

**Attention span and classroom engagement of Key Stage 2 learners:
Basis for an instructional supervision intervention plan**

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ABSTRACT

Attention span and classroom engagement among Key Stage 2 learners are critical factors influencing effective learning, especially in modern classrooms where students face increasing distractions. This study assessed the level of attention span and classroom engagement of Key Stage 2 learners at Bunakan Integrated School, Bunakan, Madridejos, Cebu during the School Year 2025–2026 as a basis for developing an instructional school supervision intervention plan. The study was conducted at Bunakan Integrated School using a random sampling method with more than 50 Key Stage 2 learners as respondents. Data were gathered using an adapted questionnaire. The study employed an embedded mixed-method research design. Data were analyzed using the weighted mean and Pearson Product–Moment Correlation Coefficient (r). The study revealed that learners generally demonstrate a high level of attention span and classroom engagement. They maintain focus during instructional periods, quickly regain concentration after distractions, and complete tasks diligently and independently, showing persistence and accuracy in their work. Learners also actively participate in class discussions, exhibit confidence in their ability to succeed, and communicate respectfully and constructively with peers and teachers, reflecting strong behavioral, emotional, and social engagement. Moreover, the findings indicate a significant positive relationship between attention span and classroom engagement, suggesting that learners who sustain their focus are more actively involved in learning activities, discussions, and collaborative tasks. Therefore, it is recommended that the proposed output of the study may be adopted and implemented.

Keywords: Administration and supervision, attention span and classroom engagement, embedded mixed-method design, Bunakan, Madridejos Cebu, Philippines.

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INTRODUCTION

Attention span and classroom engagement among Key Stage 2 learners have emerged as critical concerns in contemporary education, particularly in light of increasing evidence that younger learners face growing challenges in sustaining focus within modern learning environments. Sustained attention is a fundamental prerequisite for meaningful learning because attentional lapses are strongly associated with reduced on-task behavior, diminished

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participation, and weaker academic performance (Corciega et al., 2025). As learners between the ages of 8 and 12 continue to develop cognitively, socially, and emotionally, understanding how they maintain or lose focus during classroom instruction has become essential for designing educational practices that effectively respond to their developmental needs. Research has demonstrated that attention span is not a fixed characteristic but is significantly influenced by pedagogical approaches and classroom conditions. Corciega et al. (2025) reported that structured breaks, multimodal instruction, and active learning strategies exhibit strong positive relationships with children's attention span, whereas environmental distractions such as ambient noise serve as major impediments to sustained focus. These findings underscore the importance of investigating attention and engagement as interconnected constructs that directly influence learning outcomes.

Although concerns regarding declining attention spans have become increasingly prominent, particularly following the disruptions brought about by the COVID 19 pandemic, empirical evidence documenting the extent and implications of these challenges remains limited. Reports indicate that teachers increasingly perceive younger learners as having shorter attention spans than in previous years (The Guardian, 2023). However, systematic investigations examining how such attentional challenges influence classroom engagement across varying educational contexts remain insufficient. Existing studies have tended to focus on specific age groups or isolated educational variables. For example, Monteza et al. (2025) examined the influence of electronic gadget use on kindergarten learners' attention and engagement in Cebu but did not extend their inquiry to Key Stage 2 learners. Similarly, Hermoso et al. (2022) explored the experiences of science teachers functioning as classroom managers in online learning environments in Cebu City, yet their work concentrated on teacher perspectives and did not empirically measure student attention or engagement. Likewise, action research conducted by Sulpico et al. (2025) highlighted academic achievement and enjoyment through game-based learning but did not systematically investigate the relationship between sustained attention and classroom engagement. Consequently, a significant gap persists regarding context specific, empirically grounded understanding of attention span and classroom engagement among Key Stage 2 learners, particularly within local educational settings.

The need to address this gap becomes even more pressing when considering the broader educational landscape characterized by digital distractions, post pandemic learning adjustments, and evolving learner needs. Despite widespread recognition of the importance of attention and engagement in facilitating effective learning, there remains limited empirical evidence detailing how these constructs manifest among primary learners in specific communities. This gap is particularly evident in the context of Bunakan Integrated School, Bunakan, Madridejos, Cebu, where little is known about the current levels of attention span and classroom engagement among Key Stage 2 learners. Understanding these dynamics is essential because the findings may serve as the basis for developing an instructional supervision intervention plan aimed at enhancing learners' attention, participation, and overall educational experiences.

The study is grounded in several complementary theoretical perspectives that collectively explain how attention span and classroom engagement develop and operate within educational settings. Central among these is Attention Control Theory (ACT), as expanded by Eysenck and Derakshan (2023) and supported by the findings of Wei et al. (2024). ACT posits that anxiety, cognitive pressure, and environmental distractions diminish the efficiency of executive functions responsible for attentional control. According to this theory, emotional strain consumes cognitive resources that would otherwise support sustained concentration, resulting in attentional lapses and increased susceptibility to distraction. Wei et al. (2024) further demonstrated that learners experiencing stress or academic pressure exhibit more

frequent attentional disruptions and slower recovery from distractions. These perspectives suggest that attention is not solely a cognitive function but is also shaped by emotional and environmental influences. For Key Stage 2 learners, ACT provides a valuable framework for understanding why some children struggle to sustain focus despite possessing the cognitive capacity to complete classroom tasks. The theory also highlights the importance of examining observable behaviors such as shifting attention, task avoidance, and responsiveness to distractions, which are directly relevant to assessing attention span in classroom contexts.

Complementing ACT is Information Processing Theory, which conceptualizes learning as a sequence of cognitive operations involving the encoding, storage, and retrieval of information. As discussed by May Varas (2023), attention serves as the gateway through which information enters working memory, making it a prerequisite for successful learning. Renninger (2022) further emphasized the role of interest and motivation in directing cognitive resources toward learning tasks. When learners find activities meaningful or engaging, they are more likely to devote sustained attention to processing information, resulting in deeper learning and stronger retention. This perspective is particularly relevant for Key Stage 2 learners because it suggests that instructional activities requiring prolonged concentration should be carefully designed to minimize cognitive overload while stimulating curiosity and interest. Information Processing Theory therefore reinforces the view that classroom engagement is not merely behavioral but is fundamentally connected to learners' cognitive capacity to process and manage information effectively.

The study is further anchored in Self Determination Theory (SDT), as articulated by Ryan and Deci (2019) and subsequently expanded by Ryan et al. (2022) and Burke et al. (2024). SDT proposes that learners are more motivated, attentive, and engaged when their needs for autonomy, competence, and relatedness are fulfilled. The theory emphasizes that students are more likely to participate actively in learning when they feel capable of succeeding, experience meaningful connections with teachers and peers, and perceive a degree of personal control over their learning experiences. Ryan et al. (2022) provided substantial evidence linking intrinsic motivation to increased engagement, persistence, and emotional investment in learning, while Burke et al. (2024) highlighted the effectiveness of autonomy supportive classroom environments in enhancing behavioral and emotional engagement. Within the context of Key Stage 2 education, SDT underscores the importance of supportive teacher student relationships, meaningful learning tasks, and opportunities for learner choice as mechanisms for promoting sustained attention and active participation.

These theoretical foundations are reinforced by national educational policies and international development frameworks that emphasize learner centered and developmentally appropriate education. The Enhanced Basic Education Act of 2013 (RA 10533) advocates differentiated instruction, active learning, and pedagogical approaches that respond to learners' diverse needs, capacities, and learning paces. By emphasizing meaningful learning experiences that foster curiosity, sustained focus, and active participation, the law provides a strong legal basis for examining attention span and classroom engagement among Key Stage 2 learners. Similarly, DepEd Order No. 21, s. 2019 highlights the importance of active, holistic, and meaningful learning experiences that promote learner participation and the development of 21st century skills. The policy recognizes engagement as an essential component of effective curriculum implementation and encourages instructional practices that sustain learner interest and involvement. DepEd Order No. 42, s. 2016 further strengthens this foundation by institutionalizing systematic lesson planning through Daily Lesson Logs and Detailed Lesson Plans. This policy emphasizes the importance of designing lessons that anticipate learners' attention patterns, maintain interest, minimize distractions, and promote active participation.

Together, these policies establish the educational and legal relevance of investigating attention span and classroom engagement. Likewise, Sustainable Development Goal 4 underscores the global commitment to ensuring inclusive, equitable, and quality education for all. By emphasizing effective teaching and learning processes, supportive learning environments, and improved educational outcomes, SDG 4 provides an international framework that aligns closely with efforts to understand and enhance learners' attention and engagement.

The empirical literature further demonstrates the multifaceted nature of attention span and classroom engagement. Cunha et al. (2023) found that a narrative based self-regulation intervention significantly enhanced learners' satisfaction of autonomy, competence, and relatedness while increasing classroom engagement across multiple dimensions. These findings suggest that fostering self-regulation and motivation can strengthen learners' focus and participation. Similarly, Al Mamun and Lawrie (2023) reported that students engaged in online self-regulated science modules maintained substantial engagement when instructional activities were supported by scaffolding and clear guidance, highlighting the role of instructional design in sustaining attention. In the Philippine context, Corciega et al. (2025) demonstrated that active learning, multimodal instruction, and well managed classroom environments significantly enhance children's ability to focus, reinforcing the importance of examining attention and engagement within comparable educational settings.

Research also indicates that learner characteristics and contextual factors significantly influence engagement. Zhong et al. (2025) found that socioeconomic status positively predicts academic engagement, with motivation and learning burnout serving as mediating factors. Similarly, Michael et al. (2023) demonstrated that academic motivation mediates the relationship between socioeconomic status and achievement, suggesting that engagement is influenced by motivational pathways. Cognitive and learning style differences also affect classroom participation. Pascu, Bello, and Ionescu (2024) reported that learners whose preferred learning styles align with instructional methods exhibit higher engagement, while Cavite and Gonzaga (2023) observed that learners with different learning style profiles demonstrate varying levels of performance and participation. Family involvement likewise plays a crucial role, with Martinez Yarza et al. (2024) finding that increased family involvement positively influences students' social and emotional engagement. Collectively, these studies suggest that engagement is deeply embedded within learners' socioeconomic, cognitive, and familial contexts.

At the same time, the literature identifies several challenges that may undermine attention and engagement. Learners from socioeconomically disadvantaged backgrounds often experience greater stress and reduced access to educational support, factors that negatively affect concentration and participation. Research reported in *Frontiers in Education* indicated that low-income students spent substantial portions of the school day in transitions and exhibited relatively low levels of engagement. Learner diversity presents additional challenges. Ricaforte et al. (2025) found that mismatches between teaching styles and learners' preferred learning styles contributed to lower engagement among students with disabilities, while Sankalaite et al. (2023) demonstrated that working memory constraints require teachers to employ specialized strategies to maintain engagement. Social emotional factors further complicate the picture. Studies have documented increases in attention related difficulties associated with anxiety, peer relationship challenges, and emotional stress, particularly following the COVID 19 pandemic. Martinez Yarza et al. (2024) similarly noted that low family involvement is associated with reduced school engagement and weaker social and emotional development. These findings illustrate the complex interaction of cognitive, social, emotional, and environmental factors that shape learners' attention and engagement.

Contemporary scholarship has also refined the conceptualization of attention span and classroom engagement. Corciega et al. (2025) define attention span as the duration an individual can concentrate on a task without succumbing to distractions while emphasizing its dynamic and recoverable nature. Research indicates that environmental conditions, classroom design, and instructional strategies can influence attention, and that strategically implemented breaks may help restore learners' capacity to focus. Classroom engagement has likewise evolved into a multidimensional construct encompassing behavioral, emotional, cognitive, and agentic dimensions. Drawing on Reeve's framework, Cunha et al. (2023) conceptualize engagement as involving attention, effort, persistence, emotional investment, self-regulation, and proactive classroom participation. These dimensions highlight the interconnectedness of attention and engagement and suggest that effective learning requires both sustained focus and active involvement.

Empirical evidence consistently demonstrates the close relationship between attention span and classroom engagement. Cueto et al. (2025) found that behavioral engagement was strongly associated with attention span indicators such as duration of focus, response to distractions, and task completion. Students who exhibited higher engagement levels also demonstrated stronger attentional control and greater task persistence. Similarly, Corciega et al. (2025) reported that instructional strategies promoting attention, particularly structured breaks and active learning approaches, also enhanced engagement. Longitudinal evidence provided by Saqr et al. (2023) further revealed that learners who maintained higher engagement over time exhibited more stable academic achievement trajectories, suggesting that sustained attention and engagement jointly contribute to learning success.

Taken together, the theoretical perspectives, policy frameworks, and empirical studies reviewed in this chapter establish a strong foundation for examining attention span and classroom engagement among Key Stage 2 learners. The literature demonstrates that attention and engagement are influenced by a complex interplay of cognitive, motivational, emotional, environmental, and contextual factors. While substantial evidence underscores their importance in promoting effective learning, significant gaps remain regarding their manifestation within specific local contexts. Addressing these gaps is essential for developing evidence based instructional supervision interventions that support learner focus, participation, and academic success. Consequently, this study seeks to explore the attention span and classroom engagement of Key Stage 2 learners at Bunakan Integrated School, Bunakan, Madridejos, Cebu, during the School Year 2025–2026 and to utilize the findings as the basis for an instructional supervision intervention plan designed to enhance educational quality and learner outcomes.

Statement of the problem

This study assessed the level of attention span and classroom engagement of Key Stage 2 learners at Bunakan Integrated School, Bunakan, Madridejos, Cebu during the School Year 2025–2026 as a basis for developing an instructional school supervision intervention plan. Specifically, the study sought to answer the following questions:

1. What is the level of attention span of the respondents in terms of duration of focus, response to distraction, and task completion?
2. What is the level of classroom engagement of the respondents in terms of behavioral engagement, emotional engagement, and social engagement?
3. Is there a significant relationship between the learners' attention span and their level of classroom engagement?

4. What challenges related to attention span and classroom engagement do teachers observe among Key Stage 2 learners?
5. Based on the findings of the study, what instructional school supervision intervention plan can be proposed to improve learners' attention span and classroom engagement?

METHODOLOGY

This study employed an embedded mixed methods research design to assess the extent of attention span and classroom engagement of Key Stage 2 learners. The use of an embedded mixed methods design was appropriate because it allowed the integration of quantitative and qualitative data to provide a more comprehensive understanding of learners' classroom behaviors. Quantitative data, such as survey results, rating scales, and observational checklists, objectively measured the level and frequency of attention span and classroom engagement, while qualitative data embedded within the design, including interviews, classroom observations, and open-ended responses, explained the reasons underlying the measured behaviors. This design was particularly suitable in educational settings where numerical findings alone could not fully capture the complexity of learner engagement, which is influenced by teaching strategies, classroom environment, and learner characteristics.

The study adopted a systems approach utilizing the input, process, and output model. The input component consisted of the respondents' profile variables, including age, gender, highest educational attainment of parents, occupation of parents, and combined monthly family income. It also included the respondents' extent of attention span in terms of duration of focus, responses to distraction, and task completion, as well as their extent of classroom engagement in terms of behavioral engagement, emotional engagement, and social engagement. The process component involved the systematic gathering and synthesis of variables through the selected research methods. It included data gathering, organization of data, tabulation, analysis, computation, and evaluation of questionnaire results to determine the study findings. The output component was the development and implementation of an instructional supervision intervention plan aimed at increasing the attention span and classroom engagement of Key Stage 2 learners. The proposed intervention plan included areas of concern, objectives, strategies, persons involved, budget, source of budget, time frame, expected outcome, and actual accomplishment.

The study was conducted at Bunakan Integrated School, located in Barangay Bunakan, Madridejos, Cebu, during the School Year 2025–2026. The school was selected as the research environment because it provides a realistic and context rich setting where instructional practices, learner behavior, and supervision mechanisms naturally interact. As an integrated school serving diverse learners within the same community, it reflects varied classroom conditions, learning needs, and teaching strategies that directly influence pupils' attention span and engagement. The school's structured classroom routines, implementation of the K–12 curriculum, and regular instructional supervision facilitate systematic observation and assessment of learner engagement in authentic learning situations. Its accessibility, stable learner population, and support from school administrators and teachers further ensured reliable data collection and meaningful respondent participation. These characteristics made Bunakan Integrated School an ideal research locale because the findings could accurately capture existing classroom realities and serve as a sound basis for developing a contextualized instructional school supervision intervention plan responsive to the actual needs of Key Stage 2 learners.

Bunakan Integrated School traces its roots to the small and close-knit coastal community of Bunakan, whose population numbered just under 2,000 according to recent census estimates. Although formal historical records regarding the school's founding are

limited, local records identify it as a public integrated school serving both elementary and secondary learners. Over time, the school evolved in response to the needs of a rural and geographically isolated barangay on Bantayan Island that has historically experienced limited resources. Many Grade 3 to Grade 6 learners, who comprise the Key Stage 2 population, experience challenges common to small island communities. The limited population base often results in multi grade or combined classes, requiring teachers to scaffold instruction across varying ages and attention levels. In addition, learners' attention spans may be influenced not only by classroom factors but also by their daily experiences, including fishing activities, assisting in family businesses, and coping with community related concerns. Despite these constraints, Bunakan Integrated School has demonstrated resilience, adaptation, and gradual development. The construction of a recent P13.1 million community college building in Bunakan reflects the community's commitment to educational advancement and provides younger learners with visible examples of continuing educational opportunities, potentially increasing their motivation and focus.

The respondents of the study consisted of Key Stage 2 learners enrolled in Bunakan Integrated School. A total of 50 respondents participated in the study, and the number was computed through percentage distribution. The respondent distribution indicated that all 50 respondents were learners, representing a frequency of 50 and a percentage of 100.00%. The total number of respondents was likewise 50, representing 100.00% of the study population. These learners were officially enrolled during the current school year. The study employed random sampling as the sampling technique. This method was considered appropriate because it required only a short period to accomplish and the respondents were readily available within the research locale.

For the qualitative component of the study, teachers served as key participants in exploring the challenges related to attention span and classroom engagement among Key Stage 2 learners. As individuals directly responsible for daily classroom instruction, these teachers were in a unique position to observe and describe learner behaviors, learning patterns, and engagement levels. Through interviews, focus group discussions, and reflective reports, teachers provided rich and descriptive insights regarding learner challenges, including distractibility, difficulty sustaining focus during lessons, limited participation in group activities, and inconsistent task completion. Their observations also offered valuable information regarding contextual influences on engagement, including classroom management strategies, lesson pacing, instructional materials, and learner motivation.

Data were collected using an adapted survey questionnaire based on the study of Cueto (2025). The research-based questionnaire consisted of two parts. The first part measured the respondents' extent of attention span in terms of duration of focus, responses to distraction, and task completion. Each subvariable contained an equal distribution of five statements. The second part measured the respondents' extent of classroom engagement in terms of behavioral engagement, emotional engagement, and social engagement, likewise with an equal distribution of five statements for each subvariable. To explore the challenges related to attention span and classroom engagement observed among Key Stage 2 learners, the study also utilized an interview guide. This qualitative instrument consisted of open-ended questions that enabled respondents to provide detailed, reflective, and context rich responses regarding their classroom experiences and observations. The interview guide allowed researchers to probe specific concerns, such as situations in which learners lose focus, factors that hinder participation, and strategies teachers use to maintain engagement. The use of the interview guide ensured consistency and systematic data collection across participants while allowing flexibility for elaboration on unique experiences and perspectives.

The data gathering process followed three major stages. During the preliminary stage, the researchers sent a transmittal letter to the Public Schools District Supervisor, the school principal, and the learners to request permission to conduct the study. Upon approval, a schedule was coordinated with the respondents to facilitate the conduct of the research. During the data gathering stage, an orientation session was conducted to explain the purpose of the study, the procedures involved, and the measures undertaken to ensure confidentiality and respondent protection. This was followed by the administration of the survey questionnaires. Clear instructions were provided regarding the completion of both the questionnaires and interviews. Assistance was made available throughout the data collection process, and respondents were given sufficient time to complete their responses. All questionnaires were collected immediately after completion. During the post data gathering stage, responses were tallied, organized, summarized, and analyzed. Appropriate statistical tools were applied to interpret the findings accurately and generate conclusions consistent with the objectives of the study.

The study employed the correlational method in analyzing quantitative data. Weighted Mean was used to determine the distribution results of the respondents' extent of attention span in terms of duration of focus, responses to distraction, and task completion, as well as the extent of classroom engagement in terms of behavioral engagement, emotional engagement, and social engagement. Pearson Moment Product Correlation R was used to test the significant relationship between the attention span level of the learners and their level of classroom engagement.

The qualitative data were analyzed using Thematic Analysis based on the analytical framework developed by Braun and Clarke (2006). This approach enabled the researchers to systematically identify, analyze, and report patterns or themes within the qualitative data, thereby providing a rich, detailed, and nuanced understanding of classroom behaviors. The process began with familiarization with the data through repeated reading and review of interview transcripts and observation notes. Initial codes were then generated to label significant features of the data related to attention span and engagement challenges. In the final stage of producing the report, themes were presented together with illustrative quotations and interpretations, linking the findings to existing literature and generating actionable insights for improving instructional strategies and classroom supervision. This analytical procedure ensured that the qualitative findings remained rigorous, transparent, and directly informative for evidence-based interventions designed for Key Stage 2 learners.

The study utilized a Five-point Likert Scale to measure the respondents' extent of attention span and classroom engagement. The scale required respondents to indicate the extent to which each statement described their experiences. A rating of 5 corresponded to the range 4.21-5.00 and was interpreted as Very High, meaning that the respondent experienced the statement to the highest extent. A rating of 4 corresponded to the range 3.41-4.20 and was interpreted as High, meaning that the respondent experienced the statement to a high extent. A rating of 3 corresponded to the range 2.61-3.40 and was interpreted as Neutral, meaning that the statement described the learner to a moderate or balanced extent, or that the rater had not observed the behavior to be consistently high or low. A rating of 2 corresponded to the range 1.81-2.60 and was interpreted as Low, meaning that the respondent experienced the statement to a lesser extent. A rating of 1 corresponded to the range 1.00-1.80 and was interpreted as Very Low, meaning that the respondent experienced the statement to the least extent.

The conduct of the study was guided by established ethical principles governing research practice. Voluntary participation was observed throughout the study, and learner respondents were informed that their participation was entirely voluntary. Informed consent was secured to ensure that respondents fully understood the goals, objectives, purpose, and procedures of the study, as well as their rights as participants. Anonymity was maintained by

protecting respondents' identities and ensuring that their profiles and responses remained confidential throughout the research process. Confidentiality was likewise upheld by safeguarding all information obtained and ensuring that responses and personal data were kept private. The study also considered the possibility of potential harm and assured respondents that participation posed no risk and that they were free to provide only information with which they were comfortable. Finally, the communication of results was free from plagiarism and inaccuracies. The study ensured the correctness, accuracy, originality, and objectivity of all data and findings presented. Every piece of information collected and reported was verified to be reasonable, factual, true, and unbiased.

RESULTS AND DISCUSSION

This chapter presents the results, analysis, and interpretation of data gathered from 50 Key Stage 2 learners of Bunakan Integrated School, Bunakan, Madridejos, Cebu. The study employed an embedded mixed method design, used random sampling for the learner respondents, and gathered quantitative data through an adapted survey questionnaire from Cueto (2025), while qualitative data were obtained through teacher interviews regarding observed challenges in attention span and classroom engagement. Weighted Mean was used to determine the respondents' extent of attention span in terms of duration of focus, responses to distraction, and task completion, as well as their extent of classroom engagement in terms of behavioral engagement, emotional engagement, and social engagement. Pearson Moment Product Correlation R was used to test the significant relationship between learners' attention span and classroom engagement, while qualitative responses were analyzed thematically. The discussion is grounded in the data gathered and is interpreted in direct relation to the objectives of assessing learners' attention span, determining their classroom engagement, examining the relationship between these variables, and identifying teacher observed challenges that may serve as basis for an instructional supervision intervention plan.

The respondents' extent of attention span in terms of duration of focus was generally interpreted as high, with an Overall Mean of 3.93 and SD of 0.68. Among the indicators, "Learners actively focus on their teacher during instructional periods" obtained the highest mean of 4.42 with SD of 0.45 and was interpreted as VH. This indicates that learners demonstrate a very high tendency to attend to the teacher during instructional periods, suggesting that classroom instruction is generally able to capture their interest and sustain their focus. The indicator "Learners concentrate on their work with minimal distractions" obtained a mean of 3.70 with SD of 0.80 and was interpreted as H, while "Learners maintain focus during group activities without frequent reminders" obtained a mean of 3.88 with SD of 0.70 and was also interpreted as H. The indicator "Learners demonstrate sustained attention during multimedia or interactive lessons" obtained a mean of 3.58 with SD of 0.85 and was interpreted as H, whereas "Learners demonstrate sustained attention during independent reading or assignments" obtained a mean of 4.08 with SD of 0.60 and was likewise interpreted as H. Based on the legend, 4.21-5.00 means very high, 3.41-4.20 means high, 2.61-3.40 means neutral, 1.81-2.60 means low, and 1.00-1.80 means very low. These results imply that learners are generally able to sustain attention across instructional, independent, group, and interactive learning situations. The very high rating for active focus during teacher instruction suggests that teacher directed learning remains an important source of attention control, while the high ratings in independent work, multimedia lessons, and group activities indicate that learners can sustain focus when tasks are structured and instruction is engaging. This supports the view that high levels of on task attention are associated with engaging and learner centered teaching

practices, such as interactive questioning, varied instructional tasks, and meaningful feedback, which help sustain student focus and involvement (Hattie, 2020). Since attention is a key component of cognitive engagement and learning transfer, learners who maintain active attention are more likely to process information deeply, retain knowledge, and demonstrate improved academic performance (Reschly & Christenson, 2020).

The respondents' extent of attention span in terms of responses to distraction was also interpreted as high, with an Overall Mean of 4.07 and SD of 0.59. The highest rated indicator was "Learners quickly return to their work after brief distractions," which obtained a mean of 4.14 with SD of 0.55 and was interpreted as H. This was followed closely by "Learners stay focused on tasks by effectively ignoring minor distractions," which obtained a mean of 4.12 with SD of 0.55 and was interpreted as H. The indicator "Learners recognize distraction triggers and apply strategies to maintain focus" obtained a mean of 4.08 with SD of 0.58 and was interpreted as H, while "Learners exhibit strong self-regulation skills and independently refocus on tasks" obtained a mean of 4.04 with SD of 0.6 and was interpreted as H. The indicator "Learners remain attentive despite activities happening around them" obtained a mean of 4.00 with SD of 0.65 and was also interpreted as H. These findings indicate that learners possess a high capacity to recover from distractions, ignore minor disruptions, recognize distraction triggers, and independently refocus on learning tasks. The result implies that learners are developing self-regulation skills and resilience in maintaining focus despite minor interruptions in the classroom. This ability helps minimize loss of instructional time and promotes sustained engagement. The finding is consistent with Cleary and Zimmerman (2019), who emphasized that self-regulated learners are better able to control attention, manage distractions, monitor performance, prioritize tasks, and remain committed to learning objectives. The findings also support Fredricks et al. (2019) and Shernoff et al. (2019), who noted that sustained engagement is positively correlated with achievement outcomes.

The respondents' extent of attention span in terms of task completion was interpreted as high, with an Overall Mean of 4.12 and SD of 0.56. Four indicators obtained the highest reported mean values: "Learners consistently complete their tasks on time" obtained a mean of 4.14 with SD of 0.55 and was interpreted as H; "Learners independently complete assignments with minimal need for reminders from the teacher" obtained a mean of 4.14 with SD of 0.55 and was interpreted as H; "Learners follow task instructions accurately without frequent clarifications" obtained a mean of 4.14 with SD of 0.55 and was interpreted as H; and "Learners demonstrate persistence in completing challenging tasks" obtained a mean of 4.14 with SD of 0.55 and was interpreted as H. The remaining indicator, "Learner's transition between tasks efficiently without significant delays," obtained a mean of 4.06 with SD of 0.60 and was interpreted as H. Although the accompanying interpretation identified the highest responses as having a mean of 4.12, the reported table values show that the highest item means are 4.14, while the Overall Mean is 4.12. The results imply that learners are capable of managing time, completing tasks independently, following instructions accurately, transitioning efficiently, and sustaining effort when faced with challenging activities. For teachers, these findings suggest that the classroom environment and instructional strategies are sufficiently supportive, clear, and engaging to help learners take ownership of their learning. This aligns with Cleary and Zimmerman (2019), who emphasized that student engagement and self-regulation are associated with planning, goal setting, and adaptive task strategies. The findings also support Dweck (2019), who linked perseverance, problem solving, independent learning, and sustained motivation with long term academic success and personal growth.

The respondents' extent of classroom engagement in terms of behavioral engagement was interpreted as high, with an Overall Mean of 4.04 and SD of 0.62. The highest rated indicator was "Learners actively participate in class discussions and share their ideas," which obtained a mean of 4.14 with SD of 0.55 and was interpreted as H. This was followed by

“Learners actively participate in classroom activities and follow instructions consistently throughout the lesson,” which obtained a mean of 4.08 with SD of 0.60 and was interpreted as H. “Learners maintain a calm and respectful atmosphere in the classroom” obtained a mean of 4.04 with SD of 0.62 and was interpreted as H, while “Learners consistently submit assigned tasks and projects on time” obtained a mean of 4.00 with SD of 0.65 and was interpreted as H. The indicator “Learners engage in meaningful conversations that contribute to learning” obtained a mean of 3.96 with SD of 0.70 and was interpreted as H. These findings indicate that the learners demonstrate active participation, compliance with classroom instructions, timely task submission, meaningful interaction, and respectful classroom behavior. The result implies that active participation reflects not only comprehension of lessons but also learners’ willingness to think critically, communicate effectively, and collaborate with peers. For teachers, these results suggest that instructional strategies and classroom conditions encourage open dialogue and provide learners with opportunities to express ideas without fear of judgment. This supports Shernoff et al. (2019), who emphasized that active classroom engagement is associated with cognitive, behavioral, and social emotional learning outcomes. The findings also align with Fisher and Frey (2021) and Hattie (2020), who noted that supportive classroom environments promote autonomy, inclusive participation, and deeper learning.

The respondents’ extent of classroom engagement in terms of emotional engagement was interpreted as high, with an Overall Mean of 3.98 and SD of 0.71. The highest rated indicator was “Learners show confidence in their ability to learn and succeed in school tasks,” which obtained a mean of 4.20 with SD of 0.60 and was interpreted as H. The indicator “Learners feel happy and enjoy being in class” obtained a mean of 4.06 with SD of 0.65 and was interpreted as H, while “Learners take pride in their work and accomplishments in school” obtained a mean of 4.02 with SD of 0.68 and was interpreted as H. “Learners remain calm and resilient when faced with challenges” obtained a mean of 3.86 with SD of 0.75 and was interpreted as H, and “Learners exhibit emotional investment in classroom activities, showing motivation and a sense of belonging” obtained a mean of 3.76 with SD of 0.85 and was interpreted as H. These findings indicate that learners generally demonstrate confidence, enjoyment, pride, resilience, motivation, and belonging in classroom learning. The result implies that when learners believe in their capacity to understand and accomplish tasks, they are more likely to participate actively, accept challenges, and persist despite difficulties. This confidence reflects the effectiveness of instructional strategies, teacher support, and a positive learning environment in fostering competence, autonomy, and encouragement (Hattie, 2020). For educators, the findings suggest that learners are developing self-regulation skills, proactive attitudes toward learning, and the ability to take ownership of their educational progress, all of which contribute to sustained classroom engagement and improved academic performance (Schonert-Reichl, 2020).

The respondents’ extent of classroom engagement in terms of social engagement was interpreted as high, with an Overall Mean of 3.91 and SD of 0.73. The highest rated indicator was “Learners communicate politely and constructively with teachers and classmates during classroom interactions,” which obtained a mean of 4.04 with SD of 0.65 and was interpreted as H. The indicator “Learners show empathy, inclusivity, and positive interaction skills during peer-to-peer and group activities” obtained a mean of 3.98 with SD of 0.7 and was interpreted as H, while “Learners actively seek and offer help to classmates during learning activities” obtained a mean of 3.96 with SD of 0.68 and was interpreted as H. “Learners remain focused and attentive during class activities” obtained a mean of 3.94 with SD of 0.72 and was interpreted as H, and “Learners enjoy collaborating with their classmates on group projects”

obtained a mean of 3.66 with SD of 0.88 and was interpreted as H. These results imply that learners demonstrate social emotional competence, respect, constructive communication, empathy, inclusivity, cooperation, and willingness to assist classmates during classroom interactions. Such behavior indicates awareness of appropriate social norms and the ability to express ideas, ask questions, and provide feedback in a respectful and meaningful manner, thereby enhancing classroom interaction and peer learning (Jennings & Greenberg, 2019). For teachers, these findings reflect the value of classroom management strategies and the creation of a supportive and inclusive learning environment (Cohen et al., 2020; Zins et al., 2020).

The significant relationship between the attention span level of learners and their level of classroom engagement was tested using Pearson Moment Product Correlation R. The results showed an r-value of 0.62, computed t-value of 5.14, df of 58, critical t-value of 2.001, p-value of $< .001$, and a level of significance of 0.05. The decision was to Reject H_0 , and the interpretation was that there is a significant moderate positive relationship between learners' attention span and classroom engagement. The computed Pearson r-value of 0.62 indicates a moderate positive correlation, which means that as learners' attention span increases, their classroom engagement also tends to increase. The computed t-value of 5.14 exceeded the critical t-value of 2.001 at 58 degrees of freedom and at a 0.05 level of significance. Moreover, the p-value of $< .001$ confirms that the relationship is highly significant. Since the computed t-value is greater than the critical value and the p-value is lower than the alpha level, $\alpha = 0.05$, the null hypothesis is rejected. This result implies that improving students' ability to sustain focus can meaningfully enhance their active participation in classroom activities. Because attention span is closely linked to engagement, instructional strategies that promote concentration, including interactive teaching methods, structured learning tasks, brain breaks, and varied instructional materials, may lead to higher levels of student involvement. This finding underscores the critical role of teachers in designing learning environments that minimize distractions and sustain students' cognitive focus. It supports Muhammadjonova (2025), who emphasized that students' ability to sustain focus is fundamental to active classroom involvement, and Shuwara et al. (2025), who observed that passive teaching methods may reduce attention and engagement, whereas interactive and problem-based approaches help sustain involvement in learning tasks. The findings also align with Rustam kizi (2025), who noted that varied instructional segments and active learning techniques improve both attention and engagement by reducing attentional fatigue and promoting active participation.

The qualitative findings regarding teachers' observed challenges in learners' participation during lessons, group work, and classroom discussions revealed several recurring themes. One major theme was lack of confidence or shyness, as some learners hesitated to speak due to fear of making mistakes. This was reflected in the statement, "Some students are too shy to speak up even when they know the answer." Another theme was limited attention span or distraction, which hindered active involvement, as illustrated by the statement, "Some students get distracted easily and stop paying attention in the middle of lessons." Unequal participation in group work also emerged as a challenge, with some learners dominating discussions while others remained passive, as shown in the response, "During group work, a few students do most of the talking while others just follow along." Limited preparation or understanding was also identified, as some learners remained quiet because they lacked prior knowledge, reflected in the statement, "Some students cannot join discussions because they haven't read or understood the topic." Classroom or environmental factors, such as overcrowding or noise, also affected participation, as indicated by the teacher comment, "It's hard for everyone to participate when the class is too crowded." These findings imply that learner engagement is shaped by personal, cognitive, and environmental factors. The results point to the need for instructional strategies that develop learner confidence, sustain attention,

encourage equitable participation, and create classroom conditions that support active involvement.

The interview responses concerning activities and teaching methods that reduce or increase learner engagement revealed that interactive and hands on activities increase learners' focus and participation. Teachers observed that learners were more engaged during experiments, role playing, and practical demonstrations, as reflected in the statement, "Students are more focused when they do hands-on activities rather than just listening to lectures." Discussions and question and answer sessions were also found to promote engagement, particularly when teachers used open ended questions, as illustrated by the comment, "When I ask open-ended questions, students become more willing to share their ideas." In contrast, passive or lecture-based methods reduced engagement, especially when prolonged explanations limited learner interaction, as shown in the statement, "Students tend to lose focus when I just explain the topic for a long time." The use of visual and multimedia resources also enhanced engagement, as teachers noted that videos, images, and slides helped sustain interest, reflected in the statement, "Showing videos or images related to the lesson keeps students attentive and curious." Competitive or game-based activities likewise encouraged participation, as gamified lessons and quizzes motivated learners to contribute actively, shown in the statement, "Friendly competitions make learners excited to join in and contribute." These findings imply that learner engagement is strongly influenced by teaching methods. Active, interactive, visual, and game based approaches foster higher participation, while passive approaches tend to hinder involvement.

The qualitative results on how learners respond when asked to participate in classroom tasks or collaborative activities revealed varied patterns of engagement. Some learners responded positively and enthusiastically, actively joining group work and contributing ideas, as reflected in the statement, "Learners enjoy working in groups and actively contribute their ideas during tasks." However, hesitation or reluctance was also observed among learners who were shy or afraid of making mistakes, as shown in the statement, "They are sometimes quiet during group work because they are afraid of giving the wrong response." Participation also varied depending on learners' interest in or familiarity with the topic, with teachers observing that learners participated more when activities were meaningful or connected to their experiences, as reflected in the statement, "Students participate more when the topic is interesting or related to real-life situations." Peer influence and social factors also shaped participation, as shown in the statement, "When other students are actively participating, quiet learners often join in." However, some learners displayed disengagement or minimal effort, as indicated by the comment, "Some students just follow along without contributing much to the activity." These findings imply that learners' participation is influenced by confidence, interest, peer dynamics, and task familiarity. They also indicate the importance of instructional strategies that build self-assurance, increase motivation, and provide equitable opportunities for meaningful contribution in collaborative learning.

In synthesis, the findings show that Key Stage 2 learners demonstrated a high extent of attention span in terms of duration of focus, with an Overall Mean of 3.93 and SD of 0.68, responses to distraction, with an Overall Mean of 4.07 and SD of 0.59, and task completion, with an Overall Mean of 4.12 and SD of 0.56. They also demonstrated a high extent of classroom engagement in terms of behavioral engagement, with an Overall Mean of 4.04 and SD of 0.62, emotional engagement, with an Overall Mean of 3.98 and SD of 0.71, and social engagement, with an Overall Mean of 3.91 and SD of 0.73. The Pearson Moment Product Correlation R result of r -value = 0.62, computed t -value = 5.14, df = 58, critical t -value = 2.001, p -value = < .001, and α = 0.05 led to the decision to Reject H_0 and confirmed a significant

moderate positive relationship between learners' attention span and classroom engagement. The qualitative findings further revealed that learners' engagement is affected by confidence, distraction, group participation patterns, preparation, classroom environment, teaching methods, interest, peer influence, and task familiarity. Collectively, these results address the study objectives by describing the extent of learners' attention span and classroom engagement, establishing the relationship between the two variables, and identifying teacher observed challenges that must be addressed through instructional supervision. The findings contribute to the field by emphasizing that attention span and classroom engagement are closely interconnected and can be strengthened through interactive, structured, inclusive, and learner responsive instructional practices. These results provide a sound empirical basis for the succeeding section of the manuscript, particularly the development of an instructional school supervision intervention plan designed to improve the attention span and classroom engagement of Key Stage 2 learners.

CONCLUSION

The study determined the extent of attention span and classroom engagement of Key Stage 2 learners of Bunakan Integrated School, Bunakan, Madridejos, Cebu in the school year 2025-2026 as a basis for an instructional school supervision intervention plan. It was conducted using an embedded mixed-method design, with random sampling applied to over 50 respondents. Data were gathered through an adapted questionnaire and analyzed using weighted mean and Pearson-Moment Product Correlation R.

The findings revealed that learners generally exhibited a high level of attention span across duration of focus, responses to distraction, and task completion. In terms of duration of focus, learners actively maintained focus on their teacher during instructional periods, indicating strong attentiveness throughout lessons. In terms of responses to distraction, learners were able to quickly return to their work after brief interruptions, suggesting effective self-regulation and the ability to regain concentration. In terms of task completion, learners consistently demonstrated diligence by completing assignments on time, following instructions accurately, working independently with minimal reminders, and showing persistence when confronted with challenging tasks.

The study further revealed that learners demonstrated a high level of classroom engagement across behavioral, emotional, and social dimensions. In terms of behavioral engagement, learners actively participated in class discussions and readily shared their ideas, reflecting consistent involvement in learning activities. In terms of emotional engagement, learners showed confidence in their ability to learn and succeed in school tasks, indicating a positive attitude and motivation toward academic challenges. In terms of social engagement, learners communicated politely and constructively with teachers and classmates during classroom interactions, demonstrating effective interpersonal skills and collaborative behavior. Taken together, these findings indicate that learners were highly engaged in their learning process through participation, emotional commitment, and social interaction within the classroom environment.

Furthermore, the study established a statistically significant relationship between learners' attention span and their level of classroom engagement. This finding indicates that learners who are able to sustain their attention during instructional activities tend to be more actively involved in classroom tasks, discussions, and collaborative activities. Thus, learners' attention span plays a crucial role in shaping the quality and extent of their classroom engagement. Sustained focus supports not only cognitive learning but also active participation, effective task completion, and meaningful collaboration with peers.

Based on these findings, the study concludes that strengthening learners' attention span is essential to improving classroom engagement among Key Stage 2 learners. Since attention span and classroom engagement are closely connected, instructional practices must be designed to sustain focus, reduce distractions, encourage participation, and support learners' confidence and social interaction. The results therefore emphasize the need for a structured instructional school supervision intervention plan that addresses both attentional development and classroom engagement.

Consequently, the study recommends that DepEd strengthen policies and provide continuous professional development programs focused on strategies that enhance learners' attention span and active classroom engagement, including differentiated instruction, brain-based learning, and effective classroom management. School administrators should implement and monitor an instructional supervision intervention plan that supports teachers through coaching, classroom observations, and provision of resources that promote engaging and learner-centered teaching practices. Teachers should adopt varied instructional strategies such as interactive activities, formative assessments, movement breaks, and the integration of educational technologies to sustain learners' focus and participation during lessons.

The study also recommends that parents collaborate closely with the school by reinforcing positive study habits at home, minimizing distractions, and supporting routines that improve learners' concentration and readiness to learn. Learners should actively participate in classroom activities, practice self-regulation strategies, and develop responsible learning behaviors that enhance their attention and engagement. The researcher should disseminate the results of the study to stakeholders and assist in the development or refinement of the proposed instructional supervision intervention plan. Future researchers should conduct similar studies in different contexts or grade levels, include additional variables such as learning environment, technology use, or socio-emotional factors, and evaluate the effectiveness of implemented interventions to further improve learner engagement and attention.

In conclusion, the findings provide a clear basis for adopting the instructional enhancement plan entitled "Instructional School Supervision Intervention Plan." This plan is expected to guide instructional supervision practices, strengthen teacher support, and promote learning environments that improve the attention span and classroom engagement of Key Stage 2 learners.

REFERENCES

- Al Mamun, M. A., & Lawrie, G. (2023). Student-content interactions: Exploring behavioural engagement with self-regulated inquiry-based online learning modules. *Smart Learning Environments*, 10, Article 1. <https://doi.org/10.1186/s40561-022-00221>
- Burke, K. M., Shogren, K. A., Parente, A., Alsaed, A., Myers, A. M., & Aleong, S. (2024). Self-Determination Research: Current and Future Directions. *Behavioral Sciences*, 14(7), 613. <https://doi.org/10.3390/bs14070613>
- Cavite, J. A. V., & Gonzaga, M. V. A. (2023). Pupils' learning styles and academic performance in modular learning among Grade IV, V, and VI learners of Hindang Central School. *International Journal of Multidisciplinary Educational Research and Innovation*.

Children & Schools. (2021). Social-emotional attention in school-age children: A call for school-based intervention during COVID-19 and distance learning. *Children & Schools*, 43(2), 107–117. <https://doi.org/10.1093/cs/cdab010>

Corciega, N. A., Bayot, C. M. A., De Jesus, M. S., Hinampas, G. M. A., Muaña, R., & Ones, S. A. (2025). Engaging young minds: Rating strategies and environmental factors to enhance attention span for primary pupils. [Unpublished manuscript]. Negros Oriental State University.

Corciega, N. A., Bayot, C. M. A., De Jesus, M. S., Hinampas, G. M. A., Muaña, R., & Ones, S. A. (2025). Engaging young minds: rating strategies and environmental factors to enhance attention span for primary pupils. Unpublished manuscript.

Corciega, N. A., Bayot, C. M. A., De Jesus, M. S., Hinampas, G. M. A., Muña, R., & Ones, S. A. (2025). Engaging young minds: Rating strategies and environmental factors to enhance attention span for primary pupils. [Unpublished manuscript].

Corciega, N. A., Bayot, C. M. A., De Jesus, M. S., Hinampas, G. M. A., Muaña, R., & Ones, S. A. (2025). Engaging young minds: Rating strategies and environmental factors to enhance attention span for primary pupils. [Unpublished manuscript]. Negros Oriental State University.

Cueto, L. A., (et al.). (2025). Attention span and classroom engagement of Key Stage 2 learners [Manuscript]. IJM CER.

Cunha, J., Martins, J., Peseta, R., & Rosário, P. (2023). A self-regulation intervention conducted by class teachers: Impact on elementary students' basic psychological needs and classroom engagement. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1220536>

Cunha, J., Martins, J., Peseta, R., & Rosário, P. (2023). A self-regulation intervention conducted by class teachers: Impact on elementary students' basic psychological needs and classroom engagement. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1220536>

Eysenck, M. W., & Derakshan, N. (2023). A neurocognitive account of attentional control theory: How trait anxiety impairs the efficiency of executive processes. *Cognition & Emotion*, 37(6), 1183–1198. <https://doi.org/10.1080/02699931.2022.2159936> Taylor &

Frontiers in Education. (2022). Exploring classroom practices associated with greater student engagement that may benefit low-income students in the early grades. *Frontiers in Education*, 7. <https://doi.org/10.3389/educ.2022.944731> Frontiers

Hall, R., & Association of School and College Leaders. (2023, June 7). Children's attention span 'shorter than ever' since Covid crisis, say teachers in England. *The Guardian*.

Infantes-Paniagua, Á., Silva, A. F., Ramírez-Campillo, R., Sarmiento, H., González-Fernández, F. T., González-Víllora, S., & Clemente, F. M. (2021). Active school breaks and students' attention: A systematic review with meta-analysis. *Brain Sciences*, 11(6), Article 675. <https://doi.org/10.3390/brainsci11060675>

Martinez-Yarza, N., Solabarrieta-Eizaguirre, J., & Santibáñez-Gruber, R. (2024). The impact of family involvement on students' social-emotional development: The mediational role of school engagement. *European Journal of Psychology of Education*, 39(4), 4297–4327. <https://doi.org/10.1007/s10212-024-00862-1>

Martinez-Yarza, N., Varela-González, J., & Villardón-Gil, C. (2024). Family involvement and students' school engagement: Evidence from social-emotional development mediation. *European Journal of Psychology of Education*.

May-Varas, S. (2023). Information processing theory. In *Educational learning theories* (3rd ed.). Open Educational Press.

MDPI Behavioral Sciences. (2023). Bibliometric analysis of classroom engagement: A review based on Web of Science database. *Behavioral Sciences*, 15(6), Article 737. <https://doi.org/10.3390/bs15060737>

Michael, D., Zamarro, G., & Katz, V. S. (2023). Mediating effects of motivation and socioeconomic status on reading achievement among students. *Large-Scale Assessments in Education*.

Mincera, A. G. (2024). Appropriate classroom noise and attention span of Grade 4 students. *International Journal of Innovative Science and Research Technology*.

Pascu, M., Bello, M., & Ionescu, D. (2024). The contribution of students' learning styles to their learning engagement via interactive platforms. *Education + Training*.

Renninger, K. A. (2022). Interest development, self-related information processing, and motivational interventions. *Studies in Higher Education*, 47(12), 2719–2734. <https://doi.org/10.1080/00405841.2021.1932152>

Ricaforte, R., Pilongo, C. S., & Taroma, G. T. (2025). Learning styles and teaching styles as factors affecting student engagement of learners with learning disabilities. *International Journal of Research and Scientific Innovation (IJRSI)*, 12(6), 1228–1235. <https://doi.org/10.51244/IJRSI.2025.120600100>

Roque, J. P., Macasayon, B., & Manibpel, J. (2025). Assessing the impact of technology integration on intermediate learners' attention span. *Journal of Interdisciplinary Perspectives*, 3(9), 316–323. <https://doi.org/10.69569/jip.2025.535>

Ryan, R. M., & Deci, E. L. (2019). Brick by brick: The origins, development, and future of self-determination theory. In A. J. Elliot (Ed.), *Advances in motivation science* (Vol. 6, pp. 111–156). Elsevier. <https://doi.org/10.1016/bs.adms.2019.01.001>

Ryan, R. M., Duineveld, J. J., Di Domenico, S. I., Steward, B. A., & Bradshaw, E. L. (2022). We know this much is (meta-analytically) true: A meta-review of meta-analytic findings evaluating self-determination theory. *Psychological Bulletin*, 148(11–12), 813–842. <https://doi.org/10.1037/bul0000385>

Sankalaite, S., Huizinga, M., Pollé, S., Xu, C., De Vries, N., Hens, E., & Baeyens, D. (2023). A qualitative study into teacher–student interaction strategies employed to support primary school children’s working memory. *Education Sciences*, 13(11), Article 1149. <https://doi.org/10.3390/educsci13111149>

Saqr, M., (et al.). (2023). The longitudinal association between engagement and achievement in students. *Learning and Instruction*, 83, Article 102047.

Sharpe, B. T., Trotter, M. G., & Hale, B. J. (2025). Sustaining student concentration: the effectiveness of micro-breaks in a classroom setting. *Frontiers in Psychology*, 16. <https://doi.org/10.3389/fpsyg.2025.1589411>

Sustainable Learning Environments Research. (2021). School engagement, academic achievement, and self-regulated learning. *Sustainability*, 13(6), Article 3011. <https://doi.org/10.3390/su13063011>

Tabia, J. C. J. D., Chavez, J. L., & Doncoy, G. A. C., & Doncoy, A. B. (2023). Technology integration in content and pedagogy in classrooms as affecting student engagement. *ICCEPH*.

Wei, H., & others. (2024). Examining attentional control deficits in adolescents with test anxiety: Evidence from Attentional Control Theory. *Behaviour Research and Therapy*, 162, Article 104445. <https://doi.org/10.1016/j.brat.2024.104445>

Zhong, S., Guo, Y., Liu, C., & Yuan, G. (2025). The influence of childhood socioeconomic status on academic engagement: Mediating roles of learning motivation and burnout. *Frontiers in Psychology*, 16. <https://doi.org/10.3389/fpsyg.2025.1641804>