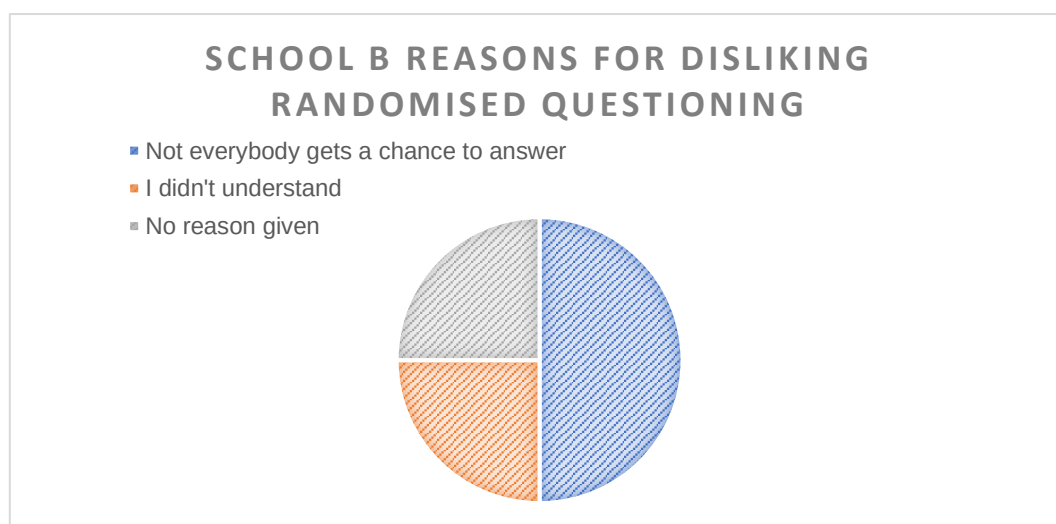


Fig 5. Reasons given for disliking randomised questioning.

Although 16% disliked randomised questioning, no respondent felt '☹️' (see Fig. 6), suggesting that for these children, the negative aspects of randomised questioning were unrelated to their wellbeing. Of the 50 children who completed the questionnaire across both classes, 85% felt randomised questioning had a positive impact on their wellbeing whilst only 2% felt that it had a negative impact on their wellbeing.

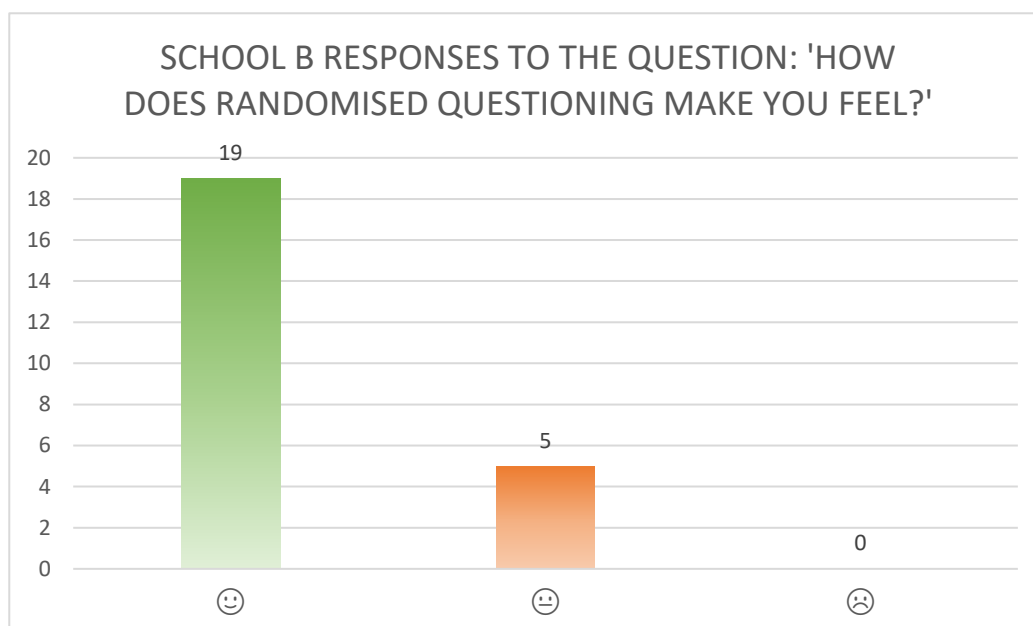


Fig 6. Emotional responses to randomised questioning.

Analysis

The interviews and questionnaires suggested randomised questioning had a positive or neutral impact on the wellbeing of most pupils. However, as in School A, observers and pupils rated reactions to questioning differently on the LSW. Such inconsistencies could imply there are issues with our data collection methods. We considered how, during observations, behaviours may be missed when the observer is recording their findings and how, during interviews, our role as teachers may influence children's responses, if they feel they must give a 'correct' answer rather than being open about their experience.

Synthesis of Research Findings

Stasulane (2017) emphasises that wellbeing is deeply contextual and Li-Fang (2018) considers the impact of AfL is conditional to the specific classroom climate at the time it occurs, therefore my results cannot be generalised to other primary schools, or to other lessons undertaken within the research schools. However, the small-scale findings of this research provide an insight into how randomised questioning may have impacted the wellbeing of specific pupils within the research lessons.

Whilst Stasulane (2017), UNICEF (2013) and others suggests that many children experience low wellbeing, the questionnaire results from both schools showed 85% of pupils considered their wellbeing to be high during randomised questioning and only 2% felt it was low. Similarly, our observations implied that the MAT case pupils in each cohort experienced high wellbeing when they were selected during randomised questioning, reflecting Hattie (2012) and Clarke (2001) who considered MAT pupils to be more confident in the validity of their answers so less likely to be inhibited by fears of making mistakes in front of their peers. However, this is complicated by their interview responses which suggested their wellbeing was 'moderate' on the LSW. The low-attaining and EAL pupils experienced low wellbeing based on our observations, but this was no lower than some mid-attaining pupils. Again, these pupils considered themselves to have 'moderate' wellbeing as a result of randomised questioning.

Throughout my literature review, pedagogues emphasised that questions should provide an appropriate level of challenge to pupils – a small number of questionnaire respondents from both schools stated that they liked randomised questioning because ‘it was challenging’. When interviewed, Pupil 2 (School A) commented that pupils ‘don’t get bored so actually try’, reflecting Csikszentmihalyi’s (1997) ‘flow matrix’ (Appendix A). This suggests that the challenge level was moderate-to-high, yet as the matrix shows, the impact of this upon children’s wellbeing depends on their academic ability in relation to the challenge. If the child’s ability is too low to meet the challenge, then they may feel worried or anxious. School A identifies Pupil 2 as being low-ability, and her suggestions combined with her consideration that her wellbeing was [3] on the LSW suggests that, for her, the challenge may have enhanced her wellbeing. However, our observations that Pupil 2 demonstrated negative body language and was [2] on the LSW, making this conclusion less credible.

My reading suggested that questions are typically distributed unfairly throughout the class, with Margutti (2006) emphasising that this can obstruct the creation of an inclusive learning environment which may impact on children’s wellbeing. Pupil 1 (School A) considered the fair distribution of questions to be the main advantage of randomised questioning over other questioning styles, a stance reflected in questionnaire responses from both schools. However, my research also suggests that although questions may be fairly distributed, some children may still suffer low wellbeing if they are not selected: Pupil 2 (School B) said that they felt ‘nervous to be picked but happy when I was chosen’, suggesting that had they not been chosen they would not have only experienced negative emotions, and reasons given for disliking randomised questioning on questionnaires in both schools included that ‘not everybody gets picked’. This could imply that whilst the random distribution of questioning was beneficial to many children’s wellbeing, the quantity of questions needs to be increased to ensure children have an opportunity to share their answers.

In School A, Pupils 1 and 2 suggested doubling the 5 second wait-time which Clarke (2001) and Black *et al.* (2004) proposed as ideal. In School B, no child expressed issues with wait-time suggesting that 10 seconds was optimal for allowing pupils to feel at ease answering questions. Whilst it cannot be assumed that it is related to wait-time, 4% more questionnaire responses stated that pupils had high wellbeing due to randomised questioning in School B compared to School A, and 2 case pupils experienced moderate-to-high wellbeing in School B versus 1 in School A. This suggests that changes we made to the implementation of randomised questioning between the two lesson studies may have allowed it to have a more positive impact on children’s wellbeing.

Hattie (2012), the Assessment Reform Group (1999) and Welsh Government (2010) all emphasised the importance of feedback to the value of AfL strategies and their impact on pupils’ wellbeing. In contrast, no child in either school commented upon our feedback through any source of data collection. This could mean that feedback was sufficient so did not require comment, or that it did not have a notable impact on pupils in these lessons. However, children’s feedback has been valuable in helping us to refine our LS and understand the impact of our teaching. Within the forthcoming Welsh curriculum, ‘Health and Wellbeing’ is visualised as giving children a better understanding of factors which impact their wellbeing as they grow (Donaldson, 2015), suggesting that the process of this LS may have allowed children to develop their wellbeing as they have been encouraged to reflect upon how a specific element of their instruction affects their wellbeing.

My reading and research have come together to give me the understanding that whilst some children may experience low wellbeing in the classroom, teachers can limit this as much as possible during randomised questioning by ensuring that there is appropriate challenge and

wait-time. Most of my research appears to suggest that randomised questioning may overcome some barriers to high wellbeing as it distributes questions fairly throughout the classroom – a concern for pupils as shown in questionnaire responses and interviews. However, the data collected from our observations conflicts with the interviews and questionnaires, meaning that any such conclusions are tentative and not wholly supported by all of our research findings.

Conclusion

Whilst this research has suggested some possible findings related to my research question, a shortcoming of our random sampling method is that it may be unrepresentative of the characteristics of the cohort, which Cohen *et al.* (2011) emphasise may weaken the validity of its results. In both schools, 2/3 of the case pupils selected were girls, yet boys comprised 74.3% of the class in School A and 60% in School B. Palsdottir *et al.* (2012) highlighted that more boys than girls typically experience low wellbeing, suggesting that our sample, although selected at random, may have influenced our findings. This is a disadvantage of random sampling, and if I undertook this LS again, I would design it with specific, predetermined case pupils in mind as recommended by Dudley (2014).

A further complication to the reliability of our findings stems is no case pupil rated themselves the same as the observers against the LSW (see Fig. 7). Sharp (2009) warns against observers assuming what children are thinking and feeling – whilst our research question necessitated this, the incongruence of our findings suggests that the observer's assumptions may have been incorrect and that we unwittingly introduced observer-bias. It could also be suggested that observer-bias occurred through the assumption that Pupil 2 (School A) giggled 'nervously' as the observer could not know that the cause of the laughter was nerves, instead showing this is an opinion the observer imposed upon the pupil. These limitations of observation as a data collection method could have perhaps been reduced had we piloted our observation schedule before the LS. We did not do so as we were unable to find suitable material upon which to base our pilot, but had we done so we could be more certain that we both understood pupils' behaviours and their relation to their wellbeing similarly before we observed each other's lessons.

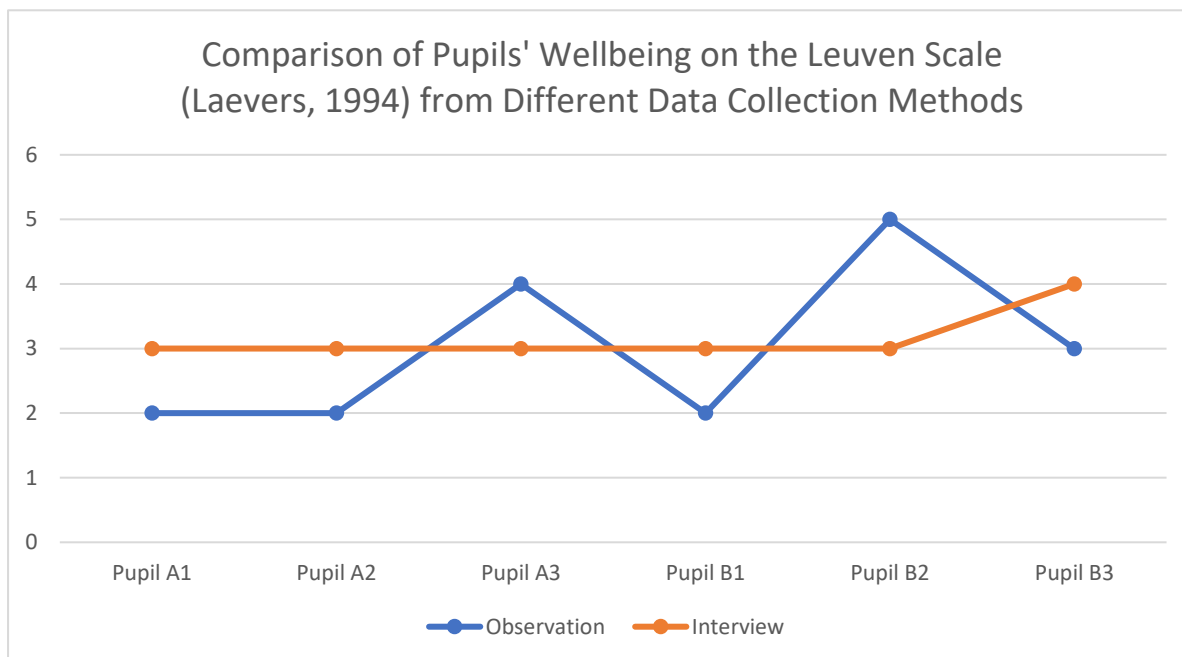


Fig 7. Graph showing the difference between observers and interviewees placement of case pupils on the LSW.

Alternatively, McCormick and James (1988) propose that interviewers may encounter difficulties in getting children to give honest responses rather than telling the interviewer what they think they want to hear, reflecting studies into obedience by Milgram (1963). 5 case pupils rated themselves [3] on the LSW – the middle value. It could thus be hypothesised that children's responses were noncommittal during the interview regarding their emotional response to randomised questioning. Likewise, there could be an issue with the use of the LSW as a tool for examining wellbeing. In School A, Pupils 1 and 2 displayed very different levels of discomfort during the lesson, yet both were rated as [2] on the LSW by the observer. This may imply that the scale has its limitations and does not necessarily clearly indicate a child's wellbeing in comparison to peers.

Despite these limitations of our data collection methods, LS has proved a useful methodology for undertaking our research. The LS cycle of observation, interview and reflection allowed us to tailor and improve our use of randomised questioning and our data collection methods for the second research lesson. Furthermore, as emphasised by Xu and Pedder (2015), by collaborating with a research partner, I have gained an enhanced understanding of my own teaching practice and its impact on pupils than had I been working in isolation. By incorporating an interview into the LS process as recommended by Dudley (2014), we have been able to critically analyse the validity of our findings by triangulating different data sets.

However, LS typically involves 'a group of teachers' collaborating (Dudley, 2014: p.5) whereas we have worked as a pair. If I were to undertake LS again, I would endeavour to work in a larger group and undertake a greater number of research lessons. This would allow additional opportunities for reflection and a wider data set upon which to base hypotheses. It could also increase the reliability of our observations which has been questionable in this project as Dudley (2014) highlights, it is impossible for an observer to capture and record every aspect of pupils' behaviour in a busy classroom environment.

Recommendations

The research undertaken has implications for myself and the normal teachers of these classes by demonstrating that randomised questioning may have positively affected many pupils' wellbeing in the research lessons. It is therefore recommended that this strategy should be incorporated into our everyday teaching. The findings will help me progress as a teacher, by highlighting the need to uphold children's wellbeing during classroom questioning, be this through the level of challenge, the wait-time, the distribution of questions or establishing relationships with pupils based on trust. In doing so, I hope that I can strengthen the wellbeing of children I teach and my own teaching practice. This project has also demonstrated the value of being a reflective practitioner, as it made me aware of the impact of features of my teaching practice which I may otherwise have taken for granted.

Several aspects of the literature, such as the influence of feedback and rewards, did not directly arise during the research aspect of this project. It would therefore be beneficial, in another LS, to consider the impact of other AfL strategies on children's wellbeing in light of these factors. If I were to do LS research again, I would carefully consider ways in which the observation aspect could be given increased validity. This could be achieved by having more than one observer in the classroom or by repeating the LS with additional classes to triangulate findings. It is hoped that doing so would strengthen the value of our observations, so if they again conflict with data collected by other methods, we can still be confident that our observations are accurate.

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