

How do different questioning strategies affect student engagement?: Focusing on how questioning impacts participation, well-being and quality of response.

Appendix

Observation Grid

(How do different questioning strategies affect pupil engagement?)

Date: 20/02/19

Pupil ID: A1

*EWB = Leuven scale for emotional wellbeing

*LOI = Leuven, Level of involvement

Teacher selected <i>Participation: Happy to give an answer without hesitation.</i> <i>Wellbeing: good, confident answer.</i> <i>Quality of response: Good clear response, Teacher able to build off their participation. Pupils understood what was said</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Name Randomiser <i>Participation: Engaged throughout.</i> <i>Wellbeing: no difference in pupils attitudes</i> <i>Quality of response: Pupil responded well they were comfortable when their name was drawn and happy to contribute to the class discussion. This answer was at a good level which allowed a level of response from the teacher and other students.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5
Volunteer Answer <i>Participation: Good to a high level of participation</i> <i>Wellbeing: Very happy with being given the choice to answer questions and take part, seemed very comfortable with this choice.</i> <i>Quality of response: good level of response allowed the discussion to be built around that answer, responded to several questions posed by the teacher after initial response.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Notes <i>This pupil volunteered to get up and sing the St Davids day song in front of the class. They seemed very comfortable in front of the class and were more than happy to provide answers to the class after every question</i>

Appx 1: Observation schedule School A pupil 1.

Observation Grid

(How do different questioning strategies affect pupil engagement?)

Date: 20/02/19

Pupil ID: A2

*EWB = Leuven scale for emotional wellbeing

*LOI = Leuven, Level of involvement

Teacher selected <i>Participation: Limited participation</i> <i>Wellbeing: Uncomfortable, didn't provide an answer.</i> <i>Quality of response: Low level of response, they were unable to respond to the question and continued to be somewhat distracted.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Name Randomiser <i>Participation: willing to participate, kept engaged throughout, lost engagement after this period has finished.</i> <i>Wellbeing: seemed more agitated, whilst waiting to see if they were being called.</i> <i>Quality of response: N/A, name randomiser didn't select them.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5
Volunteer Answer <i>Participation: Quickly put their hand up, no prompting needed. Less engaged after the response was given</i> <i>Wellbeing: very happy and confident with the answer they gave.</i> <i>Quality of response: Good response, pupil understood what they were talking about and how</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Notes <i>The pupil was disengaged for a period of the lesson, played with whiteboard showing limited interest in the discussion. However when a question was asked pupil participated in volunteering answers after questions stated.</i> <i>During name randomizer, they seemed engaged but appeared as if they were worried they were going to be called upon without knowing an answer.</i>

Observation Grid

(How do different questioning strategies affect pupil engagement?)

Date: 20/02/19

Pupil ID: A3

*EWB = Leuven scale for emotional wellbeing

*LOI = Leuven, Level of involvement

Teacher selected <i>Participation: Good response to the question presented. Stayed engaged throughout after response was given.</i> <i>Wellbeing: Comfortable responding.</i> <i>Quality of response: Good level of response, pupil provided information in their response to allow the discussion to be built from.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Name Randomiser <i>Participation: Engaged throughout the period of the name randomizer being used.</i> <i>Wellbeing: no difference, pupil seemed comfortable</i> <i>Quality of response: n/a pupils was not selected.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5
Volunteer Answer <i>Participation: Eager to respond and give an answer. Once answer given less engaged</i> <i>Wellbeing: Very comfortable giving an answer.</i> <i>Quality of response: A good response, did not prompt other thinking and contribution from other students.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Notes <i>Very engaged throughout the class apart from directly after answering a question. Kept engaged to offer a number of different answers to several different questions.</i>

Appx 3: Observation schedule School A pupil 3.

Observation Grid

(How do different questioning strategies affect pupil engagement?)

Date: 21/02/19

Pupil ID: B1

*EWB = Leuven scale for emotional wellbeing

*LOI = Leuven, Level of involvement

Teacher selected <i>Stumbled a bit but answered correctly, stumble did not affect her confidence. Was scared when she had the beanbag thrown to her, not quite confident.</i> <i>was willing to participate if chosen but was not overly enthusiastic until the introduction of the bean bag which showed the use of bean bag increased engagement</i> <i>stayed neutral throughout the teacher-led section of the lesson</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Name Randomiser Shown visible discomfort when chosen by the name randomizer as they felt that they were put under pressure and this led to them being unable to answer the questions. EWB: 1 2 3 4 5 LOI: 1 2 3 4 5
Volunteer Answer <i>was happy to avoid questions when she became less sure and more children had feedback into the lesson</i> <i>When asked to answer they instantly would answer which shows that they were continual engagement.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Notes <i>Pink shows after the introduction of a bean bag or ITT time yellow before</i>

Appx 4: Observation Schedule School B pupil 1.

Observation Grid

(How do different questioning strategies affect pupil engagement?)

Date: 21/02/19

Pupil ID: B2

*EWB = Leuven scale for emotional wellbeing

*LOI = Leuven, Level of involvement

Teacher selected <i>Confident answer very good, looks like he enjoys answering questions.</i> <i>Loved when he had to catch the bean bag as he showed a visible increase in his physical happiness.</i> <i>loved giving answers and was enthusiastic at all points</i> <i>showed an increase in happiness when asked to answer questions and this led to an increase in his EWB scale number</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Name Randomiser Wanted to answer the questions but was not chosen to answer and he showed visible disappointment when he could not contribute to the lesson. When he was finally chosen he was visibly delighted to answer the question this brought the biggest rise in his wellbeing throughout the session. EWB: 1 2 3 4 5 LOI: 1 2 3 4 5
Volunteer Answer <i>was ecstatic to answer the question when thrown the beanbag</i> <i>more than willing to volunteer themselves for answers and both showed a small increase in their motivation to answer when they knew the answers that other pupils in the class did not know</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Notes <i>Pink shows after the introduction of a bean bag or ITT time yellow before.</i>

Observation Grid

(How do different questioning strategies affect pupil engagement?)

Date: 21/02/19

Pupil ID: B3

*EWB = Leuven scale for emotional wellbeing

*LOI = Leuven, Level of involvement

Teacher selected <i>Was very standoffish at the start of the lesson, did not want to be picked by the teacher.</i> <i>This pupils level of participation increased more and more with the inclusion of the beanbag.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5	Name Randomiser <i>This pupil found this really exciting, the visible excitement they showed to be using a name randomizer was high.</i> <i>They answered the question when picked, using it the quality of the answer was not great but there was a high level of engagement from this pupil.</i> EWB: 1 2 3 4 5 LOI: 1 2 3 4 5
Volunteer Answer <i>The pupil was quick to put a hand up after given the opportunity of ITT. They again seemed happy and excited about being able to get the bean bag.</i> <i>Again the response wasn't the greatest but the showed a good level of involvement and want to answer the question.</i> 1 2 3 4 5 LOI: 1 2 3 4 5	Notes <i>Pink shows after the introduction of a bean bag or ITT time yellow before.</i>

Appx 6: Observation Schedule School B Pupil 3.

	Emotional Wellbeing	Level of Involvement
1	Extremely low The child clearly shows signs of discomfort such as crying or screaming. They may look dejected, sad, frightened or angry. The child does not respond to the environment, avoids contact and is withdrawn. The child may behave aggressively, hurting him/herself or others.	Low Activity Activity at this level can be simple, stereotypic, repetitive and passive. The child is absent and displays no energy. There is an absence of cognitive demand. The child characteristically may stare into space. N.B. This may be a sign of inner concentration.
2	Low The posture, facial expression and actions indicate that the child does not feel at ease. However, the signals are less explicit than under level 1 or the sense of discomfort is not expressed the whole time.	A Frequently Interrupted Activity The child is engaged in an activity but half of the observed period includes moments of non-activity, in which the child is not concentrating and is staring into space. There may be frequent interruptions in the child's concentration, but his/her Involvement is not enough to return to the activity.
3	Moderate The child has a neutral posture. Facial expression and posture show little or no emotion. There are no signs indicating sadness or pleasure, comfort or discomfort.	Mainly Continuous Activity The child is busy at an activity but it is at a routine level and the real signals for Involvement are missing. There is some progress but energy is lacking and concentration is at a routine level. The child can be easily distracted.
4	High The child shows obvious signs of satisfaction (as listed under level 5). However, these signals are not constantly present with the same intensity.	Continuous Activity with Intense Moments The child's activity has intense moments during which activities at Level 3 can come to have special meaning. Level 4 is reserved for the kind of activity seen in those intense moments, and can be deduced from the 'Involvement signals'. This level of activity is resumed after interruptions. Stimuli, from the surrounding environment, however attractive cannot seduce the child away from the activity.
5	Extremely high The child looks happy and cheerful, smiles cries out with pleasure. They may be lively and full of energy. Actions can be spontaneous and expressive. The child may talk to him/herself, play with sounds, hum, sing. The child appears relaxed and does not show any signs of stress or tension. He /she is open and accessible to the environment. The child expresses self-confidence and self-assurance.	Sustained Intense Activity The child shows continuous and intense activity revealing the greatest Involvement. In the observed period not all the signals for Involvement need be there, but the essential ones must be present: concentration, creativity, energy and persistence. This intensity must be present for almost all the observation period.

Appx 7: Copy of Leuven scale used during observation throughout the study in both School A and School B.

Interview Questions and Log

(How do different questioning strategies affect pupil engagement?)

Date: 20/2/19

Pupil ID: A1

(Completed by investigators)

Question	Pupil response
How did the name randomiser/teacher selection/voluntary answer make you feel?	Preferred being able to choose when to answer the questions as they felt that they had a better response prepared. (Voluntary answer). Found the randomiser fun but stated how it could be sometimes stressful. Suggested the idea of using a ball to pass around the classroom which would make them more willing to take part with questions and get involved.
Does the questioning strategy make learning more interesting?	Yes, randomising questions made it more interesting as it was more fun, thinks that if there was a use of a ball to pass around the classroom as prompt, the questioning would be even more fun. Making learning more interesting as a whole.
Which of the three strategies used do you prefer? Why?	Volunteer, because I was prepared with an answer and new that my answer was correct. The others made me worried in case I got chosen and I didn't know the answer to the question.
Do you think the questioning strategy makes you pay more attention in class? Why?	I paid more attention when we were using the lollipop sticks as I wasn't sure if I was going to be asked. So I paid more attention to make sure I knew the answer to the question
Does the questioning strategy affect the way you answer the teacher?	No
<i>Investigator comments</i>	This pupils idea of using a ball prompted a change in this research, as researchers we will now incorporate the use of ball/beanbag into our next stage of research in School B

Appx 8: Interview log from school A pupil 1

Interview Questions and Log

(How do different questioning strategies affect pupil engagement?)

Date: 20/2/19

Pupil ID: A2

(Completed by investigators)

Question	Pupil response
How did the name randomiser/teacher selection/voluntary answer make you feel?	This pupil preferred volunteering an answer, than either of the other two questioning strategies. They stated that by volunteering their own answer they felt that they knew what they were going to say and preferred it because it was their own choice to then answer the question. Made them feel more comfortable compared to the others
Does the questioning strategy make learning more interesting?	"I don't know", this pupil stated that they didn't know if the questioning strategy made them listen more or not. From observation notes its easy to see that this pupil was disengaged for a large portion of the lesson, but did volunteer answers even when not called upon
Which of the three strategies used do you prefer? Why?	This pupil preferred volunteering an answer because they could answer the questions they wanted to answer. They did state however they found the name randomizer (lollipop sticks) more fun as you don't know who is going to be asked questions.
Do you think the questioning strategy makes you pay more attention in class? Why?	This pupil stated that they paid more attention during the lollipop stick portion of the session because they did not want to be caught out by being asked a question that they didn't understand or know. It only appeared that they paid more attention during the name randomiser and not before when the information was being given for the questions.
Does the questioning strategy affect the way you answer the teacher?	Pupil stated that when the questioning was more fun they would answer the felt that they wanted to answer a question more.
<i>Investigator comments</i>	Agreed with pupil A1 that if there was a ball involved they would have found the questions more fun.

Interview Questions and Log

(How do different questioning strategies affect pupil engagement?)

Date: 20/2/19

Pupil ID: A3

(Completed by investigators)

Question	Pupil response
How did the name randomiser/teacher selection/voluntary answer make you feel?	This pupil prefers the name randomiser as they felt that it made the lesson a little more exciting because they had to pay attention to everything. They stated that they were less comfortable when they thought that the teacher was just going to choose them without any warning.
Does the questioning strategy make learning more interesting?	"I think it does" this pupil stated they felt that the randomiser (lollipop sticks) made the learning more interesting because they felt they had to listen and concentrate more about what was going on.
Which of the three strategies used do you prefer? Why?	This pupil prefers the lollipop sticks, (randomiser) as it made more of a game element to the lesson that they felt they could fully enjoy, making the lesson more fun and interactive.
Do you think the questioning strategy makes you pay more attention in class? Why?	"I thought that when the lollipop sticks were used I paid more attention" pupil goes on to suggest that they paid more attention to this period of the lesson Because they found it more fun.
Does the questioning strategy affect the way you answer the teacher?	'I don't think so' this pupil was uncertain how the questioning type affected their responses.
<i>Investigator comments</i>	

Appx 10: Interview Log, School A pupil 3.

Interview Questions and Log

(How do different questioning strategies affect pupil engagement?)

Date: 21/02/19

Pupil ID: B1, B2, B3

(Completed by investigators)

Question	Pupil response
How did the name randomiser/teacher selection/voluntary answer make you feel?	B1 Didn't like the name randomizer called it creepy and nerve racking as they did not like the uncertain nature of the technique. Question difficulty was the main factor to teacher choosing the pupils who answer the questions, all three unanimously agreed that if the question was something they believed they could answer then they did not mind the teacher asking them to answer. Preferred method was voluntary answering, the target children believed that this method allows them to only answer when they feel they know the answer and therefore this is their preferred method. All pupils felt that when they were given ITT they were happier with answering the question.
Does the questioning strategy make learning more interesting?	All three of the children liked the teacher led questioning with the use of a bean bag, all three children believed that it made answering questions more fun and this led to them engaging more within the lesson as they wanted to take part in the session. One of the children did say that it made them nervous, they were scared that they would drop the bean bag and be made fun of, but when they caught they said that "it made me feel great that I caught it and got the answer correct". They said that the name randomizer was a good way of asking the questions to the class as it was fair and meant the teacher was not biased towards the class in any way. However B1, B3 students said that it increased their nerves because they didn't know when they were going to be asked a question. B2 agreed that volunteering to answer isn't particularly interesting but if they were thrown the bean bag it would make it more fun in future lessons.

Which of the three strategies used do you prefer? Why?	The preferred method overall was the name randomiser with the use of a bean bag for the extra fun factor. The children liked it because they were uncertain if they got picked and by getting picked by the computer then having to catch the beanbag they believed that it added an extra challenge element to the task.
Do you think the questioning strategy makes you pay more attention in class? Why?	The three children believed that the name randomizer means everyone has the equal chance to answer the questions as it is uncertain when they would answer the question they would definitely pay more attention to ensure that they have the best chance of answering a question if they were asked.
Does the questioning strategy affect the way you answer the teacher?	B2 of the children believed that the way the teacher asked the questions affected the way they answered the question. This pupil said he could tell when the teacher wanted a more detailed answer depending on the question. B1 and B3 were unsure whether the way the teacher asked the question affected their answers.
Investigator comments	

Appx 11: Interview log used during the group interview in School B.

Gibbs 1988 Reflective Proforma

Title of research: How do different questioning techniques affect student engagement?

Description: What happened?

Pupils came into the lesson aware of observer presence and why the lesson was taking place. All pupils appeared comfortable and quickly sat down for the lesson. Pupils completed class discussion and their comprehension work without too many problems there was a focus on questioning types. especially directed towards the focus children of the study. These children were brought out to be interviewed. The lesson was lead by my research partner, the interview was also undertaken by my research partner.

I observed from the back of the classroom, I had very limited interaction with pupils apart from introducing myself to the whole class on arrival. I made observation notes electronically using the observation schedule made prior to the lesson starting. During the interview, I again made notes using the interview log previously made. I had little interaction with pupils during the interview due to the fact myself and my research partner thought it would allow the pupils to be more comfortable speaking to someone they had a previous pupil-teacher relationship with.

Feelings: What were you thinking and feeling?

I was making a conscious effort to make sure I noticed all the elements of the pupil behaviours I could. I had never completed an observation of this kind before so was eager to make sure I paid as much attention as I could throughout the lesson to make sure I noticed everything. I found this experience interesting but I was slightly frustrated that due to my positioning/Pupil positioning in the class I found it difficult to gather as much information as I would have liked to.

Evaluation: What was good and bad about the experience?

- + The lesson and observation as a whole went well, I thought that pupils interacted well with the questioning types being used I also thought that I was able to take some detailed observation notes even though there were some hindrances
- + Pupil interviews worked well, all pupils gave feedback to the questions they also allowed us areas to think about and build into our next lesson study. ('fun factor' ITT)

- The biggest problem with the experience was positioning during the observation. This made it difficult due to the fact it was difficult to observe all behaviour presented by pupils.
Analysis: What sense can you make of the situation
Pupils enjoyed the lesson and were all keen to take part in the lesson study, they completed their goals in the lesson and as an observer. The lesson study allowed provided us with information regarding the three elements. On initial review of the lesson it appears that pupils found the randomiser more interesting than other questioning types, however, there did not seem to be a high level of enjoyment through the questioning types it initially appeared pupils were going through the motions. The interview provided a good level of detail, on initial analysis, there need to be small changes to the interview log to make sure it is easier to note all the pupil's responses in a group interview. There are also elements of the lesson that could be changed. Pupils stated they like volunteer questioning.
Conclusion: What else could you have done?
I could have moved my positioning in the class to have allowed me to get a better view of focus pupils whilst in the classroom. This however at the time didn't seem feasible as there was limited room and I didn't want to disrupt the pupils during the lesson. The use of a pilot study where I could have tested the observation schedule and interview log this would have been more beneficial to the first lesson study and interview process.
Action plan: What will you do next?
There will be a number of edits to the study before the next lesson, this is based on researcher analysis and pupil feedback. - slight edits to interview log so that group interview can be recorded all on one sheet. - Incorporation of a fun element into the lesson during questioning (throwing of a ball/beanbag). - Incorporation of ITT and TPS into the lesson during questioning, as well as stating the question strategy before asking the questioning itself. - Observer and pupil positioning is to be clearly set out so that the observer is able to see focus pupils clear helping observational note taking. - Questioning will take place across the lesson rather than in a 20-minute stint at the beging of the class.

Appx 12: Reflective proforma, created after the first lesson, showing improvements and edits need to the second lesson study in School B.

