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How effective is the Zones of Regulation curriculum, as a social-emotional learning programme, in developing children's emotional and behavioural regulation within a Year 2 class over an eight-week period?

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The candidate confirms that the work submitted is their own and that appropriate credit has been given where reference has been made to the work of others.

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Introduction

The research project addresses the research question: How effective is the Zones of Regulation curriculum, as a social-emotional learning programme, in developing children's emotional and behavioural regulation within a Year 2 class over an eight-week period?

During my SE3 placement in a Year 2 class at an infant school with 218 pupils in a Yorkshire seaside town, I observed a growing need for emotional support. The school had recently introduced the Zones of Regulation (ZOR) curriculum through interactive display boards and four whole-class lessons. The impact on pupils' self-regulation had not yet been evaluated, inspiring me to explore the ZOR's effectiveness as a targeted social-emotional learning (SEL) intervention.

This small-scale, mixed-methods case study involved eight Year 2 pupils identified by the class teacher as having social and emotional needs. Over an eight-week period, I delivered eight ZOR intervention lessons (appendix 1) in addition to the existing classroom ZOR board (appendix 2). I observed pupil engagement with the ZOR board, where they moved their photograph to reflect their emotions. I analysed behavioural and well-being incidents recorded on the Child Protection Online Monitoring System (CPOMS). Pre- and post-intervention focus group interviews explored pupils' emotional understanding, use of strategies, and perspectives of the ZOR board.

The study investigates whether the ZOR supports emotional and behavioural regulation, specifically in helping children develop emotional language to label emotions, identify and apply self-regulation strategies, and show increased empathy and behavioural awareness. Data analysis revealed four key themes: increased emotional literacy, understanding versus application of self-regulation strategies, mixed experiences with the ZOR board, and developing social awareness and empathy. By

examining pupils' experiences and responses, I aim to contribute to the limited UK-based research on the ZOR and provide insights into the practicalities, benefits, and limitations of its implementation in early primary education.

Key definitions

Definitions of key terms vary across the literature (Cuff et al., 2016); therefore, several have been reviewed and carefully selected based on their alignment with the research focus to ensure clarity.

Emotional regulation - the ability to identify and name emotions, communicate emotional needs and show empathy towards others – it is the 'knowing' aspect of self-regulation (Perry et al., 2018).

Behavioural regulation - how children use strategies and tools to manage emotions and behaviours, and control impulses (Kuczynski and Kochanska, 1995) – it is the 'doing' aspect of self-regulation (Perry et al., 2018).

Self-awareness – the ability to understand your own emotions, thoughts and beliefs and how they impact your behaviours in different situations (Collaborative for Academic, Social, Emotional Learning, CASEL, 2025b).

Empathy - understanding how someone else feels and how your behaviours make others feel by mentally putting yourself in their place (Colman, 2015).

Emotional literacy - the ability to recognise and understand your own emotions and communicate them to others, usually verbally with 'feeling words', such as sad or excited (Alemdar and Anılan, 2020; Steiner, 2003).

Expected behaviour – behaviour that is socially acceptable and makes people around you feel comfortable (Kuypers, 2023).

Unexpected behaviour – behaviour that is socially inappropriate and makes other people feel uncomfortable, for example, shouting out in class (Kuypers, 2023).

Challenging behaviour – behaviour that is disruptive to learning or unsafe, for example, hurting peers or consistent defiance (Young Minds, 2025; Emerson and Einfield, 2011).

Challenging behaviour can arise from unmet emotional needs (Mentally Healthy Schools, n.d. a).

Literature review

Social-emotional learning

Social-emotional learning (SEL) is a broad concept which can be defined as the process by which children develop the knowledge, skills and attitudes to recognise and manage their emotions, acquire empathy for others and understand how to behave appropriately in varying situations (CASEL, 2025a; Elias, Zins and Weissberg, 2000). These skills are essential within the classroom, forming the foundation for an inclusive and supportive environment (Homel and Edwards, 2018; Durlak et al., 2011). Secure SEL skills can enhance academic, personal and social outcomes (Bear et al., 2015; Jones, Greenberg and Crowley, 2015; Durlak et al., 2011).

SEL is delivered through a range of interventions and programmes, which present challenges in evaluating its overall effectiveness due to variations in content and implementation (Mentally Healthy Schools, n.d. b). Despite this, SEL programmes typically share common aims, and there is substantial evidence supporting their benefits. Foundational reviews by Payton et al. (2008) and Durlak et al. (2011), which collectively include over 500,000 participants across diverse studies, conclude that SEL interventions significantly improve self-awareness, behaviour and academic outcomes. More recently, Blewitt et al. (2018) reviewed 79 studies in early and primary

education settings and reported significant improvements in emotional and behavioural self-regulation following SEL programmes. Cipriano et al. (2023) analysed 424 studies from 53 countries, demonstrating the universal applicability and positive impact of SEL on pupils' emotional well-being, interpersonal skills and behaviour. While publication bias may impact reported effects of SEL programmes, the growing evidence demonstrates that SEL programmes are a valuable tool for supporting pupils' holistic development.

While international evidence demonstrates the benefits of SEL, much of the literature originates from the United States, raising challenges for its application in UK contexts (Education Endowment Foundation, EEF, 2020). Nonetheless, English policy reflects recognition of the importance of SEL in early education, aligning with evidence that the rapid development occurring from birth to five years makes early childhood a pivotal period for social and emotional development (The World Health Organisation, 2019). The Early Years Foundation Stage curriculum reflects this through its emphasis on Personal, Social and Emotional Development, including teaching of self-regulation (Department for Education, DfE, 2024; Early Education, 2021). The Early Learning Goals outline the expectation for children to understand their own and others' emotions and begin to regulate their behaviour accordingly (DfE, 2024). However, from Key Stage 1 onwards, SEL is predominantly delivered through Personal, Social, Health and Economic education (PSHE) (DfE, 2021), which may reflect a reduced emphasis on the explicit teaching of SEL skills. Durlak, Weissberg and Pachan (2010) argue that some pupils require explicit, targeted SEL interventions to develop skills, while Jones (2019b) emphasises embedding SEL throughout school life, indicating that PSHE lessons alone may not provide sufficient depth.

The DfE (2018) reviewed SEL interventions within schools, finding that they positively impacted pupil behaviour, emotional well-being and academic performance.

Nevertheless, the report highlights challenges, including time constraints, insufficient resources and inadequate staff training. These challenges are reflected by a survey of over 400 UK primary schools, which found that 71% of schools reported not having time to deliver SEL lessons or feeling pressured to prioritise other areas of the curriculum (EEF, 2021). This reflects a disconnect between the recognised benefits of SEL and the practical challenges of implementing it in UK schools. While global research offers compelling evidence of SEL's effectiveness (UNESCO, 2024), further high-quality, UK-specific research is needed to guide policy and practice (EEF, 2020).

Self-regulation

A core aspect of SEL is self-regulation, defined as the ability to control one's emotions, sensory needs and impulses to behave in a socially appropriate way (Kuypers, 2011). It involves children managing their thoughts, emotions and behaviour when faced with stressors to return to a calm and focused state (Shanker, 2012). Self-regulation is a specific set of skills which can be taught and developed through modelling (Hayes, 2024). However, some pupils may require more explicit instruction to acquire the skills necessary for self-regulation (Durlak, Weissberg, and Pachan, 2010; Reid, Trout, and Schartz, 2005). The Zones of Regulation (ZOR) is an SEL curriculum that aims to teach self-regulation (Kuypers, 2025).

The Zones of Regulation (ZOR)

The ZOR curriculum aims to enhance self-awareness and reduce time spent on behaviour management in the classroom, promoting a more inclusive school environment (Kuypers, 2011). By providing visual supports and a consistent, shared language, ZOR helps both children and adults better understand, express, and

respond to emotional needs, fostering the development of self-regulation skills (Kuypers, 2025). This aligns with Vygotsky's (1978) sociocultural theory, emphasising the importance of language, adult guidance, and scaffolding in developing self-regulation.

The ZOR curriculum categorises emotions into four coloured zones:

Red – overjoyed, angry, terrified, panicked.

Yellow – worried, excited, silly, frustrated.

Blue – sad, tired, bored, sick.

Green – focused, happy, calm, proud.

The coloured zones help children identify and situate their emotions and develop vocabulary to communicate with others. A core belief of ZOR is that it is normal to experience multiple zones throughout a day, and all zones are valid (Kuypers, 2011). Each zone is accompanied by strategies to support children in managing different emotions, such as taking a break, going for a walk, and breathing exercises.

The ZOR curriculum is grounded in theory and supported by evidence; however, it is not yet an evidence-based practice (Kuypers, 2025). Nevertheless, its implementation is increasing across diverse pupil groups due to growing reports of positive outcomes (Kisiel, 2019). Some schools use the ZOR as a targeted intervention for children with behavioural difficulties, autism, or attention deficit hyperactivity disorder (ADHD) (Sanger, 2020; Quale, 2019; Nowell et al., 2019), while others apply it universally to whole classes or randomly selected pupils (Conklin and Jairam, 2021; Dunn, 2019; Yack, 2015), suggesting that the intervention is flexible in its implementation. The founder originally designed the curriculum for children with neurodivergent conditions such as autism and ADHD; however, they argue that it can benefit a wide range of

pupils (Kuypers, 2011). Pupils with autism or ADHD often struggle to focus due to challenges in emotional regulation (Brown, n.d.), leading to unexpected behaviours such as shouting out, not following instructions, or experiencing emotional outbursts (Quale, 2018). Therefore, they would benefit from the curriculum's aims. However, Mason, Leaf, and Gerhardt (2024) argue that the intended audience for the ZOR curriculum is unclear. While Conklin and Jairam (2021) used a random sample, they excluded pupils receiving special education services, and studies such as Ochocki et al. (2020) do not provide participant demographics, making it difficult to determine which groups benefit most from the ZOR curriculum. Further research involving larger, diverse samples is needed to evaluate the ZOR's effectiveness across diverse learner profiles.

Concerns have also been raised regarding fidelity to the curriculum, particularly as its implementation across diverse classroom settings may result in inconsistencies (Kuypers, 2011). If fidelity is low, the effectiveness of the intervention is compromised, and the data regarding impact becomes difficult to interpret due to the risk of bias (Kulpa, 2020). Some practitioners deliver ZOR lessons that instil the belief that the Green Zone is the only desirable state, associating other zones as problematic or linked to negative behaviour (Mason, Leaf and Gerhardt, 2024; Kuypers, 2011). Instead, the ZOR should teach children that all emotions are acceptable, but strategies may be needed to help them return to a calm and focused state (Kuypers, 2011). The ZOR curriculum consists of 18 sequenced lessons that build upon skills for self-regulation. Research reviews have synthesised studies that implemented varying numbers of ZOR lessons, with some studies using adapted lessons (Mason, Leaf and Gerhardt, 2024; Romanowycz et al., 2021). It may be beneficial for further training and guidance to implement the ZOR curriculum consistently and effectively (Budde, 2024;

Kisiel, 2019) or for studies to be conducted over a longer timescale to fully implement the curriculum (Conklin and Jairam, 2021; Quale, 2019).

The effectiveness of the ZOR for self-regulation

The term self-regulation encompasses both emotional and behavioural regulation (Perry et al., 2018; Edossa et al., 2017; Williford et al., 2013).

Emotional regulation

Research indicates that the ZOR curriculum can enhance emotional regulation by improving children's ability to identify and articulate their emotions (Budde, 2024; Kulpa, 2020; Shihadih, 2019; Karhoff, 2017). Munro (2017) observed increased self-awareness, empathy, and acceptance in 8- to 10-year-olds following the implementation of the ZOR curriculum in day-to-day classroom practice. In contrast, Karhoff's (2017) participant demonstrated limited empathy and awareness of the impact of their behaviour on others following ZOR lessons. However, the single-case design limits reliability, and the brief six-week duration raises the possibility that greater effects might have emerged over an extended intervention period.

Both Hoffman (2018) and Shihadih (2019) found that ZOR interventions supported children in developing more nuanced emotional vocabulary, moving beyond basic labels such as 'happy' and 'sad'. Hoffman observed that children aged 8-9 years with self-regulation challenges progressed to using a broader range of emotions, such as 'anxious' and 'elated', indicating improved emotional literacy. Similarly, Shihadih (2019) noted that children initially over-reported feeling 'happy' and 'sad', as these were the easiest emotions to understand. However, following ZOR-based instruction, they were better able to identify a wider range of emotions and correctly associate them with the corresponding coloured zones. These findings emphasise the importance of teaching emotional vocabulary to help children understand and communicate their feelings

effectively. Nonetheless, Hoffman (2018) used adapted versions of the ZOR, and Shihadih (2019) combined the ZOR with other SEL programmes, which limits the validity of the findings, as fidelity to the curriculum is low, and the findings may not generalise to other settings using the ZOR without adaptations.

Most research on the impact of ZOR is conducted in the United States, with a notable lack of empirical research in England (EEF, 2021). One exception is the Derby Research School (2024) case study, which reported positive outcomes from implementing the ZOR as a whole-school approach. They found that children used shared language and the ZOR display to communicate their emotional state, enabling teachers to intervene and support regulation. They also reported increased pupil independence in recognising when they require self-regulation strategies, contributing to a more focused learning environment. Although the findings lack validity due to relying on observations and practitioner reflections, the data demonstrates positive implementation of ZOR in an English school, which is limited and relevant to this research project.

Behavioural regulation

Existing research demonstrates the impact of the ZOR curriculum on behavioural regulation. Hoffman (2018) investigated the effect of the ZOR curriculum on classroom conflict, finding that pupils who recognised their emotions and applied regulation strategies showed reduced conflict. However, with only nine of the eighteen lessons delivered, a small sample size, and a short timescale, the study cannot confidently confirm a direct link between the ability to identify emotions and reduced classroom conflicts. A more reliable and frequent finding across studies was that the interventions did not eliminate off-task behaviours but instead reduced the amount of time pupils spent off-task in a dysregulated state, as they could utilise strategies to return to a calm

and focused state (Quale, 2019; Hoffman, 2018; Munro, 2017). Budde (2024) further supports this finding, attributing a decline in behavioural disruptions to the shared language taught through the curriculum, which enabled children to express their needs, allowing teachers to intervene earlier and thereby prevent behaviour from escalating. This aligns with Vygotsky's (1978) theory that language plays a vital role in self-regulation, as children internalise verbal guidance from adults to manage their actions, supporting them in moving towards independent self-regulation.

Quale's (2019) study involved three children with autism who displayed unexpected and challenging behaviours, such as talking out of turn, non-compliance, and off-task behaviour. Following eleven ZOR lessons, notable improvements were observed, including reduced non-compliance and emotional outbursts, increased focus and participation, and greater independence in using regulation strategies. While these findings suggest that the ZOR curriculum can effectively promote expected behaviours, the small sample size limits the generalisability of the research. In contrast, Karhoff's (2017) single-case study found insufficient evidence to support the impact of the ZOR curriculum on behaviour, while Kulpa (2020) reported that most teachers observed limited effects on pupil behaviour. Theorists explain that self-regulation skills develop progressively from infancy through adolescence (Piaget, 1952; Kopp, 1982), suggesting that the limited impact observed in some studies may result from their short duration. Although not specific to the ZOR, Taylor et al. (2017) demonstrated in a longitudinal study that SEL programme benefits can persist up to three years post-intervention. However, longitudinal research on SEL and the ZOR curriculum remains limited.

The availability of classroom resources and support may influence the effectiveness of the curriculum. For example, Jones (2019a) found that in a class with an additional

adult, the curriculum had a positive impact on behaviour, as the adult could support children in using strategies, such as taking a break outside. In contrast, no behavioural improvement was observed in Class B, which lacked support staff, highlighting the importance of adult assistance in developing self-regulation skills (Vygotsky, 1978).

Limitations of the ZOR research

Despite strong evidence for SEL (Blewitt et al., 2018; Durlak et al., 2011; Payton et al., 2008) and the ZOR curriculum's growing popularity, research regarding the ZOR effectiveness remains limited (Love et al., 2024; Mason, Leaf and Gerhardt, 2024). Findings within existing literature should be interpreted cautiously due to common limitations, including small sample sizes, lack of control groups, low implementation fidelity and short study durations. These factors reduce the validity and generalisability of findings. Researchers have emphasised the need for high-quality, peer-reviewed research with greater sample sizes to establish more robust and credible evidence for the ZOR implementation and impact (Romanowycz et al., 2021; Ochocki et al., 2020). Furthermore, as the ZOR curriculum was developed in the United States (U.S.), the literature review primarily draws on U.S.-based research, highlighting a gap in UK-based studies (EEF, 2021), which this research aims to address.

Methodology

Research approach

A case study approach was deemed appropriate due to the study's small scale and limited timeframe (Nair, Gibbert and Hoorani, 2023; Wilson, 2017). While case studies may not produce broadly generalisable findings (Möller, 2011; Flyvbjerg, 2006), they offer rich, in-depth insights into experiences and behaviours within natural environments (Grant and Lincoln, 2021; O'Leary, 2021; Creswell and Creswell, 2018;

Krusenvik, 2016). Yin (2018) further highlights the benefit of case studies when research on a topic is limited, and an exploratory approach is needed to gain a deeper understanding of a phenomenon (Starman, 2013).

Sample

A purposive sample was drawn from a convenience cluster of the SE3 Year 2 class, selecting eight children based on identified needs, such as challenging behaviour, difficulty expressing or managing emotions and difficulty with peer relationships, aligning with Hoffman (2018) and Quale's research (2019). Four pupils were eligible for Pupil Premium, and one pupil was awaiting a diagnosis of ADHD.

Purposive sampling is suitable when the researcher wants to include participants with specific characteristics (Campbell et al., 2020), although it may introduce bias and limit generalisability (Bakkalbasioglu, 2020; Sharma, 2017). The targeted nature of the ZOR interventions for children with specific needs justifies the small sample. Thomas (2022) argues that small-scale studies offer valuable, in-depth insights that can inform wider research.

Data collection

A mixed-methods design was used, combining observation and CPOMS data (quantitative) with focus group interviews (qualitative) to explore children's behaviours, knowledge and opinions (Biesta, 2021). Triangulation utilises multiple data sources to enhance validity and reliability by corroborating findings, providing a more comprehensive and accurate understanding (Denscombe, 2021; Barbour, 2014; Yin, 2014).

Qualitative methods provide in-depth insight into pupils' experiences (Creswell and Creswell, 2018) but may lack validity when used alone (Kumar, 2018). Quantitative

methods can enhance reliability (Bryman, 2017) and help to identify causal patterns, such as changes in CPOMS logs (De Mesquita and Fowler, 2021). When combined, qualitative data adds context and explanation to patterns found in numerical data (Tacq, 2011).

Following data collection, coding was employed as part of thematic analysis to identify themes (Silverman, 2021; Braun and Clarke, 2022). As thematic analysis relies on the researcher's judgment, structured models were followed to reduce bias (Braun and Clarke, 2022; Naeem et al., 2023). Triangulation further enhanced the credibility of the analysis through cross-checking findings (McLeod, 2024).

Observation

In the SE3 classroom, a ZOR display board allowed children to move their photograph to the zone that reflected their emotions (appendix 2). The researcher observed the eight participating children, recording each photo movement, selected zone, and contextual notes.

While children were aware of the research purpose, covert observation was used. Although ethically debated, covert methods can be justified to reduce the risk of observer influence, where participants alter behaviours to meet perceived expectations (Lee and Song, 2024; Taber, 2013), such as moving the photograph frequently to please the researcher.

CPOMS data

CPOMS logs from the autumn term (pre-ZOR interventions) and spring term (during ZOR interventions) were analysed. The CPOMS logs categorised under 'behaviour' and 'mental health and wellbeing' were included, as they related most closely to the

research. Categorising the logs made the data more reliable and quantifiable (Hoffman, 2018).

However, the varying term lengths may have introduced bias. Additional data collection methods helped mitigate this limitation by offering a more comprehensive understanding of behavioural changes (McLeod, 2024).

Focus group interviews

Two focus group interviews were conducted, pre- and post-intervention, using the same questions to compare changes in pupils' responses.

Focus groups were chosen over individual interviews to facilitate rich discussion (Heary and Hennessy, 2006) and to support confidence through peer support (Almutrafi, 2019). Ground rules were established to support respectful participation and comprehension (Kay and Wainwright, 2018; Gibson, 2012). Interviews began with simple closed questions to develop children's confidence, before progressing to open-ended questions, with occasional researcher prompts to deepen responses (Gibson, 2012).

A limitation of focus groups is the potential dominance of more vocal participants and repetition of peer-influenced responses, which can obscure individual understanding (Ennis and Chen, 2012; Field, 2000). This was addressed through varying who responded first and encouraging turn-taking.

Ethical considerations

Ethical clearance was obtained from York St John University (appendix 3), and research guidelines were followed throughout (British Educational Research Association, 2024; Ethical Research Involving Children, 2024). Gatekeeper consent was obtained from the headteacher (appendix 4), along with written parental consent

and children's verbal assent (Gibson, 2012). The children were informed of the opportunities for dissent (Tinson, 2009).

To maintain confidentiality, participant names were anonymised, and raw data was stored securely on password-protected devices and destroyed after the study (UK Data Service, 2025; The Data Protection Act, 2018).

Researching with children poses a risk of them feeling pressured to provide 'correct' answers, potentially affecting validity (Punch, 2002). To mitigate this, interviews were conducted in a familiar setting, with reassurance that all responses were valid. Data collection commenced in the third week of placement, allowing sufficient time to establish rapport (Thomas, 2022).

Further limitations

Due to time constraints and teaching responsibilities, only eight of the eighteen ZOR lessons were delivered, limiting the ability to assess the curriculum's full impact. Additionally, the absence of longitudinal data limits the ability to conclude the long-term effects of the curriculum.

Findings and discussion

The quantitative findings are presented first, followed by an exploration of key themes identified through thematic analysis of the qualitative data. Using a mixed-methods and triangulation approach, findings from the CPOMS data, observations and interviews are discussed together within each theme.

CPOMS Data

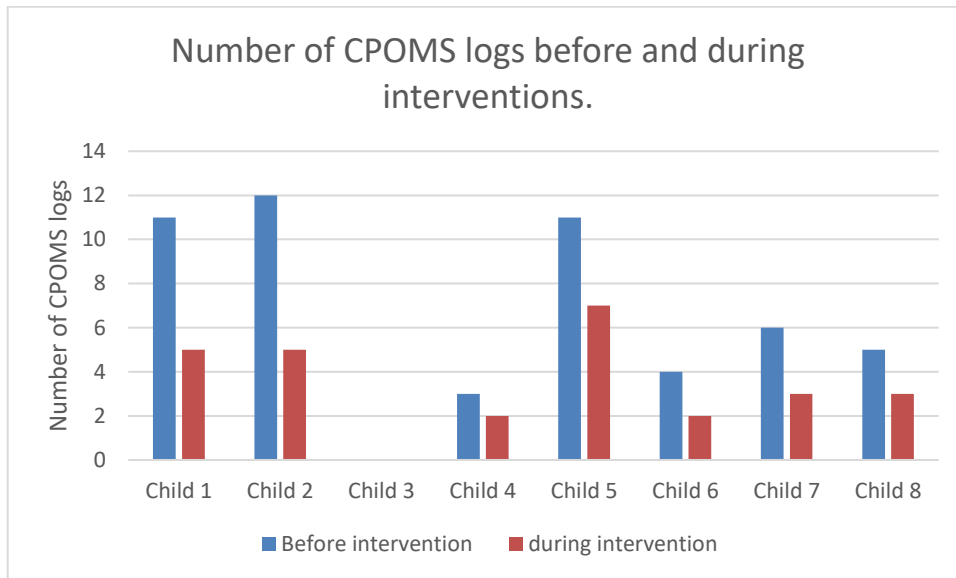


Figure 1

Figure 1 shows the CPOMS logs, categorised by 'behaviour' and 'mental health and wellbeing', recorded for each child in the sample. The data shows a decrease in all children's logs, except for Child 3.

Child 3 is an anomaly in this data collection, with no CPOMS logs for 'behaviour' or 'mental health and wellbeing' in the autumn (before intervention) and spring (during intervention) terms. However, the child's parent reported concerns that the child felt unsettled and lacked confidence in expressing worries at school. These concerns decreased following interventions, and the parent reported improved ability for the child to express their emotions to teachers. While significant, these logs were categorised under 'parental concerns' and therefore were excluded from formal data collection.

Observation

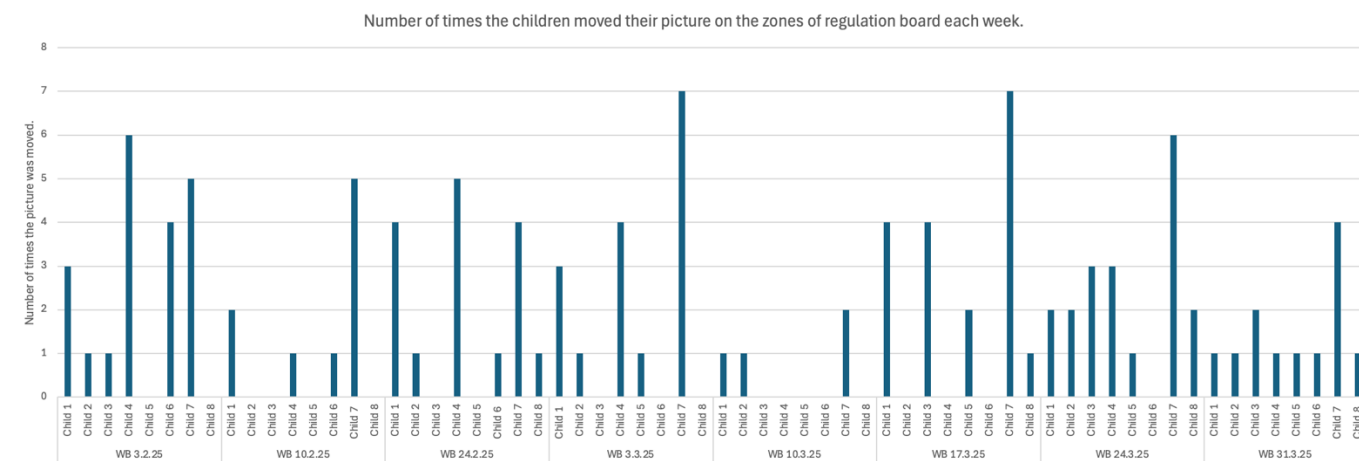


Figure 2

Figure 2 illustrates the frequency with which the researcher observed each child moving their photograph on the ZOR board each week.

All children fluctuated in how often they moved their photograph. However, some patterns can be interpreted, for example, Child 8 shows little to no engagement with the board at the beginning of the interventions, but engagement increases in the final three weeks. Conversely, Child 6’s engagement with the board decreases throughout interventions. Child 7 utilised the board most consistently throughout the data collection.

A limitation to this method is that the researcher may have missed some photograph movements due to other classroom responsibilities. This data can inform conclusions when used in combination with the focus group responses. The children’s perspectives on using the ZOR board will be explored within the themes below.

Focus Group Interviews

Themes from the focus group interviews align with the broader themes identified in the literature review: emotional regulation, which involves ‘knowing’ a range of emotions and strategies for self-regulation, and behavioural regulation, which relates to what

children are 'doing' to regulate their emotions. Quantitative data was used to deepen the understanding of the qualitative findings.

Theme 1: Increased emotional literacy

The children demonstrated an improved ability to label a broader range of emotions following the ZOR interventions, supporting the findings of Budde (2024) and Karhoff (2017). Initially, children named basic emotions during discussions; however, post-intervention, they used more nuanced vocabulary, such as 'bored', 'worried', 'disappointed', 'frustrated', and 'jealous', reflecting findings by Hoffman (2018).

During both interviews, children were asked to name the four labelled emotions for each zone. Overall, the children were able to name more emotions associated with each zone following the interventions, as supported by Shihadih (2019).

In the post-intervention interview, children identified additional emotions which were not shown on the ZOR board but aligned with zone descriptions. For example, 'nervous' and 'jealous' were suggested for the Yellow Zone. These emotions are consistent with Kuypers' (2011) description of the Yellow Zone, characterised by heightened energy and stronger emotions, such as nervousness or overwhelm. The additional responses suggest a deeper and broader understanding of emotions, rather than memorisation of emotions on the board (Shihadih, 2019; Denham et al., 2014), which is key to developing self-regulation skills (CASEL, 2025a; EEF, 2021). Similarly, in the post-intervention interview, one child added 'joyful' to the Green Zone. This closely relates to the labelled emotions 'happy' and 'proud', indicating a secure understanding of the zones.

Despite the overall advancement, some inaccuracies remained. For example, in both interviews, 'focused' was wrongly assigned to the Yellow Zone. However, during the post-intervention interview, more peer and self-correction was observed.

Increased emotional literacy enables children to communicate emotions to others (Alemdar and Anılan, 2020). The shared language enables understanding between children and adults, meaning teachers can intervene earlier to prevent behaviours escalating (Derby Research School, 2024). This is reflected in the decrease in CPOMS logs, indicating that children were better able to understand and express their feelings. These findings are consistent with Hoffman (2018) and Budde (2024).

Theme 2: Understanding versus application of self-regulation strategies

In the pre-intervention interview, the children could name some of the strategies displayed on the ZOR board in the classroom. Child 6 was able to identify that the strategy 'happy breathing' did not work for her, stating 'it doesn't do anything for me' and 'it never helps'. Child 7 agreed that happy breathing and going for a walk were ineffective, stating, 'it doesn't actually help me'. These reflections suggest that introducing the ZOR board early in the year helped some children assess which strategies work for them. This engagement indicates growing self-awareness and suggests that, with continued use, children will increasingly be able to make informed choices about self-regulation strategies.

In the post-intervention interview, the children gave examples of strategies that were personal to them, not just found on the ZOR board. These included drawing, using a glitter jar, stroking their dog, and playing on their tablet. This demonstrates increased independence in self-regulation by recognising the strategies that work for them as individuals (Pandey et al., 2018). These findings suggest that the ZOR curriculum

supports children's understanding of emotional regulation, including the ability to identify effective strategies for themselves.

However, some children required adult support to use the strategies, indicating that independent behavioural regulation was not yet fully developed. This was evident when the children were asked if they moved their photograph on the ZOR board for themselves or the teacher, and the response was split. This suggests that some children used the ZOR board to communicate with teachers and depended on them for support with regulation strategies, as reported by the Derby Research School (2024). An example of this finding includes when Child 5 moved their photograph to the Red Zone but required adult support to implement a strategy. The researcher supported the child to go outside for a run, and upon returning, the child successfully re-engaged with the learning task. This aligns with previous studies that found ZOR intervention did not eliminate off-task behaviours but did reduce the time spent dysregulated by utilising strategies to return to a calm state (Hoffman, 2018; Quale, 2019; Munro, 2017). This case highlights the importance of adult scaffolding (Vygotsky, 1978) to support regulation. Jones (2019a) notes that factors, such as support staff, impact the success of the ZOR curriculum. Child 5 would not have been able to implement the strategy if a teaching assistant had not been available to take him out of the classroom. This example, although useful for insight, is an anecdotal reflection and not part of the formal data collection. If this research were to be conducted again, it would benefit from incorporating classroom observations to gain deeper insight into the use and independence of self-regulation strategies in practice.

The children's awareness and understanding of self-regulation strategies improved following interventions; however, independent application of the strategies remained

inconsistent. A longer study duration may have revealed greater independence in using self-regulation strategies (Rose, McGuire-Snieckus and Gilbert, 2015).

Theme 3: Mixed experiences with the ZOR board

During interviews, children's responses regarding engagement with the ZOR board varied and often did not align with the observational data (figure 2). Some children reported moving their photograph but were uncertain of the frequency. In the pre-intervention interview, Child 1 stated, 'I probably do it one time a week,' and Child 3 agreed with this comment. However, observation data indicated that Child 1 often moved their photograph more than once per week, and Child 3's use fluctuated. This discrepancy suggests that the children either misunderstood the question or lacked awareness of how often they used the board (Sturgess, Rodger and Ozanne, 2002). In the post-intervention interview, Child 6 claimed, 'I do it about six times a week'. Yet observations show that Child 6 consistently moved their photograph less often than this, with four consecutive weeks of no engagement. It is plausible that Child 6 may have responded to please the researcher, rather than accurately reflect their engagement with the ZOR board, making the data less reliable (Kirk, 2007).

Following interventions, children demonstrated improved understanding of the board's purpose in identifying emotions and selecting appropriate strategies. In the post-intervention interview, Child 8 reported moving his photograph to the Red Zone when he is around certain peers, recognising that these situations make him feel angry. This suggests he is using the board proactively to manage his emotions and use strategies to prevent escalation.

However, the interviews revealed limitations to the ZOR board as a tool for supporting self-regulation. In the pre-intervention interview, Child 8 reported not using the ZOR

board because they didn't have a photograph. In the post-intervention interview, Child 1 said they had not moved their photograph for 'about a week' because their 'picture was stuck'. This implies the importance of resources being available to children so that they can engage with support in the classroom. Pre-interventions, Child 5 reported not moving their photograph because they 'forget to'. Although following interventions, their engagement with the board increased, suggesting greater awareness of the classroom aids.

In the post-intervention interview, Child 5 reported feeling more than one emotion and being unsure of which zone to move the photograph to. Child 6 agreed they had experienced feeling 'sad and angry at the same time'. This suggests increased self-awareness but highlights confusion when emotions overlap into different zones, indicating a limitation of the ZOR board. While the curriculum is designed for pupils with autism and ADHD (Kuypers, 2011), research suggests that these children may struggle with rigid thinking (Petrolini, Jorba, Vicente, 2023; Chico, Gómez and Climent, 2022; American Psychiatric Association, 2013). Requiring children to group their feelings into one coloured zone could introduce further negative emotions, as found in this study, when Child 5 'didn't know what to do'. This finding is not reflected in existing research but highlights a limitation of the ZOR board. In future practice, a more flexible approach, such as providing multiple photographs for each child, could help children represent more than one emotion at a time and avoid confusion.

A particularly interesting finding within this theme is based on Child 7.

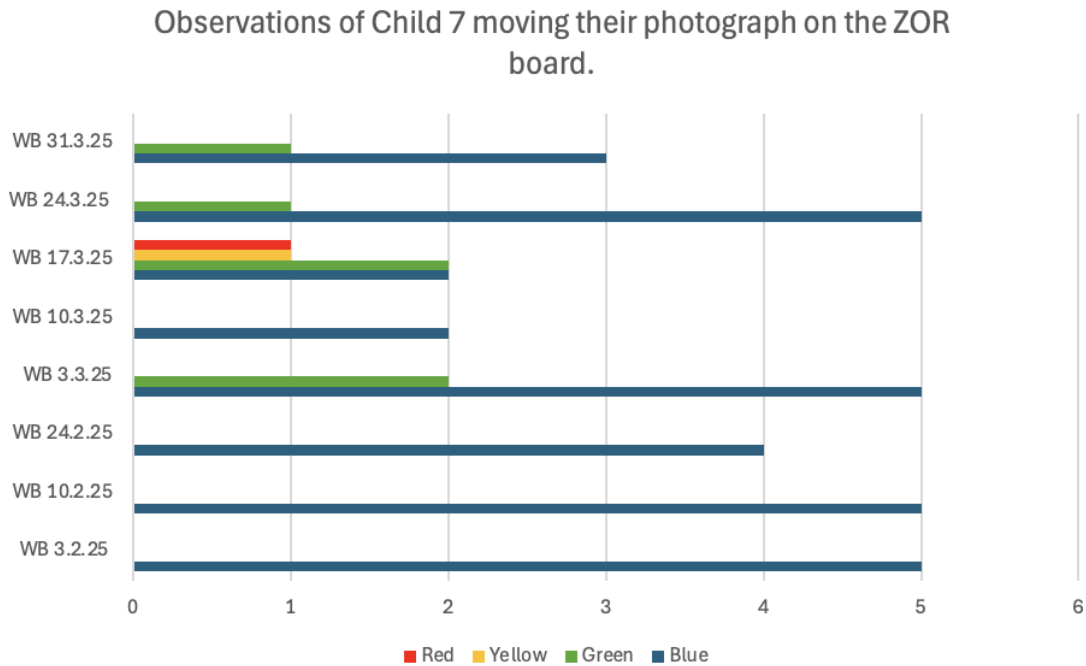


Figure 3

Figure 3 displays observations of Child 7 moving their photograph on the ZOR board to the different coloured zones. At the beginning of the interventions, Child 7 only moved their photograph to the Blue Zone. They moved the photograph as soon as they entered the classroom in the morning, and when asked how they felt, the response did not always correspond with an emotion within the Blue Zone, a finding shared by Shihadih (2019). This raises concerns regarding the validity of the observations and whether the child understood the use of the ZOR board or had established a habit of moving the photograph to the Blue Zone.

However, following interventions, Child 7 began moving their photograph to other coloured zones and was able to articulate reasons, such as ‘I feel happy because I saw a cat in my garden.’ This progression reflects Vygotsky’s (1978) theory of internalisation, as the child gradually adopted the ZOR board’s visual and linguistic cues as internal strategies for recognising and managing emotions. This also reflects CASEL’s (2025b) emphasis on the role of emotional vocabulary in developing self-

awareness. It would be interesting to explore the progress of Child 7's use of the board if the study were over a longer timescale.

Findings within this theme imply that ZOR may function less as a tool for independent regulation and more as a mechanism for co-regulation, in line with Vygotsky's (1978) sociocultural theory. Therefore, in future classrooms, modelling its use through think-aloud, questioning, and demonstrating strategies would help children understand its purpose. Teachers should also reinforce that all zones are valid to encourage honest self-reflection and use (Kuypers, 2011).

Theme 4: Developing social awareness and empathy

In the post-intervention interview, Child 1 demonstrated empathy when reflecting on not winning a raffle, stating, 'I would feel happy for the other person who wins. I would feel joyful for them.' This aligns with Munro's (2017) findings, which reported increased empathy and acceptance in children after ZOR lessons.

Similarly, Child 2 showed greater awareness of others' emotions in the post-intervention interview. When asked about a time he felt happy, he reported, 'I felt happy because I know that my cousins felt happy'. A follow-up question was posed by the researcher, asking how he knew they were feeling happy. Child 2 responded, 'because my cousins were smiling'. This indicates an increased awareness and understanding of others' emotions and behaviours (Kulpa, 2020).

The decrease in CPOMS behaviour logs indicates that children were more aware of their actions and behaviours towards others, which is supported by research demonstrating that SEL develops skills such as empathy, fairness and kindness (Weissberg, 2019; Coskun, 2019). As pupils demonstrated greater empathy and

understanding of expected behaviours, instances of challenging behaviours reduced (EEF, 2021; Rose, McGuire-Snieckus and Gilbert, 2015).

Not all children demonstrated empathy or awareness of how their behaviour affected others. This finding is consistent with Karhoff (2017) and Waseman (2021). The limited timescale of this study meant that only eight of the eighteen lessons were implemented, with progress observed over an eight-week period. Empathy is a complex skill that can take time to develop (Hoffman, 2000). Therefore, a longer study with full curriculum implementation may lead to more participants demonstrating empathy skills.

In future classrooms, lessons may need regular recapping, as self-regulation skills develop over time (Kopp, 1982). Consistent modelling and reflection in daily practice will support children in consolidating and applying these skills.

Conclusion

This study explored the effectiveness of the ZOR curriculum in supporting children's emotional and behavioural regulation within a Year 2 class over an eight-week period. Findings suggest that the curriculum had a positive impact on pupils' emotional literacy, enabling them to identify and apply personalised self-regulation strategies. The ZOR board was a valuable non-verbal tool that promoted earlier adult intervention and reduced the duration of dysregulated behaviour, while also acting as a visual prompt for children to check in with their emotional state throughout the day.

However, the effectiveness of the board varied due to factors such as children forgetting to use it, photographs being unavailable, uncertainty about how to express multiple emotions and using it habitually rather than intentionally. These findings extend current literature by highlighting practical implementation barriers in real

classrooms and reinforcing that ZOR's effectiveness is highly dependent on adult scaffolding, consistent modelling, and resource reliability.

From a pedagogical perspective, the study reinforces the curriculum's potential to address the needs of pupils who face challenges with self-regulation, including those from disadvantaged backgrounds, as reflected in the Pupil Premium status of half the sample. This aligns with research suggesting that such learners often possess weaker self-regulation skills and therefore benefit from targeted SEL intervention (EEF, 2023). Based on the findings, I will incorporate ZOR approaches into my future practice, focusing on consistent emotional language, personalised support, and reflective modelling. To enhance effectiveness, I would model the intentional use of the board, reinforce that all zones are valid, ensure resources such as photographs are consistently available, and regularly check in with children using the board to support purposeful engagement.

Limitations of this research include the partial delivery of ZOR lessons due to time constraints and teaching responsibilities, as well as limited training, which may have impacted the fidelity of implementation. These challenges are reflected in existing research, where teacher workload and a lack of professional development are common barriers to delivering high-quality SEL. These limitations have implications for school-wide practice. For school leaders, they highlight the need to prioritise time within the school day for SEL delivery and to invest in training opportunities for staff. For classroom teachers, the availability and purposeful use of resources are critical to achieving the programme's intended outcomes. The role of support staff was found to be particularly valuable in enabling access to regulation strategies, particularly in early primary education, where adult supervision is required outside of the classroom.

Although small-scale, this study contributes to the limited UK-based evidence base on ZOR. The triangulated, mixed-methods design and focus on children's perspectives strengthen its practical relevance. Importantly, this research highlights how minor adaptations, such as offering multiple photos or co-constructing emotional strategies, can improve pupil engagement, which can inform other educational settings and staff who implement the ZOR. To understand the curriculum's long-term effects and broader applicability, larger-scale UK-based longitudinal research is needed. More robust evidence would enable policymakers and school leaders to embed explicit, inclusive SEL instruction into everyday classroom practice, ultimately enhancing the emotional well-being and learning outcomes of all pupils.

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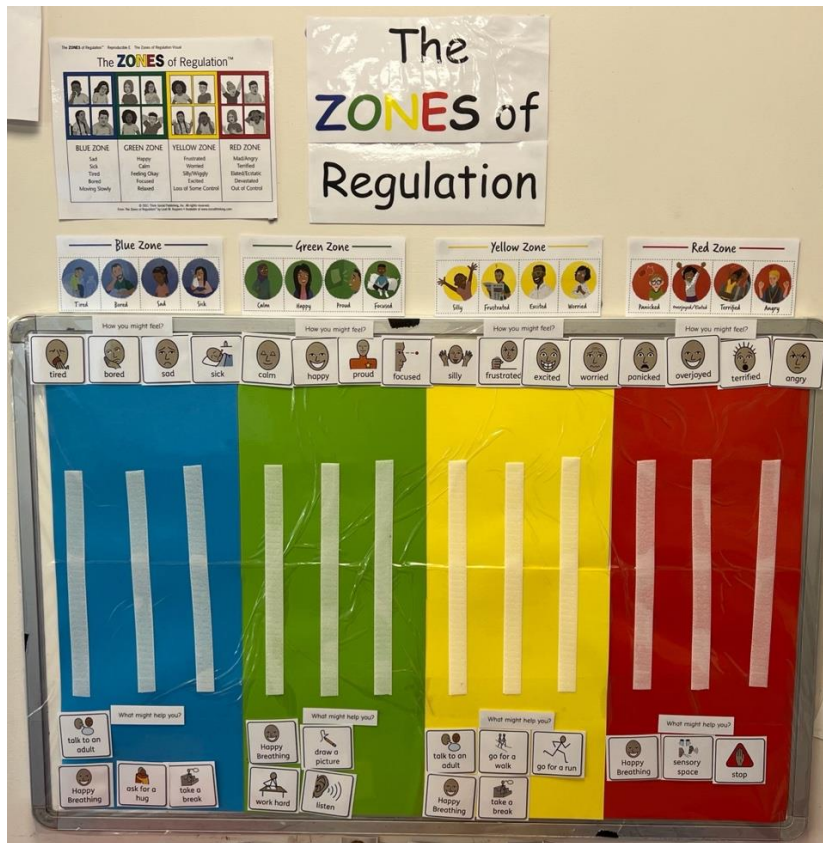
Appendices

Appendix 1: Summary of the aims of the eight ZOR interventions delivered.

Lesson 1 - I experience all the zones.	Aim: Pupils explore the concept that all the zones are expected under different circumstances, and it is okay to experience them all. Helps pupils to reflect on how different experiences affect the zone they are in. Pupils begin to notice that they may internally feel in a zone but externally, they may need to manage their behaviours to match the expected demands of the social environment.
Lesson 2 – Expected and unexpected behaviours.	Aim:

	To understand what we mean by 'expected' and 'unexpected behaviours'.
Lesson 3 – Understanding different perspectives.	Aim: Pupils learn that in a specific situation, there are expected and unexpected behaviours that a person may produce when in a zone. Pupils gain awareness about how they feel and think when another student produces expected versus unexpected behaviours when in a zone.
Lesson 4 – Me in my zones.	Aim: Increased awareness of how they feel (signals/body cues) in each zone. Improved ability to understand which zone they are in.
Lesson 5 – Changing emotions.	Aim: Understanding that our emotions change throughout the day. It is ok to experience different coloured zones.
Lesson 6 – Triggers ahead.	Aim: For children and others around them to be aware of what triggers can move them into the blue, yellow or red zones. Begin to problem solve ways to manage triggers.
Lesson 7 – Inner coach vs. inner critic.	Aim: To be aware of our own thoughts and how they influence our emotions and behaviours. Develops resilience by changing mindset and focusing on positive mental thoughts.
Day 8 – Stop and use a tool.	Aim: To understand when pupils could have stopped and used a tool to better manage feelings throughout the day. Encourages use of strategies and support independence in self-regulation.

Appendix 2: The ZOR board in the classroom



Appendix 3: YSJ Clearance

Section 7: Declaration

Declaration – I have read the ethics policy and guidance and the general data protection regulation information alongside abiding by the practice in place within my research discipline. The information supplied here is accurate to the best of my knowledge.

Student Signature
Name
Date

C. Hogarth
Caitlin Hogarth
23/01/25

Staff Signature for approval
Name
Date

Ann Jones
Ann Jones
24/01/25

Appendix 4: Headteacher consent

QTS6004M Research Project Permission form

Student name: Caitlin Hogarth

SE3 School: [REDACTED]

Headteacher permissions:

I have read this student's ethical clearance form and give my permission for the conduct of this small-scale research project.

Additional parental passive consent ~~is not required~~/has been obtained (please delete as applicable)

Headteacher's name: [REDACTED]

Headteacher's signature: [REDACTED]

Date: 27/1/25