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Exploring the impact of 'Calmed Classroom' in Dyslexia Association of Singapore (DAS) Lessons from the students perspective

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Abstract

The research explores the impact that the 'CalmEd Classroom' component has on students with dyslexia at the Dyslexia Association of Singapore (DAS). The research focuses on how Mindfulness Based Interventions (MBIs) influence the involvement, motivation and investment in literacy learning. Dyslexic students experience frustration and stress when attempting literacy tasks due to the difficulties faced in working memory, processing phonics and confidence (Carroll & Iles, 2006; Humphrey & Mullins, 2002). Recognition of MBIs has increased due to growing evidence that they can support students' emotional well-being and mental health, particularly by reducing stress, anxiety, and psychological distress (Dawson et al., 2020). Yet, research in the area is limited in exploring the perspective of the students with dyslexia. The case study methodology was used, involving three students aged between 14 to 16 years old from the DAS Main Literacy Programme (DAS-MLP). The data collected included participant surveys and semi-structured interviews, which were analysed using the Braun and Clarke's six-step framework. Five themes emerged from the analysis, a) Regulate emotionally b) Cognitive activation and learning support c) Reflective wrap-up and social insight d) Transferability and context limits e) Practical suggestions. The findings showed that the participants valued the breathing exercises and mindfulness activities for enhancing focus and reducing stress. The participants also informed feeling a greater sense of readiness to participate in the literacy tasks. The discussions based on self-reflection encouraged a sense of belonging in the class and invoked empathy amongst the classmates. However, the MBIs had limitations in the form of monotonous routines, lack of clarity on how to apply the strategies outside the DAS classroom and time constraints to practice the techniques. But beyond these challenges, the study highlights how mindfulness based routines can help dyslexic students approach literacy with more calmness, resilience and engagement. The study ends on the note that while 'CalmEd Classroom' component is not a solution for all literacy concerns, the component provides a framework that combines emotional, cognitive and social aspects of learning. Research in the future should examine the effectiveness of the component in the long term, the adaptability across other contexts and the role of the DAS Educational Therapists (DAS-EdTs) in sustaining meaningful outcomes.

Keywords: Dyslexia, 'CalmEd' Classroom, Literacy learning, Emotional regulation, Cognitive engagement, Reflective practice, Student motivation, DAS Main Literacy Programme (DAS-MLP)

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INTRODUCTION

Students with dyslexia often experience persistent difficulty with reading, spelling, and higher-order literacy skills, which can lead to frustration, reduced confidence, and avoidance of academic tasks (Hebert et al., 2018; Novita, 2016). Core challenges include difficulties in letter-sound knowledge, decoding, reading fluency, and spelling development (Hebert et al., 2018), which may contribute to feelings of inadequacy when students compare themselves with their neurotypical peers (Abu Omar et al., 2024). Over time, these repeated struggles can negatively shape students' self-perception, motivation, and relationship with school, sometimes resulting in anxiety, disengagement, and reluctance to participate in classroom activities (Wang et al, 2020). While targeted literacy interventions have been shown to improve reading outcomes, they do not consistently address the emotional and psychological barriers that influence learning, such as academic stress and low self-efficacy (Benney et al., 2022).

This gap highlights the need for approaches that support both academic development and emotional regulation. Mindfulness has gained attention in educational contexts as it enables individuals to remain present, regulate emotional responses, and manage stress more effectively (Lomas et al., 2020; Schuman-Olivier et al., 2020). Although mindfulness does not guarantee improved academic performance, it can support students in approaching learning challenges with greater awareness and self-regulation, allowing them to persist despite difficulties (Tarrasch et al., 2016). For students with dyslexia, these skills are particularly important, as they frequently encounter repeated academic setbacks that can undermine confidence and motivation.

The 'CalmEd Classroom', introduced as a mandatory component of lesson planning at the Dyslexia Association of Singapore, represents a structured effort to integrate mindfulness into literacy instruction (Rajoo, 2021). By incorporating breathing exercises, guided reflection, and opportunities for emotional expression, the programme aims to create a psychologically safe environment that reduces stress and enhances learner focus. It also seeks to promote emotional awareness, helping students understand the relationship between mood, thought processes, and behaviour, which is linked to improved resilience and coping strategies (Nykliček et al., 2021; Rao et al., 2024)

Despite its implementation, there is limited research examining the effectiveness of such interventions from the students' perspective. In particular, it remains unclear whether mindfulness-based practices like 'CalmEd Classroom' enhance students' participation, motivation, and engagement in literacy tasks. This is significant given that current research acknowledges a lack of understanding of how classroom-based interventions can develop self-regulation and support diverse learners (Keller et al., 2019).

This study therefore investigates the impact of 'CalmEd Classroom' on students with dyslexia, focusing on its role in fostering participation, motivation, and overall investment

in learning. By addressing this gap, the research aims to contribute to a more holistic understanding of how mindfulness can complement traditional literacy interventions and better support the needs of dyslexic learners.

METHODOLOGY

Case Study

A case study approach was adopted to provide an in-depth, contextualised understanding of how the 'CalmEd Classroom' operates within a real educational setting. Case studies enable the collection of rich qualitative data—such as interviews, observations, and documents—allowing for nuanced analysis of lived experiences (Gogoi et al., 2024; Yin, 2018). This design was appropriate as the study aimed to explore how a small group of students experienced mindfulness practices in relation to literacy learning and well-being.

Convenience sampling was used due to the pilot nature of the study, allowing initial insights to be gathered from an accessible group before wider investigation (Golzar et al., 2022). It was also contextually appropriate, as the 'CalmEd Classroom' component is specific to DAS classes.

Participants

Three students, 2 boys and 1 girl, aged between 14–16 from DAS participated in the study. This age group was selected due to their higher cognitive ability and capacity for reflection, as well as their ongoing development in emotional regulation—areas relevant to mindfulness interventions (Dahl, 2004; Kelley et al., 2004). Additionally, students in this age range are able to engage meaningfully in surveys and interviews (Creswell & Poth, 2018). All 3 students have a diagnosis of dyslexia and their exposure to MBIs is through the 'CalmEd' component during DAS lessons.

Students were initially identified through surveys distributed via DAS-EdTs. From the responses, three students representing both genders were selected. The participants were students that were part of the DAS-MLP and had prior exposure to the 'CalmEd Classroom'. Individual interviews were conducted at DAS premises.

Method Design

a) Lesson Structure

The 'CalmEd Classroom' consisted of three stages:

1. breathing exercises for emotional regulation,
2. literacy-linked cognitive or physical activities to activate focus, and

3. a reflective discussion. Each session lasted approximately five minutes.

This structure aligns with established mindfulness-based educational practices that integrate emotional regulation, cognitive engagement, and reflection (Hofmann and Gómez, 2017).

b) Research Tools

Two tools were used. First, surveys captured general student perceptions and allowed for broader pattern identification (Creswell & Creswell, 2018). For example, students were asked to reflect on how mindfulness activities influenced their focus and feelings during lessons (Figure 1).

Thank you for taking the time to complete this survey. Your feedback is valuable and will help us improve 'CalmEd Classroom'. Please answer the following questions with a tick (✓).

1. How easy is it for you to follow the instructions for 'CalmEd Classroom'?

- ☐ Very easy
- ☐ Easy
- ☐ Neutral
- ☐ Difficult
- ☐ Very difficult

Figure 1: Snippet of a question from the survey form.

Figure 2 compares all respondents across the five survey questions.

All respondents found the 'CalmEd Classroom' usable, though SKG 1 felt neutral compared to others who found the instructions easy to follow. The engagement varies widely, SKG 1 found 'CalmEd Classroom' very engaging, SKG 2 moderately engaging, and HDN not engaging at all. For helping to understand questions relating to the subject being taught, responses are generally positive but not consistently strong. Application of 'CalmEd Classroom' outside the DAS shows the biggest difference where SKG 1 reported never applying it, while others reported sometimes or often. Helping to reduce stress levels during lessons is moderate across all users. Overall, the system is easy to use but needs improvement in engagement consistency and real-world application.

Second, semi-structured interviews were conducted to gain deeper insights. This format allowed flexibility to probe students' experiences of breathing exercises, cognitive tasks, and reflective discussions, as well as their ability to apply these strategies beyond the classroom (Kallio et al., 2016) (Figure 3).

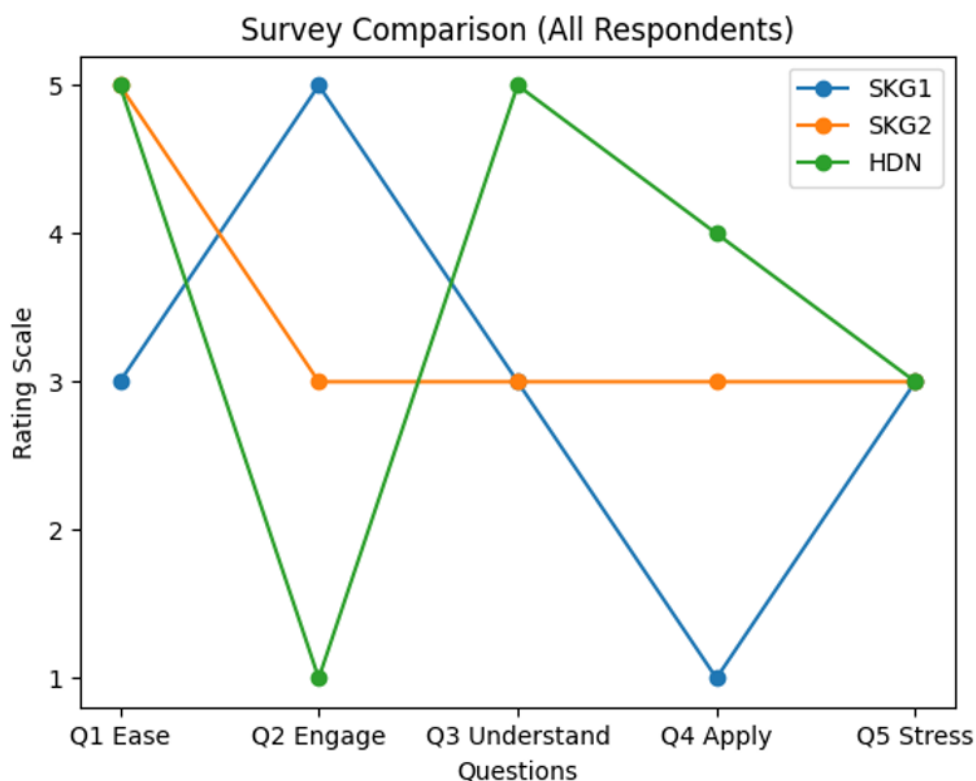


Figure 2 Comparison of all respondents to the survey

Open-Ended Questions to ask participants during the interview:

General Experience

a) Do you like the 'CalmEd Classroom' session as a whole?

- If so, what do you like about the session? Tell me more about that?
- If you don't like the session, what is it that you do not like?
Why do you link that is ?

Figure 3: Snippet of the interview questions

Data Collection and Analysis

Interviews were video-recorded with consent and transcribed verbatim. Thematic analysis, following Braun and Clarke's (2006) six-step framework, was used to identify recurring patterns (Figure 4). This method is well-suited for capturing detailed participant perspectives while allowing flexibility in coding (Maguire & Delahunt, 2017).

Phases of thematic analysis

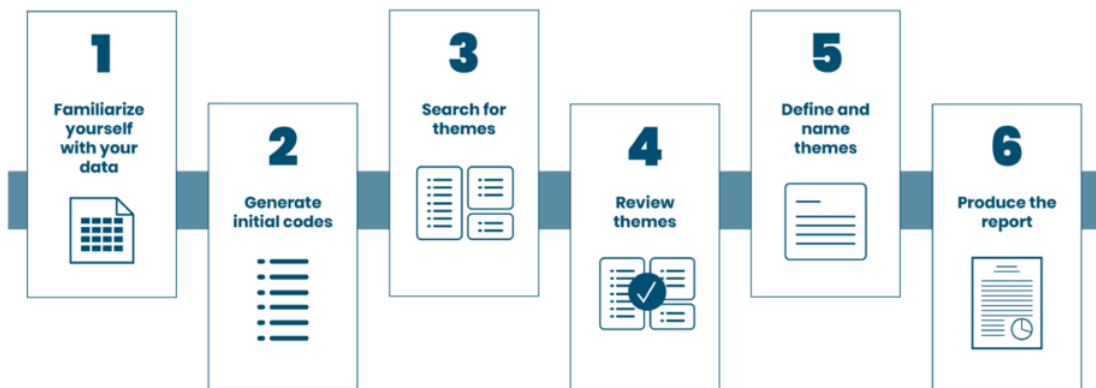


Figure 4: Six-step framework

Hard copies of transcripts were used to facilitate comparison during coding. Participants were anonymised as SKG1, SKG2, and HDN.

Five themes emerged:

- a. emotional regulation,
- b. cognitive activation and learning support,
- c. reflective and social insight,
- d. transferability and limitations, and
- e. practical suggestions.

These themes captured both benefits (e.g., reduced stress, improved focus) and limitations (e.g., challenges applying strategies outside class).

RESULTS

The results present and interprets the study exploring the ‘CalmEd Classroom’ component within the DAS-MLP, with a focus on its influence on students’ involvement in literacy, motivation, and overall investment in learning (Abu Omar et al., 2024; Areskoug Sandberg et al., 2024). Data were first gathered through surveys to capture general student perceptions, followed by semi-structured interviews to provide deeper insight into individual experiences.

Using Braun and Clarke’s (2006) thematic analysis framework, five key themes emerged (see table 1):

- a. emotional regulation,
- b. cognitive activation and learning support,
- c. reflective dialogue and social insight,
- d. transferability and contextual limits, and
- e. practical suggestions for improvement

Table 1. Thematic Table (Braun & Clarke, 2006 Qualitative Thematic Analysis)

Theme	Definition	Code	Student Quotes
Regulate emotionally	Students described the breathing component as helping them relax, release stress and be mentally ready for class	Breathing calms, destress, stress release, preparation	“So ask me to, like, take a big breath... Then you feel like your stress will come out” (HDN)
Cognitive activation and learning support	Activities after breathing engage the brain, making learning faster/better and supporting spelling/phonics.	Activities engage brain, quick learning, spelling/phonics support	“I like it because I can learn a lot and learn very fast... because of a suffix problem” (HDN) “After calming down, I get to use my brain harder... it helps me focus and understand better” (SKG2)

These themes collectively illustrated how mindfulness practices shaped students’ immediate learning experiences, while also revealing variability in outcomes across participants. The sections below present each theme, focusing on key patterns and outcomes supported by selected student responses and interpreted in relation to existing research.

Thematic Findings

Emotional Regulation

A consistent pattern across all participants was the positive impact of breathing exercises on immediate emotional regulation. Students described feeling calmer and more mentally prepared at the start of lessons, suggesting that the 'CalmEd Classroom' functioned effectively as a transitional routine into learning. For instance, SKG1 noted that the exercises "make me stop thinking about everything else," indicating a shift from distraction to task readiness. This aligns with findings that short mindfulness practices can reduce situational stress and enhance attentional focus prior to cognitive engagement (Abu Omar et al., 2024; Areskoug Sandberg et al., 2024).

However, this effect appeared to be short-term rather than sustained. One participant reported that feelings of stress returned once literacy tasks—particularly reading—began. This suggests that while mindfulness can regulate initial emotional states, it may not fully buffer against task-specific anxiety, especially when students encounter known areas of difficulty. Such variation highlights that the effects of mindfulness on emotional regulation are not uniform across contexts and may require consistent practice and reinforcement to be sustained beyond the initial phase of a lesson (Dunning et al., 2019; Zenner et al., 2014). Overall, the findings indicate that mindfulness provides an important entry point into learning but may need to be integrated more deeply to maintain its effects throughout cognitively demanding tasks.

Cognitive Activation and Learning Support

The cognitive activation component generally contributed to improved alertness and engagement. Students reported feeling more awake and ready to participate following brief literacy-linked activities, suggesting that these tasks effectively primed attention. For example, SKG2 commented that "after we do the quick game, I feel less sleepy," reflecting increased cognitive readiness. This supports the view that short, structured mindfulness activities can enhance focus and prepare learners for subsequent academic work, particularly in literacy contexts (Felver et al., 2025; Muñoz Gallardo & Guamán Luna, 2024; Tarrasch et al., 2016).

Despite this overall positive trend, responses revealed variability in perceived usefulness. Some students questioned the relevance of the activities, particularly when they appeared disconnected from the main literacy task. One participant expressed a preference to move directly into the lesson, indicating that the perceived value of cognitive activation is closely tied to its alignment with instructional goals. This suggests that although brief mindfulness and attention-focusing activities can enhance cognitive readiness and support reading performance, their effectiveness may depend on how purposefully they are integrated into literacy instruction, as meaningful alignment with

learning objectives is likely to influence students' engagement and perceived value (Felver et al., 2025).

The findings therefore suggest that cognitive activation is most impactful when it is both engaging and clearly linked to the literacy objectives, reinforcing its role not just in energising students but in supporting purposeful learning.

Reflective Dialogue and Social Insight

The reflective wrap-up stage contributed to both emotional awareness and social connection among participants. Two students described the opportunity to share experiences as valuable, particularly in realising that others faced similar challenges. SKG1's comment that "sometimes other people also feel the same, so I don't feel alone" illustrates how reflection can reduce feelings of isolation and foster a sense of belonging. This aligns with research suggesting that reflective and mindfulness-based practices can enhance social-emotional learning, emotional awareness, and peer relationships in educational settings (Dunning et al., 2019; Durlak et al., 2011; Zenner et al., 2014).

However, this benefit was not experienced uniformly. One participant expressed discomfort with speaking in a group setting and indicated a preference for more private forms of reflection. Additionally, students noted that the time allocated for reflection was often insufficient, limiting the depth of discussion. These findings highlighted that while reflective dialogue can promote connection, it may also exclude students who are less comfortable with verbal expression.

Overall, the pattern suggests that reflection is a valuable but sensitive component, requiring flexibility in delivery. Providing multiple modes of reflection, such as written or individual formats, may enhance inclusivity and allow a wider range of students to benefit (Muñoz Gallardo & Guamán Luna, 2024)

Transferability and Contextual Limits

A key area of variability was the extent to which students were able to apply mindfulness strategies beyond the classroom. Evidence of transfer was mixed. One participant reported successfully using breathing techniques during a test to manage panic, demonstrating the potential for mindfulness to support performance in high-pressure situations. In contrast, another participant acknowledged forgetting to apply these strategies when faced with stress outside the structured classroom environment.

This contrast suggests that while students can learn mindfulness techniques, the process of internalising and independently applying them is not automatic. The findings indicate that transferability is influenced by consistency of practice, explicit reinforcement, and

opportunities for students to apply mindfulness strategies across different learning contexts. Without these supports, the benefits of mindfulness may remain confined to the classroom setting (Klingbeil et al., 2017; Zenner et al., 2014).

Thus, the results highlight a gap between learning and application, suggesting that future implementation should place greater emphasis on helping students recognise when and how to use these strategies independently.

Practical Suggestions

Students' feedback pointed to areas for improving the implementation of the 'CalmEd Classroom'. A recurring suggestion was the need for greater variety in mindfulness activities. For example, SKG1 proposed using "different breathing sometimes, not always the same," indicating that repetition may reduce engagement over time. This suggests that while consistency is important, variation may help sustain student interest and participation.

Time constraints were also identified as a limitation. Students noted that activities, particularly reflection, were sometimes rushed or cut short, reducing their perceived effectiveness. This highlights the challenge of balancing mindfulness practices with curricular demands, a factor that may influence the overall impact of the intervention (Muñoz Gallardo & Guamán Luna, 2024)

Collectively, these suggestions emphasise the importance of adaptability and thoughtful implementation. Students' perspectives indicate that mindfulness interventions are most effective when they are responsive to learner needs, varied in approach, and allocated sufficient time for meaningful engagement.

SUMMARY OF FINDINGS

Across all themes, the findings reveal a consistent pattern: the 'CalmEd Classroom' supports immediate emotional regulation, enhances attentional readiness, and creates opportunities for reflection and social connection. However, these benefits are not uniform and are influenced by factors such as relevance, delivery, and opportunities for practice beyond the classroom. The results therefore highlight both the potential and the limitations of mindfulness-based approaches, suggesting that their effectiveness depends on how they are integrated, reinforced, and adapted within the learning environment (Felver et al., 2025; Klingbeil et al., 2017; Muñoz Gallardo & Guamán Luna, 2024; Tarrasch et al., 2016; Zenner et al., 2014).

DISCUSSION

The findings from this study illustrate the nuanced effects of implementing the 'CalmEd Classroom' mindfulness component with adolescents with dyslexia. Across the five emerging themes, the results can be meaningfully interpreted through the study's core framework of involvement, motivation, and investment in literacy learning, revealing how mindfulness practices shaped students' affective, cognitive, and behavioural engagement with literacy tasks.

Emotional regulation emerged as an immediate and foundational outcome that primarily supported involvement in learning. Students consistently reported that breathing exercises reduced stress and created readiness for lessons. SKG1 described that the exercises "make me stop thinking about everything else," highlighting how mindfulness temporarily shifted attention away from internal distractions toward the learning task (Abu Omar et al., 2024; Areskoug Sandberg et al., 2024). This enhanced attentional control increased students' initial classroom involvement; however, the calming effect was not always sustained, as stress re-emerged during literacy tasks, particularly reading and decoding. This suggests that while mindfulness can facilitate entry into learning, its stabilising effect on sustained involvement may require repeated, scaffolded implementation rather than isolated use (Felver et al., 2025; Shao et al., 2023; Tarrasch et al., 2016).

Cognitive activation through literacy-linked activities primarily contributed to motivation for learning, although its impact was variable. Most students reported increased alertness and engagement, with SKG2 noting feeling "less sleepy" after the quick games. However, motivational effects were closely tied to perceived task relevance. When activities were not clearly connected to literacy goals, students reported reduced value and a preference for moving directly into academic tasks (Muñoz Gallardo & Guamán Luna, 2024). This indicates that motivational gains are contingent on meaningful integration between mindfulness activities and curriculum objectives. Where alignment was strong, students demonstrated higher readiness and enthusiasm for literacy tasks, reinforcing the importance of purposeful instructional design in sustaining motivation.

Reflective dialogue contributed most strongly to students' social investment in literacy learning, particularly through fostering belonging and shared identity as learners. Participants valued recognising that peers experienced similar challenges, with SKG1 noting, "sometimes other people also feel the same, so I don't feel alone." This sense of normalisation supported relational investment in the classroom environment, which in turn can strengthen willingness to engage in literacy learning. However, this theme was less effective for quieter students and was constrained by time limitations, suggesting that reflective practices require differentiated modes (e.g., journaling, paired discussion) to ensure equitable opportunities for investment (Muñoz Gallardo & Guamán Luna, 2024).

Transferability of mindfulness strategies relates directly to behavioural investment in independent literacy learning, particularly outside structured classroom settings. While one student applied breathing techniques during a test to manage anxiety, others reported limited use in real-life contexts. This inconsistency suggests that although students may be momentarily involved and motivated during sessions, sustained investment requires explicit scaffolding to facilitate the internalisation of self-regulatory strategies and the development of autonomous learning behaviours (Shao et al., 2023; Zheng, 2016). Without reinforcement, mindfulness practices risk remaining context-bound rather than becoming transferable self-regulation tools for literacy challenges.

Practical constraints and implementation fidelity influenced all three dimensions— involvement, motivation, and investment. The brevity of five-minute sessions and competing curriculum demands limited opportunities for deeper engagement and consolidation. Students' suggestions for more varied techniques and visual supports indicate a need to strengthen motivational appeal and support ongoing involvement. These findings highlight that the effectiveness of the 'CalmEd Classroom' is not solely dependent on the intervention itself, but also on its adaptability, continuity, and alignment with student needs (Muñoz Gallardo & Guamán Luna, 2024).

Overall, the findings support broader evidence that mindfulness-based interventions (MBIs) can enhance attention and learning readiness, thereby supporting literacy performance. However, their impact is not uniform and appears to depend on the educational context and implementation (Felver et al., 2025). When interpreted through the framework of involvement, motivation, and investment in literacy learning, the study suggests that mindfulness primarily strengthens initial engagement and emotional readiness, while its influence on sustained motivational drive and independent investment in literacy requires more structured reinforcement. By addressing affective and social dimensions of learning, the 'CalmEd Classroom' offers a promising but still developing approach to supporting literacy development among adolescents with dyslexia.

LIMITATIONS OF FINDINGS

Several limitations temper the conclusions drawn from this study. The sample size was small, involving only three students, which limits generalizability. Convenience sampling may have introduced bias, as students could have responded favourably due to social desirability or perceived expectations. The study relied on self-reported data, without triangulation through EdTs' observations or assessment of classwork, which may reduce the reliability of the findings. Additionally, the brevity of the five-minute intervention constrained the potential for long-term effects, while the dual role of the researcher as interviewer may have influenced responses (Areskoug Sandberg et al., 2024). These limitations underscore the importance of interpreting results cautiously and highlight areas for methodological refinement in future studies.

SUMMARY

The study confirms that the 'CalmEd Classroom' supports adolescents with dyslexia by facilitating emotional regulation, cognitive engagement, and reflective interaction. Strengths of the intervention include immediate stress reduction, enhanced focus, and social connection. However, transferability beyond the classroom, alignment with curriculum content, and time constraints remain challenges. The findings suggest that mindfulness interventions are most effective when integrated deliberately into teaching practice, supported by appropriate instructional strategies, and adapted to individual student needs (Felver et al., 2025; Muñoz Gallardo & Guamán Luna, 2024). Overall, the study illustrates both the potential and limitations of mindfulness-based strategies for enhancing engagement and learning for students with dyslexia.

CONCLUSION

This study examined how the 'CalmEd Classroom' supports students with dyslexia in terms of literacy involvement, motivation, and overall investment in learning. The findings suggest that integrating mindfulness into literacy instruction offers a meaningful way to address both cognitive and emotional barriers to learning. By embedding short routines focused on emotional regulation, cognitive readiness, and reflection, the intervention created conditions that enabled students to approach literacy tasks with greater focus and willingness to engage.

A key implication is that emotional regulation acts as a gateway to learning. When students were better able to regulate their emotions and reduce stress, they demonstrated greater readiness to participate and persist in challenging learning tasks, consistent with evidence that social-emotional learning enhances engagement and supports reading achievement through improved self-regulation and emotional competence (Li et al., 2025). This highlights the importance of preparing students not only academically but also emotionally before introducing cognitively demanding activities. Similarly, improved focus and resilience observed among participants align with research linking self-regulation to stronger literacy engagement (Marks et al., 2023).

The reflective component further underscored the value of social connection in learning. Opportunities to share experiences helped reduce feelings of isolation and foster a sense of belonging, reinforcing findings that connectedness and positive self-concept enhance learning outcomes for students with learning difficulties (Wilmot et al., 2024). These outcomes suggest that effective literacy support must extend beyond skill acquisition to include emotional and social dimensions of learning.

Transferability of mindfulness strategies beyond the classroom remained inconsistent, indicating the need for more deliberate scaffolding and practice across contexts. This finding aligns with Schuman-Olivier et al. (2020), who argued that mindfulness-related

behavioural change is strengthened through repeated practice and application in everyday settings. It also reflects evidence that scaffolding facilitates the transfer of self-regulated learning strategies across contexts (Shao et al., 2023; Zheng, 2016). Additionally, student feedback emphasised the importance of flexibility, suggesting that mindfulness interventions should be adaptive and responsive to learner needs rather than rigidly applied. This aligns with research advocating for integrated approaches that combine explicit literacy instruction with attention to social-emotional development (Morte-Soriano & Soriano-Ferrer, 2024).

Looking ahead, future research should explore the long-term impact of 'CalmEd Classroom' across diverse settings and examine how factors such as teacher implementation and programme duration influence outcomes. Overall, this study positions 'CalmEd Classroom' as a flexible framework with the potential to make literacy learning more inclusive, highlighting that sustainable progress for students with dyslexia depends on addressing both their academic and emotional needs.

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