

Social and emotional learning (SEL) in mathematics classrooms

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This study, which is part of my doctoral research, presents British primary teachers' perspectives regarding social and emotional learning (SEL) in mathematics classrooms. Focus group research was used to elicit primary school teachers' understandings of social and emotional skills and their integration into mathematics lessons for students aged 9 to 11 (years 5 and 6) in the UK. Three primary teachers spoke about SEL at an online meeting via Skype. Their responses corresponded to the Collaborative for Academic, Social, and Emotional Learning's (CASEL) definition, and the five SEL competencies. Despite the participants identifying some barriers to the integration of SEL in mathematics classrooms, they acknowledged its importance and the presence of a standardised reference framework for SEL.

Keywords: primary; social and emotional learning; primary teachers

Social and Emotional Learning (SEL)

There is more than one definition of SEL (social and emotional learning) provided in the literature. Although defined by different researchers, they share similarities, focusing on improving the mental capabilities associated with social and emotional skills. For example, the definition provided by CASEL (Collaborative for Academic, Social, and Emotional Learning) identifies SEL as a "process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions" (n. d., para 1).

Alternatively, the Ecological Approaches to Social Emotional Learning Laboratory (EASELlab, n.d.), which is part of Harvard University, associates SEL with a wide variety of non-academic abilities, such as goal setting, controlling actions, creating relationships, and processing and retaining knowledge. Throughout our lives, these skills are vital in the contexts of education, work, home, and success within the community. The EASEL Lab categorised these skills into three domains: cognitive, social, and emotional. However, CASEL's definition is significant (Edutopia, 2011), because CASEL was the first to use the phrase 'social and emotional learning'.

The CASEL institute was founded in 1994 by David Goleman and Eileen Rockefeller Growald (CASEL, 2003). This collaborative foundation, working in conjunction with educators and researchers, has aimed to develop SEL programming from pre-school to high school, by collating evidence regarding children's health and wellbeing. Additionally, it aims to be an effective leader in fostering improvements in SEL scientifically and practically for policymakers, researchers, and educators. Moreover, the CASEL institution adopted the CASEL framework to deliver social and emotional learning. According to Ross and Tolan's (2018) research, CASEL together with its five SEL competencies, offers a valid framework for research and practice involving adolescence.

According to Osher et al. (2016), there are two principal goals of social and emotional learning, which help scholars and practitioners to comprehend emotions and social interactions. The first goal is to improve five reciprocally related elements of cognitive, emotional, and behavioural understanding termed “SEL competencies”; namely, self-awareness, social awareness, self-management, relationship skills and responsible decision-making, as follows (CASEL, n. d.):

- *Self-awareness* is the ability to comprehend one’s emotions and values, weaknesses and strengths, and capacity for self-efficacy and optimism.
- *Self-management* refers to effective management of one’s own thoughts, emotions, and behaviours in assorted situations, and includes the ability to manage impulses, control stress, and attain goals and achievement.
- *Social awareness* is the capability to recognise social and cultural norms, understand accessible resources, and realize differences in culture and background.
- *Relationship skills* are the ability to have positive relationships with people exhibiting different characteristics, and include clear communication, active listening, cooperation, and strength in resisting peer pressure, preserving one’s own opinion against conflicting ideas, and seeking out help when necessary.
- *Responsible decision making* can be defined as possessing the capacity to make decisions based on realistic assessments of results, well-being, ethics, safety, and social norms.

The second goal is to promote positive learning environments, which include the characteristics of being supportive, engaging, and participatory.

According to Greenberg et al. (2003), SEL contributes to students’ capacity to manage their emotions. Managing emotions, or self-management of emotions, is an essential competency for students, because emotions affect what and how people learn and their interpersonal relationships, impacting school life directly (Elias et al., 1997). Hence, enhanced competence helps enhance students’ academic achievements. Caemmerer and Keith (2015) support this idea for all SEL competencies.

In the literature, there are several studies relating to SEL in the domain of mathematics education. Some of these studies focus on the impact of SEL on academic results in mathematics (Rimm-Kaufman et al., 2014), whereas others examine the relationship between SEL and students’ mathematics performance in the classroom (Ee et al., 2012; Ottmar et al., 2015; Tali & Peter, 2019). According to a randomised controlled trial study (Ottmar et al., 2015), teachers who have received SEL-related training including practising social and emotional skills, exhibit stronger and more effective teaching practices in mathematics classrooms. Their students also showed greater improvements in their mathematics learning.

A quasi-experimental study by Tali and Peter (2019), examined the impact of emotional intelligence competencies on students’ performance in trigonometry at two secondary schools in Nigeria. Although this research does not explicitly state that it explores social and emotional competencies, the skills examined are similar, including self-awareness, self-management, empathy, self-motivation, and relationship skills. According to the findings, those students who were treated for emotional intelligence competencies reported noticeable improvements in their performance compared to the control group. According to the findings of Ee et al.’s (2012) research, social and emotional competencies (SECs) effectively benefit students’ performance in three core

subjects, e.g. Mathematics, Science and English language. Grade four students from two primary schools in Singapore participated in this study.

In this research project, my aim is to understand how SEL can be used to overcome existing problems, such as feelings of boredom, anger, maths anxiety, and hopelessness, when learning mathematics (Metje et al., 2007; Peixoto et al., 2016; Skaalvik, 2018). As a reasonable approach to addressing this issue, teachers could strive to develop more empathy towards those with learning difficulties and social issues. This might result in more efficient interaction and understanding of taught content, hence deliver better outcomes for the students in general.

The study

This doctoral research focuses on how social and emotional skills can be implemented into mathematics lessons by primary school teachers for year 5 and/or 6 students (aged 9 to 11) in UK primary schools. The study was undertaken in two parts: a series of focus group interviews with primary teachers, and an exploration of mathematics classrooms in UK primary schools. This remainder of this paper presents and discusses the initial focus group data.

Focus Group

The focus group aimed to provide data concerning British primary teachers' perspectives regarding SEL, and thereby to design questions more effectively to investigate SEL delivery in mathematics classrooms. The focus group interview was conducted via a Skype online meeting. Three female general primary teachers, who are responsible for class lessons, from different schools participated in this interview. The primary teachers will be referred to herein as participant A, participant B, and participant C. Participant A previously worked as a general primary teacher and is now a doctoral student. Participants B and C are currently working as general primary teachers. All the participants have experience dealing with students aged 9 to 11 and year 5 and/or 6 students in the UK. The interview was completed in 50 minutes, audio recorded and transcribed.

The participants reported having had no training in SEL, which suited the purpose of this research, which was to explore primary teachers' awareness of SEL in a natural context.

The questions posed in the focus group interview were as follows: In the context of a mathematics lesson:

- What is social and emotional learning?
- What are social and emotional skills?
- What are CASEL's five SEL competencies?
- How do you encourage social and emotional skills?
- What are the barriers to the integration of SEL into mathematics classrooms?

Findings

SEL

According to the initial focus group data, the primary teachers were familiar with SEL, and social and emotional skills. Although they had no prior formal knowledge of SEL,

their responses closely corresponded to CASEL's definition of SEL and the five SEL competencies. The participants' understanding of SEL reflected a dynamic and developing set of skills, rather than a body of knowledge. Participant B referred to resilience and communicating with peers, participant C focused on controlling emotions within relationships and challenges: "the child needs to learn how to control those emotions in certain situations". While Participant A focused on the development of these skills over time.

Primary teachers' SEL skills

When asked which social and emotional skills a teacher should develop when teaching mathematics, they explained that a teacher should give clear instructions when he or she is teaching mathematics. That is, a teacher should ensure his or her instructions are understandable for all students. This includes active listening, trying their best to identify any possible issues affecting understanding, and addressing these issues by communicating with them clearly. The teachers' relationship skills are clearly vital for teaching these skills to students. In addition, the participants mentioned that teachers need to be aware of the children's abilities, to effectively guide them in navigating their strengths and limitations. The other skill that teachers need to develop, was a capability for understanding himself and his surrounding, and acting upon this as Participant B said:

...being aware of yourself as a learner because you're learning about the children and their abilities is quite important ... a reflective element of how you are feeling, how did that go with the children and mixing groups up, and how does that work, and buddying people together.

Delivery of SEL skills

When questioned about whether they believed that it was their responsibility as teacher to develop learner's social and emotional competencies or skills in the mathematics classroom, or that of someone else (with the teacher's prioritising students' mathematical knowledge), the participants agreed that it was not the responsibility of any one individual. Participant C's focus was on the multiple opportunities for developing skills beyond the context of the teacher's lesson: "...it is the responsibility of everyone in school really, it's not only the teacher ... the child spends a whole day in school, and he [or she] can get different skills from different adults throughout the day." Participant B's focus was within the context of the lesson, and the value of the skills to support learning:

...it's the whole school's responsibility, but it's definitely the teacher [who] needs to get those children in the right zone [,] the right frame of mind [,] because otherwise they won't take anything on ... they won't learn anything [,] not really.

Their response to how they encourage SEL, was that they might use explicit instruction in their classrooms. They shared their experiences of PSHE (Personal, social, health and economic) education, in which they gave some instructions about student wellbeing, problem solving, and social awareness. In addition, they stated that SEL can be embedded into a teacher's routine practice.

In response to a question regarding the advantages or otherwise of integrating social and emotional skills when teaching mathematics, all the participants considered the integration of the SEL with a mathematics lesson potentially advantageous. Moreover, Participant C stated that attaining these skills would help students when

learning mathematics; specifically, when completing exercises, taking tests, doing projects, and engaging in team work: “it is advantageous it will definitely help them to tackle all those tasks in maths.” In addition to this question, the primary teachers tended to use these skills in mathematics classrooms as part of their teaching practice that Participant A said:

... it's kind of automatic [,] it's not explicitly in my planning but I would like to think you know these ideas of like resilience and stuff like that are kind of part and parcel of my practice [,] but it would be nice to think about that in maybe a bit more of an explicit way.

The participants' perceptions of the barriers that prevent them from integrating SEL included a lack of confidence in their own potential to do so successfully. Participant A stated that she needs a standard framework as a guide: “...I wouldn't know where to look initially or ... there's nothing explicit there isn't like a go-to guide or something that I can just quickly refer to...”. Meanwhile, according to participant B, keeping up with the curriculum's pace could be a problem while they are trying to teach these skills in their own practice or in an explicit way: “...it's the curriculum ... the speed at which we have to deliver.” Furthermore, she added, there is another barrier, which is the relatively large number of students, because delivering these skills might be hard for all students, especially if they don't have a teaching assistant: “to 30 children you know a maths lesson ... maybe you've got a TA [teacher assistant] maybe you haven't ... the level of nurture that can be achieved for all of those children.”

Conclusions

The findings of the focus group interview showed the primary teachers have an informal familiarity with SEL skills, but are not necessarily aware of formal classifications and terminology. Although the teachers had no explicit knowledge of SEL and SEL skills, they spoke about social and emotional skills in a practical manner, describing these skills clearly (CASEL, n. d.). These findings confirmed my own beliefs as a mathematics teacher that primary teachers apply informal social and emotional learning to mathematics classrooms, and try to teach these competencies to their students during lessons, despite a lack of formal knowledge about SEL standards.

Moreover, the teachers stated that the delivery of social and emotional skills in mathematics classrooms would be beneficial, which was consistent with the literature indicating that social and emotional skills positively influence academic achievement, performance, and students' wellbeing. However, they added that they require additional guidance to teach these skills to students, and to help them to overcome their existing difficulties with mathematics.

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