

## Boys and behaviour

### Alternative strategies that support boys with ADHD

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#### Abstract

**Boys are diagnosed five times more often than girls with Attention Deficit Hyperactivity Disorder (ADHD) and frequently medication has become the first option in addressing this condition. Many teachers find it difficult to cope with boys with ADHD due to a lack of understanding about ADHD symptoms and boys' personalities. This research study examined current practices used for boys with behaviour problems as well as trialling a number of alternative approaches such as music therapy, aromatherapy, yoga, building and construction, gardening and computer generated learning. During the implementation phase, teachers were closely observed and then participated in an in-depth interview with the researcher. The data revealed behavioural improvements when using the alternative strategies and demonstrated that these methods may be a better option than medication for some boys with behavioural problems, including ADHD.**

#### Background

Attention Deficit Hyperactivity Disorder (ADHD) has been described as a neuro-developmental disorder characterised by impulsivity, distractibility, and hyperactivity that manifests in early childhood (Sadiq, 2007, p. 632) and as the display of inattentive, hyperactive or impulsive behaviour observed more frequently and severely than is typically observed in other children of the same age (Efron, Sciberras & Hassell, 2008, p. 1). ADHD prevalence rates for school-aged children in Australia were reported as 11% (NSW Public Health, 2002).

The implications of the diagnosis of ADHD are a matter of concern to both parents and educators:

Children with ADHD commonly experience a broad range of difficulties, including social problems and difficulties at school. They have an increased risk of serious long-term consequences such as slow academic achievement, peer rejection and antisocial behaviour. The disorder also has a

profound affect on parents, siblings and teachers of children with ADHD. (NSW Public Health Bulletin, p. 4)

Another implication of an ADHD diagnosis relates to the use of medication to manage or reduce the symptoms. While many research reports describe the benefits of stimulant medication for children with ADHD, others are critical of its use. It is a controversial option due to the young age of the children, the amphetamine base of the medication and the dramatic increase of its use in recent years (Buckmaster, 2004). Between 1993 and 2003, prescriptions for dexamphetamine sulphate in Australia increased by 910% to 249,207 prescriptions in 2003 (Buckmaster, 2004). In the United States approximately 60% of children with ADHD are medicated, whereas in Finland, less than 1% receive drugs and by late adolescence little difference is found between those receiving medication and those not (McGuinness, 2008). In the context of medication, it should be noted, however, that many children who have been diagnosed with ADHD do not receive medication for the disorder (Fulton, et al., 2009).

Efron (2008) found that teachers have inadequate understanding and training in the area of ADHD and schools are frequently not meeting the needs of boys with ADHD, as teachers do not have adequate knowledge, understanding or strategies for dealing with these students (Cooney, 2008, p. 171). It has been estimated that nearly two thirds of those diagnosed with ADHD have probably been mistakenly diagnosed due to the initial misunderstandings of teachers (Gurian, 2002, p. 37; Quinn, 2004, p. 1). A pilot study in South London, UK (Sayal et al., 2006) reported that a brief educational intervention with teachers improved their ability to recognise children with, or at risk of, ADHD.

#### Strategies for dealing with ADHD in the classroom

Trying to teach a restless, inattentive child is never easy and this is compounded by many teachers'

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limited understanding of the behavioural profiles of children with ADHD (Arcia, Frank, Sanchez-LaCay & Fernaindez, 2000). This study also found that while teachers used a broad range of strategies, these tended to be reactive rather than proactive and did not constitute a comprehensive plan of action, which is necessary for managing students with ADHD.

Teachers need to accept that the child with ADHD will have challenging behaviours which, for much of the time, the child cannot control. Kindlon and Thompson (2000, p.202) recommend that boys with ADHD need four things: understanding, structure, clear guidelines in the classroom and support. West (2001, p.6) also agrees that structure is the most important strategy in order for students to understand expectations and limitations. Boys with ADHD will usually respond best in structured and predictable environments with clearly defined rules and regulations (Houghton, 2004, p. 18).

Some schools have responded to these findings and have altered their teaching styles and classroom structures, for example, breaking lessons into sections and incorporating breaks for the boys (National Centre for Education Statistics, 2008, p. 1). Houghton (2004, p. 18) recommends the teacher should include a combination of educational structure and support in managing ADHD behaviour.

Additionally, Myers (2009, p. 2) believes that if a child has difficulty following a plan, the teacher should assist in setting long-range goals and breaking the goals into realistic parts. If a child with ADHD has poor time management, use of a time limit, a timer, lists, calendars and charts will assist (Myers, 2009, p. 2). Additionally, attention-getting techniques, humour and a soft voice when giving direction are helpful (Myers, 2009, p. 1).

Using immediate feedback on behaviour, time out strategies and small group instruction lessons have obtained meaningful improvement in the behaviour of children with ADHD (Fabiano, 2003, p. 2). Classroom strategies should also include the use of visuals to support instructions, teaching students how to break their work into sections, monitoring their work frequently and colour coding timetables and books (Houghton, 2004, p. 16).

When applying strategies it is important to consider the reward that will be used. For reinforcement to be beneficial, it must be perceived by the student as good and desirable (Edwards & Watts, 2004, p.51).

Another useful strategy for boys with behaviour problems is teaching them how to self monitor their behaviour. West (2001, p. 2) noted that boys can be taught to use simple strategies such as looking for instructions on the board, raising their hands, waiting and seeing if they remember or quietly asking another child for help.

While helping the child avoid boredom, the teacher should also help the child alleviate stressful situations. These situations can be averted by having a time-out location, which should be a place for calming down rather than for punishment (Myers, 2009, p. 1).

### Building and constructing activities

Using body activities and hands-on lessons, boys with ADHD can learn to control their impulsivity and increase their concentration (King & Gartrell, 2008, p. 9). King and Gartrell (2008) suggest the use of block building and wood working and the provision of materials with which students can experiment. Building activities such as Duplo and Lego may be used to calm impulsive behaviour.

These changes were enjoyed both by the girls and the boys in the classroom but, in particular, worked best in calming impulsive behaviour in boys with ADHD. (King & Gartrell, 2008)

### Gardening

Other building and construction activities such as gardening have been shown to benefit boys with ADHD. According to Byrne (2009, p. 1), gardening improves symptoms of ADHD by promoting team work; boys work together in planning and developing the garden bed and boys develop care, respect and responsibility which motivates their learning in the classroom. Watkins (2008) recommends having boys with ADHD working on tasks in a collaborative learning group with a partner who has been previously trained on the task, as this improves boys' planning strategies and efficiency in activities.

### Behaviour management and the use of choice

Giving boys choices in their classroom activities is important (Loe, 2007, p.8). Choice making, peer tutoring and computer-aided instruction are strategies that will support boys' appropriate behaviour. Additionally, William Gasser's Choice Theory is an appropriate behaviour management approach as it allows students to stop and evaluate their behaviour. Choice Theory advocates the utilisation of five key aspects: developing goals, establishing classroom rules, allowing students to make classroom and learning suggestions, achieving commitment from students and implementing consequences (Edwards & Watts, 2004, p. 134). Wilson (2006, p. 1) also agrees with Gasser's theory and recommends giving boys with ADHD more than one choice in activities. There is no easy solution for the management of ADHD but asking a child with ADHD what will help them, increases teachers' understanding of how they like to learn. "It is amazing how often their opinions are ignored or not asked" (Hallowell & Ratey, 2005).

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## Physical activity

Given that fidgeting is one of the symptoms of ADHD, physical activity is important to children with ADHD because they crave movement and need time to use their excess hyperactivity. Loe (2007, p. 9) believes that physical activity is helpful for children with ADHD as it has been shown to reduce disruptive behaviour inside the classroom. King and Gartrell (2008, p. 2) consider the outdoors as a vital teaching tool for boys' behaviour development and recommend creating indoor and outdoor body experiences, experiments, building and constructing activities and dramatic play to help boys with their concentration and attention.

Gurian (2002, p. 47) found that movement for boys seemed to help not only in the stimulation of their brains but also in the management of their behaviour. Incorporating exercise activities into the daily classroom schedule is believed to be an appropriate way of enabling boys with ADHD to control their movements and to increase the likelihood of experiencing school success (Mulrine, Prater & Jenkins, 2005, p. 1).

## Aromatherapy

Smells can influence our moods and levels of anxiety and aromatherapy suggests that mental alertness, calmness and relaxation can be achieved (Jensen, 2000, p. 66). Berne (2002, p. 119) has studied the effects of aromatherapy on brain waves, with results showing that oils such as orange, jasmine, and rose enhance calmness and tranquillity in the brain. Furthermore, some essential oils such as lavender and rosemary have neuro-stimulating properties that help people relax (Sadiq, 2007, p. 6). Since children with ADHD do not always understand why they are acting out certain behaviours, Jefferies (2003, p. 64) recommends an important lifestyle change such as the use of aromatherapy to help create a calm, positive environment.

## Music therapy

Children with an emotional disturbance and / or behaviour disorder benefit from the stress reduction technique of music therapy. Weston (2008, p. 1) believes that aromatherapy and soft music should be used in schools to help with behavioural problems. By simply playing low volume music in the background, students find it easier to relax and improve their learning. Appropriate music can help create a positive learning environment that may improve the behaviour of students (Jensen, 2000, p. 60). Research by Madewell (2009, p. 1) found that by playing classical music, students with ADHD become attentive and relaxed.

## Meditation and yoga techniques

Stress, which may have a negative impact upon the health, development and wellbeing of children, is a symptom of many children with ADHD. Thomas (2002, p. 2) recommends that relaxation exercises such as Tai Chi can help manage behaviour. According to Myers (2009, p. 1), combining simple relaxation techniques such as deep breathing with positive visual imagery helps boys with ADHD improve or learn new skills. Yoga is a mind, body and spirit practice, including physical exercises, breathing techniques, relaxation, meditation and mindfulness. Cheesbrough (2006) believes that regular yoga practice can improve children's behaviour and schoolwork. "Hyperactive and disruptive children will grow calmer, particularly through the practice of breathing techniques" (Cheesbrough, 2006, p. 29).

## Boys and technology

In making lessons as 'real' as possible, Browne posits that, "Technology is a great vehicle for boys with ADHD in learning at school" (Browne, 2001, p. 40). He recommends that teachers should link both communication and technology skills. Boys with behaviour problems, including ADHD, will commonly favour computer related learning as it makes instruction visual, allows them to participate actively and increases academic opportunities. Boys with ADHD will be assisted academically when teachers apply "boy orientation" topics to programs of work, for example, technology and enterprise challenges. This may include tasks such as designing badges (Browne, 2001, p. 50).

## The current study—Method

This study explored ways teachers can manage symptoms of ADHD by using a number of different strategies which would appeal to boys and specifically address their ADHD symptoms.

A three-phased, qualitative mixed methods, research design was used: an implementation phase; followed by observation of the participants; and an in-depth interview.

The study was conducted in a country town on the Mid North Coast area of New South Wales at the larger of the two public schools which provided for students from Kindergarten to Grade 6. The research proposal was presented at a staff meeting and teachers were invited to take a booklet that outlined the strategies and techniques that would need to be implemented in the classroom over a five-month period. Sufficient detail was provided to enable the teachers to apply the strategy effectively. They were invited to identify themselves on the form and indicate the strategies they would like to

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trial. The booklet also included a feedback form which allowed the teachers to make comments after the strategy was trialled. A time of two weeks was suggested for trialling each strategy. The strategies were derived from an extensive literature review of alternatives to the use of medication for ADHD.

## Phase 1: Implementation

In this three-phased study, the first phase consisted of the implementation of specific teaching and management strategies over several months by the five teachers who had agreed to participate. The strategies trialled were:

1. Building and constructing
2. Gardening
3. Behaviour management based on Choice Theory
4. Indoor and outdoor body experiences: (a) physical activity, (b) aromatherapy, (c) music therapy, (d) yoga
5. Technology assisted learning

The participating teachers were asked to answer a series of questions and given opportunity to comment critically on the strategies that were implemented to manage boys with ADHD.

Amongst the classes involved there were a number of important variables such as the number of boys who had been diagnosed with ADHD or who had displayed symptoms of ADHD in the participating teachers' classrooms, the different behaviours that were displayed by the boys and the age of the boys with ADHD.

## Phase 2: Observations

The researcher carried out observations over a six-week period.

## Phase 3: Semi-structured interviews

The third phase involved an in-depth, semi-structured interview which was used to gather data to describe the degree of understanding the teachers had about boys with ADHD and to determine which management strategies were perceived to be most effective in improving boys' behaviour and concentration.

The results from the three investigative procedures: booklet feedback, observations and interviews were then collated and analysed.

## Results

All five of the teachers (100%) returned their booklets and nominated to be interviewed. Four of the participants (80%) trialled indoor and outdoor body experiences including strategies of music therapy, aromatherapy, yoga and physical activity. Four of the participants (80%) trialled building and constructing

activities, three of the participants (60%) trialled the behaviour booklet, one participant (20%) trialled computer generated learning, and two of the five participants (40%) trialled gardening.

## Building and constructing strategy

Three out of the five teachers trialled this strategy. All three of the teachers reported successful results in boys' attention and behaviour during building and constructing lessons. These teachers reported that:

- Boys appeared to be less hyperactive and fewer ADHD symptoms were apparent when they were building. (Lego and building blocks were used in Science and Mathematics lessons.) (Teacher 5)
- "Boys are definitely more engaged when using hands on activities." (Teacher 2)
- "Boys enjoyed building and construction activities, they learnt by doing." (Teacher 5)
- 'Cogs and wheels' were beneficial building and constructing activities. (Teacher 1)
- "Boys could not wait to continue working on activities." (Building and constructing activities were used in Mathematics through measurement, number and space; and in Science through toy making and bridge challenges.) (Teacher 2)
- Building and constructing activities developed concentration and calmness in boys with ADHD. (Teacher 5)
- Building and construction methods assist perceptual learners and are a good way to "link student prior knowledge to curriculum". (Teacher 2)
- "It is possible to build in social skills [when using building and constructing activities]." (Teacher 2)
- "Groups need to be small for the benefits to show and be well supervised." (Teacher 1)

## Gardening strategy

Two teachers out of the five explored the gardening strategy. These two teachers found such pleasing results that they discussed the results with other teachers and suggested they implement their own garden.

These teachers reported that:

- The boys took the initiative to set up a selling plan; develop prices for the vegetables and rule up a bank book to record their credits and debits. (Teacher 1)
- The boys with ADHD built a good sense of ownership with the gardens, which could then be used as a reward for stimulating learning and focusing students in the classroom. (Teacher 1)

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- As the boys began to enjoy and find satisfaction in gardening, the teacher was able to set them special research and homework tasks. (Teacher 1)
- “They didn’t even realise they were doing Math.” (Gardening was integrated into Math measurement lessons.) (Teacher 2)

### Behaviour management strategy

Three out of five teachers tested the behaviour booklet over a two-week period. All of the three teachers agreed that Glasser’s Choice Theory is beneficial for boys, especially those with a behaviour problem; however, structure needs to be constant and consistent.

Students were shown their booklet and it was their choice to follow the given outcomes. Teachers held the book at their desks, but students were involved in the discussion of their achievements. If students did not choose the appropriate behaviour, they could not receive the reward that had been made clear to them at the commencement of the activity.

It was found that:

- Boys chose the correct behaviour because they were in control of their behaviour. “Boys with ADHD need to have choice and need to feel in control, the teacher needs to give the child structure in order for this to work successfully, without structure the boy becomes the leader.” (Teacher 5)
- By setting a reward or a privilege for the student that was personalised or seen as desirable the student worked harder at achieving and focusing. (Teachers 1 and 5)
- Boys with ADHD need to be rewarded instantly. (Teacher 2)

Teacher 3 used a sticker chart that worked towards a reward. It was apparent that the boys were motivated to achieve because they were working towards a goal and responded well to these rewards. However, Teachers 1 and 2 reported more pleasing results when using the behaviour management booklet (Choice Theory). This is probably because they first found out what interested the boys and developed a reward from these interests.

### Indoor and outdoor body experiences strategies

Teacher 4 used daily physical activity such as walking, running and in-class movement skills to stimulate learning and gain concentration as well as provide breaks in lessons. After using outdoor movement activities it was reported that, “Boys enjoyed the movement and looked forward to moving again, it seemed to calm boys when they came back inside.” (Teacher 2)

Music therapy, aromatherapy and yoga techniques were used to increase concentration and calmness in boys with ADHD. Regarding these strategies, teachers reported that:

- “Music was very settling for students while they were doing work.” (Teacher 2)
- “Daily integration of classical music after a physical activity and during Mathematics or English stimulates concentration and eliminates much disruptive behaviour.” (Teacher 5)
- These techniques (music therapy and movement activities) would work better when they become part of the classroom routine. (Teacher 2)
- After using aromatherapy regularly in the classroom, ‘orange’ was found to be the most successful in calming but still motivating boys with ADHD. “While the oil was burning I noticed a change in the boys’ physical bodies, they seemed to unwind and calm down, and it helped in eliminating many messages and disruptions around them.” (Teacher 5)
- “Yoga allowed boys to use their bodies to expel excessive hyperactivity and at the same time loosen muscles and calm down.” (Yoga was used on a daily basis.) (Teacher 5)

Teacher 5 told the boys they were going to do ‘strength and balance’ activities. This seemed to result in better participation than in classrooms where the term ‘yoga’ was used.

### Technology assisted learning strategies

Two out of the five teachers chose to write feedback on using computers to motivate learning in boys with ADHD and commented that computer generated learning stimulated learning and interested the boys with ADHD. Teacher 5 also used interactive white boards to stimulate and interest learning. In these lessons boys with challenging behaviour were interested and less disruptive than in ‘normal’ lessons.

### Discussion

This study has revealed that boys with ADHD need teachers who can implement strategies that cater for their ADHD symptoms, such as hyperactivity and aggression. The research aim was to explore a number of alternative methods that were thought to be beneficial to boys with ADHD, as suggested by various researchers. However, the study found that one strategy alone was barely enough to cater for boys with ADHD. Strategies needed to be used in conjunction with one another, modified and integrated into the timetable in order to give the classroom structure and routine. Gardening

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became a reward strategy for the boys with ADHD. By integrating gardening and Choice Theory strategies, boys were given a daily choice to work productively and follow classroom rules in order to be involved in gardening. The boys became immersed in gardening, developing teamwork skills, Mathematics and English skills and a sense of pride and ownership.

Music was found to relax but also stimulate the students. Classical music was found to be the most effective type of music. In the afternoon as the boys became restless, aromatherapy was successfully used. Observation found that aromatherapy settled the boys, but at the same time also stimulated them, giving them creativity in story writing and discussions.

The major finding of this study was that boys with ADHD need to be understood. Teachers need to get to know them, develop a relationship with them, find their interests and understand their symptoms in order to implement a daily plan incorporating appropriate strategies.

Observing the five participants over six weeks, it became apparent the symptoms of ADHD, including hyperactivity, aggression and a lack of concentration were improved and minimised through the use of:

1. Structure and routine
2. Choice in their behaviour (Glasser's Choice Theory)
3. Desirable, instant rewards that relate to learning
4. Learning activities they perceive to be significant
5. Learning that is broken up through movement
6. Relaxation techniques that have a calming effect

While medication can be of value in settling the child with severe ADHD, this exploratory study found that alternative strategies can benefit boys with this condition. There is now a strong need to repeat this study with larger numbers and in a controlled and measured context to provide more detailed information. Attention Deficit Hyperactivity Disorder has been found to have a variety of aetiologies; this study has revealed that a variety of strategies, integrated consistently throughout the timetable and all within a framework of a caring educational relationship with the teacher, is highly effective at meeting the child's needs. It is the responsibility of the teacher to get to know students and understand the boys' symptoms of ADHD. Strategies can then be developed that support these boys and the classroom teacher. These steps could make positive, lifelong differences and are worth trialling prior to medication. **TEACH**

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