

Possibility of Inclusive Adaptation of The ABA Intervention at School

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Summary

Applied Behaviour Analysis (ABA) is the applied science where strategies are derived from the principles of behaviour and are applied to improve meaningful social behaviours [3]. This study investigates the possible inclusive value of the use ABA in schools in Saudi Arabia. Interviews were conducted with two ABA therapists and a support teacher in order to address this possibility. From the research findings, it emerged how ABA is one of the cognitive-behavioural intervention models and therefore, can be generalised to other disorders or diagnoses and the applied behavioural analysis does have an inclusive value as it structures individualized activities for the increase of both personal and social skills and these activities allow the subject to work on his or her skills, which are, however, absolutely preparatory to the inclusion of the subject in the classroom context.

Keywords:

ABA therapy, intervention, inclusive value, education.

1. Introduction

The goal of this study is to understand how applied behavioural analysis is reconciled with the school context and if it has an inclusive value. Two case studies were conducted using interviews with two ABA therapists and a support teacher. There is an initial presentation behaviours to which ABA can be applied including decline in communication and social and imagination deficits. Furthermore, there are the case studies, with particular attention paid to the planning of the educational intervention. The methods of carrying out the survey are specified with the description of the participants. The answer to the main objective of this study, which is to understand if the ABA intervention at school can have an inclusive value, is based on what emerged from the researcher's survey, will be detailed in the conclusions.

2. Literature Review

2.1 Applied behavioural analysis: ABA therapy

ABA is a set of techniques and procedures based on the scientific principles of behaviourism. The behavioural approach is not necessarily specific to children with autism.

However, in the last thirty years-controlled research studies published in important scientific journals (Journal of Applied Behaviour Analysis, Journal of Autism and Related Disorders), have shown how an intensive and early behavioural approach, and the most effective intervention capable of producing more long-term progress in this population. By early intervention, we mean an intervention that begins at least before the age of five. Some studies indicate better outcomes for children who begin as early as three years of age [4]. ABA should therefore not be considered as a specific model of exclusive intervention for autism or other forms of disability, but rather an exceedingly complex methodology that involves the application of precise principles and techniques according to a specific and analytical design of the intervention [7]. Behaviourism (or behavioural psychology) is an approach to psychology, based on the assumption that explicit behaviour is the only scientifically studyable unit of analysis of psychology, as it is directly observable. What matters is to arrive at a thorough empirical and experimental understanding of the relationships between certain types of environmental stimuli and certain types of behavioural responses [8]. The behavioural analysis consists of identifying the consequences and antecedents of behaviour, instead of trying to identify a hypothetical state or inner entity. To be more specific, autism is seen as a disorder that certainly has neurological origins, but which problems can be conceptualized as excesses and deficits in the behavioural repertoire. Indeed, the behavioural analysis does not deal with the organic cause of the disorder [6]. However, it nevertheless manages to answer the question of how to manage behavioural excesses (through the functional analysis of behaviour and the implementation of specific strategies) and to increase areas in deficit (through an individualized curriculum that is introduced using specific teaching and the manipulation of antecedents and consequences) until medicine finds other solutions [18]. Autism is divided into different behavioural problems, and attempts are made to intervene in as many areas as possible. The goal is an improvement in the total level of functioning of the individual and a decrease in behavioural excesses. These are very structured educational interventions, which involve teaching sessions in a one-to-one relationship for the acquisition of new learning, which must then be applied in the context of the child's life. For this last aspect, parents

must be informed and actively involved. A large number of procedures and techniques are used for this purpose that must be customized and continuously updated according to the evolution of the child. The ABA-based programs examine all areas of development, not just those specifically deficient in autism [17].

The educational objectives, which must be declared and measurable, concern many prerequisites for learning and socializing such as [20]:

- learning to learn: watching, listening, imitating, following instructions, discriminating;
- communicate: acquire tools for effective communication such as language for signs and images, understanding, vocal production, from simple vocalizations to sustaining complex conversations;
- socialize: mutual exchanges, functional play with peers, expression and understanding of emotions, appropriate use of toys;
- reason: problem-solving;
- achieve personal autonomy: personal hygiene, orientation in space and time, awareness of dangers;
- acquire school skills: reading, writing, drawing, mathematics.

It is possible to note that the interventions are aimed above all in favour of the so-called symptomatic triad, which affects the sphere of social interaction, communication and repetitive and stereotyped behaviours [19]. Complex skills are divided into small phases, defined in observable and measurable terms, which are taught one by one until the skill itself is acquired and mastered, such as washing and drying hands. Problem behaviours are addressed, interpreted and possibly replaced by acceptable behaviours [15]. As the child progresses and acquires language, teaching becomes more complex and broader, based on his abilities. The first ABA-based approaches dedicated explicitly to autistic children date back to the late 1960s; these were mostly behavioural interventions aimed at teaching specific skills to improve some of the most critical aspects that characterize autism: socialization, the communicative sphere and adaptive behaviours [17]. ABA is aimed at applying the data emerging from the experimental analysis of behaviour to understand the relationships between behaviours and the various external conditions, thus formulating hypotheses on why a given behaviour occurs in that particular context and, consequently, implement a series of interventions and strategies aimed at changing the behaviour or contextual factors involved. The intent is to apply the principles of behavioural analysis, thus increasing the appropriate behaviours, to the detriment of the problem ones, and viewing the related changes over time. The theoretical

orientation to be inspired by is, without a doubt, behaviourism, according to which behaviour is the only characteristic that can be changed [11]. Every ABA-VB intervention takes place in a place, in a time, in a relationship between people. In the behavioural and psychological sciences, this is commonly referred to as setting [1]. In the construction of a setting, specific fundamental rules must be followed which concern: the physical environment (organization of space, furnishings and materials), the regulatory environment (rules of conduct) and the interpersonal environment (exchange between people). In ABA programming there are at least two settings that are taken into consideration: the natural one which takes the name of Natural Environment Training (NET), and the structured Discrete Trial Teaching (DTT) [13]. In the NET setting, the physical environment where one works is the natural one but is enriched with intrinsically motivating material for the child, previously selected and arranged by the technician. The setting is then improved with material that may be of interest to the child and allow them to pursue the established learning goal. Being able to interact and operate within this setting is as desirable as it is complicated [1]. NET is a type of teaching in a natural environment, and can take place both individually and in groups, and is based solely on the motivation of the child. The NET is used when we want to teach the child to make a request since, based on the motivation and therefore on something he wants, the child will be more predisposed to learn. When what is being talked about has value, and all the questions asked and the requests asked are related to its motivation, then the operator is applying a NET. It is essential to underline that in the NET [13]:

- both the stimulus object and the motivating activity are always chosen by the child and must be changed after a few sessions to prevent it from becoming saturated;
- the operator and the child play with the stimulus objects as they are functional within the interaction;
- the child's attempts to respond verbally are reinforced natural, and concrete reinforcements are matched with social reinforcements.

DTT is a typical setting of formal learning such as in the context of a school classroom: in which there is an arrangement of well-defined study stations (desks for pupils, the teacher's desk); the activities are chosen and proposed in this case no longer by the child, based on his interests, but by the operator, who decides what to do, who must do it, when and for how long it must be done, why to do it, and with what criteria the child's performance will be assessed.

Lovaas was one of the first to use this approach with autistic subjects and, over the years, and he has

increasingly perfected and elaborated it up to the so-called proposal of his Discrete Trial Training [2]. Someone may object that in this way, the child's self-determination to learn is severely limited due to the reduced motivational instances. One of the major criticisms raised is precisely that of being excessively artificial in teaching and contexts, therefore with considerable consequences regarding the possibility of adequate generalization of the skills acquired. This is one of the most widespread criticisms of Lovaas's model. Nevertheless, almost all the scholastic and non-scholastic experience is characterized by similar conditions [5]. The DTT or structured teaching (or for separate sessions) provides that the skills to be learned are divided into sequences of sub-objectives and proposed within the activities in a one-to-one relationship with the adult. The teaching procedure requires that three components are taken into consideration: education, response and consequence [9]. In this case, the child's progress is assessed through constant and precise data collection, which allows determining the percentage of correct answers and possibly the passage to the next sub-goal.

2.2 Teaching through verbal operants

ABA is also based on a series of verbal operants. Its shape does not always define a word. However, its definition is determined by its functional category: this means that the same word, for example, "candy", can have different meanings depending on the conditions in which you have learned to say it. Many autistic children do not have a verbal repertoire that includes the answers for each of the categories relating to the same word (topography). This is because the categories are functionally independent, and the answers (or words) may not transfer to all categories without specific teaching. This is how the word "candy" will be [16]:

- mand
- tact
- echoic
- motor imitation
- intraverbal
- listener responding

The biggest obstacles that need to be worked on are to make sure that the child has a good relationship (pairing) with the operator and that he can request many objects insight. As soon as these goals have been reached, it will be time to begin teaching verbal operants [10]. It should also be ensured that there are plenty of opportunities for the child to provide verbal responses during the intensive Verbal Behaviour (VB) teaching sessions. It is challenging to teach children verbal operants but, if you keep an eye on the goal

(i.e. that a child can communicate), the effort will be well rewarded.

2.3 ABA and school inclusion

There are still many parents who in their hearts would prefer to entrust their children to special schools or classes and have feelings of envy towards countries such as Germany or England where these conditions prevail [12]. There is no lack of grey areas and blatant failures if we take into consideration individual situations. However, overall, the data are incontrovertible, and this is the main reason that is causing a growing and unstoppable spread of inclusive schools throughout the world. The central question is why the ABA should prefer the inclusive school to the special one. The answer is straightforward, for its ambition to normalize the life of the person to whom the intervention is addressed. Regarding the autism spectrum, the term normalisation was used by Lovaas and, although it has aroused quite a few controversies, it is the keyword to understand the close link between inclusive school and early ABA-VB intervention [14]. At least for the western population of the planet, school is the principal meeting place for children up to the age of majority; therefore, not foresee significant changes in this virtual living environment would be a contradiction concerning the very assumptions of the ABA. The intensive intervention aims to create all possible conditions for the child to find the best way at his disposal to adapt to the demands of his daily life environments and not vice versa, that is, to adapt the external environments to his special educational need. This is one of the main differences compared to the TEACCH approach, which has always favoured the particular school for children with autism: autism is a chronic disorder whose adverse effects can be improved and converted into socially useful activities. The primary purpose of the intervention is the optimal adaptation to the environment and to modify the latter to adapt to the deficit.

3. Hypotheses

The hypotheses that the study intends to verify, through an interview with ABA therapists and a support teacher, are the following:

1. ABA intervention at school can help the integration between the student's skills and social skills
2. ABA has inclusive value at school
3. Team working at school can take place between ABA teachers and therapists.

4. Research question

This research aims to address the following question:

“Can ABA intervention have an inclusive value in a Saudi school?”

5. Research Methodology

In social research, the appropriate choice of methods and investigation techniques is important to answering research questions. A qualitative interview was conducted with the ABA therapists and the support teacher. During the interview, the questions were related to attitudes and opinions regarding the use of ABA.

5.1 Participants

The three respondents (indicated respectively with R1, R2 and R3) were as follows:

1. R1 graduated in professional education, they attended a first-level master's degree in Applied Behavior Analysis and has four years of experience as a home ABA therapist. For three years, R1 has been supported at school to continue working with some children and young people that they already follow at home.
2. R2 graduated in education and training sciences, they attended a first-level master's degree in Applied Behavior Analysis and they have six years of experience as a home ABA therapist. For four years, R2 has been supporting teachers at school with some children and young people, some of whom they follow at home.
3. R3 achieved a degree in Exercise Science and then took the support qualification exam. R3 has been a support teacher for ten years. For six years, R3 has been supported by ABA therapists who follow her and monitor her on the correct development of some specific ABA teachings that R3 has adopted and now habitually applies to teaching.

5.2 Interviews

The interview with R1 was structured in such a way as to include initial generic questions on the ABA intervention and on the therapist's personal experiences in the school context. Questions were associated with the perceived strengths and weaknesses of ABA intervention, adaptations for effective implementation in schools, the extent of the involvement of an ABA therapist in activities in the school, whether schools in Saudi Arabia are ready for cooperative projects between teachers and therapists and general questions about the inclusive value of ABA. The interviews with R2 and R3 including the same questions

with the addition of questions about the experience of the presence of therapists for R3 specifically and the issue of collaboration between teachers and therapists.

6. Findings

The results of the qualitative interview were analysed against the hypotheses of the study. In the following, the findings of the interviews are presented according to the hypotheses.

6.1 ABA intervention at school can help the integration between the student's skills and social skills

In general, ABA therapists argue that ABA, conducted both in a home setting and in a school setting, focuses a lot on the development of personal and social skills. Work initially carried out in a structured environment, with a one-to-one context, is then generalised in the reference contexts, for example, in the case of the school, in the classroom context. Both the support teacher R3 and the ABA therapist R2 said that older children, first-grade high school, had the opportunity to actively involve their classmates. These pupils explained what ABA was and they could get closer to the reality of a classmate under ABA. Indeed, the classmates of those under ABA therapy became curious and wanted to help, where possible, in the choice of activities. The teacher R3 said that the classmates were outstanding in consolidating communication skills children with behavioural disorders. In fact, during the DTT they had worked a lot on the training minds, that is, on the verbal requests, so they asked the classmates to be attentive to those children, to understand when they wanted something, or for example if they were unable to tie their shoe laces and wanted someone to do it, they advised themselves that rather than rushing to do it for them, they would wait for them to ask. In this way, a generalisation of the skills acquired during structured teaching took place. R1 explained how it is important to generalise personal skills concerning peers and how important it is to generalise the skills you work on at home, as well as at school.

6.2 ABA has inclusive value at school

Regarding this hypothesis, the teacher R3 and therapist R2 immediately agreed. Especially concerning the case of some of the children with behavioural issues. They immediately pointed out how the companion children were valuable in the childrens' educational and scholastic growth path, they were close to them and sometimes, exploiting the power of the peer group, they managed to make them do

things that not even the teacher would be able to propose to those children. As for inclusion in the wide-ranging school context, it worked well with school collaborators who have established a good relationship with pupils and with curricular teachers. Both the teacher and the therapist spoke about a very serene atmosphere between pupils with behavioural issues and the teachers and that where possible, both parties work towards increasing the child's skills.

The therapist R1 said she did not observe a significant interaction between the pupils and the curricular teachers and noted that while there was a sincere affection towards them; on a didactic level, the one who took care of him was exclusively the support teacher. As regards socialisation with companions, R1 stressed that this is a shared goal in both the individualised education plan and the ABA program and that it has begun to bring positive results.

With one of the pupils they were unable to stay in circle time; they assumed attitudes of avoidance or flight. Over time, work was done to increase the time in which they remained seated with the others in circle time, rewarding him from time to time with reinforcers or motivating activities. The ultimate goal was to slowly reduce the reinforcement so that he was able to stay in circle time with the others independently. The other goal was to make him interact with his classmates using motivating and reinforcing activities, for example this was achieved by classmates giving him a piece of jigsaw puzzle without his request. Only after some time would they allow the classmates to play with him as part of the strategy of reinforcement. However, there was no attempt to generalise this particular pupil's sign language with peers. The therapist R1 said this was not good because despite the pupil having made efforts in sign language and having the skills to communicate and make himself understood, it was not used in the school context, and he felt he was not understood. Therefore, in this respect, the work done at home to learn new signs and increase his vocabulary at school was rendered useless, as it was not generalised.

6.3 Team working at school can take place between ABA teachers and therapists

In this regard, the ABA therapists R1 and R2 both agree that this may be possible, but that it should be facilitated by training for teachers and the entire school team so that everyone has a scientific idea of what ABA is and no longer give credit to misconceptions about therapists and ABA itself. In the same way, R3 agreed with the therapists, but acknowledged that the national school system is complex and that the role of a therapist varies from school to school and also from teacher to

teacher. R3 said that school is made up of people and as such everyone brings with them their ideas and their own cultural and experiential baggage. Furthermore, what R3 adds, evidently based on her personal experience, is that training aimed at teachers is not enough. Providing basic knowledge to teachers of ABA is useful to give them a more precise idea, however, it does not serve to implement a behavioural intervention. For this reason, the therapist suggested that ABA therapists be provided to support teachers, so that cooperation is more comfortable and that the behavioural intervention, implemented by a therapist specialised in ABA, is more effective. In this way, the therapist also suggests that parents would be helped, who cannot afford the costs of the ABA therapist both at home and at school and who in this way would access a service that would help their child.

7. Conclusions

The aim of this study was to understand how applied behavioural analysis is reconciled with the school context and if, therefore, it has an inclusive value. When we talk about inclusion, we refer to the different individualised practices, created for the various educational needs of all pupils. For this reason, by evaluating all special educational needs, the need arises to respond inclusively, considering and giving dignity to the needs of all pupils. For this reason, the concept of inclusion recalls feeling part of a group that recognises us, respects us and esteems us. There is a need to create a school for all that becomes an inclusive school, respectful and responsive to everyone's needs. This study had the aim of discovering through their story, how ABA was seen in the school, the effect of the presence of an ABA therapist outside the school team and how to involve the same therapist within the school context. The study then investigated what their ideas were about ABA in the school context and if ABA underwent adaptations and it was possible to verify an inclusive value of ABA intervention.

ABA is one of the cognitive-behavioural intervention models and therefore, can also be generalised to different disorders. The ABA therapists stated that in their opinion, ABA has absolutely an inclusive value as it structures individualised activities for the increase of both personal and social skills. These activities allow the subject to work on his or her skills, which are, however, absolutely preparatory to the inclusion of the subject in the classroom context. The classmates also, for their part, can carry out a fundamental action of help towards the therapists and intervene on the improvement and consolidation of the skills mentioned above, proposing activities and stimulating communication in the subject. The significant benefit of classmates is that of the peer group, which has a much stronger motivation than that of a teacher or a therapist. The

support teacher stated that being ethically inclined to have an inclusive idea of the school, she was able to fully appreciate behavioural analysis precisely because she found, among other things, an inclusive value. However, it is essential that there is co-working between ABA teachers and therapists and that, with the supervision of an ABA consultant, work is structured to allow the subject to be included in the classroom context. It is also necessary for classmates to understand what the teacher and the therapists are doing so that they are not apprehensive in relating to the children with behavioural disorders.

Above all, an aspect not to be underestimated is that of communication. If the person is low-functioning or non-vocal, an alternative method of communication should be provided. It is therefore essential that this is shared and generalised with the curricular teachers, with classmates and with anyone close to the subject. In this way, it could be possible to obtain coherence of the ABA intervention between the home therapy and the school context. What is important to explain to classmates or to anyone who approaches these pupils is that ABA is a science.

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