

Pathway to Disruptive Behavior: Mind Wandering & Habits of Mind

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This study explores the pathway to disruptive behavior by examining how habits of mind influence mind wandering and, in turn, contribute to disruptive tendencies among college students. The research also investigates the moderating role of avoidance behavior in shaping these relationships, offering a comprehensive view of the cognitive and behavioral mechanisms underlying classroom disruption. Data were collected from 266 graduate students enrolled in various programs across different colleges. Standardized scales adopted from previous validated studies were used to measure habits of mind, mind wandering, avoidance behavior, and disruptive behavior. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyze the data and test the hypothesized relationships. Results revealed that habits of mind significantly influence both mind wandering and disruptive behavior. Moreover, mind wandering mediated the relationship between habits of mind and disruptive behavior. Avoidance behavior was found to moderate the effects of habits of mind on both mind wandering and disruptive behavior, highlighting its regulatory role in cognitive and behavioral processes. This study contributes to the growing literature on cognitive-behavioral dynamics by uncovering how internal cognitive dispositions and avoidance tendencies shape student behavior. The findings offer valuable insights for educators seeking to manage disruptive tendencies through cognitive and behavioral interventions.

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Introduction

Knowledge of the cognitive and behavioral processes that lead to disruptive behavior among the students has attracted considerable interest in educational psychology in recent years (Reyes-de-Cózar et al., 2023). A disruptive behavior, where students are aggressive, inattentive, and non-compliant does not only negatively impact classroom dynamics but also impairs academic and social growth of children (Wettstein et al., 2023). Mind wandering, or how the attention is not fixed on current activities, and habits of mind, or mental dispositions leading to thoughtful and reflective thoughts, have become the important constructs to clarify behavioral outcomes (Marder et al., 2023). Previous research has highlighted that mind wandering disrupts self-regulation and performance (Sridhar et al., 2024), and high-quality habits of mind can be useful in increasing attention and adaptability (Murphy et al., 2023). Their joint effect on disruptive tendencies, however, is little investigated.

Empirical research has confirmed that there is a close interdependence between cognitive control, attention and behavior. It consistently has been shown that mind wandering is associated with reduced engagement with a task, emotional instability, and behavioral disturbance (Smith et al., 2023). As an example, a study involving classroom and workplace settings demonstrated that recurrent mind wandering correlates with poor performance, impulsiveness, and disagreement with authorities (Shinagawa & Yamada, 2025). Conversely, academic achievement and emotional balance have been positively correlated with habits of mind, i.e., persistence, self-regulation, and metacognition. The levels of disruptive or oppositional behavior are lower among student with intentionally practiced habits (reflection, empathy, responsible risk-taking) (Hill-Jackson & Lewis, 2023). Moreover, self-regulated learning theories that research supports suggest that robust habits of mind lower impulses and improve attentional regulation which cushions against cognitive overload and distraction (Li et al., 2025). Although each of these constructs has been examined separately, recent publications have proposed that the connection between them can create a pathway between cognition and behavior (Nagata et al., 2023). Taken together, these studies are conducive to the point that cognitive attention systems and reflective habits are key

predictors of behavioral stability and classroom harmony (Veiga, 2008).

Although there has been an increase in the amount of evidence existing on mind wandering and habits of mind, there are still a few gaps in research. To begin with, the majority of the existing literature has explored these constructs separately in terms of their direct connections with academic achievement or emotional health, but has not studied the interaction of these constructs with disruptive behavior (Peltier et al., 2023). This partial way of dealing does not allow a comprehensive appreciation of cognitive-behavioral mechanisms that give rise to disruptive tendencies. Second, although self-regulation and executive control theories recognize that cognitive lapses may be converted into behavioral disturbances, the empirical studies have seldom estimated mediation processes, which might include mind wandering mediating the impact of habit of mind on behavior, in a single model (Caldarella et al., 2023). Third, contextual moderators such as avoidance behavior that can dilute the positive role of habits of mind on the behavior have not been adequately studied. Their withdrawal or disengagement might be avoided, resulting in a reduction of self-regulatory benefits and an increase in distraction susceptibility, but scanty research has empirically modeled this moderating effect (Nitz et al., 2023). Fourth, most of the available studies have been done in the Western setting, which has resulted in a cultural divide in the knowledge of how such cognitive and behavioral constructs are applied in various educational systems (Allen et al., 2023). To fill these gaps, it is necessary to have a complex framework that, at the same time, explores habits of mind, mind wandering, and avoidance behavior to reveal the underlying cognitive processes and boundary conditions that contribute to disruptive behavior.

The proposed study intends to explore the cognitive-behavioral pathway towards the development of disruptive behavior through the interrelations of habits of mind, mind wandering, and avoidance behavior. In particular, the following objectives are:

1. To find out whether habits of mind are important in mind wandering and disruptive behavior.
2. To examine the mediating variable of mind wandering in the correlation between habits of mind and disruptive behaviour.
3. The objective is to evaluate the moderating effect of avoidance behavior on relations between habits of mind and mind wandering, relations between habits of mind and disruptive behavior.

These aims aim to offer a holistic insight into the working relationship

between cognitive habits and attention processes in creating a behavioral outcome in learning settings (Johnson & Lee, 2020).

Literature Review

Disruptive behavior among students has continued to be a thorn in the flesh of educational and psychological studies, mostly associated with cognitive and self-regulatory processes that affect attention, thought patterns, and decision making (Marder et al., 2023). Mind wandering is one of the important causes of such behavior, and it is a state where the individual loses focus of the task at hand and instead starts thinking inwardly or deviating the mind to other irrelevant issues (Sridhar et al., 2024). The studies show that the process of mind wandering implies the use of the cognitive resources that would be better involved in facilitating focus, impulse control, and adaptive behavior (Junker & Grünbaum, 2024; Murphy et al., 2023; Shinagawa & Yamada, 2025). When people have a high rate of task-unrelated thinking, they show a lack of self-control, become more impulsive, and have a shorter fuse, which may be very disruptive in a social or academic environment (Nagata et al., 2023). What is more, this mind wandering issue is linked to a reduction in academic engagement and task performance as well as emotional regulation, which implies that deficits in attention sustainability not only influence cognitive processes but also interfere with social peace and learning conditions (Veiga, 2008). The cognitive interference theory is on the premise that intrusiveness of irrelevant thoughts deter goals directed behavior and affective models are on the premise that the uncontrolled thought patterns are interdependent on irritability, anxiety or defiance being key antecedents to disruptive tendencies (Allen et al., 2023).

On the other hand, habits of mind - the cognitive dispositions and reflective pattern which facilitate intelligent behavior - act as a cushion to the adverse consequences of mind wandering. They are the ability of an individual to think critically, stay persistent and adaptively respond to the challenges (Kollerová et al., 2023). Teachers and psychologists consider well worked habits of mind, including self-regulation, metacognition and responsible risk-taking, to be tools of directing cognitive energy in productive and not impulsive or disruptive directions (Perlstein et al., 2023). People who develop positive habits of mind are in a better position to keep track of their thought processes, identify moments of attention lapse and redirect themselves to action (Perlstein et al.,

2023). These practices instill awareness, tolerance and compassion, all of which have an anti-aggressive or anti-defiant effect (Nagata et al., 2023). Empirical research has indicated that classroom disruptions can be curbed by training students in reflective thinking and problem-solving skills which can enhance executive functions and emotional control (Oschinsky et al., 2023). Herein the interaction between mind wandering and habits of mind can be construed as a cognitive-behavioral pathway: whereas unregulated thought patterns can predispose persons to disruptive behavior, the establishment of powerful habits of mind constitutes the compensatory mechanism that can result in focus, self-discipline and prosocial interaction (Xu et al., 2024)

Hypotheses Development

The significance of cognitive regulation and metacognition in empirical studies is significant, with the habits of mind being of great importance in determining attentional stability and mental focus (Deil et al., 2023). Research has proved that those who continuously practice reflective thinking, persistence and self-awareness, which are the main aspects of habits of mind, are more apt to deal with distraction and stay focused in the process of carrying out cognitive tasks (Hong et al., 2023). To illustrate, studies conducted in educational psychology have shown that students who exhibit significant habits of mind show increased levels of task engagement and reduced cases of episodes of off-task thought than their counterparts (Zuliyanti et al., 2023). The findings in the field of cognitive neuroscience also indicate that, through this process, such individuals are more active in brain areas pertaining to executive control and are therefore able to suppress irrelevant thoughts and minimize automatic mind wandering (Diva & Purwaningrum, 2023). Equally, programs of mindfulness and metacognitive training have been identified to enhance the strength of habits of mind, unintentional drift of thought reduction, and enhancement of sustained attention (Alfiana & Wiyarsi, 2023). All these empirical results highlight the point that habits of mind serve as a mental training system that facilitates cognitive coherence and reduces attention lapses, which are the key points in the control of mind wandering.

Based on these empirical observations, it is possible to suggest that habits of mind have a great impact on the level to which mind wandering takes place. When people develop reflective and reflective thinking dispositions, they are more in control of their thoughts processes and this means that they can control their thoughts, and thus shift it back to the task they are doing as thoughts divert attention (Hidayati & Idris, 2020). The self-regulation

mechanism allows them to maintain focus and avoid the automatic tendency to drift into irrelevant or daydreaming thoughts (Diva & Purwaningrum, 2023). Conversely, individuals who have poorly developed habits of mind are more likely to be distracted in the mind because they do not have the metacognitive awareness necessary to observe and control incidences of mind wandering (Mrazek et al., 2013). This relationship is supported by the theoretical foundations of self-regulation and attentional control because both assume that cognitive discipline and intentional thinking patterns can be used as preventive measures against inadvertent thought divergence (Rodriguez-Boerwinkle et al., 2024). Thus, it is reasonable to assume that robust habits of mind have a negative correlation with the frequency and level of mind wandering, which supports the idea that intentional mental habits are associated with the increased cognitive concentration and engagement in the work (Tng et al., 2025).

H1. The mind wandering greatly affected by habits of mind.

The past studies of educational and behavioral psychology have been held consistent with well developed habits of mind playing a role in eliminating behavioral issues and enhancing emotional control amongst learners (Liu et al., 2023; Mohamed & Ahmed, 2024; Smallwood & Schooler, 2015). Research has established that people with cognitive dispositions like persistence, responsibility, flexibility and impulse control have higher tendencies to react positively to the challenges that they face and not by becoming disruptive and aggressive (Deil et al., 2023). As an example, longitudinal research on classroom management has demonstrated that highly reflective students are in a better position to evaluate the outcomes of their behaviors and respond to problems instead of acting oppositely (Mohamed & Ahmed, 2024). Equally, evidence on the theory of self-regulation indicates that positive minds promote emotional intelligence and empathy all of which obstruct impulsive or antisocial behaviors (Smith et al., 2023). In prevention, the teachers and the psychologists have also focused on the preventive action of cognitive habits in behavioral disorders based on the fact that the cognitive habits promote a sense of responsibility and self-awareness, thereby decreasing the chances of disruption due to frustration (Oschinsky et al., 2023). Therefore, empirical data has a significant connection with the relationship between habits of mind and prosocial, disciplined behavior.

Based on these results, it is reasonable to assume that disruptive behavior is

strongly affected by the habits of mind. Cognitive habits firmly established in the minds of individuals show uniform self-regulation, which allows them to think prior to taking action and exercise proper control of their emotional urges (Hill-Jackson & Lewis, 2023). These mind patterns promote reflection, persistence and problem-solving flexibility - capabilities that allow one to overcome interpersonal disputes without being defiant and aggressive (Wettstein et al., 2023). In addition, habits of mind promote a form of internalized discipline, which manifests positive classroom engagement and respect of authority. In theoretical terms, it is proposed that social-cognitive model propose that behavioral patterns are steered by self-reflective abilities and cognitive self-regulation both of which are built into habits of mind framework (Hong et al., 2023). Therefore, those who tend to practice life by being intentional and mindful do not tend to indulge in disruptive behavior since they have the knowledge and emotional homeostasis to act thoughtfully to the demands of the situation (Perlstein et al., 2023). Therefore, it is hypothesized that habits of the mind are a stabilizing variable that directly restrains disruptive behavior by enhancing the capacity to organize cognitive, emotive and behavioral reactions in socially acceptable manners.

H2. Disruptive behavior is largely affected by the habits of mind.

Empirical research on the mediation mechanisms in the mind indicates that mind wandering is a significant mediator of converting cognitive dispositions into behavior consequences (Kollerová et al., 2023). Empirical evidence shows that good habits of mind help one to better concentrate and control the mind, but they are constantly interrupted by mind wandering, which makes self-regulation errors and improves impulsivity (Allen et al., 2023). Indicatively, research studies in both cognitive and educational psychology have revealed that students who tend to indulge in a high likelihood of mind wandering tend to exhibit inattentive, disruptive or off-task behavior (Veiga, 2008). In the same vein, the neural aspects of mind wandering have been investigated and it has been observed that less executive control that occurs during the process of unrelated thinking is associated with disorganization of behavior and difficulty in frustration tolerance (Reyes-de-Cózar et al., 2023). On the other hand, those who have a well-established habits of mind show much less vulnerability to mind wandering and therefore, they can be more emotionally stable and more stable in their behavior (Allen et al., 2023). Therefore, previous studies suggest mind wandering as one of the cognitive processes that connect behavioral manifestations with self-regulatory principles, which can be proposed as a

mediator between mental discipline within the self and behavioral manifestations.

On this empirical basis, it can be suggested that the relation between habits of mind and disruptive behavior is mediated by mind wandering (Smith et al., 2023). The habits of mind enhance cognitive regulation and metacognitive awareness of an individual and consequently lower cases of mind wandering (Sridhar et al., 2024). Reduced mind wandering increases the capacity to remain active, run information in a keen manner and control the impulse to emotions (Murphy et al., 2023). Consequently, the chances of disruptive behavior reduce. Nevertheless, the mind wandering becomes detrimental to the self-regulatory advantages of habits of mind when it is common and uncontrollable (Nagata et al., 2023). This predisposes the person to carelessness, aggravation, and the tendency to respond, thus putting the person at risk of making the environment disruptive (Nagata et al., 2023). This mediation view is compatible with dual-process theories of cognition that posit that the controlled and automatic thought processes do interact to influence behavioral outcomes (Allen et al., 2023). Thus, it may be considered that mind wandering is a cognitive mediation in which the implication of habits of mind on behavior develops. It also conveys the implications of mind discipline to apparent behavior, which supports the postulation that mind wandering is a significant mediator between the association between habits of mind and disruptive behavior.

H3. Habits of mind and disruptive behavior have a strong mediating relationship through mind wandering.

Avoidance behavior studies, which are commonly cast within the coping and behavior-inhibition literature, reveal it to be a strong predictor of maladaptive outcomes within contexts that require engagement and self-regulation (Wang et al., 2025). Unresolved stressors have been linked to avoidant coping styles (e.g., problem-avoidance, withdrawal, emotional disengagement) which are related to increased psychological distress, poorer behavioral adaptation, and externalizing behaviors, in comparison to resolved stressors (Baji & Rahimizadeh, 2025). Meta-analyses and reviews show that avoidance weakens active problem resolution and avoidance of the implementation of regulatory strategies which would otherwise counter negative behavioral consequences, particularly in social and classroom environments where urgent needs must be fulfilled (Martínez-Rubio et al.,

2023). Work based on the concept of Gray of Reinforcement Sensitivity Theory conceptualizes avoidance within a framework of a Behavioral Inhibition System (BIS) through which one becomes overly sensitive to punishment and threat and turns away from adaptive confrontation or problem solving instead of passively responding (Ye et al., 2023). In school and clinical research, avoidance-dependent students will develop a greater degree of classroom disturbance as time goes by- either due to unrelieved frustrations turning into acting-out, or because avoidance disrupts learning and raises the degree of disengagement, a common manifestation of which is disruptive behavior by teachers (Chen et al., 2023). Other intervention studies which decrease avoidant coping or increase active coping/self-management tend to report decreases in disruptive incidents, indicating that avoidance is not only correlated with but actually plays a functional role in the development and perpetuation of disruptive behavior (Baji & Rahimizadeh, 2025).

If habits of mind supply an individual with metacognitive routines (e.g., persistence, self-monitoring, flexible thinking) that normally reduce the likelihood of disruptive behavior, avoidance behavior may change how effectively those habits translate into action (Alanazi et al., 2023). Empirical evidence suggests avoidance operates as a dampener on the enactment of self-regulatory strategies: individuals with a tendency to avoid confronting problems are less likely to use reflective planning, delay-of-gratification, or perspective-taking—core behavioral components of habits of mind (Peltier et al., 2023). Consequently, even strong cognitive dispositions can fail to produce prosocial behavior when avoidance is high because avoidance interrupts the feedback loop between noticing, reflecting, and implementing corrective behavior (Allen et al., 2023). Longitudinal and experimental work on coping and self-regulation demonstrates that when avoidance is salient due to personality dispositions, situational threat, or learned coping patterns individuals show reduced engagement with problem-focused strategies and increased impulsivity or withdrawal that may manifest as classroom disruption or oppositional acts (Rajwani et al., 2023). In moderation terms, avoidance therefore weakens the protective effect of habits of mind on disruptive outcomes: among low-avoidance individuals, habits of mind more reliably produce calm, reflective responses to provocation; among high-avoidance individuals, those same habits may be suppressed, delayed, or misapplied (for instance, cognitive reflection without behavioral follow-through), permitting disruptive behavior to emerge (Perlstein et al., 2023). The behavioral-inhibition

framework and studies of avoidant coping both provide empirical analogues showing that avoidance interacts with self-regulation variables to predict maladaptive outcomes, justifying the hypothesis that avoidance behavior significantly moderates the habits-of-mind and disruptive-behavior relationship (Wettstein et al., 2023).

H4. Avoidance behavior significantly moderates the relationship of habits of mind and disruptive behavior.

Past work on attentional control, coping strategies, and mind-wandering gives clear indications that avoidance and attentional lapses are linked in meaningful ways. Mind wandering arises when executive control resources decouple from the external task and redirect to internally generated thoughts; this decoupling is more likely when motivation to engage with the task is low or when coping strategies fail to address stressors (Mrazek et al., 2013). Avoidant coping, by its nature, reduces active engagement with ongoing tasks or emotional challenges and is therefore associated with decreased task motivation and poorer sustained attention conditions conducive to increased mind wandering (Smith et al., 2023). Empirical observational and experience-sampling studies have found elevated rates of off-task thought among individuals who report higher avoidance or disengagement orientations, especially in contexts perceived as stressful or aversive (Liu et al., 2023). Neurocognitive studies also suggest that the same systems implicated in avoidance-related vigilance and threat sensitivity overlap with networks that influence attentional switching: enhanced BIS/avoidance sensitivity can create intrusive threat-related thoughts that displace task-relevant processing and manifest as mind wandering (Nagata et al., 2023). Intervention studies that train active coping, problem-solving, or attentional control show concomitant reductions in mind-wandering episodes, further linking avoidance-style responding to fluctuations in attention. Taken together, the literature shows a plausible empirical association between avoidance tendencies and greater frequency/intensity of mind wandering under real-world task demands (Vékony et al., 2025).

Translating habits of mind (i.e., metacognitive dispositions such as self-monitoring, persistence, and purposeful reflection) into sustained attentional engagement depends on both the availability of executive resources and a willingness to confront task demands (Oschinsky et al., 2023). Avoidance interferes with both: by promoting disengagement, it reduces the motivational

pull of task goals and increases the cognitive “openness” to internally generated content conditions that empirically precipitate mind wandering (Deil et al., 2023). Empirical models of mind wandering emphasize the role of motivation and meta-awareness in preventing attentional decoupling; when avoidance is high, meta-awareness mechanisms (noticing that attention drifted) may be either less likely to be recruited or less likely to trigger corrective action (i.e., re-orienting to task) (Reyes-de-Cózar et al., 2023). Thus, avoidance functions as a moderator that changes the strength and direction of the habits-of-mind → mind-wandering relationship (Alfiana & Wiyarsi, 2023). Specifically, in low-avoidance individuals, habits of mind are likely to translate into frequent meta-cognitive checks and active redirection of attention, lowering mind-wandering frequency. In contrast, when avoidant tendencies are elevated, the same habits may be insufficient to halt attentional drift because avoidance attenuates motivational incentives to reengage and fosters rumination or threat-related intrusions that perpetuate mind wandering (Diva & Purwaningrum, 2023). Evidence from cognitive training and coping intervention trials supports this conditional mechanism: improvements in habits-like skills reduce mind wandering most effectively when avoidance is concurrently addressed (e.g., through exposure, active coping training, or motivational enhancement) (Hong et al., 2023). Therefore, the hypothesis that avoidance behavior significantly moderates the link between habits of mind and mind wandering is grounded in converging empirical work linking motivation, coping style, executive control, and attentional stability.

H5. Avoidance behavior significantly moderates the relationship of habits of mind and mind wandering.

Based on the above discussion, the following framework was proposed (Figure 1).

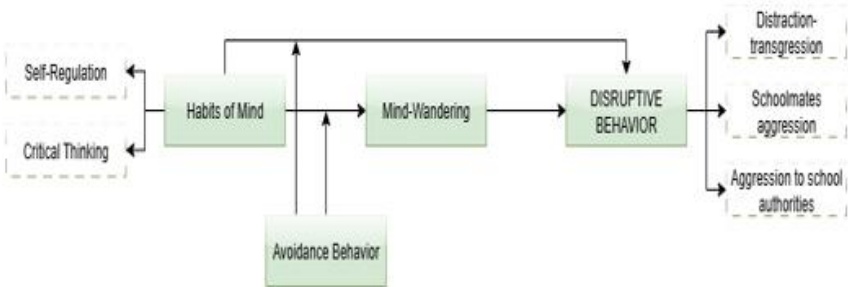


Figure 1: Conceptual Model

Methodology

The design chosen in this study was a quantitative, cross-sectional study to investigate the existing relation between habits of mind, mind-wandering and disruptive behavior and also determine the mediation mechanism of mind-wandering and the moderating effect of avoidance behavior. The specified study was intended to empirically confirm the previously introduced structural model in the framework of higher education, which targeted graduate-level learners. The main data collection tool was a structured questionnaire, and the data analysis was performed with the help of Partial Least Squares Structural Equation Modeling (PLS-SEM). The quantitative design was selected due to the fact that it enables the testing of hypothesized relationships statistically and provides the accuracy and reproducibility that is required to test a model. PLS-SEM was specifically suitable in this study in that it is an effective tool in the development of theory, predicting models and the examination of the complex causal relationships between two or more latent variables.

The sample of this research included graduate students who are undertaking different programs in different colleges. These institutions were of various academic subjects which meant that the results would be applicable to different learning settings. The sample size used in the study was 266 students whose selection was done using a stratified random sampling method to ensure that the study showed the representation of various academic programs. The sampling technique was also useful in ensuring the respondents were diverse in terms of academic backgrounds and other personal attributes like gender, age, and study specialization, which are known to affect cognitive and behavioral attributes. The 266 sample size was deemed sufficient to perform the PLS-SEM analysis because it is larger than the 10-times rule minimum sample size and has enough statistical power to conduct path analysis (Hair Jr et al., 2021). The end data set contained all complete and valid responses following data screening and eliminating outliers.

The structured questionnaire comprised of the standardized scales used in previous research that were adopted to gather the data. The instrument included several sections, which measured a certain construct of the conceptual framework. The Habits of Mind scale incorporated 13 questions/ items based on self-regulation, critical thinking and creative thinking, which were borrowed on previous research (Hidayati & Idris, 2020) that had been validated in the field of educational psychology. The Mind-Wandering scale (Mrazek et

al., 2013) was used to assess the rate of attention drift and cognitive distraction and included both deliberate and spontaneous changes in thought based on five items. The Disruptive Behavior construct consisted of those fifteen items where the construct of aggression towards school authorities, distraction-transgression, and aggression by schoolmates were put (Veiga, 2008). Lastly, the seven items scale of the Avoidance Behavior was used to measure withdrawal and disengagement tendencies as a response to cognitive or emotional difficulties (Sulfiana et al., 2021). Everything was assessed based on a five-point Likert scale with 1 (strongly disagree) to 5 (strongly agree). It was pre-tested using a small sample of the students to clarify the questions, make them readable and to make them contextually relevant before the actual data collection.

The data collection process was conducted within a span of six weeks and in various graduate colleges. The researcher administered the survey to students in physical classroom and online forms to make it convenient and increase participation after getting institutional permission. The respondents were told the purpose of the study and were urged to give responses in a reflective manner depending on their real perceptions and experiences. The feedback was anonymous so as to encourage candor and integrity. The questionnaires sent back were filtered on the missing values and inconsistent trends, and the incomplete responses were not referred to any further analysis. A dataset of 266 valid responses was considered as the final data that was finally coded and put in the statistical software to analyze further.

Results

Table 1 contains the results of reliability and validity of the constructs utilized in the structural model. The alpha of Cronbach of all items is greater than the acceptable level of 0.70, which demonstrates that there is a high level of internal consistency among the measured items (Hair Jr et al., 2021). The values are 0.724 in case of Mind-Wandering to 0.918 in case of Habits of Mind indicating that the items in each construct consistently evaluate the desired latent variable. In the same way, the composite reliability (CR) values are also above the accepted 0.70 threshold, with the results being 0.844 to 0.929, which proves that the used measurement model is robust. All the values of the AVE are above 0.50, with the exception of the Habits of Mind (0.504), which means that over half of the variance in the indicators is caused not by the measurement error, but by the latent construct itself.

Table 1
Variables reliability and validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Aggression to school authorities	0.862	0.901	0.645
Avoidance behavior	0.808	0.863	0.514
Creative Thinking	0.741	0.853	0.659
Critical Thinking	0.787	0.854	0.541
Disruptive behavior	0.915	0.927	0.560
Distraction-transgression	0.822	0.871	0.530
Habits of mind	0.918	0.929	0.504
Mind-wandering	0.724	0.844	0.644
Schoolmates' aggression	0.750	0.843	0.577
Self-Regulation	0.845	0.890	0.620

In general, the findings indicate convergent reliability and validity, which makes the constructs, including Aggression to School Authorities, Avoidance Behavior, and Self-Regulation, statistically viable to be used in the further structural analysis. These reliability indices justify the sufficiency of the measurement model and the internal consistency, which confirms the presence of all the items in the further path modeling (see figure 2).

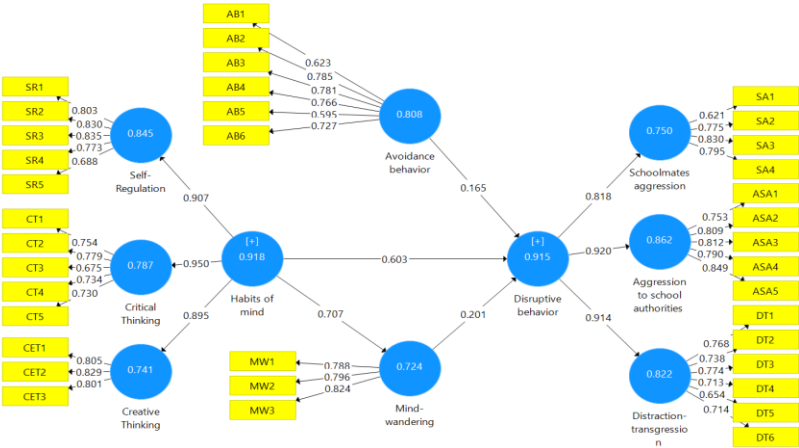


Figure 2: Estimated Model

The model in figure 2 shows the estimated model that illustrates the hypothesized relationship between the constructs. The model graphically depicts the directionality of the relationship between Habits of Mind and Mind-Wandering and Avoidance behavior moderates and Mind-Wandering is

a mediator. The conceptual relevance of the model to theoretical premises based on cognitive-behavioral and self-regulation theories is supported by the model structure. The power and importance of the paths, which have been proven using PLS-SEM, demonstrate Habits of Mind as a main antecedent, which influences both cognitive (Mind-Wandering) and behavioral (Disruptive Behavior) outcomes. Also, incorporation of moderating and mediating variables increases explanatory strength of the model to say the least; the model captures the subtle interaction between attention, cognition, and behavioral self-control. The graphic depiction provides a concise structural view of cause-dependence, hence facilitating holistic cognition of the suggested framework.

Table 2
Factor Loadings Analysis

	Items	Original Sample (O)	T Statistics (O/STDEV)	P Values
Disruptive behavior				
Aggression to school authorities	ASA1	0.744	20.818	0.000
	ASA2	0.720	15.972	0.000
	ASA3	0.708	13.886	0.000
	ASA4	0.737	16.651	0.000
	ASA5	0.779	22.021	0.000
Distraction-transgression	DT1	0.736	17.992	0.000
	DT2	0.738	21.934	0.000
	DT3	0.774	21.479	0.000
	DT4	0.713	12.985	0.000
	DT5	0.654	9.811	0.000
	DT6	0.714	11.120	0.000
Schoolmates' aggression	SA1	0.621	10.172	0.000
	SA2	0.775	17.268	0.000
	SA3	0.830	25.998	0.000
	SA4	0.795	18.406	0.000
Habits of mind				
Creative Thinking	CET1	0.805	26.114	0.000
	CET2	0.829	24.541	0.000
	CET3	0.801	19.152	0.000
Critical Thinking	CT1	0.754	18.876	0.000
	CT2	0.779	20.585	0.000
	CT3	0.675	11.614	0.000
	CT4	0.734	11.669	0.000
	CT5	0.730	15.598	0.000
Self-Regulation	SR1	0.803	17.845	0.000
	SR2	0.830	21.368	0.000
	SR3	0.835	27.731	0.000
	SR4	0.773	18.023	0.000
	SR5	0.688	12.719	0.000

Table 2

Factor Loadings Analysis (cont...)				
	Items	Original Sample (O)	T Statistics (O/STDEV)	P Values
Avoidance behavior	AB1	0.627	11.165	0.000
	AB2	0.790	22.181	0.000
	AB3	0.780	18.288	0.000
	AB4	0.769	14.496	0.000
	AB5	0.588	6.481	0.000
	AB6	0.721	15.270	0.000
Mind-wandering	MW1	0.788	18.566	0.000
	MW2	0.796	21.915	0.000
	MW3	0.823	29.609	0.000

Table 2 shows the factor loadings, t-statistics and p-values in all the variables observed with respect to the latent constructs. The factor loadings of all items are more than 0.60, which means that the indicators are reliable (Hair Jr et al., 2021). Maximal loadings are seen on some of the items including SR3 (0.835) under Self-Regulation and CET2 (0.829) under Creative Thinking, which, in turn, means their valuable contribution to corresponding latent constructs. The t-statistics of all items are significantly greater than the critical value of 1.96, and all the p-values are also 0.000, which support the high level of statistical significance and high level of associations between items and their constructs. These findings indicate a high item reliability and indicator validity in all dimensions, Disruptive Behavior, Avoidance Behavior, Habits of Mind, and Mind-Wandering. Together the large loadings and the large significance values suggest that the measurement model has an excellent convergent validity, and none of the items should be removed. This guarantees that every construct is a reliable measure of its intended concept which offers a consistent base in testing the structural hypotheses.

Table 3

Heterotrait–Monotrait Ratio										
	1	2	3	4	5	6	7	8	9	10
Aggression to school authorities										
Avoidance behavior	0.638									
Creative Thinking	0.774	0.654								
Critical Thinking	0.743	0.702	0.826							
Disruptive behavior	0.801	0.733	0.824	0.839						
Distraction-transgression	0.822	0.762	0.784	0.832	0.843					
Habits of mind	0.784	0.711	0.816	0.835	0.823	0.831				
Mind-wandering	0.755	0.598	0.807	0.831	0.829	0.781	0.834			
Schoolmates' aggression	0.783	0.601	0.834	0.845	0.841	0.794	0.823	0.811		
Self-Regulation	0.771	0.679	0.833	0.842	0.825	0.836	0.841	0.701	0.824	

The values of HTMT ratio that are used in measuring discriminant validity between the constructs are shown in Table 3. The values of all HTMT are less than the thresholds of 0.85 and indicate sufficient discriminant validity based on the recommendation of (Henseler et al., 2015). The outcomes show that some of the constructs like Habits of Mind (0.831 with Distraction-Transgression) and Mind-Wandering (0.834 with Habits of mind) are two different, but related dimensions. The comparatively lower values of HTMT between such constructs as Avoidance Behavior and Mind-Wandering (0.598) also indicate a low overlap of concepts, which supports the independence of constructs. This validation is required to ensure that every latent construct is used to measure a distinct dimension of the research framework and is not affected by multicollinearity. Therefore, the discriminant validity test indicates that the measurement model is structurally sound and that such constructs as Self-Regulation, Creative Thinking, and Critical Thinking are empirically distinguishable that make it possible to interpret the relationships within the model.

Table 4

R-Square and F-Square tests				
	F-Square		R-Square	
	Disruptive behavior	Mind-wandering	R Square	R Square Adjusted
Avoidance behavior	0.068			
Disruptive behavior			0.757	0.754
Habits of mind	0.579	1.002		
Mind-wandering	0.083		0.501	0.498

The coefficient of determination (R2) and the effect size (f2) are reported in Table 4 and they are some of the insights into the explanatory power of the model. The R2 of Disruptive Behavior is 0.757 which means that around 75.7 percent of the variance in Disruptive Behavior could be attributed to Habits of Mind, Mind-Wandering, and Avoidance Behavior. This refers to a high predictive ability (Cohen, 1998). In the same way, Mind-Wandering has a R2 of 0.501 which implies that Habits of mind and Avoidance Behavior are capable of explaining 50.1% of its variance, which is an indication of a moderate to strong level of explanatory power. When it comes to f2, both Mind-Wandering (1.002) and Disruptive Behavior (0.579) are considerably predicted by Habits of Mind, which makes the central predictor of the variables. The impact of avoiding behavior is significantly smaller but only statistically significant (0.068), which proves a moderating effect. All these findings confirm the predictive relevance and explainability of the structural model are well beyond acceptable limits, and support the robustness of the structural model.

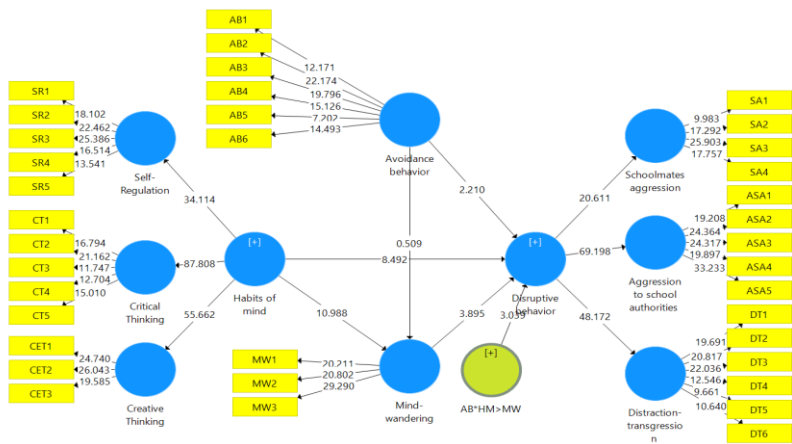


Figure 3: Structural Model for Path Analysis (with AB*HM>MW moderation path)

The negative moderating relationship between Avoidance Behavior and the Habits of Mind-Disruptive Behavior relationship is also visually evident besides the positive moderating relationship between the Habits of Mind-Mind-Wandering relationship and the Avoidance Behavior. The significance and model fit indicators (T-values and P-values) can visually be used to check that all the hypothesized relationships are statistically confirmed. This diagram is therefore a summary of the cognitive and behavioral interaction dynamics, with the adaptive habits of mind lowering disruptive tendencies in both direct and indirect ways by affecting cognitive focus (see figure 3).

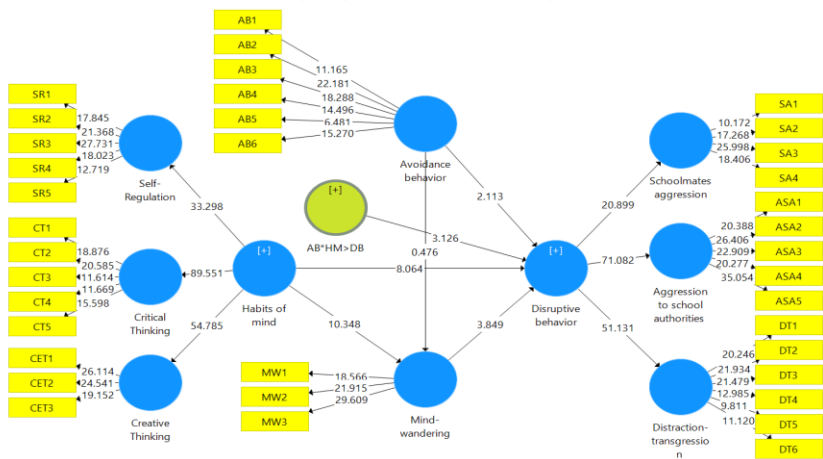


Figure 4: Structural Model for Path Analysis (with AB*HM>DB moderation path)

Table 5 summarizes the path coefficients, *t*-statistics, and *p*-values for all hypothesized relationships in the model. All five hypotheses are supported with statistically significant results ($p < 0.05$). Habits of Mind shows a strong positive effect on Mind-Wandering ($\beta = 0.686, t = 10.348$) and on Disruptive Behavior ($\beta = 0.523, t = 8.064$), confirming H1 and H2. The mediation analysis further reveals that Mind-Wandering significantly mediates the relationship between Habits of Mind and Disruptive Behavior ($\beta = 0.134, t = 3.661$), validating H3. The moderating role of Avoidance Behavior is also established: it negatively moderates the Habits of Mind–Disruptive Behavior link ($\beta = -0.067, t = 3.126$) but positively moderates the Habits of Mind–Mind-Wandering relationship ($\beta = 0.196, t = 3.849$) (see figure 4).

Table 5

	Path Analysis				
	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
H1. Habits of mind significantly influences the mind wandering.	0.686	0.684	0.066	10.348	0.000
H2. Habits of mind significantly influences the disruptive behavior.	0.523	0.518	0.065	8.064	0.000
H3. Mind wandering significantly mediates the relationship of habits of mind and disruptive behavior.	0.134	0.132	0.037	3.661	0.000
H4. Avoidance behavior significantly moderates the relationship of habits of mind and disruptive behavior.	-0.067	-0.069	0.022	3.126	0.002
H5. Avoidance behavior significantly moderates the relationship of habits of mind and mind wandering.	0.196	0.193	0.051	3.849	0.000

These results confirm the theoretical assumptions that adaptive cognitive dispositions influence both thought control and behavioral outcomes, while avoidance tendencies shape the intensity and direction of these relationships. Overall, the structural results validate the proposed model and reinforce the argument that habits of mind are essential cognitive mechanisms that regulate attention, minimize mind-wandering, and reduce disruptive behavior within educational environments.

Discussion

The behavior of the human beings in the educational setting is not simply a response to the external stimuli but a complicated mirror of the inner cognitive, emotional and metacognitive processes. The current research was aimed at

unraveling these underlying psychological pathways by examining the interactions of habits of mind, mind wandering, and avoidance behavior in causing disruptive behavior in learners. The results of the study are an extension of the recent discussion in the field of educational and cognitive psychology that highlights the interrelation between self-regulation, attention management, and behavioral consequences. Through embracing all the five hypotheses, this research gives empirical evidence to the proposed model, which proves that cognitive dispositions grounded on reflective thinking contribute greatly to attentional lapses and behavioral disturbances. Moreover, the findings highlight the importance in which the adverse tendencies like avoidance can undermine the positive power of cognitive habits. The discussion chapter explains these findings based on the past literature, theoretical perspectives, and the wide implications of the same on academic and behavioral development.

The first hypothesis, which argued that habit of mind is a critical factor in mind wandering is supported by the fact that metacognitive awareness as well as self-regulated thinking are crucial buffers to attentional failures. The results are consistent with the previous studies that suggested that people with developed reflective dispositions, persistence, and attentional control have less likely to experience cognitive drift when performing tasks (Smallwood & Schooler, 2015). The results of the study supported the hypothesis that the organized mental habits could have the power to place the mind on the moment when participants who rated their habits as stronger were found to have less mind wandering. This connection brings into focus the fact that mind wandering is not just an impulsive or uncontrollable process, but, it depends on how far people have absorbed cognitive training. Just like the evidence presented by (Diva & Purwaningrum, 2023), regarding the executive control, the findings imply that individuals with stronger metacognitive monitoring can further redirect their attention in case they get off-task thoughts. Therefore, the current research contributes to the existing theoretical discussion by proving empirically the existence of habits of mind as a form of self-regulation that attenuates the cognitive disengagement of mind wandering process.

The second hypothesis, that habits of mind are significantly related to disruptive behavior, was also supported, which has proven that reflective cognitive dispositions are converted into their behavioral stability. This is aligned with the past research, which holds that habits of mind, including persistence, flexibility, and emotional control, determine the ability of an individual to positively interact with others (Marder et al., 2023). Students with

developed intellectual routines have a higher chance to approach problems with intelligence and a smaller tendency to act impulsively or defiantly. These results therefore concur with the social-cognitive theory (Bandura, 2001) that argues that the expression of behavior is determined by internal cognitive paradigms that operates by monitoring self-behavior and forethinking. This study presents the importance of internalized mental discipline in the prevention of impulsivity and aggression by showing a direct negative relationship between habits of mind and disruptive behavior. Further, it is an added contribution to the educational practice because it works on the idea that teaching options should extend beyond knowledge delivery to development of cognitive dispositions that raise responsible and thoughtful learners (Baji & Rahimizadeh, 2025). All these findings substantiate the fact that, strengthening habits of mind does not only improve academic achievement, but also, it is a preventive measure against behavioural disturbance.

In terms of integrative perspective, the relative agreement between H1 and H2 represents an erudite-behavioral congruence: a disciplined thinker is less obstructed by the extraneous cognitions and is less prone to acting disruptively. Such convergence appreciates the cognitive-behavioural model that holds that behavioural regulation is secondary to thought regulation. The results confirm that the chain of disruptions caused by cognitive instability can be reduced through the enhancement of attentional discipline by developing habits of mind (Zuliyanti et al., 2023). Moreover, the findings also justify that habits of mind can play a dual role; as a stabilizer of attention and as a moral-psychological anchor in behavior. The empirical correlations that have been identified in this paper thus broaden the previous theories of self-regulated learning as they directly connect the internal cognition patterns with outward behavior (Peltier et al., 2023). Essentially, when learners are given the capacity to control, adapt or observe their thoughts then they can spread this control to their behaviour which makes their learning environments more conducive and behavioral conflicts are minimised.

The third hypothesis that postulated that mind wandering is a high mediator in the interaction between habits of mind and disruptive behavior was also confirmed, and this helped in shedding more light on the cognitive processes involved in the regulation of behaviors. This observation supports the theoretical hypothesis according to which attention is the mechanism by which the metacognitive habits affect the behavioral outcome (Nitz et al., 2023). In particular, people exhibiting solid habits of mind are seen to have fewer disruptive behaviors partially due to the fact that the extent to which they are less prone to mind wandering increases their engagement in tasks and stability

of their emotions. On the other hand, attention that is often shifted does not produce familiarity of cognitive dispositions into a steady regulation of behavior in spite of the fact that well-informed cognitive dispositions have been established (Alfiana & Wiyarsi, 2023). It is the mediating role of mind wandering which, therefore, fills the gap between cognitive intention and behavioral execution, which proves the cognitive-behavioral pathway that this research suggests. This finding is echoed in executive control theory that postulates that attention and self-regulation as central processes coordinate thought and behavior. The results are also consistent with the past research which has indicated that mind wandering is known to reduce self-regulation and can intensify to external behaviors once unchecked (Abdelrheem, 2024). Through the empirical validation of the mediation, this study will add a fine-grained insight into the dynamism of cognitive and behavioral sphere interaction by means of attentional processes.

The fact that the fourth hypothesis of the avoidance behavior is accepted, that is, the relationship between habits of mind and disruptive behavior is moderated significantly due to avoidance behavior, adds a deeper boundary condition to the effect of cognitive habits. Findings have shown that positive effects of habits of mind on behavior are undermined in the cases of high levels of avoidance behavior. That is, the people who are more prone to avoiding difficult situations or stresses might not be able to effectively use their reflective and problem solving abilities. This observation is consistent with the reinforcement sensitivity model (McNaughton & Gray, 2000) which indicates that avoidance motivated individuals are under the influence of increased behavioral inhibition which does not allow them to actively engage. The levels of avoidance are low where habits of mind can be used as predictors of a strong reduction in disruptive behavior but as the levels increase, the relationship weakens. This communication highlights the intricate interrelationship between cognitive preparedness and motivational disposition. Even those people who are highly disciplined in cognition can act to disrupt due to avoidance inclinations which repress their desires to face their hardships (Xu et al., 2024). The moderating effect herein identified therefore stresses the need to integrate the avoidance patterns in the behavioral intervention programs as it has the potential of eliminating the beneficial effects of the cognitive training.

Likewise, this subtle interpretation of cognitive engagement is continued by the fact that the fifth hypothesis, which states that avoidance behavior moderates the correlation between habits of mind and mind wandering, is

accepted. These results imply that in circumstances where the avoidance is high, the ability of habits of mind to sustain attention is weakened causing the habits of mind to engage in more instances of mind-wandering (Murphy et al., 2023). This finding is empirical evidence that avoidance does not only influence overt behavior, but also invalidates the cognitive control processes that occur before it. The moderation effect is an aspect that reflects the model of motivational disengagement that states individuals with a tendency to constantly avoid difficult or uncomfortable situations have less motivation to maintain attention (Deil et al., 2023). They have therefore less well utilized metacognitive resources, leading to greater attentional drift. In contrast, low avoidance improves the cognitive anchoring effect of habits of mind that guarantee stable attention and less mental sporadicity. This observation indicates that it is not enough to develop habits of mind and leave the emotional and motivational barriers that go hand in hand with avoidance tendencies alone. Theoretically, it combines self-regulation and motivational theories because it shows that cognitive discipline only works best when it is complemented with approach-based engagement.

Taken together, the validation of all five hypotheses confirms the fact that disruptive behavior can only be explained within the context of integrative cognitive-behavioral framework that integrates reflective thinking, attentional control, and motivational regulation. The research adds to the emerging body of evidence indicating that habits of mind are a core process in minimizing mind wandering and disruptive behavior, whereas mind wandering is a critical cognitive mediator between thought and action. In addition, avoidance behavior can be a contextual moderator, which establishes the degree of cognitive dispositions into attentional and behavioral results. These lessons do not only broaden the theoretical knowledge but also provide practical implications to educational institutions: the interventions have to develop cognitive habits, improve attentional regulation, and at the same time decrease avoidance tendencies. Finally, the paper contributes to the discourse on the human mind and human behavior through demonstrating that it is not only rules and discipline that leads to harmony in the classroom and subsequently in the rest of the society, but through conscious control of thought, attention and involvement.

Implications of the study

The study has a number of significant theoretical implications in the sense

that it broadened the knowledge about the cognitive and behavioral processes that connect habits of mind, mind-wandering, and disruptive behavior. It is an expansion of the theoretical base of self-regulation theory and cognitive-behavioral models that empirically proves that organized mental dispositions - or habits of mind - play a significant role in the stability of attentional state and the outcome of behavior in educational settings. The findings verify that not only cognitive habits developed are predictors of self-regulation, but also internal moderators of attentional drift, which argues in favor of the idea that cognition and behavior are dynamically related. Also, the mediation of the mind-wandering and moderation of avoidance behavior provide theoretical richness to the literature on coping styles and cognitive dispositions, indicating that personal coping styles and cognitive dispositions combine together to define the extent to which the attention lapses become disruptive behaviors. The combination of these constructs into a single model therefore makes this study relevant to the existing theoretical thinking in the field of educational psychology and behavioral regulation as the study suggests a multidimensional approach to understanding how cognitive engagement may avert maladaptive behaviors among learners.

The practical implications of the findings in this research are quite beneficial to educators, school administrators, and policymakers who want to resolve the problem of disruptive behavior and facilitate the creation of positive classroom dynamics. The study shows that habits of mind greatly decrease mind-wandering and disruptive behavior, therefore, demonstrating that it is necessary to develop reflective thinking, persistence, and self-regulation capabilities in students through deliberate instructional strategies. The concept of habits of mind can be incorporated in curriculum design by educational institutions to promote increased awareness of metacognition and attention in students when they do their learning activities. Furthermore, the modulating effect of avoidance behavior implies that those students disposed to affect emotional withdrawal or avoidance need to use special interventions, including mindfulness-based training or cognitive-behavioral counseling, to shift disengagement to other beneficial coping styles. Educators may also utilize the results of this research to detect the initial symptoms of mind-wandering and apply proactive strategies (e.g., interactive learning and real-time feedback) to maintain the focus and eliminate classroom-based disturbances. All in all, the research offers practical interventions that will help make learning

environments better by balancing intellectual growth with behavioral punishment.

Limitations and Future Research Directions

Although it contributed to this, this study does not lack limitations. To begin with, the cross-sectional research design does not allow making causal conclusions on the differences between habits of mind, mind-wandering, and disruptive behavior. Even though the relationships were statistically significant, longitudinal or experimental studies would be more effective in depicting the temporal dynamics of these constructs. Second, the data has been gathered using self-report measures, which are prone to social desirability bias as well as subjectivity in responses. To validate the results and triangulate them, future research may include multi-source data such as teacher assessments or observing the behavior of the children. Also, the research was conducted in a particular educational environment, which may limit the external application of the results to the other contexts or age groups. The external validity of the proposed model might be reinforced by further research carried in a wide range of academic, cultural, and developmental contexts.

Moreover, other mediating and moderating processes that mediate the relationship between cognitive dispositions and disruptive behavior should be investigated in the future. Emotional intelligence, resilience, and motivation as constructs would give more thorough understanding of how students control their attention and impulse. It would also be useful to combine neurocognitive or physiological (e.g., EEG, eye-tracking) measurements to study the biological associations of mind-wandering and cognitive control. The impact of habits of mind can be compared in the future with other cognitive frameworks, including grit or growth mindset, to identify which cognitive trait has a greater behavioral impact. All in all, this model can be further developed in future research that would create a more in-depth insight on how cognitive training can help minimize behavioral issues and improve educational performance in diverse contexts.

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