

## **Recommended educational approaches for teaching children with Attention Deficit Hyperactivity Disorder (ADHD) coordination and organization skills**

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### **1. Abstract**

The main purpose of this article is to investigate and describe the difficulties faced by children with ADHD and to analyze the most appropriate educational approaches in relation to them. These approaches intend to help students reach a better coordination in the work they undertake each time as well as to improve their organizational skills in order to boost both their academic productivity and social performance. Behavioral strategies include both behavior reinforcement and self-monitoring teaching. To realize this objective a brief literature review has been conducted in order to provide concrete information and convincing arguments both from the Greek and international literature. Finally, although the expected positive effects of the objectives concerning the specific educational intervention are bibliographically confirmed, it is recommended that they be further examined through their application within classroom.

**Key words:** Attention Deficit Hyperactivity Disorder, educational approaches, reinforcement, self-monitoring

## 2. Introduction

It is common knowledge that science has been deeply preoccupied with the evolution of human psyche in its various aspects. Within this framework, ADHD has aroused a strong interest of different scientific disciplines, including medicine and pedagogy. Both high frequency of occurrence among school-aged children and general behavioral problems accompanying this disorder have contributed to this intense scientific interest (Kakouros & Maniadaki, 2000). More specifically, in a mainstream class, one or two children exhibit maintenance attention problems as well as hyperactivity, with an increasing rate especially as far as boys are concerned (Heward, 2011). Despite the concern about whether ADHD is a syndrome and what its causes are (Varvogli, 2005), it has been recorded as one of the most frequent psychiatric disorders in childhood with a negative impact on students' academic performance and their psychological balance, as well. This fact calls for an overall, collaborative intervention, including the triangle student-environment-educators (Ghanizadeh, Bahredar & Moeini, 2006).

The present paper aims at addressing the various daily difficulties of a student with ADHD. In particular, this work intends to shed more light on the ADHD syndrome, while extending the identification of two educational practices that can be applied to make it more appropriate for those children. The first chapter of this work presents all the difficulties encountered by a child with ADHD. This paper makes a general reference to this disorder and proceeds to a conceptual identification of it, with a parallel, multilateral addressing of the characteristics manifested in all cases. In the same section, ADHD is analyzed and accompanied by a clear teaching target which focuses on assisting students to improve their action coordination and organization. The second chapter examines two educational interventions providing relevant and sufficient argumentation for their choice. The proposed interventions concern the reinforcement and self-monitoring strategies. Finally, in the conclusion, the reports are summarized and the final findings in connection with the expected results are exhibited. It is scientifically argued that the recommended educational approaches positively contribute to the realization of the educational objectives and enhance students' coordination skills. What needs to be done in the near future is implementing the proposed educational outline within classroom as well as promoting the collaboration of the wider child's environment, namely, parents, teachers, peers, relatives.

### **3. 1<sup>st</sup> Part**

#### **3.1. General reference to ADHD and its conceptual approach**

The first official published report of ADHD is found in 1902 where it was recorded as Still's disease and was attributed to brain damage or malfunction. In the course of research years, various terms have been used, such as encephalitis disorder, brain damage syndrome, minimal cerebral malfunction and childhood hyperkinetic impulsive disorder. However, taking into account that brain injury has not been documented in terms of medicine, science directed its attention to combining behavioral symptoms (Heward, 2011). According to DSM-V (American Psychiatric Association, 2013), ADHD is one of the neuro-developmental disorders since its appearance takes place during the development period and it is accompanied by individual, interpersonal, academic and professional deficits that continue to affect adulthood.

Although in most of ADHD cases its causes are not known, it is commonplace that constitutional malfunctions are associated with its appearance (World Health Organization, 1992). Idiosyncratic, environmental, genetic/physical factors are recorded as general categories of ADHD causes (American Psychiatric Association, 2013). Of particular concern though are the environmental causes given that nutrition, poor childhood care, fetal alcoholism and prenatal exposure to substances have been found to increase the risk of this disorder development (Heward, 2011). It is worth mentioning that inadequate parental care and dysfunctional family structure in general do exacerbate the symptoms but they are not to blame for its appearance (American Psychiatric Association, 2013; Chandler, 2010). On the other hand, inheritance appears to play an active role in this disorder appearance, since it is increased among relatives (Young Children's and Adolescents' Mental Health Society, 2003).

With regard to the frequency rate of ADHD, it is estimated that there is at least one student with ADHD in each class (Barkley, 2006), while, in relation to Greek data, the rate approaches 6.5%, with boys having more chances of developing this disorder compared to girls (Skounti, Philalithis, Mpitaraki, Vamvoukas, & Galanakis, 2006). This clear difference can be easily explained taking into consideration the boys' more dynamic and impulsive behavior, which is perceived as annoying by both parents and teachers and thus can more easily lead to monitoring and diagnosis. On the other hand, the girls' more meek and modest behavior prevents researchers from detecting ADHD symptoms rather early (Varvogli, 2005). Finally, frequent co-morbidity is attributed to ADHD, as it often coexists with other disability categories, such as emotional disturbances, mental retardation and learning difficulties, Asperger's syndrome and Tourette's syndrome (Heward, 2011). Thus, we come up with the conclusion that on the one hand there are mild cases of symptoms while on the other more severe ones (Coghill & Sonuga-Barke, 2012).

### 3.2. Multilateral description of ADHD difficulties

According to the DSM-V (American Psychiatric Association, 2013), ADHD primarily relates to careless, hyperactive and impulsive behavior that lasts for at least six months, does not follow the child's developmental level and disrupts its functionality. Thus, a range of symptoms have been recorded so far which clearly outline the difficulties dealt with by a child with ADHD, forming in the end three ADHD subtypes. These subtypes refer to (a) ADHD whose predominant attribute is carelessness, (b) ADHD whose predominant trait is hyperactivity / impulsiveness and (c) ADHD as a combination of the first two subtypes. More specifically, according to the DSM-V diagnostic criteria, children of the first category experience:

- ✓ frequent lack of attention to details and mistakes due to carelessness in their study or in other activities
- ✓ frequent difficulty in focusing on tasks or game activities
- ✓ frequent passive attitude when they are called for
- ✓ frequent failure to complete tasks as they do not follow instructions
- ✓ frequent organization difficulties
- ✓ frequent aversion for projects that require prolonged spiritual effort
- ✓ frequent loss of necessary activity tools
- ✓ easily distracted by external stimuli
- ✓ frequent carelessness in their everyday activities

Children with ADHD of the second category are identified with:

- ✓ frequent nervous movement of their hands and feet or twisting
- ✓ frequent displacements at moments that it is not permitted
- ✓ running or climbing in a way inappropriate to circumstances
- ✓ frequent difficulty in quietly engaging in games or leisure activities
- ✓ frequent continuous movements
- ✓ frequent excessive speech
- ✓ frequent reckless answers before questions are completed
- ✓ frequent difficulty in waiting for their turn
- ✓ frequent interruptions of other people's conversation

With respect to the third subtype of children with ADHD, a combination of the symptoms of the first two subtypes has been observed. Besides, this type has been described, based primarily upon Greek data, as the most frequent one (Skounti et al., 2006). It is worth reporting that these symptoms take place until the age of 12 and appear in two or more cases (American Psychiatric Association, 2013).

In the light of this data, it becomes obvious that all ADHD difficulties relate to all aspects of a child's daily life and dictate behaviors that he/she would not adopt under different circumstances. Thus, this child is likely to neglect his/her school duties due to lack of concentration, which is directly associated with low grades and slow progress. It is his/her nervous and impatient attitude, in general, that many times make him/her undesirable to peer groups or other groups and explain his/her social isolation (World Health Organization, 1992).

At the same time, he/she is likely to resort to conflicting behavior and aggressiveness towards everybody and may manifest emotional fluctuations (Young Children's and Adolescents' Mental Health Society, 2003). Therefore, he/she experiences difficulties in both adaptability and conquest of his/her autonomy. As far as expression and speech are concerned, despite his/her speech spontaneity, when an organized speech is required, it turns out that his/her speech rhythm does not follow normal patterns and lacks in expressive skills (Kakouros & Maniadaki, 2002). It is also worth pointing out that while in the case of boys hyperactivity is mostly externalized through actions, when it comes to girls it is verbally expressed through talkativeness (Parker, 2013).

### **3.3. Analysis of ADHD - Forming a Teaching Objective**

Although the first ADHD symptom that can be detected is hyperactivity, given that it triggers the first disturbances, Attention Deficit is of more critical importance with respect to educational practice. According to Hunt & Marshall (2005), the term "attention" refers to a person's ability to remain focused on both the information and the task he/she deals with, without paying attention to other secondary stimuli. Therefore, keeping DSM-V in mind, we can focus the present study on ADHD children's difficulty associated with their attention deficit. More analytically, carelessness turns children into superficial and indifferent in terms of details and hence they appear to be passive in their communication with other people, especially in cases where they have to remember and carry out instructions. As a result, their work either remains incomplete or has many mistakes. Of great difficulty for ADHD children is dealing with tasks that require constant mental alertness as they are distracted with great ease from external stimuli. Also, it is noteworthy that these children are prone to organization problems that accompany carelessness and thus turn especially their school performance into a problematic one, as the smooth course of their study is overturned due to their inconsistency as well as frequent loss of useful items.

Carelessness is certainly not a deliberate behavior of ADHD children, but it negatively affects them on both a cognitive/academic and psychological/behavioral level. Thus, ADHD children are associated with low school performance due to deficiencies in study skills, with

problems being more severe in language teaching and generally in theoretical lessons, but also in mathematics (Garagouni-Araiou, Solomonidou & Zafiropoulou, 2003; Parker, 2013). These frustrating situations these children experience because of ongoing school failures, also, influence their overall personality and psyche in a negative way. More specifically, they are of a low self-esteem and they also find it difficult to feel independent, many times easily ending up to behavior problems as well as to a definite abandonment of school attendance at a much higher frequency compared to a normally developing child (Parker, 2013).

It is obvious, therefore, that ADHD triggers off a vicious circle with respect to the child's personality. Teaching programs intend to break this cycle. The very clear formulation of a teaching objective constitutes a basic parameter and prerequisite in this process. Thus, this paper is primarily interested in teaching these children coordination and organization skills in order for them to achieve better school and social performances, always on the basis of autonomous behavior.

#### **4. 2<sup>nd</sup> Part**

##### **4.1. Analysis of the recommended educational approaches: reinforcement and self-monitoring**

Given its various causes, ADHD treatment is primarily based on medicine treatment and behavioral interventions (Sherman, Rasmussen & Baydala, 2008). However, in the present paper we direct research on behavioral interventions, as school legislation concerns only them. According to the Greek law 3699/2008 (YPEPTH, 2008), children diagnosed with ADHD are treated as pupils with special educational needs and thus they need special education, promoting, in this way, equality with other pupils in their social participation. Besides, on the basis of European directions, pupils with special educational needs are to be included in general education classes (European Commission, 2013). Nevertheless, school framework itself in certain cases contradicts the overcoming of the difficulties faced by students with ADHD and often exacerbates its symptoms. In particular, calls for attention and compliance with school advancing demands are reasons for frustration on the part of ADHD students. Therefore, any approaches that need to be educationally adopted, should aim at both controlling the deficient behavior as well as dealing with the cognitive support of these students.



Thus, in this paper two educational strategies are presented which are believed to bring about desired effects on dealing with ADHD students; that is, reinforcement and self-monitoring. In fact, many students change their undesired behavior through reinforcement. A reinforcer is a type of reward given for the completion of a task or for engaging in an appropriate behavior such as being on task. In particular, this reinforcement may refer to either the child's verbal reward or the material and symbolic one. In the first case, in case students reach the predetermined goal they receive a type of reward, while, in the second one, material/symbolic rewards are involved, such as stickers or recording of points that correspond to pre-agreed prizes; that is, allowing students to devote their time to a beloved activity, namely, computer use (DuPaul & Weyandt, 2006). It is worth pointing out that when it comes to behavioral expectations it is very helpful for students to be informed in detail of the desired behavior and the benefits deriving from such a behavior through positive and negative examples (Heward, 2011).

On a second level, self-monitoring strategies teach students responsibility and self-determination in relation to behaviors and goals, promoting indeed both generalization and maintenance of the helpful behavior. In more detail, these strategies work on a two-step process of initially evaluating the desired behavior or task and secondly of recording their assessment while comparing their behavior with a predetermined goal (Heward, 2011). According to Ratey, Hallowell & Miller (cited in Tzivinikou, 2015), to help promote students' self-monitoring means to assign them a task for which they will be responsible and to assist them in self-observation with relevant questions at the end of the day or by allowing them to leave classroom for a few minutes. On a parallel level, students are informed about the necessity of remaining on-task for a particular period of time.

#### **4.2. Documentation of the two recommended educational approaches**

The two aforementioned approaches are considered to meet the teaching objective that calls for coordination and organization skills with a view to reducing attention deficit while increasing academic and social performance of ADHD students. Initially, with respect to reinforcement, it becomes easily understood how directly this relates to increasing motivation for students, which, in turn, helps them to improve their concentration ability on the activities they deal with (Kakouros & Maniadaki, 2000). In this way, they feel that it is worth coordinating with the rest of the class since their engagement becomes both appreciated and rewarded. In particular, the

system of interchangeable rewards that involves computer use strengthens the students' focus on their duty in a pleasant way, reinforcing thus their self-esteem. A key supportive argument, however, of the specific educational strategy is to build and maintain a personal contact between teachers and students as it results in a prolonged and fruitful interaction with immediacy. As far as school actions are concerned, the adoption of reward strategies is also compatible with the operation of the rest of the class, given that it does not disturb the school program at all.

Equally helpful is the self-monitoring method which limits students' proclivity for lack of attention, as it aims at self-control and self-action. This kind of methodology results in improving both their school performance and their relationships with other peers. In particular, by assigning important and engaging projects within classroom, students with ADHD are kept alert all the time and thus they are treated by their fellow students as significant members of the team. Consequently, ADHD children learn how to organize all the necessary steps for successfully accomplishing a task. Finally, a basic argument in favor of this strategy is the fact that self-monitoring of distraction as well as restoration of co-ordination are skills that children can apply not only at school but in everyday life situations. This fact turns this strategy into one of the most essential supplies for students' life as adults later on.

## 5. Conclusion

After citing relevant bibliographical information concerning ADHD, the analysis of the difficulties it causes and the examination of the methods of dealing with attention deficit, it becomes obvious that ADHD widely overwhelms children. It disturbs their smooth socialization, their family and school relationships, their education as well as their self-image and psyche. Consequently, educational programs must act immediately and effectively in order to help ADHD students adapt easily to all types of environment. Attention deficit, which follows children throughout their life, influences their overall perspectives. On the basis of the present study, reinforcement and self-monitoring have emerged as appropriate educational approaches, as they overally activate and exploit all the children's potentials, supplying them with a solid social profile and a perfect cognitive background, greatly diminishing attention deficit. Both approaches actually contribute to positive acceptance and recognition either coming from the students' environment or their own self, thus resulting in self-realization through autonomy and social activation (Brouzos, 2004). Both strategies can easily co-ordinate and organize children

within mainstream classrooms as well as offer pedagogical perspectives to teaching subjects, especially if they are implemented after interdisciplinary collaboration (Padeliadu, 1996).

What needs to be done further is to put theory into practice so as to decide whether the above-mentioned strategies can be of great and effective help for teachers who deal with ADHD. However, in order to reach our goal, what is of utmost importance for every single effort is the sincere acceptance of the diversity of each child (Livaniou, 2004). Hopefully, with the ongoing changes in the general attitude of society, disability is likely not to be perceived as a disease and thus will be set free from insulting connotations (Lambropoulou & Panteliadou, 2000). Pedagogy simply offers the means; responsibility, however, belongs to all of us.

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