

Study of applied behaviour analysis



**ASSIGN
BUSTER**

Applied behaviour analysis is an intervention strategy producing a remarkable improvement in social human behaviour – the targeted behaviour to change might have real-life implications for the person (applied), behaviour is assessed by conducting structured observation and measurement (behaviour), and the behaviour is analysed in detail within the environment to determine influencing factors (analysis).

The general assumption is that by manipulating environmental events, behaviour can consequently be changed in a more effective way leading to improved or wished behaviour. Thus, behaviour analysis focuses on teaching new behaviours, influences the scale and frequency of current behaviours or eliminates particular ineffective behaviours. The emphasis is to look for the specified function of conduct by measuring it continuously over an extended period. Interactions are hence broken down into 3 main parts: antecedents (stimulus that immediately precedes the behaviour), behaviour and consequences (stimulus that immediately follows the behaviour).

The main programme typically involves teaching linguistics, academics, cognitive skills, social skills and adaptive living skills across all settings (eating and food preparation, toileting, dressing, personal self-care, work skills) and breaks down all these skills into single small tasks which are then taught in a highly structured, consistent and hierarchical manner. The focus is on rewarding or re-enforcing desired behaviours and ignoring, redirecting or discouraging inappropriate behaviours.

Applied behaviour analysis contributes to a full range of areas such as education, health and exercise, medical procedures, parenting and severe

mental disorders. ABA-based interventions are used to treat humans with a wide range of different diagnosis and behaviours, notably autism spectrum disorders (ASD). Behavioural analysts work in a single or one of four interrelated fields: behaviourism, experimental analysis, applied behaviour analysis and specialist practice.

It is without doubt not a “cure” for ASD or any other disorders, but some people who have followed an ABA approach have been found to make considerable progress.

HISTORY OF APPLIED BEHAVIOUR ANALYSIS

It was Mr. Fuller who, in 1949, first conducted a study of the implementation of operant conditioning with a human being.

1959 marks the formal beginning of ABA were linked to the publication of “The psychiatric nurse as a behavioural engineer” by Ayllon and Michael.

The appearance of contemporary applied behaviour is traced backed to 1968 with the first issue of the “Journal of applied behaviour analysis (JAVA)” being published and the work of Baer, Wolf and Risley “Some current dimensions of applied behaviour analysis”.

FORMAL DEFINITION of APPLIED BEHAVIOUR ANALYSIS

“ Applied behaviour analysis is the science in which tactics derived from the principles of behaviour are applied systematically to improve socially significant behaviour and experimentation is used to identify the variables responsible for behaviour change” (Cooper, Heron and Heward, 2007: 20). Within this definition, by Cooper et al. (2007) six core components are present: First, attitudes and methods of scientific inquiry lead the application of ABA. Second, behaviour change routines are characterized and conducted systematically and technologically. Third, only the changes of conduct conceptually derived from the elementary principles of behaviour qualifies as applied behaviour analysis. Fourth, socially meaningful behaviour (including reading, academics, social skills, communication and adaptive living skills such as eating, dressing, toileting, and self-care) is the attention of ABA. Fifth and sixth, ABA concentrates on noteworthy improvement in fundamental behaviour and evaluates the factors responsible for that improvement.

DIMENSIONS of APPLIED BEHAVIOUR ANALYSIS

According to Bear, Wolf and Risley applied behaviour analysis must be “ applied, behavioural, analytic; and in addition, it should be technological, conceptually systematic and effective, and it should display some generality” (1968: 92). Nearly twenty years later these seven initial key characteristics remain running as “ applied, behavioural, analytic, technological, conceptual, effective, and capable of appropriately generalized outcomes” (Baer, Wolf and Risley, 1987: 314). Today, more than 40 years later Bear, Wolf and

Risley's 1968 article is still used as the classic description of ABA and the seven terms continue to serve as the basic criteria for defining and judging the importance of ABA.

EFFECTIVENESS and LIMITATIONS OF APPLIED BEHAVIOUR ANALYSIS

“...the overwhelming evidence suggests that the treatment of choice for maximal benefit to autistic children is a systematic, [intensive] behavioral / educational approach” (DeMyer, Hingtgen and Jackson, 1981: 388)

The effectiveness of ABA-based intervention in children with ASD is perhaps the best documented through decades of research. The first positive results of ABA with autistic children were published in the 1960s by Mr. Lovaas and his colleagues. Their research outcome disclosed significant improvements (such as increased language, social skills, play skills, academic skills, reduced behavioural problems) in many autistic children, some of them even achieving average developmentally and educationally functioning (Lovaas, 1987). This early findings were amended by gains in specific skills or in general intelligence through further analysis (Anderson, Avery, DiPietro et al.; 1987) and also supported by other researchers (Birnbrauer and Leach, 1993; Sheinkopf and Siegel, 1998).

A substantial part of the research and studies done around the efficacy of Applied Behaviour Analysis has supported the effectiveness of ABA-based interventions in the assessment and treatment of behavioural issues associated with autism (DeMyer, Hingtgen and Jackson, 1981; Matson, Benavidez, Compton et al., 1996; McEachin, Smith and Lovaas, 1999; Smith,

1999; Campell, 2003; Sallows and Graupner, 2005; Cohen, Amerine-Dickens and Smith, 2006). This large body of literature review empirically supports the successful use of ABA-based procedures to reduce problematic behaviour and increase appropriate skills for children with autism. However, a critical examination of ABA is always necessary to analyze the real potential of this intervention in the treatment of autistic children.

Although Applied Behaviour Analysis is widely recognized as the most powerful approach in the education and management of autistic behaviours and many researchers state that it is the only really successful way in working with autistic children, ABA has not been without controversy and constantly appeared central to a range of debates over the last years.

It must be noted, that there are also (some) limitations and risks associated to and with the use of ABA and its effectiveness.

One major criticism relates to the highly structured Discrete Trial Training, a technique used within ABA to establish learning readiness. According to Myers and Johnson (2007) there are severe problems of prompt dependency, which is routine responding of learned behaviors, that are not transferred to spontaneous use in the child's natural environment.

Further, ABA is a very intense and structured intervention – stressful reactions by the children could lead to adverse treatment outcomes (Schoen, 2003).

There is also considerable discussion about whether ABA should be used as a sole treatment approach. The range of difficulties, characteristics of the

autistic child and his family and range of abilities would probably not suggest an exclusive use of an ABA-based program, although it might still be appropriate for some families (Simpson, 1998).

Another risk to consider is that due to the increased demand for ABA many individuals claim to “perform” ABA, providing services and set programs – however, not all of them have the proper education and experience (Green et al., 2007).

Time constraints and the high costs of such an intensive program additionally impose some limitations to an ABA-based intervention.

BEHAVIOURAL INTERVENTIONS FOR CHILDREN WITH AUTISM – Putting a behaviour analysis together

When an autistic child does something unusual in our view, we often ask ourselves why he is acting like that. Unfortunately there is no general answer for all different cases as “the same behaviours may be performed by different people for different reasons, different behaviours may be performed by different people for the same reasons, and the same person may perform the same behaviour at different times for different reasons” (Kearney, 2008: 59) and we simply often do not know why an autistic child is behaving in this particular way.

What we know, as already mentioned earlier in this paper, is that early, intensive behavioural interventions can be effective and produce improved outcomes for autistic children. “Intensive” covers most days of the week (5-7), many hours per day (6-8), on many of the child’s daily settings (school,

home) and “early” refers to children as young as 2 or 3 years of age (Lovaas, 1987; Connor, 1998).

When starting an ABA-based program for an autistic child, a behavioural analysis consisting of the ten steps (operationalization, baseline, antecedents, place, time, consequences, positive reinforcer and aversive stimuli, plan, monitor, and evaluation) has to be set up (Kearney, 2008):

First, the particular (problematic) behaviour wished to be modified must be specified/operationalized objectively to start with the most effective base possible.

Second, a baseline, which represents the frequency of the peculiar behaviour under normal circumstances, has to be established. For this purpose the child and his interactions are carefully observed over a set period of time. Comparing the later treatment with this initially baseline numbers will help to monitor the target behaviour and conclude if improvements are occurring, if the situation did not change at all or if things actually got worse. During treatment it is not uncommon to carry on with some kind of observation.

Third, identifying the antecedents (what happened right before the focused behaviour occurred?) is the next necessary part of the whole process.

Fourth, it should be noted where the behaviour precisely occurs and which events are going on in the located places. At the same time it is also wise to look where the same behaviour does not happen. These observations can help to find out what influences the target behaviour.

Fifth, it is essential to keep records of the time when certain behaviours go on, so that a connection between a specific time of the day and individual behaviour may be observed and evaluated.

Sixth, to determine the consequences (what happens immediately after the behaviour?) is indispensable. With this step the base for working is complete: antecedents, behaviour, and consequences are defined.

Seventh, it is crucial for the best possible outcome of the treatment to ascertain what can be used as a reinforcer and what is having an aversive effect. The simplest way to determine would be asking the patient directly what he likes and dislikes (Reinforcement Schedule Surveys) as well as asking the caretakers, teachers or other close persons. An alternative way would be by observation in a free choice situation when given a choice of a variety of possibilities.

Eight, a programme must be shaped. With all the information, details and data collected so far it is time to define clear goals and work towards them.

Ninth, it is necessary to monitor the developed and implemented programme carefully and constantly. Additional data is continuously collected to be able to detect even the smallest changes since the baseline was created. Testing if the programme established is really effective is often called probing.

Last, is the evaluation and the adjustment of the program. With the results of monitoring the whole intervention it may be necessary to adjust the program to work more effectively.