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# *Research on the Educational Impact of Art Education on ADHD Populations*

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***Abstract.*** The education of students with Attention Deficit Hyperactivity Disorder (ADHD) has received widespread attention in recent years, but existing intervention models still have deficiencies, mainly relying on medication and lacking systematic educational support. This article takes art education as a starting point to analyze its unique role and potential value in the ADHD population. It is found that art education can play a positive role in three aspects: First, structured art activities, such as painting, can help ADHD students maintain attention and reduce classroom interference. Second, the combination of mindfulness concepts and art can provide new paths for emotional regulation and impulse control. Third, gamification and group creation show significant advantages in promoting social skills, enhancing belongingness, and self-efficacy. Based on this, the following suggestions are proposed: in the future, empirical research on art education in ADHD intervention should be strengthened to explore the long-term effects of different forms of art activities; in educational practice, the combination of art education with diverse non-pharmacological interventions such as sports, music, and psychological counseling should be promoted; at the same time, teacher training and curriculum design should be improved.

***Keywords:*** Art Education, ADHD Populations, Emotional Regulation

## 1. Introduction

ADHD is a common neurodevelopmental disorder that is frequently diagnosed in children and adolescents. Its symptoms mainly include difficulty concentrating, excessive activity levels, and insufficient impulse control. These characteristics not only cause significant difficulties in academic performance and classroom behavior but also have a lasting impact on an individual's social interactions, emotional regulation, and long-term psychological development. Moreover, ADHD students often face dual challenges in school: on the one hand, they need to cope with academic tasks, and on the other hand, they need to deal with issues related to peer relationships and self-management.

Traditional intervention methods mainly focus on medication and behavior modification. Although medication can have certain effects on improving core symptoms, long-term use may bring side effects, and students and parents often lack compliance with medication. Meanwhile, behavior training can help students comply with classroom rules in the short term, but it is still insufficient in promoting creativity, emotional expression, and individual potential development.

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Therefore, educators and teachers are increasingly focusing on how to help ADHD students through non-pharmaceutical educational methods.

Among various alternatives, art education has gradually become a valued direction. Art activities themselves include free expression, visual stimulation, and creative exploration, which highly match the psychological and cognitive characteristics of ADHD students. Studies have shown that artistic intervention through painting can effectively reduce classroom disruptive behavior and prolong students' attention span [1]. At the same time, structured art forms, such as mandala coloring, can help students gradually train their attention and executive abilities in a relatively stable environment through repetition, symmetry, and rhythm [2]. In addition, teaching practices combining mindfulness and art have also shown positive results. It can enable students to better perceive their own emotions during the creative process, thereby reducing impulsive behavior and enhancing empathy.

More importantly, art classes naturally incorporate elements of collaboration and interaction. Whether through group drawing or role-playing through gamified art activities, students with ADHD can learn how to communicate, follow rules, and establish positive interpersonal relationships. This combination of creativity and education provides them with a relatively safe channel of expression and offers teachers the possibility of implementing differentiated teaching. In short, art education not only cultivates students' artistic skills but also provides support for students with ADHD in multiple aspects, such as maintaining attention, improving executive function, emotional regulation, and social interaction. However, current research still has some limitations, such as insufficient sample size, significant differences in intervention modes, and a lack of long-term follow-up. Therefore, studying the role of art education in the ADHD population and exploring feasible teaching strategies has theoretical and practical significance.

## 2. The challenges and requirements of educating people with ADHD

### 2.1. Symptoms and behavior in the ADHD classroom

One of the most prominent difficulties faced by students with ADHD in the classroom is their difficulty in maintaining attention for extended periods of time. They are easily distracted by unrelated sounds, movements, and visual stimuli in the environment, making it difficult for them to follow the teacher's progress in the classroom or complete homework smoothly. Research has shown that children with ADHD often experience "early abandonment" when performing continuous tasks, meaning they are highly engaged at the beginning of the task, but quickly become distracted and find it difficult to persist due to distraction [3]. This phenomenon of inattention not only affects learning efficiency but also causes a continuous decline in academic performance. More importantly, this experience gradually weakens students' confidence in learning, leading to greater reluctance to learn.

### 2.2. Difficulties faced by ADHD students in traditional education

In addition to attention deficit, ADHD students often suffer from impulsivity and emotional control disorders. In the classroom, they may frequently interrupt the teacher, move around at will, or conflict with classmates. These behaviors are often not malicious but stem from the lack of self-control ability of ADHD students. However, teachers and peers may have negative evaluations, gradually labeling students as bad. Research shows that ADHD students generally have lower emotional fluctuations and frustration tolerance than ordinary students, which not only exacerbates the difficulty of classroom management but also indirectly affects their peer relationships and social

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adaptability. These manifestations of ADHD in students bring significant teaching challenges. Firstly, in terms of classroom management, students' sudden behaviors can disrupt the teaching order, forcing teachers to repeatedly interrupt explanations to maintain classroom stability. This not only increases the pressure on teachers but also affects the learning experience of other students. Secondly, in terms of behavior guidance, traditional education models have limitations in effectiveness, sometimes even leading to stronger resistance and confrontation from students. In this case, teachers are prone to feel powerless and frustrated, and students gradually lose their enthusiasm for learning because they are not understood.

### 2.3. The rise of non-pharmacological interventions in education

In the actual school environment, teachers often face limitations such as large class sizes and heavy tasks, making it difficult to provide adequate support for ADHD students. Currently, common non-pharmacological intervention forms mainly include three categories. First, classroom behavior intervention and management strategies. For example, through antecedent- & consequence-based interventions, self-regulation training, and other strategies, teachers can reduce students' disruptive behaviors in class. Analysis has shown that these strategies have significant effects in reducing off-task and disruptive behaviors in regular education classrooms, especially consequence-based and self-regulation interventions have the strongest effects [4].

Second, mindfulness training and family participation interventions. Third, classroom strategy combination interventions. For example, a middle school student experiment compared strategies such as "advance prompts + self-management + rest + sensory stimulation", and the results showed that these strategies performed well in improving task start speed, reducing classroom interference behavior, and enhancing classroom participation [5]. Traditional teaching methods often emphasize discipline and a standardized teaching approach, which, to some extent, contradicts the learning characteristics of ADHD students. According to research, many teachers lack relevant professional training, leading them to feel powerless when dealing with the special needs of ADHD students [6]. Educational scholars generally believe that to help ADHD groups better focus their attention and maintain learning motivation, it is necessary to design a teaching model that can take into account individual differences and classroom integrity, including flexible learning tasks, visual teaching tools, and timely positive feedback [6]. This also provides important theoretical space and practical opportunities for the intervention of art education. However, up to now, the traditional classroom teaching model is still mainly adopted, and the classroom strategy combination model still has certain limitations, which may make some strategies and methods unable to be implemented in practice.

## 3. Theoretical basis and practical value of art education

### 3.1. Unique attributes of art education

Compared to other subjects, the biggest advantage of art education lies in its ability to emphasize sensory experience and creative expression, which is different from pure knowledge memorization. Art learning often utilizes a series of visual constructions such as images, colors, and shapes. This learning method is particularly important for ADHD students, as they often have difficulty maintaining attention for long periods of time in the classroom, while art-based activities can attract their interest through intuitive experience and immediate feedback.

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In addition, art classrooms generally foster a relaxed and open environment in which students are encouraged to share their thoughts and emotions through various media such as painting, Free expression of sculpture, and collage. Instructors can also incorporate various materials and assignments into their lessons so that students can complete their projects at their own pace. Existing research has shown that the strategies employed by teachers in art classrooms, such as breaking down complex tasks into smaller steps or using visual instructions, to help students organize their memory processes, can effectively relieve the stress that ADHD students experience while performing tasks [7]. Therefore, art education serves not only as a means of cultivating artistic skills but also as a versatile learning mechanism, providing appropriate cognitive and expressive aids to ADHD students.

### 3.2. The effect of creative activities on attention and executive function

Creative activities are a process that combines cognition, emotion, and behavior. In art education, students often need to complete their ideas through a series of thinking, selecting materials, and completing works, which exercises their attention and executive function. For ADHD students, such tasks can extend their focus time under the drive of students' interests, and also help them form goals and plans. For example, research has found that mandala coloring has a significant improvement effect on the executive function of ADHD children. Such activities have regularity and symmetry, which can reduce the difficulty of students in task selection to a certain extent, making it easier for them to focus on the current choice. In addition, another study also pointed out that repetitive operations and phased goals in the visual arts can provide external scaffolding for ADHD students, thereby enhancing their ability to monitor themselves and maintain attention. Therefore, creative activities in art education can not only improve the quality of students' works, but also shape their cognitive control and task execution ability invisibly.

### 3.3. Emotional support and social skill development in art education

In the previous discussion, it was seen that ADHD students often cause management difficulties for teachers in traditional classrooms due to emotional fluctuations, impulsive behavior, and interpersonal conflicts. These issues not only disrupt classroom order but also weaken the quality of interaction between students and peers. Therefore, art education also demonstrates unique value in emotional mobilization and social interaction. Many ADHD students often experience emotional changes, impulsive behavior, and interpersonal conflicts, and art classrooms can provide them with a space to release emotions and express themselves positively. In the creation of art, students can convey their inner feelings through colors and images. This non-verbal expression helps reduce direct conflicts and provides assistance for teachers to understand students' emotional states.

According to research, art interventions combined with mindfulness concepts can reduce aggression in ADHD students and enhance their emotional awareness and empathy [8]. On the other hand, gamified art activities or group collaborative creations provide students with a social practice scenario. They need to work together, follow rules, and communicate with peers, thereby subtly improving communication skills and team awareness [9]. Therefore, art class is not only an art course, but also an important platform for promoting emotional support and social skill development.

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## 4. Suggestions for implementing art education in ADHD teaching

### 4.1. Design personalized and differentiated art learning tasks

For DST students, a prominent challenge in classroom teaching is that their attention and interest points vary greatly, and a unified teaching model often cannot meet the needs of all students. Therefore, in art education, teachers can try to design personalized and diverse learning tasks. Specific practice includes providing diverse painting and creative choices based on students' interests, attention, and skill levels. For example, some students are more likely to complete their assignments in a shorter amount of time, so teachers can provide small-scale assignments that can be quickly completed. For students who can gradually focus their attention, long-term tasks that require multiple steps can be assigned. Research has shown that diverse homework designs can enhance students' learning motivation and engagement, as they gain greater autonomy and a sense of control when choosing homework. This diversified task arrangement not only helps teachers better manage the classroom but also allows students to experience the value of art learning at their own pace.

### 4.2. Incorporating the concept of mindfulness into art education

In recent years, mindfulness training has been widely applied in education and psychological intervention, with the core concept of "focusing on the present". When combined with artistic activities, it can provide a unique way for ADHD students to regulate their emotions. Teachers can guide students to pay attention to the weight, color changes, and physical sensations of the brush when drawing in the classroom. This mindfulness painting not only helps them concentrate, but also allows students to learn to use breathing and observation to replace immediate impulsive reactions when they experience emotional fluctuations. Research has shown that art-based mindfulness interventions can effectively reduce aggressive behavior in children with ADHD and improve their emotional stability and empathy [8]. Therefore, the introduction of mindfulness concepts is not only a way of artistic creation, but also a teaching strategy for training emotional management and self-control.

### 4.3. Enhance social skills through gamification and group cooperation

ADHD students often have difficulties in social interaction, such as not following rules, lacking listening ability, or cooperation awareness. Combining gamification design with group creation can provide them with a fun and regulated learning environment. Teachers can design "point system", "level-based tasks", or "role-playing painting" activities in the classroom to stimulate students' interest and participation. Research has shown that game-based art activities can significantly improve ADHD students' cooperation ability and classroom engagement [9]. At the same time, group creative collaboration allows students to learn communication and negotiation in the division of labor and cooperation, such as completing a mural or collective artwork together. This not only promotes emotional connection between peers, but also helps students gradually establish the awareness of following group rules and sharing resources [10]. Therefore, art education in the design of gamification and cooperative tasks can not only meet classroom teaching goals, but also enhance students' social skills and collective belongingness.

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## 5. Conclusions

This article focuses on the role of art education in ADHD populations, with an emphasis on analyzing the potential value of ADHD in attention maintenance, emotion and impulse management, and social interaction. Art education is not only a simple form of artistic expression but also a comprehensive intervention method that integrates psychology, education, and social interaction mechanisms. Throughout existing research, art education has gradually become an important supplementary approach for educators and psychological interveners. The existing results indicate that structured art activities, such as painting, have a positive impact on prolonging the attention span of students with ADHD and reducing disruptive behavior in the classroom. At the same time, combining the concepts of concentration and artistic creativity provides a new practical approach for emotional management and impulse control. During the painting process, students gradually learn to observe themselves and adjust their reactions by paying attention to changes in brushes and colors. On the other hand, art activities that combine game and group work elements provide students with more opportunities for interaction and collaboration. This not only enhances their communication and collaboration skills but also strengthens their sense of achievement and collective belonging. Overall, art education not only has aesthetic and creative functions, but also demonstrates unique value in helping students with ADHD achieve the dual goals of learning and psychological development.

Looking ahead to the future, there is still a lot of room for research on the application of art education in ADHD intervention. Firstly, additional longitudinal studies are needed based on empirical evidence to further validate the long-term effects of different forms of art interventions on the ADT population. Secondly, educational practice should emphasize the integration of art education with other non-pharmacological intervention methods, such as exercise therapy, music education, psychological counseling, etc., to form a systematic support. Finally, it is necessary to continuously improve the professional training and program design for teachers to help them flexibly incorporate artistic elements into classroom technology, while meeting the overall teaching needs of the classroom and considering the individual needs of students with ADHD.

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