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How Interest-Driven Learning Relates to Focus in Students with ADHD ?

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ABSTRACT

Students with ADHD often struggle with focus, especially when studying material that feels boring or repetitive. This study examined the relationship between personal interest and self-reported focus during independent study among students with and without ADHD. A survey was conducted with 95 students, including 39 students who reported having ADHD. Participants rated their focus when studying topics they found interesting and topics they found boring. The results showed that students in both groups reported higher focus when studying interesting topics. However, the difference was numerically greater among students with ADHD, with a mean difference of 4.46 points compared with 2.00 points among students without ADHD. These findings suggest that personal interest may be particularly relevant to maintaining focus during independent study among students with ADHD.

Keywords: ADHD; Interest-Driven Learning; Attention; Focus; Motivation; Independent Learning; Self-Directed Learning; Student Engagement; Intrinsic Motivation; Academic Performance; Attention Regulation; Learning Strategies

INTRODUCTION

Studying can be especially difficult for students with ADHD, particularly when traditional learning methods are used. Many common study strategies focus on discipline, routine, and forcing concentration for long periods of time. While these methods may work for some students, they often do not work as effectively for students with ADHD, who tend to struggle with sustained attention and motivation. As a result, students with ADHD are frequently viewed as lacking discipline or effort, even when they are genuinely trying.

ADHD is one of the most common neurodevelopmental disorders and affects millions of students around the world. Although it is usually associated with difficulty paying attention, many researchers explain that ADHD is better understood as a difficulty regulating attention rather than an inability to focus. This is because many students with ADHD are able to concentrate for long periods when they find a task interesting, while struggling to stay focused on tasks that feel repetitive or unimportant. Understanding this difference is important because it may help explain why some students with ADHD perform well in certain situations but struggle in others.

However, many students with ADHD report their focus improves significantly when they are studying something they're genuinely interested in. In these situations, concentration often feels more natural and requires less effort compared to studying assigned or uninteresting material. This difference raises an important question about whether the main challenge for students with ADHD is a lack of discipline or the way interest influences attention and motivation. If interest plays a major role in focus, then traditional study methods may be overlooking an important factor in how students with ADHD learn best.

One possible reason for this is that interest can increase motivation. When students enjoy what they are learning, they are often more willing to spend time on it and put in more effort. Previous research has shown that students are generally more engaged when they have a personal interest in the material they are studying. Since motivation and attention are closely connected, studying topics that are personally meaningful may make it easier for students with ADHD to stay focused for longer periods.

Most existing research on ADHD and learning has focused on classroom behaviour, structured environments, or controlled experimental settings. There is less research examining how interest affects focus and motivation during independent or self-directed study, which is a common part of academic life. Understanding this relationship is important because many students are expected to study on their own outside of the classroom, where external structure and supervision are limited.

Recent research continues to show that ADHD can affect learning and academic functioning in different ways. Faraone, describe ADHD as a heterogeneous condition, meaning that the difficulties experienced by students can vary across individuals and situations [1]. This is important when

considering attention during learning because students with ADHD may not experience the same level of difficulty across all tasks or learning environments. Research on motivation regulation has also shown that students often need to regulate their motivation when studying difficult or tedious tasks, although the role of the learning context has received less attention in previous research [2].

Interest may be particularly relevant in this context because it can affect how willing students are to engage with and continue a learning task. Previous research has shown that personal interest can support attention, effort, and engagement in learning [3]. However, much of the existing research on ADHD and learning has examined students in classrooms, structured learning environments, or specific interventions. Less attention has been given to how personal interest relates to focus during independent study, when students have to manage their own attention and motivation without direct guidance from a teacher. This makes independent study an important area for examining the relationship between personal interest and focus, particularly among students with ADHD.

Independent study has become an important part of education, especially for high school and university students. Preparing for examinations, completing assignments, and learning new topics often requires students to manage their own time and maintain focus without direct guidance from teachers. Because of this, understanding what helps students with ADHD stay engaged during self-directed learning could have practical benefits for both students and educators.

This study examines whether studying topics of personal interest affects focus in students with ADHD. By comparing students' experiences when studying interesting topics versus boring or assigned topics, this research aims to better understand how interest-driven learning may influence attention, motivation, and overall engagement. The findings may help explain why some students with ADHD struggle in conventional learning environments but perform better when they are engaged with topics they care about.

It is expected that students in both groups will report better focus when studying topics they find interesting. However, because students with ADHD often rely more on interest to maintain attention, the difference between interesting and boring topics is expected to be greater for the ADHD group. By exploring this relationship, this study hopes to contribute to a better understanding of how interest influences learning and how study strategies can be adapted to better support students with ADHD.

LITERATURE REVIEW

Students with ADHD often struggle with maintaining focus and motivation, especially when learning tasks feel boring or repetitive. Research by Barkley describes ADHD as a disorder related to difficulties with attention regulation rather than an inability to focus [4]. This helps explain why many students with ADHD can focus well in certain situations but lose attention quickly when tasks do not interest them.

More recent research has continued to support the idea that ADHD involves differences in how attention and motivation are regulated rather than a complete inability to maintain attention. Faraone, describe ADHD as a heterogeneous disorder, meaning that symptoms and difficulties can vary considerably between individuals [1]. This variation is also important when considering learning, because students with ADHD may experience greater difficulty with some tasks than others depending on the demands of the situation.

Understanding these differences can help explain why some students may be able to concentrate well when they find a task interesting while struggling with tasks that feel repetitive or less rewarding.

This difference in attention can also be seen in the way students respond to different types of learning tasks. Students with ADHD may be able to concentrate for longer periods when a task captures their interest, but may find it harder to stay engaged when the task feels repetitive or lacks personal meaning. This suggests that attention may depend not only on the individual but also on the characteristics of the task itself.

Interest has been shown to play an important role in learning and motivation. Ryan and Deci, explain that when motivation comes from genuine interest rather than external pressure, students are more likely to stay engaged and persistent [5]. Their work on intrinsic motivation suggests that learning becomes easier when students care about the material, which may be especially relevant for students with ADHD. Recent research has also found differences in academic motivation among students with higher levels of ADHD symptoms, suggesting that motivation may operate differently for students with ADHD compared with students with lower levels of ADHD symptoms [6].

Educational research has also shown that interest can influence how deeply students process information. When learners are genuinely interested in a topic, they are more likely to spend additional time exploring it, ask questions, and connect new information with what they already know. These behaviours can improve understanding and long-term retention. For students with ADHD, whose motivation may be strongly influenced by interest, these benefits could be especially important during independent study.

Growing evidence has highlighted the importance of motivation in ADHD. Some researchers argue that attention problems in ADHD may depend partly on how interesting and rewarding a task feels [7]. Studies on reward processing also show that individuals with ADHD may respond differently to tasks that feel repetitive or low in value [8]. This supports the idea that interest may influence how long students are able to stay focused.

Several researchers have also examined the role of dopamine in ADHD. Volkow, found that differences in dopamine activity are linked to motivation and attention in individuals with ADHD [9]. More recent research continues to support the idea that reward-related brain systems may influence how effort is sustained over time [10].

When tasks feel uninteresting or repetitive, reduced reward responsiveness may make it harder to stay focused. In contrast, when tasks are personally meaningful or engaging, motivation may increase, which can support stronger attention.

Other studies have shown that allowing students more choice in learning can improve engagement. Hidi and Renninger found that personal interest can strongly influence attention and effort in learning [3]. Similarly, Patall, reported that giving students choices in what they learn can increase motivation and engagement [11]. However, much of this research focuses on classroom learning rather than independent study. A more recent qualitative study also found that students with ADHD sometimes experienced better concentration when learning environments allowed them to respond to their own interests, enjoyment, and need for breaks. However, the study also found that being expected to manage learning independently could sometimes be challenging, suggesting that autonomy may have both benefits and difficulties for students with ADHD [12].

Researchers have also begun to pay greater attention to how students learn outside the classroom. Independent learning requires students to organise their time, remain motivated, and maintain attention without constant guidance from teachers. Recent research has also highlighted the importance of study strategies and self-management for students with ADHD. A systematic review of research published between 2018 and 2024 found that ADHD symptoms were associated with poorer academic performance among university students and identified study strategies and executive functioning as factors that can influence academic outcomes [13]. These skills can be particularly challenging for students with ADHD. Despite this, relatively few studies have examined whether personal interest influences attention during self-directed learning, making this an area that deserves further investigation.

Overall, existing research shows that attention and motivation are connected in students with ADHD. Many traditional learning approaches focus on structure and routine, but they may not fully consider how personal interest affects attention. While previous studies have examined classroom behaviour and structured interventions, fewer have looked at how interest influences focus during independent study. The present study aims to explore this question.

METHODOLOGY

This study used a survey design to examine the relationship between personal interest and self-reported focus during independent study among students with and without ADHD.

Participants

This study included 95 students. Out of these, 39 participants reported that they had ADHD. ADHD status was self-reported.

Participants were asked whether they had previously received a diagnosis of ADHD. No medical records or formal verification were collected.

The survey was completed voluntarily, and no identifying information, such as names or contact details, was recorded.

Measures

Focus was measured using a short questionnaire created for this study. Participants were asked to rate how focused they felt when studying topics they were interested in, and when studying topics they found boring and repetitive.

Responses were given on a scale from 1 to 10, where 1 meant very low focus, and 10 meant very high focus.

Some example questions included:

1. "How focused do you feel when studying a topic you are interested in ?"
2. "How focused do you feel when studying a topic you find boring?" Participants gave separate ratings for interesting topics and boring topics.

Procedure

The survey was shared online. Participants were asked to think about their general study habits rather than one specific situation. After completing the survey, responses were grouped based on whether participants reported having ADHD or not.

ETHICAL CONSIDERATIONS

Participation was voluntary. Before beginning the survey, participants were informed about the purpose of the study and that their responses would remain anonymous. Participants agreed to take part before continuing. They were also informed that they could stop at any time.

RESULTS

The study included 95 students, including 39 who reported having ADHD and 56 who did not. The descriptive statistics and results of the paired samples t-tests are presented in Table 1.

Group	n	Interesting Topics (M)	Boring Topics (M)	Mean Difference	Cohen's d	p-value
ADHD	39	8.87	4.41	4.46	1.92	< .001
Non-ADHD	56	8.36	6.36	2	2.59	< .001

Table 1: Comparison of Focus Ratings Between Interesting and Boring Topics

Note: Higher scores indicate greater self-reported focus. M = mean

As shown in Table 1, paired-samples t-tests were used to compare focus ratings for interesting and boring topics within each group. Students reported significantly higher focus for interesting topics (M = 8.87) compared to boring topics (M = 4.41), $t(38) = 12.00$, $p < .001$. The difference between conditions was approximately 4.46 points, indicating a large difference in self-reported focus. A paired samples t-test was also conducted for students without ADHD (n = 56). Students reported significantly higher focus for interesting topics (M =

8.36) compared to boring topics (M = 6.36), t(55) = 19.40, p < . 001. The average difference between conditions was approximately 2.00 points.

Although both groups reported significantly higher focus when studying interesting material, the mean difference was numerically greater among students with ADHD (4.46 points) than among students without ADHD (2.00 points).

Students with ADHD showed a much larger difference in reported focus between interesting and boring topics than students without ADHD. Their mean focus difference was 4.46 points, while students without ADHD showed a mean difference of 2.00 points. In other words, the difference in reported focus between interesting and boring topics was more than twice as large for students with ADHD. This suggests that personal interest may be particularly important for helping students with ADHD maintain attention and stay engaged while studying

Effect sizes were calculated using Cohen's d to estimate the magnitude of the differences in focus between interesting and boring topics. Cohen's d was 1.92 for students with ADHD and 2.59 for students without ADHD, indicating large standardized differences in both groups. These findings indicate that studying personally interesting material was associated with substantially higher reported focus in both groups.

DISCUSSION

The results showed a clear pattern. Students in both groups reported higher focus when studying topics they were interested in compared to topics they found boring. However, the difference was noticeably larger for students who reported ADHD. In this group, the average focus rating was 8.87 for interesting topics and 4.41 for boring topics, representing a difference of 4.46 points. Among students without ADHD, the average focus rating was 8.36 for interesting topics and 6.36 for boring topics, representing a difference of 2.00 points.

These findings suggest that personal interest may be particularly important for maintaining focus among students with ADHD during independent study.

This pattern supports the idea that attention in ADHD is not simply reduced but can change depending on the type of task being performed. Students with ADHD appeared to benefit more from studying topics they found personally interesting, suggesting that interest may play an important role in helping them remain engaged. Although students without ADHD also showed better focus for interesting topics, the difference was noticeably smaller.

The larger difference in reported focus among students with ADHD may be important when considering how these students approach independent learning. While students in both groups reported better focus when studying interesting material, students with ADHD showed a much sharper difference between interesting and boring topics. This may help explain why some students with ADHD can remain highly focused when they are interested in a subject but struggle to maintain the same level of attention when the material feels repetitive or less meaningful. However, these findings should be interpreted as an association rather than evidence that interest directly causes changes in attention.

These findings are consistent with previous research showing that motivation and attention are closely connected in ADHD. Capps, found differences in academic motivation among college students with higher levels of ADHD symptoms, suggesting that motivation may operate differently for students with ADHD [6]. The present findings add to this research by showing a similar pattern in self-reported focus: students with ADHD reported a much larger difference between interesting and boring topics than students without ADHD. Unlike research that examines academic motivation or achievement more broadly, the present study focuses specifically on students' reported focus during independent study.

These findings are also consistent with recent research on autonomy and learning among students with ADHD. Uthus and Løhre, found that students with ADHD sometimes experienced better concentration when learning activities allowed them to respond to their own interests, enjoyment, and individual needs [12]. However, their study also found that managing learning independently could sometimes be challenging. This is similar to the present findings, as both studies suggest that connecting learning to students' interests may support engagement while independent learning can still require strong self-regulation [13-15].

These findings may also have practical implications for education. While school curriculum cannot always be based entirely on students' interests, allowing students some flexibility in choosing topics, projects, or examples may increase motivation and encourage greater participation. Small changes that connect learning to students' interests could make studying more engaging, particularly for students with ADHD.

Overall, this study adds to existing research by focusing on the role of personal interest during independent study, an area that has received less attention than classroom-based learning. There are some limitations to this study. ADHD status was self-reported and not medically verified [16-18]. The ADHD group was relatively modest in size (n = 39), which limits how widely the results can be applied. In addition, focus was measured through self-report rather than direct observation. Future studies with larger samples and different methods could provide stronger evidence.

Another limitation is that the study measured participants' perceptions of their focus rather than directly observing their study behaviour. Although self-report measures provide useful information about personal experiences, future research could combine questionnaires with behavioural or experimental methods to gain a more complete understanding of how interest affects attention during learning. Overall, the results support the idea that attention and interest are closely connected, particularly for students with ADHD.

CONCLUSION

This study examined the relationship between personal interest and self-reported focus during independent study among students with and without ADHD. The results showed that students in both groups reported higher focus when studying

topics they found interesting compared to topics they found boring. However, the difference was numerically greater among students who reported ADHD, with a mean difference of 4.46 points compared with 2.00 points among students without ADHD.

These findings suggest that personal interest may be particularly relevant to maintaining focus among students with ADHD during independent study. While interest alone cannot address every challenge associated with ADHD, allowing students some connection to topics that are meaningful to them may help make learning more engaging. At the same time, structure and guidance remain important, particularly when students are expected to manage their own learning.

The study has several limitations, including self-reported ADHD status, a relatively small ADHD group, and the use of self-reported focus rather than direct measures of attention. Future research could use larger and more diverse samples and combine self-report questionnaires with behavioural or experimental measures to examine this relationship more closely.

Overall, the findings highlight the importance of considering personal interest when understanding focus during independent learning, particularly among students with ADHD.

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