

'Listen... I have feelings': Social and Emotional Learning in Mathematics (Summary)

School type : Co-educational P-6

Location : Outer suburban

Size : 250-500 students

The project, *'Listen ... I have feelings': Social and Emotional Learning in Mathematics*, evolved from observations and data showing that children in a suburban Catholic Primary school in Victoria's western region appeared to be disengaged in their learning and lacking in confidence. 2010 school data indicated a need to improve numeracy across the school and that children in the senior level had not reached expected levels of achievement, particularly in mathematics. Wellbeing data (2010/2011) indicated a need to motivate our students to become confident and self-directed learners, and showed student engagement as well below the mean for Victorian Schools.

As a Mathematics teacher working within the Prep Learning Community, and with the school data in mind, I undertook an action research project to improve student learning outcomes by, initially, embedding Social and Emotional Learning (SEL) skills in Mathematics. Working with a collaborative team of three classroom teachers, the Mathematics Leader, the Wellbeing Leader, the Literacy Leader and two additional support staff, the project's research question was: *What are the effects of building social and emotional learning and problem solving through the area of mathematics?* Our plan for the future was to embed SEL across other curriculum areas, given the established link between social and emotional learning and academic outcomes (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

We chose to focus initially on the SEL core competency of **self-awareness** (CEOM, 2009), and took a preventative approach by teaching the Prep Learning Community to identify and label emotions and feelings connected to experiences. This resonated with the World Health Organization (Palmer, 2009) view of self-awareness as an emotional skill needed for children to become confident and creative individuals. Similarly, Bernard (2011) suggests programs and practices should include teaching SEL skills such as persistence, maintaining that children can learn to manage their emotional responses to frustrating or challenging tasks. Kress & Elias (2006) support the notion that balancing curriculum content with SEL skills can help schools to become effective learning centres, and Poon (2010, p. 15) recognises that teachers are able to provide opportunities for purposeful connections and building relationships through their daily interactions with children. Bernard (2011) maintains it is the quality of teaching and the relationships formed that influence a child's engagement in mathematical learning.

Three Prep grades participated in the research, engaging in daily mathematics instruction using a SEL focus. Each lesson had an explicit mathematical outcome and an explicit SEL outcome. SEL was addressed at the beginning and end of each lesson. Following the mathematical investigation, children shared and recorded their identified feelings, either orally or through snapshot *emotional stamps*. Circle

IMPORTANT INFORMATION

This project was undertaken in partial fulfillment the Master of Education (Student Wellbeing), Melbourne Graduate School of Education (MGSE) at the University of Melbourne. The project has been edited for online use and individuals and organisations have been de-identified for ethical reasons. CEOM and MGSE gratefully acknowledge the author for making the projects available.

Time, timetabled weekly, provided a *safe* forum for the children to talk about themselves and to unpack their emotions and associated feelings. On recognising that the children were experiencing difficulty in expressing their feelings, the collaborative team changed their teaching strategy to expand the children's knowledge of emotions and to extend their vocabulary to be able to express their feelings.

We used *creative interviewing techniques* (Patton, 1990) to visually show the children's perceptions of the feelings they experienced in mathematics, and Circle Time to gather data. Initial findings from a sample group of 23 children revealed 88% described themselves as *happy*, although the reasoning to support this response varied considerably. 4% connected their emotional response to learning: 'I feel angry when I don't know how to do something.' 23% connected being happy to a specific mathematics task. 50% of the children either connected their responses to social issues, or were unable to explain their responses. 8% of the children made no connection to mathematics or learning. Overall more than half of the children were not linking their emotions to learning.

Data from a focus group of eight children showed that as they participated in SEL activities such as developing connections using sentence starters – 'I feel ... because ...', 'I felt ... when ...' – to make meaning of the feelings associated with particular emotions, they began to show more confidence in extending the language used to describe their feelings. Responding to observations, teachers were able to adapt their teaching to meet children's individual needs and to extend their vocabulary. The exchange (right) shows that some children were more capable of reflecting on and recounting their feelings, and importantly, that the children were able to help one another with SEL. In a whole class activity students were asked to imagine a time when they were learning mathematics well and then show the feelings experienced in a drawing. This activity was repeated to show a time when learning mathematics was difficult. Group class reflections (Table 1) were recorded in a class notebook entitled, *Listen ... I have feelings*.

In this example a child struggles to find the language to explain the feelings experienced, despite being able to name an emotion.

Child A: *I feel happy when I draw pictures.*

Child B asked **Child A** to explain what she meant.

Child A showed through her body language that she was extremely uncomfortable about this question. She sat in silence.

Child C: *I think she knows she is happy, but she doesn't know how to explain this.*

Child B provided an explanation. She likened it to her explanation of angry from the previous day's reflections.

Child B: *Angry is like ... you feel frustrated so, happy is like ...*

Group response: *You just feel good.*

Table 1 - Responses from Children's Drawings

Learning Mathematics	Feelings	%	Trends
Went well	e.g. excited, happy, clever	74	<ul style="list-style-type: none"> • 65% of children believed that when they had the knowledge of what to do they experienced emotional responses of feeling clever, excited and surprised about their learning. • Additional responses included providing new challenges and investigations were 'fun.' • Some of the children were able to articulate their mathematical reasoning to validate their approach. • Others experienced positive emotional responses when their answers were correct
	Connected two or more words to describe their feelings, e.g. 'I felt clever and was surprised that I could count these big numbers.'	26	
Was difficult	e.g. confused, frustrated, worried, puzzled, sad, angry and miserable.	70	<ul style="list-style-type: none"> • Responses included: lack of understanding; couldn't complete mathematical workings; lack of mathematical skills needed to complete investigations. • 17% identified interruption to their learning as a reason behind their responses of confusion, frustration and anger.
	Combining words to reflect their feelings, e.g. 'I feel angry and sad when I don't know what to do.'	30	

Overall trends showed that after we worked on the language of feelings, 100% of the children had connected emotions and associated feelings to their mathematical experiences. These results were notable when compared with the initial data. The findings reflected a significant shift in the children's ability to articulate their feelings in connection with their learning in Mathematics, potentially giving them more ability to manage these feelings in ways that supported learning. Survey data collected from parents following a Family Maths Night showed that overall parents supported the change in our classroom practices, with some beginning to recognise the link between SEL and mathematics learning. Many indicated they would continue to support this process through their daily interactions within the home. This was the link we were hoping to achieve – parents supporting classroom practices to transfer learning into the home. Data from an informal teacher focus group showed that all members of the team believed they had received strong support in understanding SEL and that there was a need for further learning. Some spoke of a sense of ownership of the project, and one spoke of the enhanced knowledge, language and skills. The majority believed they needed to continue to develop open questioning strategies to elicit the children's feelings, and affirmed the strategy of teaching children SEL through mathematics.

This project has demonstrated that collaborative approaches to teaching have benefits both for developing children's wellbeing and for changing our practice and pedagogy. While teaching SEL through mathematics had been our short-term approach to change, our long-term approach is to sustain and develop the implementation of SEL throughout our learning and teaching. Our starting point for ongoing school improvement is to share our learning with the extended school community.

References

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