

What happens when I welcome mistakes in my classroom?

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Group 2G

Rationale

To begin with it is important to state the reasoning behind our enquiry. In our group, we all discussed the challenge of encouraging children to embrace mistakes in the classroom. From our experience as leaders in learning, we all agreed that the learners often show anxiety about answering out in fear of getting the answer wrong. In the primary sector, the curricular area in which we all felt was most associated with anxiety and fear of making mistakes was mathematics. Based on this assumption, we decided to implement Growth Mindset strategies into the day to day learning and teaching of mathematics, monitoring the pupil response to this over a period of 4 weeks. Psychologist Carol Dweck's fascination with Growth Mindset derived from her interest in her students' response to failure. She views Growth Mindset as a tool to enhance learning and success (Dweck and Dweck, 2006). With this in mind, we agreed to explore Growth Mindset strategies within our own classrooms to evaluate the impact it had on pupil attitude towards making mistakes.

Aims

The aim of my enquiry was to investigate the impact of Growth Mindset in relation to mathematics. By implementing Growth Mindset strategies coupled with an ethos of embracing mistakes in mathematics I aimed to find out more about pupil confidence and attitude towards learning in this curricular area.

Methodology

At the beginning of the enquiry, I introduced the concept of making mistakes by asking children to anonymously write down their interpretation of the word "mistake." The majority of the responses defined a mistake as "getting something wrong." After this exercise, we had a class discussion about the general emotions we feel after making a mistake in school.

Figure 1 shows the mind-map of responses created by the pupils.

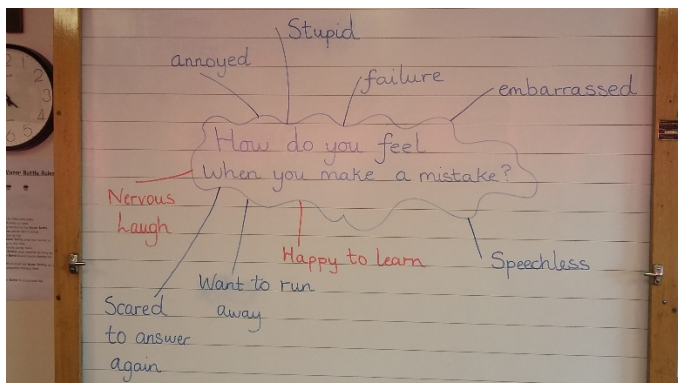


Figure 1

The next day, I created a scale on the board asking children how they felt about making mistakes in maths; the scale was in child friendly format, ranging from ‘not good’ to ‘ok’, ‘good’ and ‘very good.’ I gave each child a blank post it note and asked them to put it on the scale at the section they agreed with most. This task was repeated at the beginning of each week to monitor their attitude towards making mistakes in maths.

During the course of the enquiry, a variety of methods were introduced to measure the impact of embracing mistakes in the classroom. This varied from scales, class mind-maps, exit passes and Growth Mindset strategies. I implemented ‘Mindset Motivators’ in the classroom over the four week period. This involved choosing one person each week to be the ‘Mindset Motivator’ – encouraging their peers to have a ‘can do’ attitude towards tasks and challenges in their day to day learning.

In addition, I began each maths lesson with mental maths problems and encouraged the children to think about the process of the calculation rather than the importance of getting the answer correct. Each day, I would put a mental maths problem on the board and ask the children to come up with as many different strategies to solve the problem as possible. They then showed with their fingers the amount of strategies they could come up with. After this, I would then write several of their strategies on the board (both correct and incorrect) consistently focusing on the process of the calculation rather than the final answer. During this time, we would refer to the Growth Mindset vocabulary on the wall and we would embrace mistakes by linking our discussion to the quotes and phrases on our Growth Mindset display.

Findings

By focusing on the process of the mental maths strategies rather than the final answer each day, I found that the children were more eager and more willing to answer out. This was evident through my observation of confident participation and a willingness to risk getting the answer wrong. I also found that the children had a positive attitude towards this part of the maths lesson: this was evident in the abundance of positive comments on exit passes that were given out at the end of the lessons.

Sample A

“I would like to do more mental maths strategies. I like learning new ways to find an answer.”

Sample B

“I enjoy working on my own to come up with different ways to solve the problem and I feel better about getting the answer wrong because I can learn for the next time.”

Sample C

“I enjoyed trying to get as many strategies as I could to work out the multiplication answer. I ‘think I can get more.’”

Furthermore, collecting data from the scale and mind-map proved to be an interesting way to gauge pupil opinion on making mistakes in the classroom. From the scale conducted at the

beginning of the enquiry, it appeared that the majority of the pupils felt a degree of anxiety about making mistakes in maths – the bar chart (*Figure 2*) demonstrates that out of a class of twenty-two, only three children said they felt good about making mistakes in maths at the beginning. At the beginning of the four weeks, the majority of the children said they felt “not good” or “ok” about making mistakes in maths. In antithesis, the scale conducted at the end of the enquiry showed that more children placed themselves as feeling “good” or “very good” in comparison with the first one.

Conclusions

To conclude, introducing Growth Mindset into the classroom appeared to have an overall positive impact on the pupil attitude towards making mistakes in maths. Furthermore, assessment results (both formative and summative) showed an enhancement in pupil achievement in mental maths. The learners themselves commented on the positive aspects of focusing on the process of maths calculations rather than on getting the answer right. The scale depicted a small change in attitude towards making mistakes in maths with many of the learners saying they felt better about making mistakes in maths than they did before the enquiry began.

Although I detected a more positive attitude in general from the children in relation to making mistakes in maths evident in *Figure 2*, it is also important to acknowledge the limits of this enquiry. As it was only conducted over a short four week period, it is difficult to say whether or not the enquiry has made a significant difference to my pupils’ view on making mistakes in maths. As the scale pointed to a small change in pupil confidence towards making mistakes I aim to pursue this further in the remainder of the year.

Implications for Future Practice

As this is a very small scale enquiry, it would be interesting to monitor the impact of Growth Mindset and making mistakes in mathematics over a longer period of time. Although research from the enquiry has enhanced my understanding of Growth Mindset, I am keen to explore other strategies similar to Mindset Motivators that could be adapted and applied to other stages across the primary. In addition, this enquiry has also raised further questions such as “what other methods could be introduced to reduce anxiety towards making mistakes in maths?” As examined in the work of Alan Mclean (2003), the teacher also plays a crucial role in creating the ‘classroom climate’ – engaging with professional literature has inspired me to consider the role of the teacher in relation to Growth Mindset and this is an area I would be keen to explore in the future.

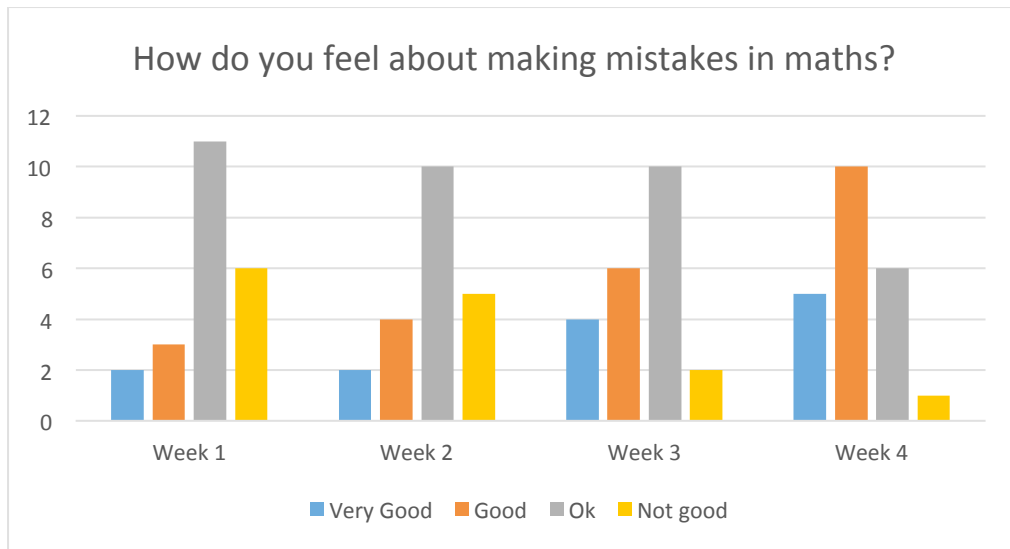


Figure 2

Bibliography

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