

## Educational intervention in the context of the classroom for the inclusion of students with attention *deficit* hyperactivity disorder in general education schools in Huambo



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#### Laurinda Baca

Prof.<sup>a</sup> Dr<sup>a</sup>.

Institution: Higher Institute of Educational Sciences of

Benguela

#### **Celso Henrique David**

Prof. Doctor.

Institution: Higher Institute of Educational Sciences of

Benguela

#### **Carlos Gabriel Henrique**

MSc.

Institution: Higher Polytechnic Institute of Caála.

#### **Celestino Utengi**

MSc.

Institution: Higher Polytechnic Institute of Caála.

#### **ABSTRACT**

The present research arises from the fact that it is verified in the students in the context of the classroom frequent distractions in the face of any stimulus, lack of attention when the teacher explained the contents, in the performance of tasks, constantly getting up from their seats and not only. Based on the above, the following problem was formulated: What methodological strategies can the teacher use to carry out the educational intervention of students with Attention Deficit Hyperactivity

Disorder in the context of the classroom, from the perspective of inclusive education? Thus, the general objective was to empower teachers with methodological strategies that allow them to carry out educational intervention in the context of the classroom, from the perspective of inclusive education of students with Attention Deficit Hyperactivity Disorder. The study is descriptive, with a mixed approach. Theoretical methods were used: historical-logical, analysis-synthesis and bibliographic research. And the empirical ones: observation, interview, and questionnaire. For data treatment, the statistical method was used with the support of the SPSS statistical program. 20.0. The results show that there are difficulties in teachers in the educational intervention of students with ADHD from the perspective of inclusion in the context of the classroom, due to weaknesses in knowledge of methodological strategies to care for students with ADHD. The proposed strategy includes continuous training activities to enhance teachers' knowledge about ADHD identification and to carry out educational intervention from the perspective of inclusion using organizational strategies, positive behavior, strategies for students with ADHD to carry out assessments/tests and intervention activities in the classroom.

**Keywords:** Attention Deficit Disorder, Educational Intervention and Inclusion, Methodological strategies.

#### 1 INTRODUCTION

The school as an integral part of society cannot only be a privileged space for the transmission of knowledge, but must also be a place to share experiences and experiences, in order to favor the development of all students. In this sense, the educational institution must be open to diversity, prepared to give all students the opportunity to succeed, respecting and taking advantage of their differences as values.



According to Benczik (2000), the school as an institution and permanent space for learning, for social involvement, whose main objective should be to promote socio-educational inclusion and provide learning with the participation of all students, where it is essential to learn together regardless of their difficulties and differences.

Attention *Deficit* Hyperactivity Disorder (ADHD) in the school context raises a challenge that aims to understand how children and adolescents are diagnosed. For this purpose, the teacher must have the knowledge to identify, diagnose, refer and intervene in the classroom context with the guidance of specialists so that these children can be socialized and included in the teaching-learning process.

#### 1.1 DEFINITIONS OF ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

Leslie, Aarons, Haine, Hough (2007, p.25), refer to Attention *Deficit* Hyperactivity Disorder "as a neurobiological disorder that appears in childhood, characterized by inattention, agitation and disorganization". As for the neurobiological aspect, the part of the prefrontal cortex takes time to develop, being less in people with this disorder. This part of the brain is responsible for actions such as attention, planning, impulsivity, among others (Carvalho Alves, *et al.*, 2020).

According to Andrade, et. al., (2011, p.2), Attention Deficit Hyperactivity Disorder "is a neurobiological disorder characterized by difficulty in privileging a focus and sustaining it with a sufficient level of attention, modulating levels of cognitive activity and, in some cases, controlling impulsive behaviors".

According to the DSM-V Diagnostic and Statistical Manual of Mental Disorders (2014, p.100), Attention *Deficit* Hyperactivity Disorder "is a neurodevelopmental disorder, defined by detrimental levels of inattention, disorganization and/or hyperactivity and impulsivity." It is characterized as a disorder that can manifest itself by easy distractability or difficulty in finishing tasks or concentrating at work, with a multifactorial etiology, since it depends on genetic factors, biological and psychosocial adversities for the subject to develop this disorder.

Paraphrasing the authors cited, Attention Deficit Hyperactivity Disorder can be defined as an alteration with an insistent pattern of inattention and/or **hyperactivity-impulsivity**, whose symptoms interfere with or reduce the quality of the student's performance of an academic, social or occupational task.

Some studies show that children with ADHD show a lack of persistence in performing activities that require the intervention of cognitive processes, so teachers refer to them, highlighting the following characteristics: difficulty in paying and maintaining attention, difficulty in organizing tasks and activities, reluctance to perform tasks that require continuous mental effort, distraction with irrelevant stimuli; particularities that translate, in practice, their attention and concentration difficulties.



The crucial problem of these children is, in fact, to keep their attention on something for long periods of time (Parker, 2006).

Considering the position of these authors, such difficulties, in the context of the classroom, can be solved or corrected, if the teacher is knowledgeable about this subject and methodological strategies, in order to be able to identify, refer to specialists and intervene with the guidance of the specialist.

Wanting to contextualize what the phenomenon in question was, we would start from the point of view that, nowadays, this is a problem with which schools, families and society in general have faced the same phenomenon, however, there are a number of difficulties that are related to the lack of information on the part of some parents, families and teachers about this disorder, which made it difficult for them to deal with children who show signs and symptoms of Attention *Deficit* Hyperactivity Disorder.

On the other hand, in our context, Attention *Deficit* Hyperactivity Disorder exists, because some teachers and families complain about some behaviors of students, such as: lack of frequent attention when performing an activity, moving the limbs frequently or moving - in the chair, getting up - whether from the chair in the classroom or in other places where they were expected to remain seated, they often interrupted others. It was not treated as it should be, because there are few professionals who are trained to attend and intervene with appropriate methods in the classroom where there are children who exhibited this behavior so that they would have an adequate socio-educational inclusion.

## 1.2 ETIOLOGIES AND TYPES OF ATTENTION *DEFICIT* HYPERACTIVITY DISORDER (ADHD)

Despite the large number of studies already conducted, the precise causes of Attention *Deficit* Hyperactivity Disorder are still not fully known. However, the influence of genetic and environmental factors on its development are widely pointed out and accepted in the literature as causes of ADHD.

Recent studies have shown that Attention Deficit Hyperactivity Disorder may be related to biological hazards that can affect a child before, during, or after their birth. According to Phelan (2005, p.62), "identifiable risk factors include: mother who smokes or consumes alcohol, prematurity and low birth weight". These risks may in some way affect the prefrontal areas of the developing brain of the fetus that are responsible for attention in the child.

From the perspective of Andrade, et al., (2011, p.456), environmental factors consistently associated with ADHD "include a mother smoking during pregnancy, alcohol abuse, not having regular appointments and psychological stress or family adversity during pregnancy, low birth weight such as <1,500 g and encephalitis".



According to the DSM-V Diagnostic Manual of Mental Disorders (2014), what causes ADHD are environmental factors related to the child's low birth weight (less than 1,500 grams) confer a 2 to 3 times higher risk of having the disorder; the consumption of tobacco and alcohol by the mother during pregnancy reaches the uterus and may be one of the causes. A small number of cases may be related to dietary aspects. A history of child abuse, neglect, multiple foster homes, exposure to neurotoxins (e.g., lead), infections (e.g., encephalitis), or exposure to environmental toxins may also be listed as a cause of ADHD.

Andrade, et al., (2011), consider that the causes of Attention Deficit Hyperactivity Disorder are related to genetic factors, since, after several investigations carried out, they concluded that there is a greater propensity for ADHD in biological families than adoptive ones, since studies suggest that 25% of families of children with ADHD manifest this disorder, That is, the child is more likely to have the disorder because of the hereditary factors that the child inherits from the parents at the time of conception.

Regarding genetic factors, the DSM - V (2014) states that people who have first-degree biological relatives with the disorder, to these people their children are more likely to develop Attention Deficit Hyperactivity Disorder 2 to 10 times more than the rest of the population, because of the genetic heritage inherited from parents during conception.

In addition to environmental and genetic factors, the DSM-V (2014) indicates that ADHD may have another cause, which is changes or lesions in the brain, specifically in the prefrontal area. There are changes in the frontal region and its connections to the rest of the brain. The prefrontal region is responsible for the ability to pay attention, organization, planning, memory, and self-control. Injuries in this area make it difficult for the child to pay attention.

Thus , we agree with the authors cited, because for the child to develop ADHD there are risk factors that contribute to the development of ADHD, which are environmental factors, because if the mother before and during pregnancy consumed psychoactive substances such as: tobacco, alcohol, did not have prenatal , postnatal consultations, postnatal consultations, and Christmas, drank over-the-counter medications, low birth weight, these factors also contribute to the child having this problem. Genetic factors can also be one of the causes, as families with this problem are more likely to have Attention Deficit Hyperactivity Disorder, due to the genetic heritage that children inherit from their parents during conception that usually passes from generation to generation.

According to the Diagnostic and Statistical Manual of Mental Illness (DSM – IV, 1994, p.717) Attention *Deficit* Hyperactivity Disorder can be subdivided into three types:

- ✓ ADHD with a predominance of inattention symptoms;
- ✓ ADHD with a predominance of symptoms of hyperactivity and impulsivity;
- ✓ Combined type ADHD.



#### 1.3 TYPE OF ADHD WITH A PREDOMINANCE OF INATTENTION SYMPTOMS

The type of Attention *Deficit* Hyperactivity Disorder with a predominance of inattention symptoms is characterized by the difficulties that children may present in the ability to maintain attention when performing various activities. The predominant type of inattention is the one that includes subjects who present (06) six or more symptoms of inattention, but show few, such as:

- ✓ Difficulty maintaining attention for a long time on a subject (unless there is a lot of interest).
- ✓ Making several mistakes due to lack of attention.
- ✓ Not wanting to start activities that require mental effort.
- ✓ Forget what you were going to say.
- ✓ Difficulty in organizing oneself with time planning and also with objects (drawers, tables, papers).
- ✓ Not listening when called upon, appearing to be disinterested or selfish (American Psychistric Association, 1994, p.717).

On the other hand, the ADHD type with a predominance of symptoms of hyperactivity and impulsivity is characterized by difficulties in self-control on the part of the child. They can't be quiet or calm for five minutes, they get up unnecessarily or say what they think when they feel like it, i.e., hyperactive-impulsive Attention Deficit Hyperactivity Disorder includes children who have six or more symptoms of hyperactivity and impulsivity, but show few symptoms of inattention. The following are presented:

- ✓ Restlessness, not being able to sit still or sit still;
- They move their hands and/or feet when they are seated and cannot sit in one place for a long time;
- ✓ Has a quick temper;
- ✓ They make changes of plans unexpectedly;
- ✓ They do many things at once;
- ✓ Often there may be difficulty in expressing oneself, speech does not keep up with the speed of the mind (*Ibid*, p.718).

#### 1.3.1 Combined ADHD Type

This type **is** identified by the fact that children present symptoms of inattention, hyperactivity and impulsivity. It is necessary for the child to have a combination of several characteristics in order to be diagnosed with the combined type, presenting signs and symptoms of inattention, hyperactivity and impulsivity (*Ibid*, p.719).

From the perspective of Andrade, *et al.*, (2011, p.457), there are also three types of ADHD: inattentive type, hyperactivity/impulsivity type, and combined type.



The inattentive type "is when, over a period of six months or more, the child shows symptoms of inattention, but not those of hyperactivity and/or impulsivity" (*ibid*).

Attention *Deficit* Hyperactivity Disorder of the hyperactive/impulsive type: "it is always that in a period of six months, the subject manifests for the diagnosis the symptoms of hyperactivity/impulsivity, but does not present those of inattention" (*Ibid*).

Combined type "is when, for a period of six months, the criteria for both attention deficit and hyperactivity/impulsivity in the child are met" (*Ibid*).

Thus, paraphrasing the aforementioned authors, Attention Deficit Hyperactivity Disorder has three types, such as: inattentive, hyperactive/impulsive and combined. This is the inattentive type when the child for six months or more shows symptoms of inattention, such as: he often shows difficulty in sustaining attention in tasks or playful activities, loses objects necessary for his tasks and activities (pencil, eraser, pencil sharpener); easily distracted by stimuli unrelated to his task and frequently forgets the activities of the day - a - day. On the other hand, the hyperactive/impulsive type is when children from six months onwards manifest symptoms of hyperactivity/impulsivity, such as: frequently moving their hands and/or feet when sitting in the chair, often getting up from their seat (from the chair in the classroom or in other situations in which they should remain seated) and running or climbing in situations where this is not appropriate. The combined type, on the other hand, is whenever the child for six months or more shows symptoms of inattention and hyperactivity/impulsivity simultaneously.

#### **2 DEFINITIONS OF EDUCATIONAL INCLUSION**

The word inclusion derives from the verb to include, originating from the Latin *incluire*, corresponding to insert, introduce, add or encompass, which consists of an adequate and appropriate education, which respects the specific characteristics and needs of the students in the regular class, as the school is prepared to serve students with SEN, as it has appropriate human resources and infrastructures to carry out this activity.

Correia (2010, p.65) defines educational inclusion "as the inclusion of students with SEN in the regular class where, whenever possible, they should receive all appropriate educational services, with appropriate support (from other professionals, parents...) to their characteristics and needs."

#### 2.1 PRINCIPLE OF SPECIAL EDUCATION SERVICES

Regarding this principle, it is first important to emphasize that special education services are specialized help, aimed at responding to the special needs of the student, according to their particularities and with the purpose of maximizing their potential. Therefore, in order for the student with SEN to succeed in their educational process, it is of paramount importance that they have at their disposal specialized educational services that will be provided by the special education teacher,



depending on the support that he or she will provide to the teacher and parents and/or guardian in the cooperation of teaching. These educational services, corroborating Correia (2010), consist of:

- ✓ Modify (adapt) the common curriculum to facilitate learning for children with SEN;
- ✓ Provide additional help and services that the student needs to succeed in the classroom and beyond;
- ✓ Change the evaluations so that the student can show what he has learned;
- ✓ Be aware of other aspects of teaching, namely individualised teaching, that may respond to the needs of the student.

Therefore, for the successful implementation of inclusive education, it is important that the school management applies these principles, which are based on a sense of community and responsibility, a direction with believing and effective leadership, high quality standards, collaboration and cooperation, changes in roles on the part of teachers and other education professionals, availability of services, creation of partnerships, including with parents, flexible learning environments, new forms of assessment and continuous professional development of teachers so that they are empowered to carry out the inclusive education of students with SEN, in particular those with ADHD.

Thus, from the perspective of Moura, *et al.*, (2018) in its reflection on inclusive education presuppose not only educational improvement, but also social improvement in a relationship of interdependence that will always mark the School's raison d'être. They consider it to be different, from a system that only cares about a specific group of students. It is concerned with improving the performance, activity and participation of all students through collaborative and active learning and the recognition of diversity as a social asset.

On the other hand, inclusive education, in addition to the physical integration of the student with SEN, presupposes participation through true equality of opportunities, so that all students learn together, whenever possible, regardless of their difficulties or differences, transforms adversity into a factor of enrichment and an engine of development.

It is important to mention, as Miranda (2008) points out, for the existence of the success of the inclusive education of students with SEN, there is an urgent need for schools to be prepared in several aspects to provide the necessary support to these students. In other words, there must be in the institution's infrastructures (ramps, signs, mobile desks, etc.), as well as the training of teaching professionals for this type of monitoring, as well as the creation of multidisciplinary teams in the school that are prepared to assess, diagnose, monitor and intervene early with students with SEN.

In this same line of thought, Henriques (2012) says that school success in the process of inclusive education of students with SEN, in particular those with *Attention Deficit* Hyperactivity Disorder, it is important that, in the first place, the school, through the multidisciplinary team, characterizes the student in order to have an early diagnosis of the same. that allows us to know the



strengths and difficulties of the student, or the needs of the student, so that the educational intervention can be carried out with appropriate methodological strategies that will enable the student to be included. Inclusive education advocates for a differentiated and quality learning environment for all students, acknowledging differences, developing with diversity, emphasizing that all children should be educated in a school free of pedagogical barriers. The school should be open to all, regardless of the difficulties, the children/young people should learn together, without distinction.

Thus, we agree with the above-mentioned authors, because in order for there to be success in the process of inclusive education of students with SEN, it is important that a team with different specialists characterize the student with SEN to know their strengths and weaknesses, to have teachers prepared to carry out this process and changes in some school structures.

#### 2.2 EDUCATIONAL INTERVENTION IN THE CLASSROOM FOR STUDENTS WITH ADHD

Before addressing educational intervention in the context of the classroom, it is first important to mention that intervention is the act of intervening, of exerting influence in a given situation through methodologies in an attempt to change or modify some situation taking into account the objective set.

According to Fisher quoted by **Máximo-Esteves** (2008, p.40):

The educational intervention consists of making an assessment of the student in order to identify the needs and potentialities in the academic areas and beyond, so that according to this knowledge the teacher in the context of the classroom with the help of other specialists can use some methodological strategies that allow intervention so that the student learns the contents and is thus included.

From the perspective of Almeida (2012, p.94), the educational intervention "consists of assisting the student with various methodological strategies in the academic areas, taking into account the strong and weak areas that the child with ADHD presents, depending on the evaluation carried out by a specialist".

Therefore, it is corroborated with the authors, because in order to carry out an adequate educational intervention for students with ADHD in the context of the classroom, it is essential that the multidisciplinary team carry out an assessment of the student to know their strengths and weaknesses in the various academic areas such as: reading, writing, calculus, in memory, hearing, vision and others so that, according to this knowledge, methodological strategies (curricular adaptations), positive behavioral, organization and structuring of the classroom, affective variables and personalized efforts for the individualized care of students with ADHD that allows them to access the content so that they can learn and have an inclusive education in the context of the classroom.



### 2.3 THE ROLE OF THE TEACHER IN THE INCLUSIVE EDUCATION OF STUDENTS WITH ADHD

According to Roldão (2007, p.33), the teacher "is the person, who exercises a profession, in an educational context to be able to train students in an integral way, regardless of the needs and particularities they present, to be able to perform a useful activity in society".

Therefore, being a teacher is much more than exercising a profession, teaching, applying and correcting tests. Being a teacher is a profession that requires a lot of effort, preparation, knowledge, research, time and dedication, affection, as well as commitment and commitment to the students, to the school, to the families and to society in general, since these students after graduating should serve society as Marinho-Araújo and Almeida (2008) opines.

According to Marcelo (2009), the teaching profession is considered the profession of knowledge, and also a profession in which the teacher must use different methods and means of teaching, through which he will teach the contents, with a view to training students with and without SEN so that they can absorb and apprehend the knowledge that facilitates and promotes changes in students' behavior.

Thus, it is corroborated with the authors cited above, since the teaching work in the classroom is based on the commitment to transmit and share knowledge through the use of various methodological strategies, organization and teaching means that allow students with and without SEN to learn the contents regardless of their needs and potentialities in such a way that they can develop skills, habits, attitudes, and values.

However, in the face of students with special educational needs, particularly students with Attention Deficit Hyperactivity Disorder, and agreeing with Pires (1996), the role of the teacher is of paramount importance in the inclusive education of these students, since the teacher is the competent authority to direct the pedagogical process, interferes and creates the necessary conditions for the appropriation of knowledge by the student taking into account his need and potentiality, as well as always respecting diversity.

From this perspective, Nielsen (1999) states that the teacher who is really concerned with inclusive education and who really wants to include all students in the same classroom has to rethink his performance, because his attitude, his specific training play a fundamental role in the implementation of inclusive education in the context of students with and without SEN. especially students with ADHD.

On the other hand, Heinburge and Rief (2000) opine that inclusive education leads us to changes in educational methods and practices, teachers should not worry too much about teaching and transmitting knowledge, but their role is to create conditions and strategies to meet learning. Such strategies should take into account the particularities of their pupils with SEN.



#### Thus, Meijer (2003, p.13) agrees when he states that:

Teachers' attitudes are indicated as a decisive factor in building more inclusive schools. Therefore, it is important that the teacher in the process of inclusive education of students with and without SEN in a regular class has attitudes that favor this process, not discriminating students, serving students with and without SEN in the same way, since, for the inclusive school, all students must learn together within the same context.

Therefore, the role of the teacher in the inclusive education of students with ADHD in the classroom context is of paramount relevance, as he must have good attitudes respecting all students, the learning rhythms, teach taking into account the particularities of students with ADHD through the use of various methodological strategies, organization, means and principles of teaching that facilitate students to access content so that they can learn and have an inclusive education.

### 2.4 CONTINUOUS TEACHER TRAINING FOR THE INCLUSIVE EDUCATION OF STUDENTS WITH ADHD

The world is experiencing rapid and radical changes or transformations that influence society in general, but the school mainly, because talking about the role of the teacher would make it necessary, when he is the main agent of change in the educational system that favors the socio-educational inclusion of students with SEN. Their training must focus more and more on practical problems that both schools and teachers need to reflect more deeply on in order to carry out the inclusive education of these students in a dignified manner.

The qualification of educational agents, particularly teachers, is the basis for innovation and progress of any educational system, so it is necessary that teacher training programs are designed and organized in order to contribute to the improvement of teachers' skills (Minetto, 2008).

Therefore, it seems evident that all schools should be concerned with the training of their staff in accordance with the educational objectives set by them. In the case of inclusive education for students with ADHD in their midst, this training becomes practically mandatory, otherwise we will see inadequate educational performance for such students.

According to Baca (2016, p.10) "the success of the teacher's work will depend not only on his training but also on the knowledge of the pedagogical content and the experiences he acquires and on which he reflects over time of the activity he performs".

Thus, it seems necessary to reflect on the continuous training of teachers, since, as Victor da Fonseca (1980) cites Morgado (2004, p.45):

Continuous training must be guided by adapting to change, making it special, since every teacher, in order to be able to respond to the purposes of inclusive education of children with SEN, in particular students with ADHD, must receive special training and over the years must have quarterly continuous training in different themes of this science to be updated and trained



with knowledge and methodological strategies that gradually help them to better serve these children in the classroom so that they can have a quality socio-educational inclusion.

From the perspective of Hunter (1999) cited by Correia (2010, p.60) "adequately preparing teachers for these new functions and responsibilities requires the implementation of a model of continuous training, consistent, planned and selected according to the common philosophy defined by and for the school". It considers that such continuing training should be carefully planned and should be based on an assessment of the needs of the professionals involved. On the other hand, this type of training must be carried out in the place where the teacher works and/or in a higher education or similar institution, through short and medium-term courses, scientific conferences, round tables, conference cycles, colloquia, symposia, congresses and seminars.

According to Henriques (2012), teachers and educational assistants need continuous training through medium-term courses (postgraduate), conference cycles, symposia, seminars, which will enable them to be equipped with the knowledge to assess, identify and assist students with ADHD in the classroom through the use of various methodological and organizational strategies.

Thus, it is corroborated with the above-mentioned authors, since, in order for the teacher to be able to carry out the inclusive education of students with ADHD in the classroom, it is very important that the school management invites specialists to carry out short and medium-term continuous training in special education, inclusive and beyond, through conferences, seminars, taking into account the weaknesses of teachers to gradually be trained with knowledge, methodological and organizational strategies that will allow them to manage, organize the classroom, as well as attend to students with ADHD, always respecting the difference, the learning rhythms in relation to students without SEN.

## 3 THEORETICAL FOUNDATIONS OF THE METHODOLOGICAL STRATEGY FOR THE CARE OF STUDENTS WITH ADHD IN THE CLASSROOM CONTEXT

#### 3.1 STRATEGIES

Before presenting the methodological strategies for the teacher to be able to attend and include students with *Attention Deficit* Hyperactivity Disorder in the classroom, it is first important to point out that the term strategy comes from the Greek strategía, *and from the Latin strategia*, which refers to the art of taking advantage of or exploiting the conditions and means available, in order to achieve certain objectives (Anastasiou and Alves, 2004).

Pozo (2002, p.235) conceptualizes strategies as "procedures that are applied in a controlled manner, within a plan deliberately designed in order to achieve a set goal".

Nisbett and Shucksmith (1987) cited Alencar (2006, p.119) define strategies as "procedures or activities that are chosen with the purpose of facilitating the teaching of content, so that the acquisition, storage and/or use of information is a fact in students".



Therefore, paraphrasing the above-mentioned authors, strategies can be defined as the set of plans, methods, means, procedures that are selected and used taking into account the identified problem and according to the objective that is intended to be achieved.

Dansereau (1985) cited by Orantes (2000) named two types of strategies: primary or cognitive and supportive or secondary.

#### 3.2 PRIMARY OR COGNITIVE STRATEGIES

According to Valdes (2003, p.12), the primary or cognitive strategies:

These refer to those that are related to the processing of information. Its function is to help the student reflect on the important parts of the text, represent the relationships between the contents, summarize the information, generate metaphors to translate difficult notions and concepts, and memorize information. "The fundamental concept is to support the student during the different stages of the school learning process." They constitute a support in the acquisition of new information, integrating it with their previous knowledge and restructuring it, enriching it with new elements and, finally, to consolidate and improve this knowledge through the transfer and practice maintained.

In the perspective of Dansereau (1985) cited by Alencar (2006, p.120), primary or cognitive strategies "are those that enhance motivation, attention, concentration and, in general, the use of one's own cognitive resources".

Therefore, it is corroborated by the cited authors, because the primary strategies, also conceptualized as cognitive, refer to the learning material, aimed at the comprehension and retention of the main elements of a content and as a necessary complement to the recovery and use of the knowledge learned in practical situations.

#### 3.3 SUPPORTIVE OR SECONDARY STRATEGIES

In the studies carried out by Orantes (2000), in relation to support strategies or secondary strategies, they refer to being those that are aimed at preparing the work environment. Because the environment is not only the physical space, organization and programming of the study, but also the preparation of the state of mind of the student who learns. Strategies should serve to support, to offer support and to prepare the conditions for learning to occur satisfactorily.

According to Pozo (1996) quoted by Alencar (2006, p.120):

Support strategies are those that are directly aimed at the learning of the subjects, with the mission of increasing the effectiveness of this learning by improving the conditions in which it is produced. They include strategies to increase motivation, attention, concentration and, in general, the use of one's own cognitive resources.

We agree with the authors, because the support strategies should provide the student with an adequate environment to carry out the study, which will allow the teacher: to organize, program and



carry out the activities, to control the concentration of the students during these activities and to verify the intended objectives in order to involve the different aspects related to the student's learning. In addition to these strategies already mentioned, three new forms can be added: motivational, cooperation and information-seeking.

Therefore, in the specific case of students with ADHD, primary or cognitive and secondary or behavioral strategies are efficient procedures that help teachers to develop their pedagogical practice and be able to include them in the teaching-learning process.

#### 3.4 THE STRATEGY OF FLEXIBILIZATION OF TEACHING: CURRICULAR ADAPTATIONS

The inclusion of students with special educational needs in the regular classroom showed that the traditional pedagogical practice, based only on the transmission of knowledge, is ineffective to teach most of these students. According to Blanco (2004), the traditional school focused its attention on satisfying common needs, outlining objectives without considering the specific characteristics of each student. This traditional stance, in the curricular context, is demonstrated by rigid proposals, which disregard the various contexts in which the teaching and learning processes occur. As a consequence, it is possible to observe the high occurrence of learning difficulties, repeating students, absenteeism and school failure in them.

The school inclusion movement has revealed that education, with its traditional methods, increasingly excludes students, rather than including them (Benczik & Bromberg, 2003). Thus, it was evidenced that considering the specificities of each student is essential to ensure the quality of education for all students, and not only for those who have more evident difficulties, such as students with *Attention Deficit* Hyperactivity Disorder.

According to Perrenoud (2001), most of the teaching strategies used by the teacher should be adapted to the characteristics of students with ADHD, the composition of the class and the history of the relationships between the students and between them and the teacher.

In view of this, it is clear the importance of making curricular adaptations for the inclusion of students with special educational needs, especially for those who have *Attention Deficit* Hyperactivity Disorder.

Therefore, according to Aranha (2002, p.2):

The terminology adaptation can be interpreted as flexibility, since it presupposes the existence of changes and/or modifications in the educational process, essentially in the curricular scope. For this, the school curriculum should be taken as a reference in the identification of possible changes due to the special needs of the students. In summary, the school must adopt the same curricular proposal for all students, and, if necessary, make adaptations or changes. Therefore, it is up to the technical-pedagogical team, including the teacher of the regular classroom, to map the educational particularities of the students who need adjustments in the curriculum and propose the management of the appropriate conditions for this to occur.



Thus, according to Aranha (2003, p.5), for the implementation of inclusive education of students with ADHD, it is necessary to carry out "curricular adaptations, which are the adjustments and modifications that must be promoted in the different curricular instances, to respond to the needs of each student, and thus favor the conditions that are necessary for the maximum possible learning to be effective".

From the perspective of Sá (2007, p.33), curricular adaptations "are defined as educational possibilities to act in the face of students' learning difficulties". They presuppose that the regular curriculum is adapted, when necessary, to make it appropriate to the particularities of students with special needs. Not a new curriculum, but a dynamic, changeable curriculum, which can be expanded, so that it truly serves all learners.

In these circumstances, curricular adaptations involve pedagogical planning and teaching actions based on criteria that define what the student should learn; how and when to learn; which forms of teaching organization are most efficient for the learning process; how and when to assess the learner to know if the learner is progressing in terms of learning.

According to Leite (2008), curricular adaptations can be defined as educational responses that should be provided by the educational system, in order to favor all students and, among them, those with special educational needs (ADHD). Therefore, in order to carry out the curricular adaptation, it is necessary that the pedagogical project of the school and the planning of teaching must consider educational objectives and didactic-pedagogical strategies that guarantee accessibility for all students in the school network.

Therefore , we agree with these authors because curricular adaptations are adjustments and changes that must be made by the school management, by the teacher at the level of the curriculum in the classroom, in relation to the contents, methods, means and procedures of teaching, as well as the forms of evaluation according to the particularities of the students so that they access the contents and thus there is success in the learning and educational inclusion of the student with ADHD.

#### 3.5 ORGANIZATION STRATEGIES FOR TEACHING STUDENTS WITH ADHD

According to Casas *et al.*, (2001) for the teacher to carry out the educational inclusion of students with ADHD in the classroom, they need to know and use different methodological strategies such as:

#### 3.6 ORGANIZATION AND STRUCTURE OF THE CLASSROOM

The presence of students with special educational needs in regular schools necessarily implies that it needs to be flexible in order to be able to welcome, serve and include a diversity of students with different interests, motivations and learning abilities.



A school that is open to diversity must offer answers to the concrete needs of all students, breaking with rigid and inflexible models. In short, it is the school that must adapt to the child and not the other way around, as has been the case until now (Blanco, 2004).

In the classroom, there is a more intense educational relationship and the processes that are triggered there have a decisive importance in the students' learning. In the insertion of children with ADHD in this environment, some guidelines should be considered regarding the structure of the educational space, the pedagogical resources used, the procedures and rules to be observed in the classroom.

The classroom environment is an important factor in the way students behave, in academic performance. Lighting, furniture, place, ventilation, exposed materials, color, relaxation areas, and the possibility of isolating distractions during written work are elements that must be carefully considered. There are many environmental factors that can be altered and regulated to considerably improve classroom performance in the care of students with ADHD (Rief, 1998).

In the classroom structure of students with ADHD, some interventional actions are notably important for their inclusion in the academic environment. Recent research suggests that for children with ADHD, row-arranged and fixed (traditional) chairs, facing the front of the classroom, are not the best option. On the other hand, modular arrangements, in which several children share a desk at a large table – especially if facing each other while working – seem to provide excessive stimuli and may favor inattention in school work.

Thus, changing the arrangement of chairs in the classroom, as Benczik and Bromberg (2003) point out, that each student should sit in a single desk with a table that is not fixed, as it is an effective means to help improve the behavior and performance of that child with ADHD in the classroom, since, During the lesson, the teacher can change the organization of the classroom in the form of a circle and **semi-circle**.

On the other hand, children with ADHD may perform better if their desk is in an area close to the teacher and away from restless, noisy classmates. Thus, it becomes more practical for the teacher to structure the tasks with the child, monitor their difficulties and progress, and provide adequate reinforcement when they notice any in the task that the student performs. If the child is seated in the front row, facing the front of the room, the visual and auditory stimuli that appear will be behind him, minimizing his inattention. They should also sit away from the window or door, in a place where the possibilities of distraction are minimal, in the midst of colleagues who can offer help (Barkley, 2002).

The elaboration of a table of tasks and rules of the classroom, of a table of reinforcements for each activity, can facilitate the child's adherence to the rules of the classroom, as well as their inclusion in the school environment (Alencar, 2006).



Studies also suggest the use of closed classrooms, which are physically included (such as between four walls and a door), without many students are considered better for a child with ADHD than the so-called open classrooms, since it gives the possibility for the teacher to be able to monitor students more efficiently (Lopes and Nogueira, 1998). Open classrooms are most often noisier, hectic and present numerous possibilities for distraction due to the various stimuli that the student can hear and observe. Barkley (2002, p.243) describes that research shows that very noisy environments are associated with less attention to work and higher levels of disruptive behavior with children.

It should be added that, in students with ADHD, the difficulties in organizing time and work materials are clearly perceived in the accomplishment of homework. It is rare for these students to make incomplete notes of the activities, not to observe dates for their evaluation.

The teacher should also talk to the student about the proposed task, ensuring that the student understands how to perform and present it, enhancing organizational and planning skills that, according to (Casas *et al.*, 2001), favor its execution and systematically supervise its accomplishment through personal contact with the student.

Finally, the right environment for this child is a well-structured room with good lighting, ventilation, with movable desks and that receives a smaller number of students, in order to allow the teacher to monitor the students individually and systematically the difficulties that arise, which has education professionals with a theoretical and practical reference of this problem.

#### **4 MATERIAL RESOURCES**

In view of the objectives, content and methodology selected, the instruments necessary to achieve what is intended are organized. Teaching resources are intimately linked to all elements of educational action; they are facilitators of learning. The main purpose of the resources is to support the task of teaching, especially to students with ADHD, who will request adaptations of these or additional means. It is essential to adapt the materials to the possibilities of these students, so that they understand the information presented, in the case of students with ADHD, presenting concrete supports (lists, tables, charts), adapting the vocabulary using audiovisual resources or reducing and/or breaking down the information (Blanco, 2004).

As Blanco (1995) cites Alencar (2006), didactic resources perform three essential functions: **motivating** – the way the contents are presented can arouse the student's interest in solving the task. This characteristic is essential when it comes to teaching students with ADHD; support the presentation of the content – performs an **informative** function to support the formation of concepts; **structuring** – guides **teaching-learning** strategies and methodological processes.

Due to the intrinsic need for novelty, a requirement of the student with ADHD, it is imperative to use resources that make classes more dynamic, motivating and interesting. Among these, we



highlight a tape recorder, computer, overhead projector, slide projector, a lot of color (colored chalk, pens or colored pencils for records in the notebook or book), magazine for clippings, preparation of materials by students according to a subject studied (Benczik and Bromberg, 2003).

#### 4.1 INTERVENTIONAL ACTIVITIES IN THE CLASSROOM

The intervention in the structure of the classroom accompanies the change of procedures, attitudes and strategies that aim to favor the school performance of students with ADHD. A large number of scholars offer a broad framework of interventional proposals to work with children with ADHD in their academic field. We highlight some of these proposals below:

Increase innovation and interest in tasks with the use of exaggerated stimulation (e.g., color, shape, texture). This increase seems to slow down the level of activity, raise the level of attention and improve the student's performance (Zentall, 1985 cited by Lopes and Nogueira, 1998).

The style of presentation of the lessons, assignments and materials used should be modified in order to help the child with ADHD maintain interest and motivation. A child's attention can be accentuated with a more enthusiastic, brief, and participatory lesson model (Barkley, 2002).

Passive or uninteresting tasks should be interspersed with active or highly interesting tasks, favoring attention and concentration (Benczik and Bromberg, 2003).

Academic activities should be shorter to conform to the child's attention span. Barkley (2002, p.244) proposes a rule of thumb that is to determine the amount of work that might be appropriate for a child with ADHD. Short periods should be proposed for this and external aids – stopwatches, clocks – should be used.

#### 4.2 POSITIVE BEHAVIORAL STRATEGIES

According to Antony & Ribeiro (2004), in relation to positive behavioral strategies, it is necessary to take into account the following structural variables:

- ✓ Ask a student to state the appropriate rule when an infraction occurs.
- ✓ Review behavioural expectations before starting an activity.
- ✓ Give attention to students who denote appropriate behaviors.
- ✓ Praise and provide positive, specific and illustrative feedback to students who meet expectations. Example: I like the way Michael stays in line, quiet and without grabbing anyone. Good job, Michael. I see that Abel has his book open on the correct page and he has the paper and pencil in his wallet. Abel is ready to work.
- ✓ Try to make the rewards and consequences have immediate effects.
- ✓ Use preventive tactics (anticipate problems and avoid them through careful planning).
- ✓ Provide frequent breaks in activities and opportunities for students to move around.



- ✓ Postpone instruction until everything is calm and students are focused.
- ✓ Use proximity control, move among students or position yourself next to the desk of the student whose behavior is inappropriate or who is about to behave.
- ✓ Try to ignore slightly inappropriate behaviors, especially if they are not intentional or intentional.
- ✓ Teach other students to ignore the behaviors previously.

#### **4.3 ENVIRONMENTAL VARIANTS**

- ✓ As for the environmental variants, the following stand out:
- ✓ Move students closer to the center of instruction, closer to the teacher, away from friends, away from distractions.
- ✓ Remove distracting items/objects from students (Toys or objects they are handling or playing with).
- ✓ Increase the distance between desks and, if possible, provide more space.
- ✓ Try to use music to calm or relax students. Use it also at times when they change activity.
- ✓ Frequently inspect the room and be permanently alert to what students are doing.
- ✓ Arrange the room in such a way as to allow easy access to all points and a good perspective for all students. Sit students with disruptive behaviors next to the teacher.

#### 4.4 AFFECTIVE VARIABLES AND PERSONALIZED EFFORTS

- ✓ Provide individualized attention to students.
- ✓ Recognize and value what students think and feel.
- ✓ Try to show as much empathy and understanding as possible with students.
- ✓ Establish a period of time so that students who are becoming agitated or angry can calm down.
- ✓ Discuss situations individually with students in a calm and soothing tone of voice.
- ✓ Try to isolate the student from his peers when analyzing his or her inappropriate behavior.
- ✓ Maintain positive expectations for student success.
- ✓ Use humour to reduce the intensity of problematic situations and to provide support to the student.
- ✓ Avoid censorship and permanent criticism of students.
- ✓ Try to lower your voice instead of raising it.



#### 4.5 STRATEGIES FOR STUDENTS WITH ADHD TO TAKE ASSESSMENTS/TESTS

According to Heimburge & Rief (2000), the teacher, in order to evaluate the learning of students with *Attention Deficit* Hyperactivity Disorder, must make some adaptations and modifications in the questions so that students can answer them. Thus, here are some adaptations to be made:

- ✓ Give students worksheets and test sheets that are easy to read and understand (printed, accessible, at least double-spaced, well-executed copies, wide margins).
- ✓ Eliminate unnecessary words and expressions that may confuse students from assessments or tests.
- ✓ Give instructions in clear terms and using simple sentences.
- ✓ Underline or use a different color for the instructions or for keywords in them.
- ✓ Give the possibility of evaluation if done by means of a short answer (multiple choice, matches, true and false).
- ✓ In vocabulary assessments, give the definition and ask the student to indicate the respective word, rather than indicating it and asking the definition to match.
- ✓ Present a list of words from which the student must select the correct one to fill in the blanks of the test exercises.
- ✓ Allow extra time for the student to answer the test questions.
- ✓ When possible, give students an example of the different types of questions they will encounter on exams.
- ✓ Grant a larger area of work in the period of solving exams, particularly in mathematics.
- ✓ Instead of requiring all calculations to be done directly on the limited space on the test sheet, allow students to use graph paper or other paper to solve math problems. Staple that paper to your proof.
- ✓ Increase the font size.
- ✓ Divide the test into parts and give it to students on different days, instead of rushing them by making them solve the entire long test in one school time.
- ✓ Allow the student to take the test orally, after having solved it in writing. The student will be able to improve the score of his/her exercise, if he/she is able to demonstrate a greater knowledge/mastery than that denoted in the written tests.
- ✓ Substitute the oral exam for a written one or vice versa, according to the student's needs.
- ✓ Read aloud the instructions for the different parts of the test and the questions on the test so that students can understand and solve them.
- ✓ Do not penalize spelling mistakes, other grammatical errors, etc., in tests that are intended to assess mastery of content in other areas.



- Before assigning the final score to the test, mark incorrect aspects in the student's resolution and allow the student to try to correct mistakes made by distraction. Only then will you establish the final quotation.
- ✓ Assign shorter word lists to students who struggle with spelling for example, 15 words instead of 20 or 25.
- ✓ Teach students the strategies and skills required for different types of quizzes (true/false, multiple choice, fill-in-the-blanks, compositions, correspondence, etc.).
- ✓ Practice all the ways to test knowledge, as well as evaluate, what has been taught.
- ✓ Avoid asking questions that, by their form, are a deliberate trap for the student.
- Develop multiple-choice questions whose options are vertical rather than horizontal lists (easier to read).
- ✓ Use unit evaluation (progress assessed on the basis of individual performance and improvements, as opposed to comparison with others).
- ✓ On math tests, present the representative signs of mathematical operations in color, for students who do not focus enough on details and make careless mistakes due to lack of attention. For example, underlined yellow = addition +, green = subtraction -, blue = multiplication x.
- ✓ Allow the use of calculating machines in math tests that are intended to assess skills in the field of problem solving.

# 7

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