

Effects of Classroom Mindfulness Practice on Fifth-Grade Spelling Performance, Confidence, and Test Anxiety

Jenna Akers¹, Justin J. Wageman², Stacy Duffield³, and Lisa Narum⁴

¹ Central Cass School District, North Dakota

² North Dakota State University

³ North Dakota State University

⁴ Central Cass School District, North Dakota

Abstract: This action research study examined the effects of a classroom-based mindfulness intervention on fifth-grade students' spelling performance, confidence, and test anxiety. Implemented in a single classroom, brief, teacher-led mindfulness activities were conducted prior to weekly spelling assessments. Results showed improved spelling scores during the intervention phase compared to baseline. In contrast, student-reported confidence and anxiety showed little change. Findings suggest that mindfulness may support academic performance, while short-term effects on affective outcomes are limited. Implications for classroom practice and future research are discussed.

Keywords: Mindfulness, Spelling Achievement, Test Anxiety, Grade 5, Action Research

Confidence, and Test Anxiety

Test anxiety poses a persistent threat to student performance and learning across educational settings (Putwain, 2008; Zeidner, 1998). Students experiencing test anxiety often demonstrate decreased concentration, reduced working memory capacity, and lower academic achievement (Cassady & Johnson, 2002). Elementary classrooms involve frequent assessment, such as spelling instruction, and anxiety can interfere with students' ability to accurately demonstrate what they know, raising concerns about the validity of assessment results and the overall effectiveness of instructional practices (Popham, 2025).

Mindfulness practices have been increasingly studied as a potential strategy to reduce anxiety and improve focus. Research suggests that mindfulness can positively impact attention, emotional regulation, and stress reduction in students (Dunning et al., 2019; Zenner et al., 2014). Mindfulness interventions may reduce test anxiety and improve academic performance (Bellinger et al., 2015; Carsley et al., 2015; Hembree, 1988). However, much of the existing research has been conducted in controlled settings or with older students, and less is known about how mindfulness strategies function in elementary settings during routine academic tasks such as spelling tests. As a classroom teacher, the primary researcher observed that several students appeared anxious during weekly spelling assessments, which seemed to impact their performance. In response, a brief mindfulness

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intervention was administered prior to spelling tests to examine its effect on student anxiety and test outcomes.

This action research study investigated the impact of a brief, teacher-led mindfulness activity on elementary students' test anxiety and spelling performance and whether incorporating mindfulness into regular classroom routines could serve as a practical strategy to help students demonstrate their learning more accurately.

Literature Review

Mindfulness has gained increasing attention in education as a practice that can support students' focus, emotional regulation, and academic functioning. In school settings, mindfulness is commonly defined as paying attention to present-moment experience with openness and without judgment (Kabat-Zinn, 2003, 2015). Systematic reviews and meta-analyses indicate that school-based mindfulness interventions can produce positive effects on students' cognitive performance, resilience to stress, and emotional problems, though outcomes are not uniformly strong across all contexts and measures (Carsley et al., 2018; Waters et al., 2015; Zenner et al., 2014; Zoogman et al., 2015).

Test anxiety, a situation-specific form of performance anxiety, is a prevalent issue that significantly affects elementary students' academic achievement and overall well-being and involves heightened emotional, physiological, cognitive, and behavioral responses to evaluative situations perceived as threatening. A 20-year systematic review and meta-analysis of primary school children found that test anxiety was negatively related to academic achievement, academic self-concept, and self-efficacy, and positively related to broader anxiety and depression symptoms (Robson et al., 2023). Mindfulness practices are among the approaches used to reduce test anxiety in children. Mindfulness-based techniques, including guided relaxation, breathing exercises, and yoga, have helped alleviate physiological and cognitive symptoms of anxiety in school-age students (Robson et al., 2023; Stapp & Lambert, 2020). Carsley et al. (2015, 2018) found that classroom mindfulness activities reduced test anxiety in children, and Napoli et al. (2005) reported improvements in elementary students' attention and reductions in test anxiety following a school mindfulness program.

In addition to anxiety reduction, mindfulness can influence academic performance by improving students' ability to focus and regulate anxious thoughts during high-pressure tasks. Bellinger et al. (2015) found that mindfulness indirectly benefited high-stakes mathematics performance by reducing anxiety and freeing working memory resources.

Research on confidence-related outcomes is underdeveloped, particularly for elementary students in classroom-based assessment contexts, even though confidence-related variables are linked to students' experiences of testing (Robson et al., 2023).

Overall, the literature demonstrates that mindfulness interventions in schools can reduce anxiety, support emotional regulation, and, in some cases, improve academic performance. Despite this evidence, research has not examined how consistent mindfulness practice influences elementary students' spelling performance, confidence regarding spelling tests, and anxiety surrounding those assessments. This study addresses that gap by examining these outcomes in a fifth-grade classroom.

Purpose of the Study and Research Questions

The purpose of this study was to determine the possible effects of mindfulness practice in the fifth-grade classroom. Specifically, this study examined whether consistent mindfulness practice could improve spelling test scores, confidence regarding spelling tests, and anxiety surrounding spelling tests. The following research questions guided this study:

1. How does consistent mindfulness practice affect fifth-grade students' spelling test scores?
2. How does consistent mindfulness practice affect fifth-grade students' self-confidence regarding spelling tests?
3. How does consistent mindfulness practice affect fifth-grade students' anxiety regarding spelling tests?

Method

Participants

This study took place in the primary researcher's homeroom class of fifth-grade students at a middle school in the upper Midwest. The class consisted of 14 students, ages 10–11. Students receiving full pull-out services for their reading curriculum were not involved in the research because they did not take the spelling assessments. All students had the option to participate in or opt out of the study at any time. Guardian consent was obtained prior to collecting data. All guardians and students chose to participate. Approval was also received from the school's administration and the Institutional Review Board (IRB) before beginning the study.

Setting and Intervention

At the time of the study, the general education fifth-grade teachers at the middle school used the 2017 Journeys series by Houghton Mifflin Harcourt. The series provided a weekly spelling unit, enabling regular data collection. Each weekly list included 20 basic words and five challenge words aligned with a spelling skill. Students practiced the words throughout the week through activities such as proofreading paragraphs, completing crossword puzzles, doing word sorts, using software activities, and practicing with peers.

The mindfulness intervention consisted of guided meditations delivered through the free meditation application Smiling Mind (<https://www.smilingmind.com.au/smiling-mind-for-schools>). This application was selected for its short, guided meditations suitable for use in the classroom. The meditations ranged from approximately 5 to 15 minutes, a duration that was developmentally appropriate for fifth-grade students and feasible within a regular classroom routine.

Beginning after baseline data collection, students engaged in mindfulness practice during the morning reading block. Students were guided through short meditations once or twice daily and participated in a brief mindfulness meditation before each weekly spelling test. Students were encouraged to find a comfortable position for meditation, either seated in a chair, seated on the floor, or lying on the carpeted classroom floor. Students could close their eyes or focus softly on a spot in front of them if that felt more comfortable.

Measures

A document was created in Microsoft PowerPoint for students to record both spelling test answers and survey responses each week. Before each spelling test, students responded to the following questions:

- On a scale of 1–10, how anxious are you right now?
- On a scale of 1–10, how confident are you about this test? Why?
- What score do you think you got on this spelling test?

During the intervention phase, the survey also included the following question:

- Were you “all in” on mindfulness practice today? Yes or no; please explain.

All quantitative data were entered into a Microsoft Excel spreadsheet. The primary researcher also kept observational notes from each mindfulness session, including the date, practice title, duration, and any noteworthy events.

Procedure

Baseline data were collected over 12 days. During this phase, students completed their regular weekly spelling activities and took the weekly spelling test without the mindfulness intervention. Before each test, students responded to the anxiety and confidence survey questions, and after the test, they predicted their score.

Following baseline data collection, the primary researcher began implementing short Smiling Mind mindfulness meditations during the morning reading block. Students participated in guided mindfulness practice as part of the class routine and also completed a brief mindfulness meditation before each weekly spelling test. After the meditation, students completed the spelling assessment and the associated survey questions. Although the study was originally intended to last three weeks, weather-related school cancellations required extending the intervention period to four weeks.

Across the intervention period, students completed 15 mindfulness meditations. Five of the 14 participants missed multiple sessions due to vacations, illness, or appointments. During the intervention period, the primary researcher also recorded contextual notes about factors that could have affected outcomes, such as classroom interruptions.

At the conclusion of data collection, 14 participants were asked five open-ended questions in a group discussion setting. The primary researcher asked the questions verbally and documented students' responses during the group discussion using handwritten notes.

- What went well in mindfulness practice?
- What did not go well in mindfulness practice?
- How has mindfulness practice benefited you?
- Have you applied mindfulness to domains other than English Language Arts class?
- Will you use mindfulness in the future? If so, how?

Data Analysis

All data were double-checked before analysis. Baseline and intervention spelling scores were calculated on a 20-point scale, with the option to earn 5 bonus points for correctly spelling the challenge words, for a maximum score of 25. Anxiety and confidence ratings were measured on scales from 1 to 10. Prediction accuracy was calculated by subtracting students' predicted scores from their actual spelling test scores. A negative value indicated that a student predicted a higher score than was earned, a positive value indicated that a student predicted a lower score than was earned, and a value of zero indicated an exact prediction. Engagement was coded as yes (1) or no (0).

Quantitative data were analyzed using Stata/IC 16.1. Baseline and intervention means were compared using paired t-tests. Qualitative data from students' written responses and the culminating group discussion were analyzed using inductive thematic analysis. Responses were coded and grouped into categories based on recurring patterns in the data.

Results

Research Question 1: How does consistent mindfulness practice affect fifth-grade students' spelling test scores?

Baseline spelling scores ($M = 17.5$, $SD = 6.2$) and intervention spelling scores ($M = 18.8$, $SD = 5.0$) were analyzed using a paired t test. The mean difference was 1.6, and this difference was statistically significant, $t = 2.10$, $p = .042$. These results indicate that spelling test scores were higher during the intervention period than during the baseline period.

Research Question 2: How does consistent mindfulness practice affect fifth-grade students' self-confidence regarding spelling tests?

Baseline confidence scores ($M = 5.9$, $SD = 2.2$) and intervention confidence scores ($M = 5.6$, $SD = 2.0$) were analyzed using a paired t test. The mean difference was 0.3, which was not statistically significant, $t = -0.68$, $p = .500$.

As a related indicator of students' perceptions of their performance, baseline prediction scores ($M = -2.6$, $SD = 4.2$) and intervention prediction scores ($M = -0.6$, $SD = 3.8$) were also analyzed using a paired t test. The mean difference was 2.0, and this difference was statistically significant, $t = 2.31$, $p = .026$. These results indicate that students' predicted scores were closer to their actual scores during the intervention period than during the baseline period.

Research Question 3: How does consistent mindfulness practice affect fifth-grade students' anxiety regarding spelling tests?

Baseline anxiety scores ($M = 5.3$, $SD = 3.1$) and intervention anxiety scores ($M = 4.3$, $SD = 2.7$) were analyzed using a paired t test. The mean difference was -1.0 and not statistically significant ($t = -1.76$, $p = .087$).

Student Engagement and Qualitative Findings

Students were asked whether they were "all in" on mindfulness practice in order to measure engagement. Engagement scores during the intervention period had a mean of 0.8 and a standard deviation of 0.4. Of the 39 responses recorded, 32 were yes (1).

Analysis of the 66 verbal responses to the five open-ended questions yielded three categories. First, responses including the words sleep, tired, relaxed, calm, or yawn were coded as tired responses. Sixteen of the 66 responses fell into this category. One student reported, "I felt relaxed like I was in a deep sleep." Another stated, "I wanted to stay mindful, but my mind wanted to sleep."

Second, responses including the words hard, tough, awkward, couldn't focus, or not used to were coded as difficult responses. Nine of the 66 responses fell into this category. One student said, "I couldn't focus on one thing. I felt calm but didn't get it." Another reported, "It felt tougher than usual after a long weekend."

Third, responses including the terms didn't have to worry, use, less stress, focus, solid, clear thinking, peaceful, trusting, safe, light, confident, stronger, self-control, and patience were coded as positive responses. Fifteen of the 66 responses fell into this category. Students described using mindfulness in situations such as trouble with a sibling, trying to fall asleep, feeling distracted during homework, waiting for a parent to return from a trip, and feeling stressed on a long car ride. Twelve of the 14 participants reported using or planning to use mindfulness practice in the future.

Discussion

This action research study examined the effects of consistent mindfulness practice on fifth-grade students' spelling test scores, confidence regarding spelling tests, and anxiety regarding spelling tests. Overall, the findings suggest that consistent mindfulness practice positively influenced students' spelling performance, while confidence and anxiety were not significantly affected.

Consistent mindfulness practice improved fifth-grade students' spelling test scores significantly. These findings suggest that slowing the pace of the classroom, even briefly, may help students approach academic tasks with greater calm and focus and demonstrate what they know more accurately. This interpretation is supported by broader research indicating that mindfulness-based interventions may help reduce stress-related interference and support students' functioning in school settings (Klingbeil et al., 2017; Zenner et al., 2014). At the same time, research involving younger students has shown that mindfulness-based interventions do not always produce outcomes that are clearly stronger than those of other engaging classroom activities, suggesting that context and implementation matter (Britton et al., 2014).

Confidence was not significantly affected by consistent mindfulness practice. Student score prediction, however, was significantly closer to actual student scores. These findings suggest that mindfulness practice did not increase confidence, but it may have helped students make more accurate judgments about their own performance. Increased confidence was not the outcome, but increased accuracy in self-appraisal was. Though metacognition was not a focus of this study, these findings suggest that mindfulness may have supported higher-level thinking as students considered what score they had earned on spelling assessments.

Test anxiety was not significantly affected by the intervention, even though the reported mean decreased from baseline to intervention. This suggests that mindfulness may not have reduced students' self-reported anxiety in a consistent enough way to produce a statistically reliable change. It is also possible that anxiety ratings were influenced by shifting

classroom conditions unrelated to mindfulness itself, such as the difficulty of particular spelling lists or schedule disruptions. The improved spelling scores, therefore, should not be interpreted as clear evidence that mindfulness reduced anxiety. Instead, the intervention may have supported performance through other mechanisms, such as attention, readiness, or classroom settling before assessment.

The findings also suggest that mindfulness practice became meaningful to students over time. Students looked forward to mindfulness practice and even requested specific practices based on what they felt they needed that day. For example, during a particularly rowdy period of free time, a student remarked that the class would benefit from a body scan practice. This intuitiveness and recognition of emotions suggest that students were beginning to identify their different states of mind and decide what they needed. In this sense, mindfulness appeared to serve as a practical classroom tool that students could begin using independently.

Student engagement and the qualitative findings also strengthen the interpretation of the results. Most students reported being “all in” during mindfulness practice, suggesting that the intervention was generally acceptable to participants rather than merely tolerated. Students described feeling relaxed, calm, or almost sleepy during the exercises, while others reported that the practice felt awkward or difficult at first, especially when trying to focus after a long weekend or when they were physically uncomfortable in a particular position. These responses suggest that mindfulness was not immediately easy or natural for all students and required consistency and repetition. This interpretation aligns with Britton et al. (2014), who found that classroom-based mindfulness practices were feasible, acceptable, and generally viewed as beneficial by students.

The qualitative responses also suggest that students began transferring mindfulness beyond spelling tests and beyond English Language Arts. Several described using mindfulness when trying to fall asleep, calm down during stress, focus on homework, manage impatience, or settle themselves in other uncomfortable situations. In addition, 12 of the 14 students reported using or planning to use mindfulness in the future. This suggests that students did not view mindfulness only as a school requirement, but as a strategy they might carry beyond the immediate classroom context.

Overall, the data gathered in this study echo existing research on mindfulness in education while also contributing a more specific classroom-based example involving elementary spelling assessments. The strongest finding was improved spelling performance, accompanied by more accurate score prediction. Anxiety and confidence did not change significantly, suggesting that classroom mindfulness may be most useful not as a broad cure-all but as targeted support that helps some students settle, focus, and judge their performance more accurately before an assessment.

Limitations and Future Research

Limitations should be considered when interpreting the findings of this study. The study was conducted in a single fifth-grade classroom with 14 students, and this small, demographically homogeneous convenience sample limits the extent to which the findings can be applied in other settings. The study was also constrained by time; a longer baseline and intervention data collection period would have provided more data points and allowed for stronger analyses of each variable, as well as an examination of whether the effects of

mindfulness practice strengthened, stabilized, or changed over time. In addition, the absence of a control group limits causal interpretation. Although baseline data were compared with intervention data, it is difficult to determine the extent to which mindfulness alone accounted for the observed differences, as other factors, such as spelling-list difficulty, classroom routines, or normal student development, may also have influenced the results.

Future research should include a control group and extend data collection over a longer period. Studies should also investigate whether mindfulness affects performance in academic areas beyond spelling and explore its potential role in supporting metacognitive processes such as self-monitoring, goal setting, and reflection. Examining how mindfulness functions across different age groups would also help clarify how, for whom, and under what conditions it is most effective.

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About the Authors

Jenna Akers is an Elementary Librarian at Central Cass School District in North Dakota. She integrates mindfulness into her classroom to support focus, encourage positive behaviors, and instill a love for reaching.

Justin J. Wageman, is a professor in the School of Education at North Dakota State University. His research focuses on classroom management, second language learning, educational psychology, and classroom assessment.

Stacy Duffield is the director of the Office of Teaching and Learning at North Dakota State University. As a professor and administrator, Dr. Duffield's research and teaching interests include the science the teaching, adolescent and adult learning, with a special interest in literacy and professional development.

Lisa Narum is the Middle School Principal at Central Cass School District in North Dakota. She is an advocate for lifelong learning.