



## Strategies for Inclusion of Students with ADHD through Music and Physical Education in Primary School

**Anca Simion**

*Babeş-Bolyai University (Romania)*

[ancasimion1@gmail.com](mailto:ancasimion1@gmail.com)

### Abstract

*Musical and physical education classes are very common among the Romanian curriculum for primary school. The classes are limited to two hours per week. Students with ADHD are included in the Romanian public school system without special requirements. The current paper presents an experimental program that consists in extra-curricular music and physical education classes. The primary school teacher indicated to the parents of students with ADHD that it is important to create a educational context that is appropriate for their needs. The parents were open to consider the experimental program that was suggested. Novelty is an important element in the case of ADHD students. Considering the structure of music and physical education classes, we can find the perfect elements that can help the student to overcome the manifestations of ADHD. The experimental program started in a school from Cluj-Napoca, Romania. The children involved in the program had an improvement in dealing with certain tasks at the classroom.*

### 1. Introduction

School integration in the Romanian school system is performed in units of mass education and/or special education. One of the requirements of effective integration of children with special educational needs (SEN) is creating support services, specialized educational assistance, which will benefit both the children and the students integrated in the school system, but also the school teaching collective [1]. Children with SEN are the ones that are included in one or more of the following categories: motor difficulties, Down syndrome, speech difficulties, behavioral disorders, autism, attention deficit hyperactivity disorder (ADHD), and those who pass simply through a tough time. Attention-Deficit/Hyperactivity Disorder has been known to occur in various cultures even though the variations reported in prevalence differ in Western countries, probably because of the different diagnostic practices than from differences in clinical presentation [2]. A child with ADHD is diagnosed when he/she exhibits a persistent syndrome of inattention, hyperactivity, and impulsivity that impairs functioning both at home and at school before the child is 7 years old [8]. The worldwide prevalence of this disorder is 5.29% [9] and is more frequent in boys than girls with a ratio ranging from 4:1 to 9:1 [2]. Even though ADHD is a very common disorder amongst young children, putting a correct diagnosis on a child with ADHD is a difficult process. Considering the young age of the child and the changes that he is under at this stage of his life, the symptomology is very difficult to correlate with a proper diagnosis for ADHD. The development of motor skills at this age and the hyper-activity can be easily confused with those of a disorder. The only way in which a child can receive a good and correct diagnosis consists in having information from both the parents and the teacher. In this way the specialized medical practitioner can make the necessary investigations in determining the correct diagnosis.

Treatment varies and is set in accordance with the age of the child. Statistics regarding the response to medication looks like this: > 70% will respond well to amphetamine; > 70% will respond well to methylphenidate; > 88% will respond well when a person tries both. There are also alternative therapies that help to overcome the symptoms of ADHD. Among these therapies the following are a few examples: behavior therapy, omega-3 fatty acids, nutrition, exercise, working-memory training, natural surroundings and neurofeedback.

### 2. The music element

Music is an important element in everyone's life, especially in children. Different music tempo have been shown to influence mood changes and affects visual attention [8]. Study shows that auditory stimulation through music can benefit the child with ADHD in arithmetic tasks [4]. The choosing of the music or the activity attended by music is an important task for the teacher and also for the parent. Music with a higher intensity is more distracting and has a greater effect on task performance and concentration [5], so the outcome may differ in regards to the music chosen by the teacher or parent.



In the school environment music can play an important role in establishing social interactions. As previously studies show, the frequencies of child-to-child social interactions increased significantly over the baseline during and after music presentations [6].

In a study undertaken in a Romanian primary class reported that musical background had an influence in the development of social and emotional behavior of primary school children [11]. Making music together is a fun activity that children of all ages embrace from an early age [7]. The children can only benefit from this social interactions made easy through music making and music listening.

Children with ADHD benefit from music because it gives them a sense of order in their everyday life. They feel social when they are able to fit in the norms of the classroom and are rewarded when their performance is at their own personal best.

### 3. Physical education in the school environment

Physical education in the Romanian school curriculum is present for all grades. The primary school curriculum has two hours of physical education per week. The main goals of the physical education in school are: strengthening the health of children, their harmonious physical development, psycho-motor capacity and favorable behavioral traits education activities in teams. Physical education is achieved by balancing the demands of intellectual with the psycho-motor and playful particularly that is important for organizing educational activities with students aged six to ten years of age. Children and adolescents should have a schedule for regular physical activities thus promoting a healthy body weight and body composition.

Physical education is comprised of three main areas of development: aerobic activities, muscle-strengthening activities, bone-strengthening activities. Activities such as rollerblading, bicycle riding, brisk walking, skateboarding are meant as aerobic activities. Muscle-strengthening activities include: running and chasing, jumping rope, bicycle riding, running sports such as soccer, ice basketball, swimming. Games such as hopscotch, skipping, jumping, jumping rope, hopping, running sports such as gymnastics, basketball, volleyball, tennis are meant for bone-strengthening. During their playtime children perform various activities that have healthy benefits in their lives. For more benefits children should have organized activities that are meant for their proper physical and mental development, which is why it is important that at least sixty minutes per week children should have a physical activity program design for their benefit. The sixty minutes period is a minimum of time that children should spend developing their body and mind, an increase up until 150 minutes per week is in their benefit according to the Office of Disease Prevention and Health Promotion in the United States of America [3].

Children with ADHD have a tendency to perform extra physical activities due to their hyperactive behavior; therefore a program with extra-physical activities fits in their personal needs and gives them the opportunity to vent out their extra energy, but all together assuring a pleasant environment for their development.

### 4. The experimental program

The purpose of the experimental program was to create a better integration of the children with special requirements in the classroom. The class that the program was implemented was the zero grade. Primary school grades in Romania are comprised of five grades from zero to four, beginning with 2012. Taking into consideration the multiple actions that a teacher can take in the classroom management, it was decided, with the consent of the parents, that a program with extra-physical education and music was a way to try and make the children's school activities more accessible, appealing and exciting.

The class in question has a number of 20 students with ages between 6 and 7 (Mean=6.3). From the total number of the students, three children manifest a behavior, which in most of the cases doesn't benefit the classroom or the children. Two of the three students were diagnosed with ADHD and one with disruptive behavior caused by multiple factors unidentified or unnamed.

For the music activities children had a wide variety of musical instruments (drums, flutes, maracas, bells, xylophone, piano) that they could play with during recess and also in the organized special music class. For the physical education activities the help of the physical education teacher was asked. The physical education teacher combined a program that was to take place every morning, twice a week. The materials that were used in the physical education activities consisted in: volley balls, gymnastics table, mattresses, in door running field, hoops.

The program for the music activities was consistent with the Romanian musical curriculum and in addition there were spontaneous musical breaks during classes whenever the children were misbehaving or their attention was disrupted, but also for rewards they were left to play with the



instruments. The physical education activities were to be attended by the three students in the first hours of the morning, before the students' first course hour. The program of physical education class was divided in the following three sections: educating the reaction rate, remaining in the task compliance with workload, navigating through an applicative-route. Some examples of the tasks that were performed by the students were: track running with direction switching, slight bounce in place, running around obstacles, crawling and ball transportation from point A to point B.

## 5. Discussions

Considering the incipient stage of the program and its limitation in the number of participants, the programs results are visible for this starting level. The feedback received from the other teachers that teach other subjects at this students was positive, also the parents of the students saw improvements in their child's development.

Limitations of this paper consist in the implementation at the micro level, the short period of time that the program was developed and the limited number of participants.

Considering the complexity of dealing with a child with special needs, setting up an environment that is meant for his/hers proper development is a challenge both for the teacher and for the parents. The aim of the present program is to be included in more classrooms to help children with ADHD and also children with different disorders.

## References

- [1] \*OMECT 5379/2005, *Methodology on the organization and functioning of educational services through support teachers for children with special educational needs, integrated in mainstream education.*
- [2] \**The Diagnostic and Statistical Manual of Mental Disorder.* (2000) Fourth Edition, Text Revision. Washington, DC: American Psychiatric Association.
- [3] \*Centers for Disease Control and Prevention. *The association between school based physical activity, including physical education, and academic performance.* (2010) Atlanta, GA: U.S. Department of Health and Human Services.
- [4] Abikoff, H., Courtney, ME, Szeibel P.J., Koplewicz H.S. (1996) *The effects of auditory stimulation on the arithmetic performance of children with ADHD and nondisabled children.* J Learn Disabil. May;29(3):238-46.
- [5] Chou, P.T.M. (2010) *Attention drainage effect: How background music effects concentration in taiwanese college students.* Journal of the Scholarship of Teaching and Learning 10, no. 1: 36-46.
- [6] Godeli, M.R.C., Santana, P.R., Souza,V.HP., Marquetti, G.P. (1996) *Influence of background music on preschoolers' behaviour: A naturalistic approach.* Percept Mot Skills. Jun;82(3 Pt 2):1123-9.
- [7] Kirschner, S., Tomasello, M. (2010). *Joint music making promotes prosocial behavior in 4-year-old children.* Evolution and Human Behavior 31 (2010) 354–364
- [8] McConnell MM, Shore DI. (2011) *Upbeat and happy: arousal as an important factor in studying attention.* Nov;25(7):1184-95. doi: 10.1080/02699931.2010.524396
- [9] Moffitt, T., Melchior, M. (2007). *Why does the worldwide prevalence of childhood attention deficit hyperactivity disorder matter?.* Am J Psychiatry Jun; 146(6): 856–858.
- [10] Polanczyk, G., de Lima MS, Horta BL, Biederman, J. (2007) *The worldwide prevalence of ADHD: a systematic review and meta-regression analysis.* Am J Psychiatry. Jun;164 (6):942-8.
- [11] Simion, A. (2014). *The external factors of socio-emotional development behavior. The effect of music listening on primary school children.* Publisher: Eikon.