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Nurturing Motivation and Engagement in All Students

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Nurturing motivation and engagement in all students

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DEDICATION

To my son and daughters: By being your mama, you have given me a deeper view of my journey in this world, my place in it, and its importance.

To Holly, John, Randy, Mom, Kory, and Callie: Thank you for support throughout this experience. You have listened, shared, encouraged and lifted me up. You have modeled an effective support system team for this educator. You were vital in my process of personal and professional growth.

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Abstract

This paper examined the multifaceted definitions and perceptions of engagement in school and its effects on student achievement. The research presented in this paper utilized qualitative, quantitative, and mixed-method approaches. The studies investigated classroom observations and perceptions of engagement based on various models, as well as the academic and social-emotional effects of different types of motivation and engagement. Additionally, the research explored implications for educators and stakeholders. These findings contributed to a deeper understanding of the significance and impact of student engagement and how educators can foster more inclusive learning environments for both neurotypical and neurodiverse learners. The studies highlighted the importance and complexity of student engagement in relation to holistic achievement. The research suggested that teachers play a pivotal role in influencing student motivation and engagement. Furthermore, it demonstrated the need for teacher training in classroom management and instructional strategies to support differentiated instruction and inclusivity, which are essential for promoting student engagement. The findings emphasized that educators should move beyond a one-size-fits-all approach and adopt differentiated practices that address the complex, multifaceted nature of student engagement and motivation.

Keywords: engagement, behavioral engagement, emotional engagement, cognitive engagement, neurodiversity

Nurturing Motivation and Engagement in All Students

Chapter One: Introduction

Parenting and teaching a child through the maze of education toward academic success can be a rewarding yet sometimes confusing endeavor. This complexity becomes even more apparent when managing multiple children, each with distinct personalities and unique needs. Consider, for example, one child who is obedient, kind, follows the rules from a young age, and diligently completes her homework every night. As she grows, she becomes active in sports, music, and community service, eventually graduating from high school. Despite these outward signs of success, this child struggles with self-efficacy and barely completes her high school education.

Now imagine another child—energetic and talkative—who learns two languages before the age of two and reads in both languages by the age of five. However, his love for talking and boundless energy leads to frequent disruptions in class, resulting in numerous phone calls home. By second grade, he is labeled as a disruptive student, and by fourth grade, he holds the record for the most referrals for talking in class. His self-esteem suffers due to constant labeling and a lack of differentiated instruction for his diagnosed ADHD, leading to symptoms of depression.

Each child has their own academic journey filled with social, emotional, and academic successes and challenges. Which child ultimately achieves greater academic success? Which student do teachers perceive as more engaged? What types of engagement matter to the academic success and educational journey of these children? The first child is behaviorally engaged in her educational career but cognitively struggles with engagement, leading to lower self-efficacy and eventually dropping out of college due to failing grades. The second child experiences lowered emotional engagement in upper elementary school and middle school, which causes his grades to

plummet. However, due to increased cognitive engagement and later emotional engagement, he graduates with honors and receives a full scholarship to college. These questions and experiences highlight the complexities of student engagement and its impact on both academic and social-emotional success. They also emphasize that while engagement can be shaped, it can also be fleeting (Alba, 2019).

Importance of the Topic

The topic of student motivation and engagement has gained increasing attention in recent years, with research showing how essential these factors are for academic success. According to Alba (2019) the outdated expectation that students can perform well academically despite being bored or disengaged, emphasizes the need for a more holistic approach to learning. A recent Gallup survey (Hrynowski, 2024) involving 4,157 young people, including over 2,000 K-12 students, highlights a concerning gap in engagement. The data reveals that up to 54% of students feel disconnected from their learning, finding it neither meaningful nor aligned with their strengths. Many students also struggle to see their schoolwork as a positive or worthwhile challenge.

Additionally, the research suggests that the engagement level among Gen Z students is directly tied to their sense of preparedness and hope for the future. Those who are more engaged not only enjoy learning more but are also more likely to graduate and pursue higher education. Alba (2019) points out that simply achieving high grades or gaining admission to top universities is not enough if students are simultaneously dealing with poor mental health or other self-destructive behaviors. Therefore, schools must prioritize not just academic achievement, but also students' emotional and social well-being. Engaged students tend to perform better overall and enjoy greater physical and mental health benefits, making engagement a critical factor in long-

term success. Research indicates that teachers significantly influence student enthusiasm and interest. The survey from the Walton Family Foundation and Gallup reports that 60% of students attribute their excitement about learning to their teacher's ability to make the material engaging and stimulating. This shows the large impact teachers have on student engagement. Additionally, teachers' perceptions of engagement and their ability to plan for diverse student needs are important. (Hrynowski, 2024)

Educators' perceptions of engagement directly affect the teaching practices and instructional strategies they implement. These perceptions are shaped by various factors, including the teacher's understanding of what constitutes engagement and their interpretation of different students' behaviors (Fredricks et al., 2004). Blazar and Kraft (2017) suggest that many teachers focus on behavioral engagement over emotional and cognitive dimensions because the former is more observable and measurable. For example, students who adhere to rules and exhibit quiet attentiveness are often viewed as more engaged, while introverted students or those with neurodivergent traits might be overlooked or misunderstood. This limited focus can obscure the deeper cognitive and emotional processes essential for learning, potentially leading to misinterpretation of students' true academic potential. Such misinterpretations are particularly problematic for neurodivergent students, whose unique learning styles require more nuanced forms of engagement to be fully recognized and supported.

Scope of Research

The first theme examined the different aspects and viewpoints of engagement. It looked at how motivation relates to engagement and how teachers understand and define these concepts. This theme also highlighted the various types of engagement—behavioral, emotional, and

cognitive—providing a foundation for understanding the complexities of student engagement in the classroom.

The second theme focused on how teachers can promote student engagement through differentiated instruction and inclusive practices. This theme connected the theoretical ideas about engagement from the first theme to practical strategies that teachers can use. It aimed to help both experienced and future teachers apply effective classroom strategies to boost engagement for all students.

Building on the first two themes, the third theme examined engagement among neurodiverse students. It pointed out the unique challenges these students face in staying engaged and linked this understanding back to the broader ideas discussed in the first theme, especially how different types of engagement show up in diverse learner groups.

Research Question

In light of what is known about differentiated instruction, how can educators nurture motivation and engagement in all students? This inquiry was driven by Concordia University, St. Paul's Differentiated Instruction Program's Essential Question: "In light of what is known about differentiated instruction, how should professional educators effectively teach every student?"

The essential question frames the research by emphasizing the need for educators to adapt their teaching strategies to meet the unique needs of all students, including neurodivergent learners.

The connection between these questions was important. The essential question addressed the broader challenge of effectively reaching every student, while the central research question focused on the specific types of engagement—behavioral, emotional, and cognitive—that are most critical for fostering academic success among diverse learners. By examining how

educators perceive and implement these forms of engagement, this research showed strategies that align with the principles of differentiated instruction.

Differentiated instruction (DI) provides a framework for effectively engaging neurodivergent students by tailoring instruction to meet their varied needs. Tomlinson (2017) emphasized that DI allows educators to modify content, process, and product based on students' readiness, interests, and learning profiles. This is significant when addressing the engagement needs of students whose cognitive or emotional engagement may differ from conventional expectations of attentiveness. For neurodivergent learners—such as those with Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), or Emotional and Behavioral Disorder (EBD)—emotional and cognitive engagement may manifest differently than in neurotypical students. Teachers may fail to recognize signs of engagement when these students do not conform to traditional expectations of attention and participation (Reschly et al., 2020). For instance, an autistic student who appears disengaged may be processing content internally in ways that are not readily observable. Similarly, students identified as gifted may complete tasks too quickly or disengage from repetitive content, leading teachers to misinterpret their level of engagement. Thus, DI becomes an essential tool for ensuring that all forms of engagement, whether behavioral, cognitive, or emotional, are accurately identified and nurtured.

Definition of Terms

Engagement is motivation in action (Skinner, 2008).

Behavioral Engagement is positive behaviors such as following rules, avoiding disruptions, participating in academic tasks with effort and attention, and engaging in extracurricular activities (Fredricks, Blumenfeld, & Paris, 2004).

Emotional Engagement is a student's feelings and attitudes toward their school, teachers, and the learning experience (Blazar & Kraft, 2017).

Cognitive Engagement is the intellectual investment and mental effort students put into learning (Reschly et al., 2020).

Neurodiversity is the idea that a kid's brain functions differently from those of children who are neurotypical. (Garey, 2024)

Summary

Ultimately, the findings of this paper led to practical implications of how educators could develop increasingly inclusive and responsive learning environments. With a deepened understanding of the types of engagement that matter most, educators are in a significantly stronger position to construct learning activities that not only engage diverse learners but also support achievement. It is recommended that educators move beyond a one-size-fits-all approach and reconstruct practices in ways that reflect the complex, multifaceted nature of student engagement and motivation.

Chapter Two: Literature Review

With growing evidence that nurturing student engagement can improve academic success, reduce dropout rates, and enhance social-emotional well-being, more studies on the multidimensional nature of engagement have been completed. This literature review aimed to distinguish the different types of engagement and examine the effects of fostering these types, particularly for neurodiverse learners. The review also explored strategies that can be implemented in the classroom to enhance students' engagement and motivation, considering how teachers and students perceive engagement. The research analyzed in this paper resulted in three major themes connected to the research question: *How can educators nurture motivation and engagement in all students?*

The first theme explored the concept of engagement, its connection to motivation, and how educators perceived and defined it. It also provided insights into the different types of engagement—behavioral, emotional, and cognitive. The first theme involved four studies by Berry (2020), Olivier et al. (2018), Skinner et al. (2008), and Ben-Eliyahu et al. (2018).

The second theme focused on how educators could foster engagement in all students through differentiated instruction and inclusive practices, drawing from six studies by Waterschoot et al. (2019), Lohbeck (2016), Orkin et al. (2017), Cheon and Reeve (2014), Cinar (2019), and Olivier et al. (2020). The studies shared several common themes related to enhancing student engagement and motivation in the classroom. All the research emphasized the importance of fostering intrinsic motivation to improve academic performance and engagement. The studies demonstrated that a student-centered, supportive approach was essential for fostering both engagement and academic achievement across diverse learning contexts.

The third theme explored engagement and motivation and their connection to holistic well-being and academic success among neurodiverse students. It referenced research by Rushton et al. (2023), Martin, Burns, and Collie (2023), Koegel, Singh, and Koegel (2010), Nakutin and Gutierrez (2017), Didion et al. (2023), and Leggio and Terras (2020). The studies demonstrated that building strong relationships with students and using tailored teaching strategies are essential for improving engagement, especially for those with different learning needs, such as ADHD, ASD, and EBD. It was concluded that supportive interactions and motivational techniques can significantly enhance students' academic performance and reduce disruptive behaviors. As the research highlights the significance of supportive relationships and tailored strategies for enhancing engagement, it becomes crucial to examine how both educators and students perceive and experience engagement among different dimensions.

Engagement, Perceptions, and Motivation

One mixed-methods study by Ben-Eliyahu et al. (2018) highlighted the importance of addressing all three dimensions of engagement—emotional, behavioral, and cognitive—in educational settings. Their study introduced the Activity Engagement Survey, a tool designed to measure various facets of student engagement across both formal school settings and extracurricular activities. This research involved 786 sixth-grade students (59% female) from ten urban public schools in the Midwest. The students, with a mean age of 11.7, came from a range of socio-economic and ethnic backgrounds. Each participant completed a questionnaire that assessed their level of engagement in one of six science-related activities.

The researchers concluded that all three types of engagement—emotional, behavioral, and cognitive—play a vital role in enhancing students' learning experiences. They proposed that educators can stimulate cognitive engagement by introducing tasks that require deeper thinking

and critical analysis. To foster behavioral engagement, hands-on, active participation in learning tasks was encouraged, while emotional engagement was seen as dependent on creating a supportive and positive learning atmosphere. Importantly, they emphasized that these strategies need to be adaptable depending on the environment: in a classroom, structured engagement works best, while in informal settings such as museums, a more exploratory approach is often more effective.

One of the study's standout findings was that students who experienced positive emotions—such as enjoyment—during learning were more deeply engaged in the material. This showed that prioritizing emotional well-being in schools is essential for improving learning outcomes. The study also highlighted the strong connection between motivation and engagement, showing that higher motivation drives greater student involvement and success. Highly motivated students, particularly those with strong self-efficacy or mastery goals, showed higher levels of engagement. This created a positive feedback loop where engagement further enhanced their motivation, leading to even greater involvement in learning activities.

Building on the findings of Ben-Eliyahu et al. (2018), which highlighted the importance of emotional well-being and engagement in educational settings, Olivier et al. (2018) explored the connections between student self-efficacy, engagement, and academic success over time through their quantitative study. This research examined the relationship between student self-efficacy, engagement, and academic achievement in a quantitative study of 671 students in grades four to six. Using Self-Efficacy Theory, the Self-System Model of Motivational Development, and Expectancy-Value Theory, the researchers tested cross-lag models and mediation paths over three school years. The results primarily supported Self-Efficacy Theory, showing a reciprocal relationship between self-efficacy and academic achievement.

The authors explained Bandura's (1997) Self-Efficacy Theory, emphasizing that students' beliefs in their abilities positively influence engagement and academic success. Students confident in their skills, such as in math, are more likely to participate, complete tasks, and perform well, reinforcing their belief in their abilities. High self-efficacy was linked to better academic outcomes, particularly in math, highlighting the theory's strong predictive power for student success.

While Self-Efficacy Theory was the strongest predictor, the study found mixed results for the other frameworks. The Self-System Model of Motivational Development, which focuses on autonomy, relatedness, and competence, was not as strongly supported. Behavioral engagement (e.g., class attendance, homework completion) did not predict academic success, suggesting that belief in one's abilities is critical. Surprisingly, high emotional engagement in 5th grade was linked to lower academic performance in 6th grade, indicating that emotional investment without academic success may lead to frustration. The study highlighted that teachers can foster student confidence through clear feedback, opportunities for small successes, and supportive environments, ultimately improving both engagement and achievement (Olivier et al., 2018). The authors emphasized self-efficacy's role in boosting student engagement and academic success.

Meanwhile, Skinner et al. (2008) broadened this focus by examining student engagement and disaffection in the classroom. Their study, *A Motivational Perspective on Engagement and Disaffection*, analyzed how students engage or disengage, drawing on both student self-reports and teacher observations. The study followed 1,018 students from third to sixth grade over four years, using a quantitative approach. Data were collected twice during Year 3 through self-report questionnaires and teacher reports to measure behavioral and emotional engagement and

disaffection. The sample primarily included Caucasian students from working- to middle-class backgrounds in a rural-suburban public school. Key motivational factors, such as perceived control, relatedness, and autonomy, were also assessed, and classroom observations were conducted to accurately measure engagement behaviors.

Engagement was defined as the extent to which a student connects with their school environment, including participation in activities, alignment with goals, and support for school values. The authors argued that engagement is crucial for academic success, retention, and resilience. They divided engagement into behavioral engagement (active participation) and emotional engagement (enthusiasm for learning). Disaffection was characterized by withdrawal or avoidance, including behavioral disaffection (distraction) and emotional disaffection (feelings of boredom or frustration).

The study also examined how engagement and disaffection relate to motivational factors, including students' sense of control over academic outcomes, self-regulation skills, relationships with teachers and peers, goal orientations, and reactions to failure. More engaged students tended to have greater confidence, stronger social connections, and a positive attitude toward challenges, while disaffected students relied on external factors, struggled with self-regulation, and reacted negatively to academic difficulties.

One significant finding was that behavioral engagement is easier to observe than emotional engagement, which can be subtler. Likewise, disaffection is clear when students disengage, but emotional disaffection is less obvious.

Three unexpected findings came from the study. First, students' belief that effort leads to success did not predict engagement as anticipated, suggesting that effort alone may not sustain meaningful engagement. Second, a negative correlation was found between beliefs about ability

and engagement, indicating that students may view success as dependent on innate ability rather than effort, which can reduce motivation. Finally, results regarding introjected self-regulation—driven by pressure or guilt—were mixed; while it could enhance engagement, it seemed to diminish students' enthusiasm for learning. The researchers suggested that future research should explore additional factors, such as student commitment, oppositional behavior, and academic re-engagement, to further understand their role in the engagement-disaffection model.

Building on Skinner et al. (2008) exploration of engagement and disaffection in the classroom, Berry et al. (2020) expanded the discussion by examining how teachers conceptualized and experienced student engagement, offering insights into the challenges educators face in fostering meaningful engagement that promotes academic success. In their qualitative study, Berry et al. (2020) explored how teachers conceptualized and experienced student engagement in their classrooms. The research involved 15 teachers from six primary schools in Victoria, Australia, representing a diverse mix of demographics, age, and teaching experience. Using semi-structured interviews, the study aimed to uncover how teachers perceive engagement, their awareness of disengagement, and how they see the relationship between engagement, motivation, and learning outcomes. The research sought answers to key questions: How do teachers define and recognize engagement? How do they detect disengagement? And how do these factors interact to shape learning?

The study revealed that teachers tended to assess engagement primarily based on observable behaviors, such as participation and compliance with tasks. However, they acknowledged that these external behaviors don't always capture deeper cognitive or emotional engagement. For example, high-achieving students might appear engaged by following instructions and completing tasks, but this doesn't necessarily mean they are fully invested in the

learning process. Teachers also pointed out that engagement was not static—it fluctuated both within and between lessons, depending on the classroom environment, the nature of the tasks, and the teaching strategies employed. One of the main challenges identified in the study was finding ways to foster engagement that genuinely promoted academic success. Teachers recognized that while engagement is a strong predictor of positive learning outcomes, it's difficult to define and measure comprehensively. Engagement was described as a fluid continuum, shaped by various factors, including the nature of the task and the student's individual context.

Although teachers struggled to make clear links between engagement and learning, they agreed that deep learning required higher levels of engagement, particularly when students sought challenges, aimed for understanding, and continuously strived to improve. Berry et al. (2020) emphasized the need to help teachers understand the less visible cognitive and emotional aspects of engagement, which go beyond what is seen on the surface. This aligns with Fredricks et al.'s (2004) foundational study, as cited in Berry (2020), which proposed that engagement consists of three dimensions: behavioral (participation and task completion), emotional (attitudes toward school), and cognitive (psychological investment and strategic thinking).

The first theme of this literature review established an understanding of student engagement by exploring its various dimensions and its relationship to motivation. Through an analysis of both teacher and student viewpoints, the theme explored how behavioral, emotional, and cognitive engagement work together to influence not just academic performance but also student well-being. The findings highlighted the crucial roles of self-efficacy and emotional investment in fostering deeper engagement and driving motivation, offering a clearer understanding of how both students and educators perceive and define these concepts.

Building upon this foundation, the second theme shifted the focus from merely understanding engagement to examining the strategies educators use to enhance it. While the first theme provided the importance of recognizing the different forms of engagement, the second theme turns to practical applications in the classroom, such as differentiated instruction, autonomy-supportive teaching, and fostering intrinsic motivation, which cater to meet students' diverse needs. This section further enriched the conversation by exploring how educators create inclusive, motivating environments that not only sustain engagement but also ensure students feel supported and empowered in their educational journeys.

Increasing Classroom Engagement and Motivation: Strategies and Insights

In the previous theme, the importance of understanding different types of engagement was discussed, particularly the crucial role of fostering self-efficacy and emotional involvement. Building on this foundation, the second theme focuses on enhancing classroom engagement through effective strategies tailored to students' needs and motivations. The studies conducted by Cheon and Reeve (2014), Cinar et al. (2023), Lohbeck (2016), Olivier et al. (2020), Orkin et al. (2017), and Waterschoot et al. (2019) explored specific approaches that teachers have used to cultivate engagement and motivation.

Waterschoot et al. (2019) conducted a quantitative study examining how providing or depriving elementary school children of choice affects their intrinsic motivation during painting activities. The study involved 126 children aged 9 to 12 from Belgium and measured intrinsic motivation through enjoyment, behavioral persistence, and vitality. The research also explored how indecisiveness and teacher-student relationships influenced these effects. Pilot studies were used to select activities that were both attractive and challenging for the children. The study found that children in the choice provision condition reported increased intrinsic motivation and

vitality because they experienced higher levels of autonomy and competence need satisfaction. This effect was particularly significant for indecisive children. Teachers are encouraged to consider students' levels of indecisiveness when implementing choice provision, as it has the potential to enhance intrinsic motivation, contributing to students' learning and well-being. The authors pointed out some limitations, including the uniformity of the sample and the specific choice manipulation used. They recommended further research to explore the effects of choice provision in different settings, focusing on the number of options, their attractiveness, and the type of choices offered.

While Waterschoot et al. (2019) demonstrated that providing choices enhances intrinsic motivation by fostering autonomy, Lohbeck (2016) expanded on this by exploring how a strong math self-concept can influence academic outcomes, suggesting that both autonomy and self-concept play crucial roles in shaping motivation. Lohbeck (2016) conducted a quantitative study investigating the relationships between math self-concept (MSC), various types of motivation, and math grades (MGs) in elementary school children. The study involved 397 fourth-grade students from 10 schools in Germany, who completed questionnaires assessing their math self-concept, motivation based on self-determination theory, and self-reported math grades. The research aimed to examine how students' beliefs about their math abilities and their motivation impacted their academic performance in math.

The findings revealed that a strong MSC and intrinsic motivation (INTR) positively influenced children's MGs, while extrinsic motivation (EXTR) and amotivation (AMOT) were negatively related to MGs. The study recommended that teachers focus on these areas by giving positive feedback, highlighting the importance of learning, and motivating students to engage with subjects they find enjoyable. The study also suggested that future research should examine

differences between boys and girls in their academic self-confidence and motivation in specific subjects when studying these relationships.

In addition to self-concept, as found by Lohbeck (2016), Orkin et al. (2017) explored how integrating motivational strategies within reading instruction can significantly boost engagement and skills among struggling readers, reinforcing the key role of teacher intervention in fostering positive outcomes. Orkin et al. (2017) conducted a quantitative study to improve reading skills and engagement by fostering intrinsic motivation. The study involved 47 children (ages 7-10) in a summer reading program. Two programs, RAVE-O and the Wilson Reading Program were used, with groups differing in their motivational approaches. The control group followed a traditional reward system, earning prizes for task completion, while the intervention group used strategies based on four psychological principles: autonomy, belonging, competence, and meaning. This approach encouraged students to take ownership of their learning, build community, challenge their abilities, and connect their efforts to personal goals.

These principles resonate with the Responsive Classroom approach, which promotes intrinsic motivation by emphasizing autonomy, a sense of belonging, competence, and purpose. To encourage autonomy, students in the intervention group made choices about how to demonstrate their learning, such as selecting how to present what they had learned. This reflective process increased their responsibility for their own progress. To promote belonging, teachers focused on creating a sense of community. Activities like developing a class constitution encouraged collaboration, and peer recognition was emphasized, creating a supportive environment. Competence was cultivated by encouraging students to push slightly beyond their current abilities, using a method inspired by "supersets" in muscle building. Teachers provided process-oriented feedback, such as "I saw how hard you worked to sound out

that word," to highlight effort over outcomes. Finally, meaning was addressed by helping students find personal relevance in their learning. Students set personal goals, or "hopes and dreams," which were revisited throughout the program.

The study found that the intervention group, which utilized motivational strategies, showed significantly greater improvements in both reading skills and engagement compared to the control group. These findings suggest that promoting intrinsic motivation through autonomy, belonging, competence, and meaning can enhance both academic performance and engagement, offering effective strategies for supporting struggling readers (Orkin et al., 2017).

Following the focus on motivational strategies in reading, Orkin et al. (2017) provided a practical framework that complements the findings of Cheon and Reeve (2014), who emphasized the importance of teacher perceptions and styles in reducing amotivation among students. Cheon and Reeve's (2014) study specifically investigated an intervention designed to help physical education (PE) teachers reduce students' lack of motivation. This quantitative study utilized an experimental design, involving 16 PE teachers from South Korea who were randomly assigned to either an experimental group receiving the intervention, or a control group. The final sample consisted of 598 middle and high school students, with a retention rate of 95.2%.

The intervention involved teachers selecting one class section, from among the five to eight classes they taught, for participation in the study. Surveys were used to measure student motivation at three points during the semester. The results showed that teachers in the experimental group were perceived as more supportive of student autonomy and less controlling by both objective raters and their students. Students in this group experienced greater satisfaction of their psychological needs, were more engaged, and reported reduced amotivation compared to

those in the control group. These findings suggest that the intervention not only changed teachers' motivating styles but also enhanced student motivation and engagement.

The study had some limitations. The small sample size of teachers and the focus on Korean secondary school PE classes limit the generalizability of the findings. Additionally, baseline differences between the experimental and control groups complicate the interpretation of the results. To build on these findings, future research should assess both need satisfaction and need frustration and incorporate objective measures of student achievement to provide a more robust understanding of the intervention's effectiveness.

Building on the significance of teacher interventions noted by Cheon and Reeve (2014), Cinar et al. (2023) highlight the long-term development of engagement in students, advocating for early interventions and supportive environments that align with the autonomy-supportive approaches of teachers. Cinar et al. (2023) conducted a longitudinal quantitative study to examine the development and predictors of classroom engagement in elementary school children from grades 1 to 6. The study focused on how cognitive skills, attention, motor skills, motivation, and behaviors influenced classroom engagement over time, with particular attention to differences between boys and girls. The researchers followed 877 children, collecting data at multiple points between the ages of 6 and 12. Teachers rated classroom engagement, evaluating factors such as cooperation, participation, and adherence to classroom rules. The study found that classroom engagement generally improved as children aged, especially between ages 7 and 10. Notably, this improvement was significant for girls but not for boys, suggesting that boys might require different strategies to enhance engagement.

The study highlighted several key predictors of classroom engagement. Children with higher receptive vocabulary, attentional skills, and motivation to learn demonstrated greater

engagement initially, although their growth slowed over time. This trend was explained as a potential ceiling effect, where children who started with high engagement levels had less room for further growth. The study also provided several practical implications for educators regarding classroom engagement.

First, it emphasized the importance of early identification of children at risk of low classroom engagement, particularly those with deficits in receptive vocabulary and attentional skills. To address this, the researchers suggested that educators could implement response-to-intervention strategies that promoted vocabulary and attention through varied instructional methods, such as incorporating audiobooks to enhance receptive vocabulary.

The study also pointed out that behavior and motivation played a significant role in how engaged students were and that teachers could help by creating a supportive learning environment, offering positive feedback, and giving students opportunities to work with classmates. It stated that these practices could boost students' motivation to participate in class. Teachers were encouraged to foster intrinsic motivation by adopting autonomy-supportive teaching styles, providing positive feedback, and promoting opportunities for peer collaboration. These strategies could enhance children's engagement in classroom activities.

Additionally, professional development for teachers could be beneficial in helping them cultivate techniques that boost student motivation and compliance. Early intervention and teacher training were considered key to improving classroom engagement, especially for children displaying behavioral and learning challenges.

This theme provided valuable insights into the factors that motivate students and keep them engaged in learning. The research showed that focusing on intrinsic motivation, meeting students' psychological needs, and using effective teaching strategies lead to better academic

outcomes. By promoting autonomy, competence, and a sense of belonging, teachers create classrooms that not only boost students' motivation but also enhance their overall well-being. The studies also emphasized the importance of offering students choices, building their confidence, and employing motivational techniques, particularly for those struggling in school. Early identification and intervention for students at risk of disengagement proved crucial, allowing teachers to adapt their methods to better support individual needs.

Building on the effective strategies highlighted in the previous studies, such as offering choice, fostering autonomy, and providing positive reinforcement, the necessity of adapting these approaches to meet the unique requirements of neurodiverse students became even more apparent. Research suggested that while these strategies could enhance engagement in most students, neurodiverse learners—who often struggle with attention deficits and externalizing behaviors—require more targeted interventions to maintain engagement and motivation. Cinar et al. (2023) emphasized the critical role of cognitive skills, attention, and behavior in predicting classroom engagement, noting that children with attentional challenges and externalizing behaviors, such as impulsivity or difficulty following rules, are particularly at risk for disengagement. These challenges are commonly observed in neurodiverse students, including those with ADHD, ASD, or EBD.

Olivier et al. (2019) explored the complex relationship between internalizing behaviors (like anxiety and depression) and externalizing behaviors (such as hyperactivity and defiance) and how these behaviors affect school engagement among elementary and middle school students. The quantitative study involved two groups: 1,036 elementary students (grades 3-6) and 1,011 secondary students (grades 7-8) in Quebec. Researchers collected data using a combination of computerized student questionnaires and teacher assessments. The students self-reported their

internalizing behaviors and levels of school engagement, while teachers rated the students' externalizing behaviors.

The study found a strong link between externalizing behaviors (e.g., hyperactivity, defiance) and reduced behavioral engagement, particularly among younger students. Teachers reported that these behaviors were more disruptive in elementary students, while middle school students' self-reports showed a stronger connection between externalizing behaviors and disengagement. Internalizing behaviors (e.g., anxiety, depression) were linked to lower emotional and cognitive engagement, with a more pronounced effect in elementary students. Both elementary and middle school students experiencing internalizing issues reported emotional struggles, but this effect was more prominent in secondary school, likely due to increasing academic pressures and reduced teacher support.

Gender differences were also evident: boys exhibited more externalizing behaviors, while girls showed higher levels of internalizing behaviors, both of which negatively impacted engagement. Neurodiverse students, especially those with ADHD faced challenges, with externalizing behaviors leading to disengagement, while anxiety and depression affected emotional and cognitive engagement. Interestingly, some secondary students with both hyperactivity/inattention and internalizing behaviors were more engaged than expected, possibly due to their high activity levels or additional support.

The study concluded that both externalizing and internalizing behaviors threaten student engagement. Olivier et al. (2019) emphasized the need for interventions to address these issues, recommending self-regulation strategies for externalizing behaviors and emotional support for internalizing struggles. They stressed the importance of recognizing these patterns, especially

during the transition from elementary to secondary school, to better support students at this critical stage.

The second theme demonstrated how differentiated instructional strategies that emphasize autonomy, choice, and motivational support can significantly enhance student engagement and academic success across diverse classrooms. These strategies, tailored to individual student needs, help foster intrinsic motivation and positive learning experiences. However, as valuable as these methods are, they may not fully address the distinct needs of neurodiverse students, who often face unique challenges in maintaining engagement and motivation in traditional educational environments.

The studies collectively highlighted the importance of fostering intrinsic motivation through autonomy, competence, belonging, and meaning to enhance student engagement and academic outcomes. Orkin et al. (2017) found that using motivational strategies improved reading skills and engagement in struggling readers. Similarly, Cheon and Reeve (2014) demonstrated that autonomy-supportive teaching reduced student amotivation, while Cinar et al. (2023) emphasized the need for early interventions to maintain long-term engagement.

These findings suggested that autonomy-driven environments positively influenced both student motivation and engagement across various educational contexts. However, the need for differentiated approaches became apparent, particularly for neurodiverse students with attentional challenges and externalizing behaviors (Olivier et al., 2020). Furthermore, integrating flexible, student-centered approaches with targeted support for neurodiverse learners can create more inclusive learning environments. The research demonstrated the value of these adaptive teaching strategies that address the diverse needs of both neurotypical and neurodiverse students, supporting engagement and academic success.

Engagement in Neurodiverse Students

Garey (2024) explained that neurodiversity refers to the idea that a child's brain may function differently than that of neurotypical children. Attention deficit hyperactivity disorder (ADHD) is recognized as the most common neurodevelopmental disorder in childhood, affecting approximately 5-7% of children worldwide (Hinshaw, 2017, as cited in Rushton et al., 2023). It is characterized by developmentally inappropriate levels of inattention, impulsivity, and hyperactivity, which can significantly hinder functioning in various settings (Voigt et al., 2017, as cited in Rushton et al., 2023). Rushton et al. (2023) investigated how symptoms of ADHD influence emotional engagement with school during the primary years, particularly emphasizing the importance of student-teacher relationships. The researchers studied how ADHD symptoms in early primary school (age 7) affected emotional engagement in middle (age 10) and upper primary years (age 12) and whether conflict or closeness in student-teacher relationships influenced this relationship.

They found that higher levels of ADHD symptoms were associated with increased student-teacher conflict, which contributed to lower emotional engagement over time. However, ADHD symptoms did not significantly affect student-teacher closeness. This study used a quantitative, longitudinal approach, following 498 children from 43 schools in Melbourne, Australia, over several years, with data collected through parent and teacher reports using the Conners 3 ADHD Index and diagnostic interviews. The authors highlighted that reducing student-teacher conflict might improve emotional engagement for children with ADHD, suggesting that teachers could benefit from more support and training in managing ADHD-related behaviors. Additionally, they emphasized the importance of targeting emotional

engagement, as it is foundational to behavioral and cognitive engagement in school (Rushton et al., 2023).

Rushton et al.'s (2023) findings on the role of student-teacher relationships in emotional engagement among primary school children with ADHD complemented the following study by Martin et al. (2023), which expanded the focus to explore how motivation and academic engagement could be improved for students with ADHD through self-efficacy and teacher support. Martin et al. (2023) conducted a study to examine how self-confidence, control, and teacher support impact literacy and math achievement in students with and without ADHD.

Using social cognitive theory (SCT), they explored the academic challenges faced by students with ADHD, particularly in relation to self-efficacy, perceived control, and teacher support. ADHD, characterized by inattention, hyperactivity, and impulsivity (American Psychiatric Association, 2013, as cited in Martin et al., 2023), often results in difficulties with self-regulation, working memory, and goal-directed behavior, which hinder academic performance (Pennington & Ozonoff, 1996, as cited in Martin et al., 2023). Executive function deficits, such as issues with planning and organization, also contribute to these challenges (Barkley, 2006, as cited in Martin et al., 2023). The study emphasized the role of self-efficacy and teacher support in improving academic outcomes for students with ADHD (Martin et al., 2023).

This quantitative research included 164 students with ADHD from Years 7-9 in 20 Australian schools, a sample consistent with ADHD prevalence estimates (Barkley, 2006, as cited in Martin et al., 2023). The results indicated that self-efficacy and teacher support significantly impacted academic achievement, with a stronger effect observed for ADHD students. The findings reinforced that fostering self-efficacy and positive teacher-student

relationships is crucial for overcoming academic challenges in ADHD students (Martin et al., 2023).

The authors provided several recommendations for educators working with ADHD students. These included breaking down tasks into smaller, manageable components to build students' confidence (Martin et al., 2023), using mastery learning techniques that allow students to progress at their own pace (Schunk & Miller, 2002, as cited in Martin et al., 2023), and promoting goal-setting and problem-solving skills to enhance self-efficacy (Locke & Latham, 2002, as cited in Martin et al., 2023). Additionally, they stressed the importance of supportive teacher-student relationships to foster motivation and engagement, especially for ADHD students (Sherman et al., 2008, as cited in Martin et al., 2023). The study also recommended adapting lessons to accommodate ADHD students' needs, such as offering flexible learning approaches and hands-on activities (Martin et al., 2023). Social skills training and fostering a cooperative classroom environment were suggested as strategies to improve peer interactions and reduce stigma among ADHD students (Hoza et al., 2000; Geng, 2011, as cited in Martin et al., 2023). In conclusion, the study outlined strategies to enhance the academic success of ADHD students, focusing on fostering self-efficacy, strengthening teacher-student relationships, adapting instruction, and promoting social development (Martin et al., 2023).

In contrast to Martin et al. (2023) and Rushton et al. (2023), who focused on the role of teacher support and engagement in improving academic outcomes for students with ADHD, Koegel, Singh, and Koegel (2010) adopted a different lens by addressing the needs of children with autism spectrum disorder (ASD).

Their study involved four children who frequently exhibited disruptive behaviors during academic tasks. By combining qualitative observations with quantitative data analysis, they

examined how incorporating motivational strategies—such as providing children with choices, mixing simpler tasks with more challenging ones, and using natural rewards linked to the activities—could improve academic performance. The researchers used methods like video recording, structured coding, and parent feedback to measure the impact of these interventions on task engagement and behavior.

During the intervention, children were given the opportunity to make decisions about task materials and the environment. For instance, they could choose between a pencil or a marker for writing or decide whether they wanted to sit at a desk or on the floor. Each academic task was linked to a natural motivator, such as writing about playing outside, which was followed by actual outdoor playtime as a reward. The use of personal interests was key: for example, a child who loved maps was encouraged to write about maps and then was rewarded with the chance to draw one afterward. Similarly, math tasks were adapted to the children's preferences, using items they liked, such as gummy candies or toy ducks, and incorporating these into math problems to boost engagement.

The results of this approach were significant. By integrating motivational strategies, the children showed increased task completion, fewer disruptive behaviors, and a higher level of interest in the academic activities. This suggests that educators working with students on the autism spectrum could benefit from incorporating these types of techniques, as they enhance learning and engagement while indirectly reducing disruptive behaviors.

While Koegel, Singh, and Koegel (2010) focused on enhancing academic motivation in children with autism spectrum disorder (ASD) by embedding motivational strategies into tasks like writing and math, Nakutin and Gutierrez (2017) explored a different approach aimed at improving academic engagement and cognitive skills. Their study investigated the role of

physical activity in supporting both academic engagement and executive functioning in children with ASD.

Nakutin and Gutierrez (2019) conducted a quantitative study using a multiple-baseline, single-case design to examine how physical activity (jogging) affects academic engagement and executive functioning in children with autism spectrum disorder (ASD). The study involved three students, aged 6-7, at a public elementary school in Southern California. Academic engagement and executive functioning were measured before and after the intervention, which consisted of 12 minutes of jogging followed by a 5-minute cool-down. Academic engagement was measured using direct observation, while executive functioning was assessed through tasks such as digit span tests (to measure working memory) and a go/no-go task (to assess inhibitory control).

The results indicated that physical activity had a significant positive effect on academic engagement. All three participants showed increased engaged time, particularly in active engagement, after participating in the exercise intervention. These findings aligned with previous studies suggesting that physical activity can promote positive classroom behaviors in children with ASD (Kern et al., 1984; Nicholson et al., 2011; Rosenthal-Malek & Mitchell, 1997). However, contrary to the initial hypothesis, physical activity did not lead to improvements in executive functioning. While academic engagement showed immediate and substantial improvement, executive functioning measures remained largely unchanged. Despite this, the intervention was perceived as effective and appropriate by school staff, supporting its social validity as a school-based strategy for children with ASD.

The study had several limitations that impacted the generalizability of its findings. First, the sample size was small, involving only three participants, which makes it difficult to

generalize the results to a broader population. Individual differences among participants were not fully controlled, and this may have influenced the outcomes. Additionally, the measures used to assess executive functioning may not have been sensitive enough to detect short-term changes.

Nakutin and Gutierrez (2019) suggest that adding physical activity to daily school routines could help students with ASD by improving their academic engagement, which is linked to better academic success. Although the study didn't show improvements in executive functioning, the boost in classroom engagement is notable. The authors recommend physical activity as a useful tool for enhancing learning for students with ASD but highlight the need for more research to determine the best type and duration of exercise for cognitive benefits, including executive functioning improvements. In light of the findings on physical activity and academic engagement for students with ASD, it was also important to explore additional strategies for educators.

Building on these insights, the research examined Didion et al. (2018) study on the use of response cards to enhance engagement and participation among middle school students with emotional and behavioral disorders (EBD). These students often face challenges in both academics and social interactions, frequently displaying off-task or disruptive behaviors that interfere with learning (Bradley et al., 2008; Mulcahy et al., 2014; Kauffman & Landrum, 2013, as cited in Didion et al., 2018). These difficulties are particularly evident in math, where many students with EBD perform below grade level.

This quantitative study focused on strategies to increase student engagement, which research has shown to improve academic outcomes (Heward & Wood, 2015, as cited in Didion et al., 2018). The research was conducted in a middle school, self-contained classroom during math instruction. Five male students aged 12 to 14, all diagnosed with EBD, participated. The

classroom teacher provided whole-group instruction, focusing on repeated practice of math algorithms—a common teaching method for students with EBD.

The study evaluated whether response cards, which allow students to answer questions simultaneously, could reduce disruptive behaviors and increase engagement. Previous research suggested that response cards could help improve engagement and reduce off-task behaviors (George, 2010; Schnorr et al., 2015, both as cited in Didion et al., 2018), though their use with students with EBD had not been widely studied. The findings supported the effectiveness of response cards in improving both student engagement and academic performance.

Didion et al. (2018) also discussed the broader results of their findings, noting that traditional methods, like hand-raising, often fail to keep students with EBD engaged. In contrast, response cards provide a simple, low-cost way to increase opportunities to respond (OTR), helping students stay focused and reducing disruptive behaviors. Additionally, teachers using response cards asked more questions, which improved classroom interaction and lesson pacing. The authors emphasized that response cards are easy to implement, require minimal training, and can be integrated into existing lessons without extra resources. They are applicable across different subjects and grade levels, making them a flexible tool for improving participation. Beyond increasing engagement, response cards help manage classroom behavior by reducing opportunities for disruptions, fostering a more positive classroom environment.

While Didion and colleagues (2023) examined the use of response cards to improve student engagement, Leggio and Terras (2020) explored teachers' views on the key skills and strategies required for effectively teaching students with EBD. Leggio and Terras (2020) conducted a qualitative study to explore the perceptions of teachers regarding the qualities, knowledge, and skills necessary for teaching students with emotional/behavioral disorders

(EBD). Six EBD teachers from a Midwestern school district participated in the research, and three central themes emerged from the data.

First, teachers highlighted the importance of building unconditional teacher-student relationships. They noted that these relationships take time but are crucial for students' success, allowing them to feel supported and part of the classroom. Teachers emphasized the significance of listening to students, which helps in understanding the root causes of their behaviors.

Second, creating a positive classroom environment was identified as essential for managing student behavior and promoting learning. Teachers stressed that the classroom must be organized, consistent, and calm, with clear expectations to help students with EBD feel secure. Participants also pointed out the importance of having designated spaces for students to de-escalate during times of crisis.

Third, individualization was seen as critical for effective teaching. Teachers highlighted that students with EBD have unique needs, requiring flexible instruction and behavior management strategies. Data collection was considered essential for identifying student patterns and modifying instructional plans as needed to meet evolving needs.

The authors also offered practical implications for educators. They suggested that EBD teachers should focus on improving their skills in building strong relationships with students by maintaining positive attitudes and genuinely listening to students' concerns. Teachers should also work on creating structured, consistent classroom environments while individualizing instruction to meet each student's specific needs. Additionally, EBD teachers should help general education teachers understand the importance of a positive attitude toward students with EBD, which can improve inclusion and increase teacher expectations for student success. Active listening, consistent routines, and adapting to students' emotional needs were highlighted as key strategies

for supporting students with EBD. The study was limited by a small sample size and the fact that it examined only one school district, rather than a national sample. Additionally, the data were based on self-reports from participants, which may have been influenced by a desire to present themselves in a more positive light.

Review of the Proposed Problem

In light of what is known about differentiated instruction, how can educators nurture motivation and engagement in all students? The above research highlighted three themes surround engagement and motivation. The first theme looked at different aspects of student engagement and how motivation connects to it, focusing on how teachers define these ideas. It identified three types of engagement: behavioral, emotional, and cognitive, which helped explain the complexities of engagement in the classroom. The second theme discussed how teachers can boost engagement using differentiated instruction and inclusive practices, linking theory to practical strategies for both new and experienced teachers. The third theme built on the first two by examining engagement among neurodiverse students, highlighting their unique challenges and connecting these to the broader ideas of engagement discussed earlier.

Review of the Importance of the Topic

Research shows that student engagement is critical in achieving academic success. Many students report feeling unengaged in their learning (Hrynowski, 2024). Furthermore, engaged students not only perform better academically but also enjoy improved mental and physical health (Alba, 2019). Teachers significantly influenced student engagement, as their ability to make lessons interesting directly affected students' enthusiasm for learning (Gallup, 2024).

Summary

The studies surrounding theme one emphasized the importance of understanding student

engagement from various angles—behavioral, emotional, and cognitive. Olivier et al. (2020) looked at how both internalizing behaviors (like anxiety and depression) and externalizing behaviors (such as hyperactivity) affected engagement. They noted that externalizing behaviors, particularly in neurodiverse students with ADHD, ASD, and EBD tended to lower behavioral engagement, while internalizing behaviors were linked to reduced emotional and cognitive engagement. This finding was echoed by Cinar et al. (2023), who discussed how attention and motivational challenges impact neurodiverse learners' cognitive engagement. Both Ben-Eliyahu et al. (2018) and Olivier et al. (2018) pointed to self-efficacy as a critical part of student engagement, a view also supported by Berry (2020) and Skinner et al. (2008), who associated emotional and behavioral engagement with deeper learning and better academic outcomes.

The research in theme two explored strategies to improve classroom engagement and motivation, focusing on more personalized approaches. Waterschoot et al. (2019) showed that offering students choices, fostering a sense of autonomy, and providing early interventions led to better motivation and engagement, especially for at-risk or struggling students. They noted that student choice helped to boost intrinsic motivation by fulfilling their needs for autonomy and competence. Lohbeck (2016) added to this by demonstrating that a strong self-concept in math significantly enhanced both motivation and academic performance, whereas extrinsic motivation seemed to have the opposite effect. In literacy, Orkin et al. (2017) highlighted how motivational strategies improved both engagement and reading skills for struggling learners. Cheon and Reeve (2014) revealed that teachers who supported autonomy reduced student amotivation and increased engagement in physical education. Cinar et al. (2023) reiterated the need for early interventions and a supportive teaching environment, especially for students facing additional challenges.

The studies surrounding theme three showed how important it is for teachers to build strong relationships with students and use tailored strategies to improve engagement for those with different learning needs. Rushton et al. (2023) found that students with ADHD who experienced more conflicts with teachers showed decreased emotional engagement. In a different study, Martin et al. (2023) found that supportive teacher-student relationships and a sense of self-efficacy helped secondary students with ADHD do better academically.

For students with ASD, Koegel et al. (2010) explored how motivational strategies could make learning more engaging and decrease disruptive behaviors, while Nakutin and Gutierrez (2017) examined how physical activity could increase engagement, though they found minimal improvements in executive functioning. Additionally, Didion et al. (2023) tested the effectiveness of response cards in a middle school math class, discovering that this simple strategy enhanced participation and reduced disruptive behavior. Meanwhile, Leggio and Terras (2020) gathered insights from teachers on the most effective skills and strategies for working with students who have emotional and behavioral disorders (EBD), adding to the conversation on how best to tailor instruction to diverse student needs.

Conclusion

The above research delved into various aspects of student engagement and motivation, emphasizing the need for tailored strategies to meet diverse learning needs. Studies highlighted the significance of understanding engagement through behavioral, emotional, and cognitive lenses, with findings suggesting that self-efficacy, teacher-student relationships, and the provision of choices played crucial roles in enhancing student motivation. Research indicated that neurodiverse students, faced unique challenges that impacted their engagement levels.

Effective teacher interventions, such as fostering supportive environments and implementing motivational strategies, proved essential for promoting engagement and academic success.

All three themes reinforced the importance of creating a positive classroom atmosphere and addressing individual needs to improve student outcomes.

The next chapter will cover the insights gained from the research and explore future studies focused on engaging all learners holistically to promote long-term academic success, helping guide school leaders and teachers in their efforts.

Chapter Three: Discussion, Application, and Future Studies

This chapter explores the research reviewed in the literature by discussing insights into how both neurotypical and neurodiverse students can achieve academic and social-emotional success through increased engagement. The findings highlight that there is no universal approach to fostering engagement, reinforcing the need for educators to adapt strategies to meet the unique needs of individual students. This chapter will explore how educators can effectively incorporate student engagement into their instructional planning, emphasizing the importance of personalized approaches. It will also discuss potential future research on how to equitably support the social-emotional and academic needs of diverse learners.

Insights Gained from the Research

In the research analyzed, common explanations and strategies for increasing classroom engagement among both neurotypical and neurodiverse students emerged. A key theme across studies was that engagement is a multifaceted concept involving cognitive, emotional, and behavioral components.

One major insight gained is that student engagement is closely linked to motivation and learning outcomes. While teachers often look for visible signs like participation or task completion, these may not fully capture a student's deeper cognitive or emotional involvement. Emotional engagement, the foundation of both cognitive and behavioral engagement, is particularly hard to measure. This highlights the need for better tools to assess engagement beyond what is immediately observable.

Another important takeaway is that self-regulation skills and positive relationships with teachers and peers significantly influence engagement. These factors are strong predictors of student success, suggesting the need to promote self-management and foster positive interactions

in the classroom. Autonomy and self-efficacy were also identified as key to sustaining deeper, more meaningful engagement, driven by intrinsic motivation. Studies showed that giving students more choices and promoting autonomy enhance their motivation and engagement.

The research also emphasized the importance of individualized strategies for neurodiverse students, such as those with ADHD, ASD, and EBD. These students may exhibit behaviors like impulsivity or disruption, leading to increased conflict with teachers and reduced emotional engagement. Adopting flexible, personalized approaches and building strong teacher-student relationships were shown to improve engagement, reduce conflict, and create a more supportive learning environment. Tailoring strategies to their unique needs enhances both academic performance and emotional well-being.

In summary, fostering positive relationships, promoting autonomy, and using individualized approaches for neurodiverse students are critical for achieving deep, sustained learning and long-term success. Educators must address all three dimensions of engagement—cognitive, emotional, and behavioral—for meaningful outcomes.

Application of Research

Implementing strategies in the classroom that foster student motivation can help educators ensure heightened student engagement and long-lasting academic and social emotional successes. Research revealed that it's important to remember that engagement can fluctuate, but being mindful of all types of engagement while planning is key.

Teachers play a critical role in fostering student engagement across cognitive, behavioral, and emotional dimensions. To boost cognitive engagement, teachers should introduce critical thinking tasks and encourage problem-solving and self-directed learning. Active learning

strategies are essential for enhancing behavioral engagement, while a positive classroom climate and strong teacher-student relationships are key to emotional engagement.

It is important for educators to recognize that emotional engagement should complement, not replace, academic rigor. Teachers should create learning experiences that challenge students academically while also providing emotional support. Encouraging students to develop self-regulation skills and offering opportunities for reflection can help maintain consistent engagement over time.

Providing explicit instruction and feedback that highlights the value of effort and persistence is also crucial. This can be done by using growth-oriented language, setting goals, and incorporating self-reflection activities that allow students to assess their progress and strategies. Teachers should support student autonomy by offering choices in learning activities and decision-making, which helps build a sense of ownership and responsibility for academic progress.

For students with specific needs, such as those with ADHD, EBD, or ASD, differentiated instruction and tailored strategies are necessary. Teachers should build strong, supportive relationships with these students, offering encouragement and using flexible learning opportunities that cater to their strengths and challenges. Physical activity, choice-based learning, and natural reinforcers can further enhance engagement for students with ASD, while a calm, structured environment is vital for students with EBD.

Future Studies

Future research on student engagement should prioritize the development of tools to accurately measure emotional engagement, as it serves as the foundation for other forms of engagement. Additionally, studies could examine the effectiveness of professional development

programs that train educators to identify less visible aspects of engagement, such as emotional investment and cognitive strategies. By implementing more comprehensive assessment tools, educators would gain a deeper understanding of these factors. Monitoring emotional engagement effectively would enable teachers to adapt their teaching strategies and content to better address students' needs, resulting in more personalized and impactful instruction. Given the strong link between emotional engagement and both academic and social-emotional success, many studies highlighted the necessity of developing effective tools to help educators assess this critical area.

Additionally, future research should include more qualitative studies that examine student engagement from the students' perspectives. Current studies have largely relied on quantitative methods and mixed-method approaches that emphasize the teachers' views on engagement. Qualitative research could offer deeper insights by focusing on how students experience and perceive engagement, provided the studies are designed in an age-appropriate and student-centered way.

Lastly, future research should explore the effectiveness of teacher training programs designed to increase emotional engagement and self-efficacy among neurodiverse students. Educators could benefit from training that helps them better support students with ADHD, ASD, and EBD. This training would not only help reduce classroom conflict but also enhance emotional engagement among neurodiverse students. By focusing on improving emotional engagement, educators could positively impact the overall academic success and well-being of these students. Furthermore, research on the outcomes of such training could help tailor instructional approaches to meet the needs of all students, improving peer interactions, fostering academic success, and reducing the stigma faced by neurodiverse students.

Conclusion

This review looked at what affects student engagement for both neurotypical and neurodiverse students, focusing on their academic success and social-emotional growth. Engagement involves three key areas: cognitive, behavioral, and emotional, and there's no one-size-fits-all approach that works for every student. The findings show how important it is to address all three areas through personalized strategies. For neurodiverse students, especially, individual approaches are essential for keeping them engaged and achieving positive results.

Consider the two students mentioned above that showed different engagement patterns. The quiet, rule-abiding student, though behaviorally engaged, struggled with deeper cognitive engagement and self-confidence, led to academic difficulties. On the other hand, the disruptive but cognitively engaged student faced early behavioral and emotional challenges but eventually thrived academically as emotional and cognitive engagement improved. It's clear that success depends on supporting all forms of engagement.

Teachers play a crucial role in fostering this engagement by using flexible, personalized strategies that help students build autonomy, positive relationships, and self-regulation. By doing this, they can not only improve day-to-day learning but also help students grow over time. To meet the needs of both neurotypical and neurodiverse students, it's important that teachers continue to learn and adapt. Schools and policymakers should invest in professional development that equips teachers to support all forms of engagement. Continuous training and adaptable teaching methods can create environments where every student thrives, regardless of their learning journey.

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Appendix

Article Tracking Matrix

Articles	Method	Types of Engagement	Increasing Engagement/ Motivation	Engagement/ Neurodiverse Students
Ben-Eliyahu et al., 2018	Mixed	x		
Berry, 2020	Qualitative	x		
Blazar & Kraft, 2017	Quantitative	x		
Cheon & Reeve, 2014	Quantitative		x	
Cinar et al., 2023	Quantitative	x	x	
Didion et al., 2018	Quantitative			x
Fredricks et al., 2004	Quantitative	x		
Hrynowski, 2024	Quantitative		x	
Koegel et al., 2010	Mixed			x
Leggio & Terras, 2020	Qualitative			x
Lohbeck, 2018	Quantitative		x	
Martin et al., 2023	Quantitative			x
Nakutin & Gutierrez, 2019	Quantitative			x
Olivier et al., 2018	Quantitative	x		
Olivier et al., 2020	Quantitative	x		x
Orkin et al., 2018	Mixed		x	
Rushton et al., 2019	Mixed			x
Skinner et al., 2009	Qualitative	x		
Waterschoot et al., 2019	Quantitative		x	

