Emotional intelligence in learners with Attention Deficit Disorder

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This study was undertaken to analyse and evaluate the nature and quality of emotional intelligence in learners with Attention Deficit Disorder (ADD), and to investigate whether their emotional intelligence was enhanced, and whether the symptoms and behaviour of these learners improved, after exposure to a programme on emotional intelligence. Learners with ADD were identified from within a larger group of Grades 4 and 5 learners. The whole group was exposed to a programme on emotional intelligence and the results were examined and compared qualitatively. At the beginning of the study, the learners with ADD displayed an inaccurate appraisal of their emotional intelligence as being at a higher level than that of their peer group. After exposure to a programme on emotional intelligence, these learners were able to accurately appraise their emotional intelligence. The results of this study indicate that the symptoms and behaviour of learners with ADD are improved after exposure to a programme on emotional intelligence. The enhancement of emotional intelligence, therefore, appears to be related to the symptoms and behaviour of learners with ADD.

Keywords: Attention Deficit Disorder, emotional intelligence, education and emotional intelligence, PATHS programme

Introduction

Emotional intelligence as a construct has come under the spotlight in an increased number of publications, in terms of what it means for moral education, academic performance and, specifically, for the impact of intervention programmes on learners with special needs (Durbin, Klein, Hayden, Buckley & Moerk, 2007; Hartley, 2004; Kristjansson, 2006; Leckman & Mayes, 2007; Vanhatalo, 2007). Research suggests that learners with Attention Deficit Disorder (ADD) are more susceptible to lowered emotional efficacy, otherwise termed emotional intelligence, which may be defined, generally, as behavioural dispositions and self-perceptions related to the manner in which they recognise, process and use emotion-laden information (Petrides, Frederickson & Furnham, 2004). This study was generally aimed at analysing and evaluating the nature of emotional intelligence as well as the different aspects of ADD, and how these constructs are manifested in the symptoms and behaviour of learners with ADD. The question explored in this article is therefore: To what extent can the enhancement of emotional intelligence alleviate the symptoms and behaviour of learners with AD/HD?

Exploring the concepts of emotional intelligence and Attention Deficit Disorder

Emotional intelligence is a term that has gained prominence in a field that is growing rapidly. Many of the definitions are complementary and propose that emotional intelligence may be conceptualised as the set of verbal and non-verbal abilities that enable individuals to generate, recognise, express, understand, and evaluate their own and others' emotions, in order to guide thinking and action to successfully cope with the environment (Bar-On, Maree & Elias, 2006; Salovey & Mayer, 1990; Van Rooy & Viswesvaran, 2004; Weare, 2006). Although many closely related terms such as emotional literacy, emotional competency,

mental health, and well-being (Weare, 2006) are used to explain this construct, they all seem to describe a common construct, or at least aspects related to that construct (Bar-On *et al.,* 2006). For the purposes of this study, the term 'emotional intelligence' will be used, which can be understood as a set of social and emotional skills that enable the individual to translate intellectual raw material into action and accomplishment (Bar-On *et al.*, 2006).

There appears to be a lack of consensus about the social-emotional difficulties relative to the cognitive-academic disabilities among learners with ADD, and it seems widely accepted that social cognition can be considered to be one of the most difficult areas for these learners (Bauminger, Edelsztein & Morash, 2005). It appears that the concept of ADD has been in use since the turn of the 20th century (Amen, 2001a; Barabasz & Barabasz, 1996; Davison, 2001; Sears & Thompson, 1998). ADD has been part of the Diagnostic and Statistical Manual of the American Psychiatric Association since its inception in 1952, albeit under different labels. The latest version of the DSM IV-R encompasses a cluster of symptoms, including a short attention span for routine tasks, distractibility, organisational problems, impulsivity, and the presence of hyperactivity in certain cases (Diagnostic Statistical Manual of Mental Disorders, 1994). The diagnosis requires an accumulation of several symptoms, emphasising the fact that no single symptom is definitive of the disorder, with a typical onset by the age of seven years. There is some criticism of this diagnostic classification on the grounds that it focuses on the behavioural deficits of inattention, hyperactivity and impulsivity, and fails to explain the cognitive and executive functions that are associated with the disorder (Barkley, 1997a). Researchers state that conduct disorder is co-morbid in approximately 15 to 35% of learners with ADD and that these learners are at a greater risk of developing symptoms of other disorders such as substance use disorders, learning disabilities and depression (Amen, 2001; Cukrowicz, Taylor, Schatschneider & Lacono, 2006). Specific descriptions of the difficulties of a learner with ADD may be of greater benefit to providing an intervention strategy than the narrow confines of a category.

During middle childhood, learners with ADD are not only dealing with the complex emotional behaviour typical of that stage of development, but also demonstrating social and cognitive difficulties when processing social-emotional information (Bauminger *et al.*, 2005). It seems that learners with ADD are often unable to understand the intentions of others or their perspective on a situation, and lack planning strategies and the ability to develop social goals (Bauminger *et al.,* 2005; Gottman, Katz & Hooven, 1997). As far as verbal and non-verbal abilities are concerned, learners with ADD appear to experience difficulties with recognising and talking about their own and others' emotions (Bauminger *et al.*, 2005). Bar-On (2000) defines this even further, by including self-regard, emotional self-awareness, assertiveness, independence and self-actualisation, and includes assessment of each of these factors in the Bar-On Emotional Quotient Inventory (Bar-On EQ-i). The symptoms and behaviour of learners with ADD may be linked with both intrapersonal and interpersonal difficulties within their personal intelligence, in that they often experience difficulties understanding complex emotions, or hidden and mixed emotions, which play an important role in efficient peer interactions in middle childhood (Bauminger *et al.*, 2005; Mayer & Salovey, 1993; Salovey & Mayer, 1990).

Petrides *et al.* (2004) propose a clear conceptual distinction between two types of emotional intelligence, namely trait emotional intelligence (hereafter referred to as trait EI) and ability emotional intelligence (hereafter referred to as ability EI). Trait EI is measured through self-report questionnaires, and relates to behavioural dispositions and self-perceptions. This concept incorporates dispositions that are different from the personality domain such as empathy, impulsivity and assertiveness, as well as elements of social intelligence proposed by Thorndike (1920)**,** and personal intelligence proposed by Gardner (1999). Trait EI has been used in this study, because it relates to the symptoms and behaviour of learners with ADD, and takes into account their behavioural dispositions and self-perceptions, and both their social and personal intelligence.

Whilst the diagnosis might be stressful to the individual and his/her family, ADD represents a crisis, since it often leads to a negative identity, as well as lowered self-confidence and self-esteem for the learner. One can also expect reduced academic achievement, weak social relationships, conflicted family

life and poor adjustment (Cukrowicz *et al.*, 2006). Outcome data suggest that between 5 and 75% of adults still show significant levels of the symptoms of ADD, indicating that this is a long-term dysfunction that requires immediate and effective treatment during childhood (Wasserstein, 2005). If the learner with ADD is treated with support and nurturance, aspects of this disorder can be channelled into creative productivity, as well as helping to decrease social maladaptation which is so stressful to relationships (Wasserstein, 2005).

Many secondary psychological problems tend to develop in relation to the primary neurological problem of ADD. Therefore, this article focuses particularly on those problems pertaining to social and emotional intelligence. From a young age, the learner with ADD is exposed to repeated failures, misunderstandings, labelling, rejection, and other emotional mishaps which slowly erode his/her self-esteem and confidence (Hallowell & Ratey, 2002; Levine, 2002). The learners with ADD frequently misinterpret social situations, because they experience difficulties interpreting and communicating the feeling part of language, using an appropriate tone of voice, recognising a tone in others, using a correct choice of words, or following the rhythm of language (Levine, 2002). The learners with ADD may also find it hard to use 'code-switching', an essential language function, which refers to being able to converse in a different and appropriate manner depending on the situation. Other critical areas in social language are the ability to use humour appropriately, to request something without alienating others, to understand and match the mood of another – using the right language – and to compliment another person to make them feel good (Levine, 2002). It is of vital importance for the learners with ADD to learn to express their feelings accurately, and to be able to use good social language. Learners with ADD often struggle with social feedback cues, because they misinterpret body language and facial expressions. These learners often experience difficulty with self-monitoring, thus failing to notice when they are annoying or infuriating another person, and they continue their behaviour with disastrous consequences. Learners with ADD struggle to work in a team, in that they either dominate the team and want to be in control, or refuse to co-operate and contribute to the team, which alienates them from the group.

The programme known as Promoting Alternative Thinking Strategies Programme (PATHS), used in this study, works on recognition of body language and facial cues while, at the same time, labelling feelings and helping members to work in groups in order to act out different emotional scenarios. The aim is to improve social and emotional functioning in an attempt to lessen the symptoms and behaviour of ADD. Ongoing brain research suggests that increased connectivity between the amygdala, which is the seat of emotional behaviour, and the cortex, which controls more cognitive thought patterns, could restore much of the harmony and balance between reason and emotion (Morris & Casey, 2005). Previous research outlines the success of the programme in multiple contexts, and shows that the emphasis is placed on the cognitive and developmental aspects of the child (Kelly, Longbottom, Potts & Williamson, 2004). This programme has been shown to be effective in raising the levels of emotional intelligence in learners who do not have ADD (Bar-On, 2003; Greenberg, 2007; Kelly *et al.*, 2004; Morris & Casey, 2005; Sharp, 2001; Weare, 2006). The PATHS programme is based on the ABCD (affective, behavioural, cognitive, and dynamic) model, with special emphasis on the developmental integration of affect, the vocabulary of emotion, and cognitive understanding as they relate to emotional and social competence (Kelly *et al.*, 2004).

In terms of intervention, the question is whether it is possible to educate learners with ADD to raise their ability not only to recognise the feelings of others, but also to become more cognisant of their own emotions. Bar-On (2003) discusses research which showed that emotional intelligence was enhanced after exposure to educational programmes. The two emotional intelligence competencies, which were enhanced the most after these programmes, were emotional self-awareness and empathy, and it seemed that the individuals who began the programme with the lowest EQ-i scores were those who made the most progress. This is particularly encouraging in terms of this study, since it is posited that learners with ADD would have low scores in emotional intelligence and would, therefore, benefit from a programme aimed at improving these competencies.

Procedure

Qualitative research, which may be defined as the different use of qualitative techniques and data-collection methods in relation to social interaction (De Vos, 1998), was used in this study. A quasi-experimental research design with a purposive sampling technique was also used. The entire sample group of Grades 4 and 5 learners, including the eight learners with ADD, completed the assessment to evaluate their emotional intelligence (Bar-On EQ-iYV) at the beginning and at the end of the study. The teachers of the learners with ADD completed the Connors Rating Scale (CTRS-R) at the beginning and at the end of the study to determine the symptoms and behaviour of the learners with ADD. The researcher then conducted the semi-structured interview with the learners with ADD to establish their personal feelings about their symptoms and behaviour. The researcher attempted to ensure that the study can be replicated by other researchers with different subjects, and that the study will be able to inform and enhance the reader's understanding of the subject (Myers, 2000).

Sample

In this particular study, non-probability sampling was completed without the use of randomisation. Purposive sampling was used in that the researcher included in the sample group eight learners, who had been medically diagnosed with ADD, within the larger group of students in Grades 4 and 5 at an international school in Johannesburg. The predominant language is English and each grade consists of three co-educational classes with approximately 15 students in each class. (Age, grade and language spoken were similar across the sample group.) These learners were diagnosed as having the most characteristics, representativeness, or typical attributes of the phenomena under study, namely the symptoms and behaviour of learners with ADD. Two of these learners were South African, four were American, one was from Saudi Arabia and one was British. Five of these learners were from intact marriages, two had single mothers and one was from a divorced family with a stepmother. Of the eight learners with ADD, six showed a low academic level (50%-60%), and two learners showed an average academic level (60%-70%). None of the learners displayed high academic achievement (70%+).

The general sample group consisted of 49 male learners and 29 female learners between the ages of nine and eleven, who had not been diagnosed with ADD. The intelligence levels of these learners were found to be average to above average as assessed by an Educational Psychological evaluation, entrance assessment by the school, and/or scholastic records. This group supported the literature which showed general trends in emotional intelligence after exposure to a programme on emotional intelligence. This group was also used to compare their levels of emotional intelligence with those of the learners with ADD, in order to gain insight into the possible enhancement of emotional intelligence, after exposure to a programme on emotional intelligence.

Data collection

The data on learners with ADD was collected by means of assessments, interviews, participant observation and some interpretative enquiry. All learners completed the pre-test on the Bar-On Emotions Quotient Inventory – Youth Version, Short Version (Bar-On EQ-iYV S) and the post-test on the same measure. All learners received the treatment which consisted of the Promoting Alternate Thinking Strategies (PATHS) programme aimed at improving emotional intelligence, over a period of eight months. The eight learners who had been medically diagnosed with ADD were rated by the teacher, using the Connors Teachers Rating Scale – Revised, Long Version (CTRS-R L) at the beginning and at the end of the study. The semi-structured interview was used to follow up on the learners with ADD, after the intervention programme had been completed and they had undertaken the assessments described above.

The Bar-On EQ-iYV (Bar-On, 2003) was designed to assess the emotional intelligence of children and adolescents between the ages of seven and eighteen. This is a self-report measure, which provides an estimate of the underlying social and emotional intelligence of the individual, and is underpinned by the theoretical base of the Bar-On Emotions Quotient Inventory (Bar-On EQ-I). A consensus of approximately

60 studies demonstrates that the EQ-iYV is a reliable, valid and robust measure of the construct involved (Bar-On, 2005). A validation summary of results shows that the Bar-On EQ-I YV scales identify core features of emotional intelligence in children and adolescents (Bar-On & Parker, 2000).

In this study, the Connors Teacher Rating Scale Revised (CTRS-R) was used to obtain data on the students with ADD in the sample group. This rating scale is one of the most widely used ADD scales in clinical practice and adheres closely to the DSM-IV criteria, addressing a wide spectrum of ADD symptoms (Opposition, Cognitive/Inattention, Hyperactivity, Anxious/Shy, Perfectionist/Obsessive, Social, DSM IV Inattentive, DSM IV Hyperactivity/Impulsivity, DSM IV Total), including poor self-image (Wasserstein, 2005). Researchers have recommended that normative-based criteria be used in addition to the categorical criteria (placing individuals into diagnostic categories) so frequently in use (Barkley, 1990; Connors, 2004). The Connors Rating Scale provides such a framework by reporting on the degree and severity of the problem by means of a score on a continuous scale (Connors, 2004). This is of particular importance in the context of this study, since the focus is on the degree and severity of the symptoms and behaviour of learners with ADD. The Connors Rating Scale also provides a measure of functioning that is manifested overtly, as well as internal states indicative of emotional problems, psychosomatic conditions and perfectionism.

Because the PATHS curriculum is extensive and, in its entirety, covers a two-year period, it was decided to complete the first year of instruction, which would cover a 25-lesson extract, addressing feelings and relationships. The programme was applied to all the learners in the sample group. The researcher wanted to use a programme that was already shown to be successful in improving the emotional intelligence of students, so that, in this study, the aim is not to evaluate the programme, but to evaluate whether it would improve the symptoms and behaviour of learners with ADD.

The semi-structured interview was used to follow up on the learners with ADD, after the intervention programme had been completed and they had undertaken the assessments described above. The semi-structured interview covered the following topics: anger management; organisational skills; completion of tasks; concentration issues; restlessness; impulsivity; anxieties; sensitivities; shyness; perfectionism; friendships and socialisation; confidence, and loneliness.

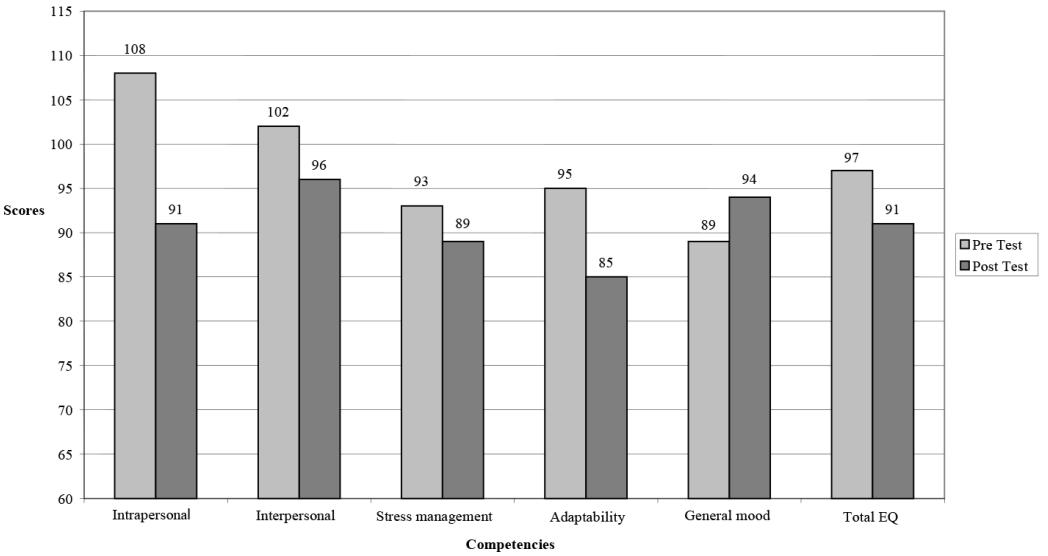
Data analysis

This data was then analysed in a systematic manner within the qualitative paradigm (De Vos, 1998).

Results of the pre-test and post-test of emotional intelligence

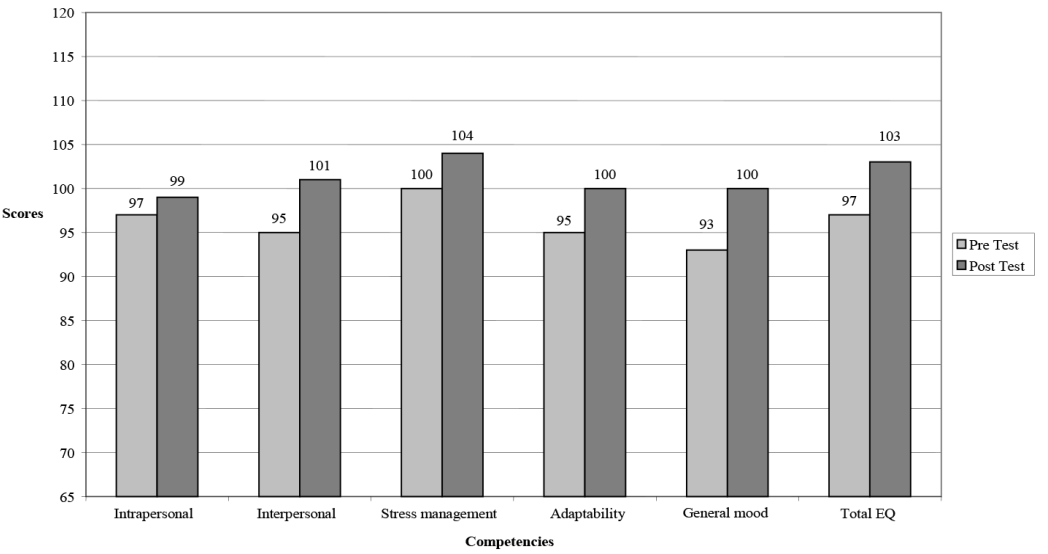
In terms of the traditional manner in which emotional intelligence is measured, scores on the Bar-On EQ-iYV should increase to show growth. As can be seen on the graph (Figure 1), the learners with ADD, contrary to research findings, displayed an unrealistically high perception of their emotional intelligence in the pre-test and their scores decreased in the post-test. These results show that learners with ADD have difficulty evaluating themselves with regard to emotional intelligence, and this provides valuable insight into, and information on this group of learners. The researcher suggests that, after exposure to a programme on emotional intelligence, this group of learners became more able to evaluate themselves accurately, having developed a better awareness of their emotional intelligence.

Figure 1: Comparison of pre-tests and post-tests for emotional intelligence for learners with ADD



By contrast, the larger group of learners, who do not have ADD, appeared to evaluate themselves accurately and in the traditionally accepted manner in the pre-test, in that their scores were initially lower and then improved after exposure to a programme on emotional intelligence (Figure 2).

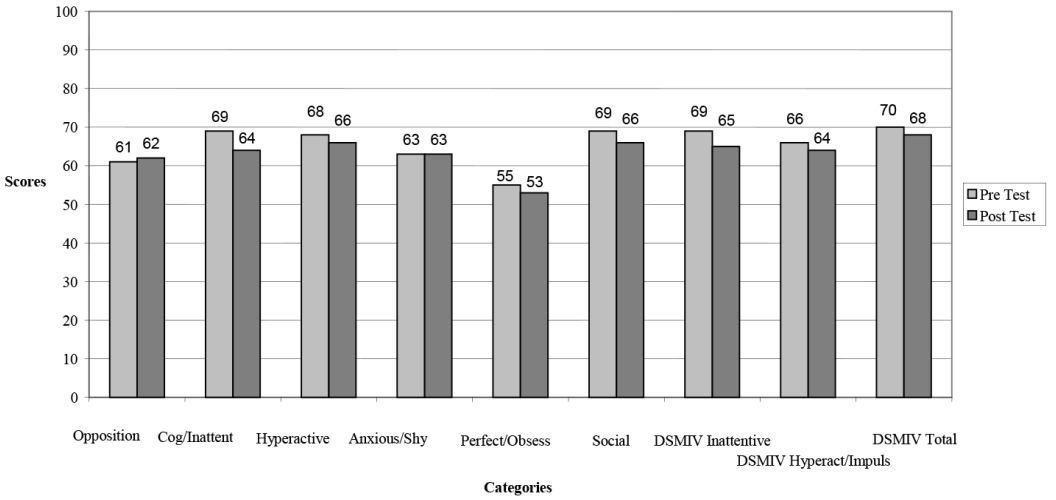
Figure 2: Comparison of pre-tests and post-tests for the whole group on emotional intelligence



The pre-test profiles of the learners with ADD on the Connors Rating scale (CTRS-R) showed that these learners were rated by their teachers as within the categories for ADD on 8 of the 9 subtests (Figure 3). The post-test results of this study showed that the symptoms and behaviours of the learners with ADD were lowered (improved) on 7 of the 9 subtests after exposure to a programme on emotional intelligence.

This shows that the learners with ADD improved their symptoms and behaviours of ADD at the end of the study.

Figure 3: Comparison of ADD learners' results in the pre-tests and post-tests for ADD



On the semi-structured interview, the learners with ADD did not show agreement with either their individual teachers or their individual mothers' perceptions of their emotional states or their symptoms and behaviour at the beginning of the study. However, these learners showed growth in self-awareness after participating in a programme on emotional intelligence, in that they were not only able to appraise themselves more accurately in this regard, but they agreed with their teachers' perceptions of them, and also improved their symptoms and behaviours in relation to ADD at the end of the study. This means that the perceptions of the learners with ADD were in keeping with the teachers' perceptions and their mothers' perceptions after the programme on emotional intelligence. This would suggest the importance of exposing learners with ADD to programmes to enhance their emotional intelligence, since there seems to be a link with this development, and the amelioration of the symptoms and behaviour related to ADD.

Recognising the limitations

While recognising the programme on emotional intelligence as an important mechanism in the enhancement of emotional intelligence in learners with ADD, the contribution by a complex interaction of other components such as peer influence, maturational development, teacher interaction, and the impact of other significant members of the family, is not disputed. The profile of learners with ADD may indicate enhancement and development of emotional intelligence after exposure to the PATHS programme. The researcher recognises that there is no literature to support this view and that more research is required before this phenomenon can be verified. It is more than likely that a longitudinal study on the same subjects over a longer period of time, in which they are exposed to the programme on emotional intelligence to its completion (three years), would yield more conclusive results and generate valuable longitudinal data.

Discussion

From the findings of this study, it has become evident that the symptoms and behaviour of learners with ADD improved as their emotional intelligence was enhanced and developed. It is of significance that learners with ADD experience difficulty being able to accurately appraise themselves. Whereas prevailing research shows the expectation that learners with ADD experience lowered emotional intelligence (and

this has been borne out by the perceptions of their mothers and teachers), these learners initially appraised themselves as having higher emotional intelligence than their peers who did not have ADD. However, after exposure to a programme on emotional intelligence, their growth and enhancement of emotional intelligence was shown in their ability to appraise themselves more accurately and to acknowledge their difficulties. Another area of interest that was highlighted in this study is the fact that, as the emotional intelligence of these learners developed and they became more self-aware and accurate in their perceptions of themselves, there was also better congruence between their perceptions of their symptoms and behaviour relating to ADD and those of their teachers.

Although the Bar-On EQ-iYV is generally recognised as an accurate reflection of emotional intelligence, in the case of learners with ADD the results were quite unexpected. This brings into question the nature of self-report questionnaires in the case of learners who have difficulty with self-awareness. It is interesting to note that the learners who did not have ADD were able – in the expected manner - to appraise themselves accurately on a self-report measure and to show improvement in their behaviour and symptoms after exposure to a programme on emotional intelligence, in the expected manner. This study might be replicated using an ability-based assessment which could then be linked to the academic achievement of these learners. The mixed ability assessment was better suited to this particular study, because the researcher was investigating the symptoms and behaviour of learners with ADD, and not their abilities; however, further research into this area might lead to interesting comparisons.

Conclusion

It can be concluded from this study that interventions aimed at developing the emotional intelligence of learners with ADD would both enhance their ability to appraise themselves more accurately, and improve their behaviour and symptoms. This study has resulted in a better awareness of, and insight into how learners with ADD perceive themselves, and this has important implications for establishing appropriate intervention and treatment programmes. Further research into the efficacy of such programmes in South African schools may be advantageous.

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