

**THE IMPACT OF STORYTELLING ON THE SOCIAL DEVELOPMENT
OF LEARNERS WITH ASPERGER'S SYNDROME**

by

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“A learner with Asperger’s Syndrome needs social guidance or a social mentor the same way that a blind person needs a white cane, a deaf person needs a hearing aid and a crippled person needs a wheelchair. Notwithstanding that Asperger’s Syndrome is less visual; the crippling impact on the learner is just the same.”

(Dr and Mrs Roelofse, Chairperson of ASASA and his wife).

DECLARATION

Student number 715-382-1

I declare that **THE IMPACT OF STORYTELLING ON THE SOCIAL DEVELOPMENT OF LEARNERS WITH ASPERGER'S SYNDROME** is my own work and that all sources I have used or quoted have been indicated and acknowledged by means of complete references.

Sanders D A

Date

SUMMARY

THE IMPACT OF STORYTELLING ON THE SOCIAL DEVELOPMENT OF LEARNERS WITH ASPERGER'S SYNDROME

This study investigates the nature of Asperger's Syndrome and specifically the social impairments experienced by learners affected by this syndrome. The incorrect social language, narrow interests and repetitive routines, and the deficits of theory of mind, central coherence and executive functioning of learners with Asperger's Syndrome are also outlined, and an attempt is made to relate these impairments to the social difficulties that learners with Asperger's Syndrome may experience in any inclusive setting.

Chapters two and three comprise an in-depth literature study on this specific subject, thus forming a basis for the empirical research reported in chapter five. A qualitative research design is used, first to gain information about and understanding of the nature of the social impairments that afflict learners with Asperger's Syndrome, and secondly to gauge the effectiveness of using social stories as a means to assist the social development of affected learners. More specifically, an ethnographic research design has been chosen for its flexibility which readily permits last-minute adjustments to suit any design, and also because it helps to give meaning to personal encounters. The sensitive nature of the topic is another important reason for choosing this approach (ie. interaction with the researcher could be "fine-tuned" to achieve the ends of this adapted interview situation effectively, circumspectly and safely without undue upset for all concerned).

The interview responses of two mothers of learners with Asperger's Syndrome, as well as the observation of these learners are reported. The results of the interviews and observations are checked against the literature study for corroboration in order

to bring about a more positive awareness of the impairments experienced by these learners.

The technique of social stories was investigated as a method of enhancing the social development of learners with Asperger's Syndrome. Three specific social stories were developed for this research in order to test the effectiveness of this method. Positive outcomes were achieved after implementation of the stories.

Results of this study indicated that knowledge and understanding of Asperger's Syndrome, as well as positive attitudes, are critical to ensure the acceptance and accommodation of learners with Asperger's Syndrome in the school environment and in society as a whole. Also, the issue of accommodating learners with Asperger's Syndrome in an inclusive setting should receive concerted attention since it can have major implications for their educational prospects.

KEY TERMS

Asperger's Syndrome

Central coherence

Executive functioning

Language impairments

Learners with Asperger's Syndrome

Narrow interests

Repetitive routines

Social impairments

Social stories

Theory of mind

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DEDICATION

This work is dedicated to my nephews and niece:

- My oldest nephew David who, twenty-two years ago, added the momentous title “aunt” to my name.
- My “little” niece Lara who always manages to put a smile on my face.
- Lawrence Mark and Liron Marc whose names perpetuate the loving memory of my dear **father**. His desire to become a doctor has been fulfilled in this work and I know that today he would have been a very proud man.

“They [the people] think I’m [learner with Asperger’s Syndrome] perfect when they see me. I cry on cue. I move my arms and legs. My fingers and my toes both add up to ten. Their specialists tick all the columns on their rating scale. They won’t find out. None of the tests they run will show my secret. My subtle imperfection will complicate the lives of everyone who loves me” (Erasmus 2004:78).

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CHAPTER ONE: INTRODUCTORY ORIENTATION AND STATEMENT OF THE PROBLEM

1.1 INTRODUCTION

The identification of Asperger's Syndrome dates to 1944, when a Viennese psychiatrist, Hans Asperger, published a seminal paper in which he described a group of learners with unique social disabilities (Simpson & Myles 1998:149) that became known since then by the present designation.

This disorder was virtually unknown until a few years ago. Today, however, there is a dramatic increase in the number of learners diagnosed with Asperger's Syndrome (Baker & Welkowitz 2005:2), particularly since the addition of the disorder as a subclassification of pervasive developmental disorder in the widely used *Diagnostic and statistical manual of mental disorders* (Simpson & Myles 1998:149). Many speculative theories have been advanced and much research has been published regarding the causes of this syndrome (Gillberg 2002:viii; Hewetson 2002:119; Myles & Simpson 2002:39). Much has also been written about the reasons for the increase in diagnosis (Mertz 2005:53-55); indeed, some researchers (eg. Szatmari 2004:122) even maintain that there is no evidence that the incidence of the syndrome is increasing; rather it is the detection of the "condition" that is advancing.

Important Note:

For the sake of consistency and clarity the term "Asperger's Syndrome" will be used in a general sense to denote high-functioning autism and autistic-spectrum disorder (ASD). For the same reasons the term "learners" will be used throughout this study as a wide-ranging term referring to anyone "diagnosed" or identified with Asperger's Syndrome.

The definition of Asperger's Syndrome as given by the American Psychiatric Association (2000:74-75; see also paragraph 1.5.1.1) indicates that social impairments are the earliest and most serious manifestations of this condition. Social situations occur daily or even hourly that make little or no sense to learners with Asperger's Syndrome (Myles & Southwick 1999:75) because they do not comprehend the unstated rules of social interaction without explicit instruction (Mesibov, Shea & Adams 2001:88) and therefore find it exceptionally difficult to make friends and behave appropriately in social situations. Encouraging them to participate in building social skills can be difficult because they find it difficult and frustrating to think and behave in ways that run counter to their essential predisposition; indeed such efforts can cause considerable anxiety for them (Bashe & Kirby 2001:331-332). This research will therefore be focused on *enhancement of the social development of learners with Asperger's Syndrome*.

A technique that has enriched the social development of learners with Asperger's Syndrome is storytelling. Carol Gray (Gray & Garand 1993:1) has developed this technique, which is proving remarkably effective in enabling learners with Asperger's Syndrome to understand the cues and actions for specific social situations. Social stories are an effective technique of providing both guidance and directions for responding to social situations that promote self-awareness, self-calming and self-management (Myles & Southwick 1999:69).

It is the researcher's intention to focus on the strengths of learners with special needs and to proceed from the premise that learners with Asperger's Syndrome possess many "gifts" that with the correct understanding and necessary support, can be enlisted to make a valuable contribution to our diverse society, which needs the uniqueness and expertise of these learners. It is the researcher's opinion that South African society has much to gain from the amazing "qualities" of these learners. As

Jacobs (2004:337) maintains "... I will always feel that Asperger's Syndrome offers the gift of the alternative." This precept will guide the whole research under the rubric of the "social acceptance and awareness model". Ultimately the researcher intends to foster a more positive attitude towards these learners with special needs with a view to showing that the unusual qualities of these learners can be seen as "endowments" that can be used to benefit society, rather than something to be "cured". However, this does not change the fact that the "gifts" are still *impairments*; that they are permanent, and that *these impairments will always have to be managed*, to which end the assistance of people who have received special training will be required. It is the researcher's opinion that the "condition" of the learner with Asperger's Syndrome is not unlike that of a whole range of people who can function quite well in society with some therapy and medication.

Nevertheless, ultimately South Africa - especially the education system which has to mould and develop the minds of the younger generation - needs to be uplifted, or the present adult generation must become more open-minded and must appreciate that each one of us, with our own individuality, must be respected and welcomed into a society in which all can coexist as a harmonious functional whole. This means that a good deal of mutual tolerance in general, and of judicious, well-informed compromise are required to integrate learners with Asperger's Syndrome effectively within inclusive classrooms and society at large.

The following rationale will place this research in perspective and explain why it is necessary.

1.2 RATIONALE AND MOTIVATION FOR THE STUDY

1.2.1 Need for further research into the positive influence of storytelling on learners with Asperger's Syndrome

The main reason for undertaking this study is to research the nature of storytelling, specifically the technique of social stories. As indicated, learners with Asperger's Syndrome experience various *social impairments* but can be assisted to develop the necessary social skills. For example, with the use of *social stories* these learners may be guided to become fully functioning adults who can make a meaningful contribution to society. However, this technique requires further research and testing, especially considering that *each* learner with Asperger's Syndrome is a *unique individual*, and a social story productively utilised for one learner may be fruitless when tried with another. In addition there is a dearth of empirical studies with strong internal validity that support the use of social stories (Sansosti, Powell-Smith & Kincaid 2004:194; Scattone, Wilczynski, Edwards & Rabian 2002:536).

1.2.2 Need for increased awareness of the nature of social impairments associated with Asperger's Syndrome

Another reason for undertaking this study is that Asperger's Syndrome is a very topical and relevant research subject which has only recently been classified as distinct from autism proper.

Although there has been a dramatic increase in the incidence of Asperger's Syndrome and a commensurate increase in the interest shown in this condition by professionals and families (Safran 2002a:283; Yapko 2003:63), little is known and little research has been done about it (especially in South Africa), with the result that information and strategies for managing the impairments afflicting learners with this

syndrome are lacking (Simpson & Myles 1998:149). Howlin (2004:181) concurs by asserting that much more effective dissemination of information about Asperger's Syndrome and strategies for intervention are clearly crucial. The object of this study is therefore to promote the dissemination of information about the social impairments presented by learners with Asperger's Syndrome, and about one of the valuable techniques of managing these social impairments, namely social stories. As Bashe and Kirby (2001:123) stress: "information is power".

1.2.3 Fostering positive responses to learners with Asperger's Syndrome

A further reason for undertaking this study is that because of this lack of awareness of Asperger's Syndrome, and because these learners display no distinguishing physical disabilities or characteristics, they are often viewed with much disapproval. As Willey (1999:98) points out, the sooner the general public realises what Asperger's Syndrome is and how the condition manifests itself, the sooner it will meet with the broader acceptance and understanding required to ensure that affected learners receive adequate support. Klein (2001:2) notes that medical texts tend to describe Asperger's Syndrome only in terms of impairment, disability and related problems, implying that normal is good and unusual is bad; that all deviations from the usual are signs of dysfunction and must eventually be cured. Any positive potential is therefore precluded. However, it is the researcher's opinion that by enhancing awareness and understanding of the impairments to which learners with Asperger's Syndrome are subject, the general public will become more accepting and accommodating of the distinctive behavioural traits of these learners, and will begin to realise that every member of any human society is one of a group of unique individuals, each with his or her own particular needs and "gifts". *In other words, despite the Asperger's Syndrome learner's impairments, with effective*

support and understanding they (learners with Asperger's Syndrome) can make a positive and significant contribution to a diverse society (eg. South African society).

1.3 PROBLEM STATEMENT

A specific problem statement enables the researcher to communicate the research problem to others and guides the research process, for example by indicating how and by what methods data will be collected (Johnson & Christensen 2000:47); what will be required to conduct the study; and how the information gained from it will be presented (McMillan & Schumacher 1997:84).

One problem statement and four subproblems were formulated for the purpose of this research. These will keep the study focused and will ensure that readers know what outcomes are envisaged (ie. what the study is intended to accomplish).

The following problem statement will guide this research:

How can storytelling be used to promote the social development of learners with Asperger's Syndrome?

1.3.1 Subproblems

The subproblems that emerge from the above main research problem are as follows:

- What is Asperger's Syndrome?

- What is the nature of the social impairments of learners with Asperger's Syndrome?
- Are the normally, or apparently, inborn traits termed "theory of mind", "central coherence" and "executive functioning" discernible in the behaviour of learners with Asperger's Syndrome, and if so, how?
- What are social stories?
- Can a conducive environment be created for the successful delivery of basic education, as well as the successful accommodation of challenging conditions such as Asperger's Syndrome, among others, in a typical inclusive classroom in South Africa? And if so, how, and within what time frame?

1.4 AIMS OF THE RESEARCH

The main aim of this research will be to investigate the nature of storytelling and how it can be successfully employed to promote the social development of learners with Asperger's Syndrome.

In order to achieve this aim the following subaims will be pursued:

- Study the nature and extent of the social impairments of learners with Asperger's Syndrome.
- Contextualise the study appropriately by taking due account of pervasive South African conditions.
- Investigate the use of social stories to promote the social development of learners with Asperger's Syndrome.

- Investigate the qualities termed “theory of mind”, “central coherence” and “executive functioning” as displayed (or not) by learners with Asperger’s Syndrome.
- Question parents about impairments of learners with Asperger’s Syndrome and about the techniques used to enhance the affected learners’ social development. The knowledge gained in this way will empower the researcher to develop specific social stories for the support of learners with Asperger’s Syndrome.
- Test the effectiveness of the social stories by determining whether any improvements in social behaviour became evident *after the social story was applied*.
- Correlate the findings from the literature research and the empirical study in order to draw conclusions about behaviour changes (if any) resulting from the use of social stories.

1.5 EXPLANATION OF RELEVANT CONCEPTS

It is important for the researcher and the readers to have a clear understanding of the principal terms to be utilised throughout this study. Thus, in each case the specific meaning of the term for the purpose of this research will be emphasised.

1.5.1 Learners with Asperger’s Syndrome

1.5.1.1 Asperger’s Syndrome

The DSM-IV-TR (American Psychiatric Association 2000:74-75) definition of Asperger’s Syndrome is the most widely used in the United States. While the symptoms of Asperger’s Syndrome overlap with other conditions, it is often the unique combination of behaviours in social interaction and the severely restricted areas of interest that baffle professionals and parents alike, and that commonly lead

to misdiagnosis. Thus, the DSM-IV-TR definition contains six primary clusters of traits that must be present to qualify for a diagnosis of Asperger's Syndrome. The first primary cluster is collectively defined as a qualitative impairment of social interaction comprising the following four elements, of which at least two must be evident to substantiate a diagnosis of the syndrome:

- marked impairment in the use of multiple nonverbal behaviours, such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction
- failure to develop age-appropriate peer relationships
- a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (eg. lack of showing, bringing, or pointing out objects of interest to other people)
- lack of social or emotional reciprocity

The second major DSM-IV-TR cluster is the affected learners' narrowly circumscribed, repetitive and stereotyped patterns of behaviour, interests, and activities, exemplified in at least one of the following:

- abnormally intense or exclusive preoccupation with a stereotyped and severely restricted type or range of interest
- apparently inflexible adherence to specific, non-functional routines or rituals
- stereotyped and repetitive motor mannerisms (eg. hand or finger flapping or twisting, or complex whole-body movements)
- persistent preoccupation with parts of objects.

The other four clusters of the DSM-IV-TR criteria specified for a diagnosis of Asperger's Syndrome include the following:

- The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.
- No clinically significant general delay in language acquisition (eg. single words used by age two years, communicative phrases used by age three years).
- No clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behaviour (other than social interaction), and childhood curiosity about environment.
- Criteria are not met for another specific pervasive developmental disorder or schizophrenia
(American Psychiatric Association 2000:74-75).

Asperger's Syndrome has been viewed either as a less severe form of autism (Ringman & Jankovic 2000:394), or as a separate condition in its own right, but definitely part of the autistic continuum (Connor 1999:81) which consists of a group of development disorders with lifelong effects that include impairments that affect social interaction, communication, imagination, and behaviour (narrow and repetitive pattern of behaviour) (Wing 1997b:1761). It was Wing (quoted by Tsai 2000:139-140; Wing 1981:124; Wing 1997b:1761) who suggested that Asperger's Syndrome be considered part of the autistic continuum and that Asperger's Syndrome could be a *mild variant of autism in relatively bright children*.

For the purpose of this study Asperger's Syndrome is classified as a *pervasive developmental disorder* on the grounds (specified by Grieg 1998:16) that it significantly limits functioning in three or more of the following life activity areas: communication; learning; economic self-sufficiency; independent living; self-direction; cognitive functioning; that it originated before the person reached age twenty-two; is chronic; therefore requires lifelong treatment or services; and is a

significant handicap to the affected person's ability to function normally in society. Yapko (2003:24) confirms this by noting that these disorders affect three primary areas of development: communication (verbal and nonverbal), social interaction and repetitive behaviour patterns, interests and activities.

A pervasive developmental disorder (as described by Grieg 1998:16) can therefore be regarded as a spectrum of disorders that differs with respect to the number or type of symptoms or the age at onset (Searcy, Burd, Kerbeshian, Stenehjem & Franceschini 2000:699; Stoddart 1998:45; Szatmari, Bryson, Streiner, Wilson, Archer & Ryerse 2000:1980). The pervasive developmental deficits at issue in the present context are severe and pervasive impairment of reciprocal social skills (eg. communication) or the presence of stereotyped interests and activities (American Psychiatric Association 1994:75). In other words, the "condition" is a less acute type of autism, but is nevertheless characterised by impairments that could cause severe difficulties for affected learners.

As mentioned at the outset (important note on page one), the term "Asperger's Syndrome" will be utilised in preference to the synonymous terms "autistic spectrum disorder" (ASD) and "high-functioning autism" because its use is by far the most prevalent in the literature and therefore the most familiar and least likely to be misunderstood. Jacobs (2004:52) confirms the said alternative designations for Asperger's Syndrome.

The term "learner" will now be defined.

1.5.1.2 Learner

A “learner” can be defined as any person who is exposed, either by choice or by legal mandate, to planned, deliberate learning from early childhood (eg. development oriented education at preprimary level) to any stage of adulthood (eg. adult basic education). In the formal context (eg. public schools) the terms “pupil” and “student” are replaced by “learner” (Department of Education 1997:vii; Dictionary of South African Education and Training, 2000:95, s.v. “learner”).

Having defined the terms “Asperger’s Syndrome” and “learner”, the researcher can proceed logically to explain what is meant by a “learner with Asperger’s Syndrome”.

1.5.1.3 A learner with Asperger’s Syndrome

The definition of the term “Asperger’s Syndrome” as given by the American Psychiatric Association (2000:74-75; see also paragraph 1.5.1.1) indicates that social impairments are the earliest and most serious manifestations of this condition. The emphasis of this study will therefore be on *social impairments* as the definitive symptoms of Asperger’s Syndrome. This emphasis serves the important purpose of providing a reliable basis for testing the effectiveness of using social stories for supporting the social impairments of *affected* learners. In turn the social stories developed by the researcher will serve as a reference for the following explanation of the concept of impairments.

1.5.2 Impairments affecting social development

1.5.2.1 Impairments

An impairment is defined as a damaged or weakened state (especially of the quality or strength) of something or somebody (Concise Oxford Dictionary 1996:827, s.v.

“impairment”). It was stated in the introduction above that Asperger's Syndrome is expressed in pronounced social impairments but by their nature can also be seen as “gifts”, provided of course that their *basic status of impairments is not overlooked*.

For the purpose of this study “impairment” refers to a *specific* impairment (eg. intellectual or visual) that afflicts a learner (eg. with Asperger's Syndrome). These impairments referred to in this case are permanent and irreversible (caused by intrinsic factors - ie. factors located within the person). Barriers to learning and development occur where failure to meet the diverse range of learners' needs leads to learning breakdown (Department of Education 1997:v).

Intrinsic factors are located within the affected person and can be regarded as constant, while extrinsic factors emanate from the affected person's social and material circumstances and can therefore be manipulated to accommodate the person's condition so that he or she can attain to his or her potential. Alternatively, if the circumstances are unfavourable for the person, then his or her impairments may become a “disability”, which is described in the *White Paper on an Integrated National Disability Strategy* (Office of the Deputy President 1997:10-11) as follows:

- “... as a human right and development issue
- as resulting from factors in the social environment
- in terms of a social model of disability and NOT a medical model.”

A disability is an impairment that can be physical or physiological or psychological (eg. cognitive). It can also be an extrinsic impairment caused by inadequate education or a restrictive environment that prevents him or her from developing to his or her full potential. If the system is addressed to accommodate persons with impairments, then they would be able to live with their impairments and need not be

regarded as disabled. Thus an impairment does not have to put the learner at a disadvantage (Burden nd:5-6).

Since learners with Asperger's Syndrome have to contend with impairments that seriously hamper their social development it is necessary to discuss the concept of "social development" here.

1.5.2.2 Social development

Social development is the development of relationships and associations with others. It is marked by interaction and friendliness with the aim of enjoying the society or companionship of others. It is a learning process based on relationships (Van den Aardweg & Van den Aardweg 1993:222-223), and it entails the learning of a "social code" (LaSalle 2003:26) that includes hundreds of unwritten rules, for example about *what* to say, *when* to say it and *how* to say it or *how* close to stand to an interlocutor, and *where* to look during verbal interaction. It even includes rules about tilting your voice up and down and about taking turns, about sharing, and even rules about making faces – happy faces, sad ones, and so forth.

For this research, therefore, social development can be defined as acquisition of the ability to interpret others' behaviour in terms of mental states (thoughts, intentions, desires and beliefs), to interact both in complex social groups and in close relationships, to empathise with others' state of mind and to predict how others will feel, think and act (Baron-Cohen, Ring, Bullmore, Wheelwright, Ashwin & Williams 2000:355). Developing and keeping friendships depends on social development (Kranowitz 1998:289).

People generally learn the rules governing social interaction by observation and incidental interaction with other people. This development of social interaction does not come naturally to learners with Asperger's Syndrome (Mertz 2005:59). Social situations must be worked out one at a time in order to create a repertoire of responses for appropriate social understanding. Learners with Asperger's Syndrome need to learn social interaction cognitively rather than by observation and incidental interaction with others (Shore 2001:5). Thus, it is the researcher's aim to *focus on developing the social skills of learners with Asperger's Syndrome* by using storytelling as a technique to enhance the social development of these learners.

It is appropriate at this point to discuss the concept of social stories, given the success achieved in using this technique to enhance the social development of learners with Asperger's Syndrome.

1.5.3 Social stories

In order to eliminate confusion it must be borne in mind that the term "social stories" (see chapter two paragraph 2.6) will be regarded as synonymous with "storytelling" (as utilised in the title of this study). Preference will be given to "social stories" as this is the term coined by Carol Gray who developed the specific technique of utilising stories to aid the social development of learners with Asperger's Syndrome.

A social story, as the name implies, is a short story (between twenty and one hundred and fifty words) that is specifically devised to inform and advise learners with Asperger's Syndrome about a social situation (Gray 1995:222; Ozonoff, Dawson & McPartland 2002:202; Smith 2001:338). For example, it is used to help teach the rules of social interaction (Shore 2004:201), which tends to be an area of particular difficulty for learners with Asperger's Syndrome (Smith 2001:338).

Besides explaining to the learners what to do and say during social interaction, they supply critical information about the social situation, highlighting certain social cues, and other people's motives or expectations. Most important, social stories provide a rationale for why the learner should do or say what he or she is told to do or say (Ozonoff et al. 2002:202).

A social story is a product involving a process that improves social understanding between learners with Asperger's Syndrome and those charged with assisting them. As a process, a social story requires consideration of the perspective of learners with Asperger's Syndrome. As a product, a social story is typically short and specialised in the sense that it describes a situation, concept or social skill by using a format that learners with Asperger's Syndrome can relate to. The result of this interactive one-on-one teaching is often that caregivers involved with their learning are imbued with renewed sensitivity to the experience of learners with Asperger's Syndrome, and that there is a noticeable improvement in the response of such learners to efforts to socialise and educate them (Gray 2003:1).

Social stories are thought to be helpful not only in providing justification for social behaviour, but also in being visually highly structured. They provide a written product that the learner can refer back to at any time as a prompt or reminder. Social stories can be written on index cards and taped to the learner's desk to remind him or her of appropriate social behaviours in the classroom. Many learners keep their social stories organised in a notebook and enjoy rereading them with family or saving ones they no longer need as evidence of the progress they are making (Ozonoff et al. 2002:204).

1.5.4 Theoretical models of “diff-ability”

As mentioned in the introduction, this research is based on a "social acceptance and awareness model" that focuses on the strengths of learners with Asperger's Syndrome and is based on the principle that correct understanding and increased knowledge are essential for acceptance that the distinguishing features of these learners with special needs exemplify an outlook that is different from, but not inferior to other non-Asperger's Syndrome people. In fact, many see this syndrome as a "gift" (Jackson 2002:19; Jacobs 2004:337) and consider that there is absolutely no reason to "cure" them. The diversity of modern society cannot only accommodate these learners, but also needs and is enriched by their uniqueness. Moreover, since the condition of these learners is caused by intrinsic factors that are constant it follows that society has to assume that they can be integrated into society, and that on the whole their lives can be made easier (Jackson 2002:36-37).

Jacobsen (2003:87) captures the essence of this model as follows:

... I do not necessarily think of it as a disorder. In my experience it is atypical, but another way that some people are. The challenge was to utilise the exceptional strengths and abilities it presents, and also get along in the world with more typical people.

The term “neurotypical” apropos this research, will now be defined.

1.5.4.1 Neurotypical

“Neurotypical” refers to people whose neurological development and state conforms to what most people would perceive as normal (<http://en.wikipedia.org/wiki/>

Neurotypical 2005:1), in other words the rules and behaviour that society expects its members to follow in order to lead a harmonious, peaceful existence. The term “neurotypical” has been defined (with obvious satirical or sarcastic intent) as a neurological disorder characterised by preoccupation with social concerns, delusions of superiority and obsession with conformity (Institute for the Study of the Neurologically Typical 2002:1; Phillips 2004:6), in other words, “neurotypical” describes people who display neurologically typical behaviour characterised by instinctive and unconsciously acquired socialisation (Gardner 2002:1).

The term “neurotypicals”, actually coined by learners with Asperger’s Syndrome, is used with varying degrees of seriousness ranging from straightforward presumed factual labelling to refer to non-Asperger’s Syndrome people, to a more playfully tongue-in-cheek use in contexts which often strongly imply that the “merely typical” are to be pitied for wasting so much of their brain capacity keeping track of uninteresting and irrelevant information such as the thoughts and feelings of other people (<http://en.wikipedia.org/wiki/Neurotypical> 2005:1). However, with regard to this research the term “neurotypical” will be loosely, but cautiously, used to refer to all people without Asperger’s Syndrome; that is people who typically conform to societal expectations. Clearly this is a derogatory way, conceived by learners with Asperger’s Syndrome, of referring to the vast, incomprehensible complexity outside their own narrowly self-centred and circumscribed world. It must also be emphasised that there is no such concept as “neurotypical people” and certainly no “neurotypical world” and that such terms are at best a figment of the imagination of learners with Asperger’s Syndrome for the simple reason that there is so much variation among the general run of people that the fact that they are not affected by Asperger’s Syndrome is among the few traits that they have in common. It must be stated clearly that although the term “neurotypical” will be used in a few instances in this research, the researcher is well aware that it certainly is a questionable and

imprecise term at best. Nevertheless, it must be stressed that scientific inquiry and research is no less worthwhile because of its ambiguities. The kinds of questions asked, rather than the specific answers to those questions, constitute the essence of the field (Davidson, Neale & Kring 2004:2-3).

Three theories have been used to explain why the behaviour of learners with Asperger's Syndrome deviates from the so-called "norm" and why social situations present difficulties for them. A brief description of each theory will now be given.

1.5.4.2 Theory of mind

Theory of mind is a concept or mental apprehension of another person's attitudes and thoughts. Theory of mind enables people to recognise that another person's belief is based on his or her experience or knowledge, and not necessarily on what they know to be true (Jacobsen 2003:34). It is the ability to understand the thoughts, beliefs, feelings, intentions and point of view of others (Lovecky 2004:136).

It will be shown in this research that the development of theory of mind is delayed in learners with Asperger's Syndrome, and this impairment may hamper their social development. Nevertheless, as will be shown in chapter three, with the correct understanding and support learners with Asperger's Syndrome can overcome this impairment.

The concept of "central coherence", specifically with reference to learners with Asperger's Syndrome, will be now be briefly explained.

1.5.4.3 Central coherence

Central coherence is the process of constructing and synthesising a higher meaning from diverse information (Jacobsen 2003:45). It is the ability to “get the point” by putting many pieces of information together to construct a coherent overall picture in a particular context (Yapko 2003:55).

Non-Asperger’s Syndrome people generally get the “bigger picture” without thinking. Without any conscious effort they know that the real meaning of words and events derives from their context (Bashe & Kirby 2001:310). However, this is not the case for learners with Asperger’s Syndrome who cannot access this essential contextual information without a great deal of training and concentration (Bashe & Kirby 2001:310; Cumine, Leach & Stevenson 2000:25). Despite this, as will be shown in chapter three, weak central coherence effectively conduces to strength by causing greater emphasis and reliance on the ability to attend to detail. The likelihood of detail errors is greatly reduced in people who attribute inordinate significance, and therefore pay close attention to and remember them (Jacobsen 2003:46).

The concept of “executive functioning”, which has been used to explain the deficits found in learners with Asperger’s Syndrome will now be defined.

1.5.4.4 Executive functioning

Executive functionability is essentially the ability to “prepare for and execute complex behaviour, including planning, inhibition, mental flexibility, and mental representation of tasks and goals” (Ozonoff & Griffith 2000:86). It allows the person to disengage from the immediate focus of attention in order to pursue a goal, taking into account all available information (Szatmari 2004:40). It enables people to

recognise what is relevant and shift their attention from the irrelevant to the relevant (Jacobsen 2003:42).

Learners with Asperger's Syndrome display considerable executive functioning deficits. However, and in keeping with the "social acceptance and awareness model" adopted for this research, it must be recognised that with the trait of not being easily deflected from the immediate object of attention learners may excel in areas of their special interest and may even gain a considerable reputation for their phenomenal knowledge in a specific area. Career opportunities could be sought in such areas and their popularity among peers may increase when they become a reliable source of information in an area of common concern.

Only a very brief outline of the design chosen for this research will be given here since it is covered comprehensively in chapter four.

1.6 RESEARCH DESIGN

A qualitative research design will be used to gain information about and understanding of the nature of the social impairments that afflict learners with Asperger's Syndrome, and to gauge the effectiveness of social stories in assisting the social development of affected learners. It is the researcher's opinion that such a design will be most effective for this research, considering the sensitive nature of this topic. This type of design allows the researcher to remain receptive to new ideas, issues and undercurrents emerging from the study. This is especially relevant for the subject of the present study which is still relatively undeveloped (ie. a fairly new field of study), with the result that there is a considerable likelihood that new developments relating to the social skills of learners with Asperger's Syndrome may evolve during the process of the research.

Qualitative research tends to rely on the inductive mode of the scientific method, which is mainly concerned with exploration or discovery and deals with a phenomenon in an open-ended way, without prior expectations. Furthermore, the researchers develop hypotheses and theoretical explanations that are based on their interpretations of what they observe. Qualitative researchers view human behaviour as dynamic and changing, and they advocate studying phenomena in depth and over an extended period of time. The product of qualitative research is usually a narrative report with rich description (vivid and detailed writing) rather than a statistical report (Johnson & Christensen 2000:312).

A qualitative research design is not entirely preplanned. It is flexible and emerges in the course of research. Typically, the qualitative researcher selects a topic and generates preliminary questions at the start of a research study. However, the questions can be changed or modified during data collection if any of them are found to be naïve or trivial compared to others. This is one of the reasons why qualitative research is often said to be an emergent or fluid type of research (Johnson & Christensen 2000:312). This flexibility makes it possible for further information to be collected during the study.

For this particular research it was felt that an ethnographic research design would yield the best results. Only a brief outline of this design will be given here as more depth will be given in chapter four (see paragraph 4.3.2). Ethnography literally means “a portrait of a people”. An ethnography is a written description of a particular culture – its customs, beliefs, and behaviour – based on information collected through fieldwork (Harris & Johnson 2000:77-78).

Ethnographic research begins with the selection of a problem or topic of interest. The research problem that the ethnographer chooses guides the entire research endeavour. It typically dictates the shape of the research design, including the budget, the tools to conduct the research, and even the presentation of the research findings (Fetterman 1998:2). Ethnographic research methods, particularly extended observation and undirected interviews, offers researchers a rich and nuanced understanding of a field situation that may help enable creative problem-solving (Hsu 2001:1). In ethnography the researcher is the main research tool.

Direct participant observation is the main way of collecting data from the culture under study, and observers try to become part of the culture, taking note of everything they see and hear but also interviewing members of the culture to gain their interpretations (Holloway & Wheeler 1996:84-85). Using ethnographic methods helps researchers contextualise the behaviour, beliefs and feelings of the people being interviewed and observed (Holloway & Wheeler 1996:41). This was critical for the present research because the focus will be on assimilating / integrating learners with Asperger's Syndrome into society and thus it is important for the researcher to be able to appreciate the whole cultural background of these learners and the society in which they live.

Some background information is necessary to conceive the research topic in a way that permits a clear formulation of the problem. This information is obtained mainly by reading whatever has been published that appears relevant to the research topic. This process is called a literature review (Bless & Higson-Smith 1995:22). The purpose of the literature review is to assist description of relevant ideas and to form a theoretical basis for the research so that a more comprehensive understanding can be gained of the structure of social stories and the nature of the social impairments that afflict learners with Asperger's Syndrome.

Since the parents of these learners have accumulated a vast store of indispensable knowledge which the researcher can utilise, they will naturally form part of the sample population for this research. According to Arkava and Lane (quoted by Strydom & De Vos 1998:191) sampling can be defined as “the element of the population considered for actual inclusion in the study.” It can also be viewed as a subset of measurements drawn from a population of interest. The sample is studied in an effort to understand the population from which it was drawn.

The sample for this study (ie. the parents) will be interviewed. An interview is a data collection method in which an interviewer (the researcher or someone working for the researcher) asks questions of an interviewee (the research participant). That is, the interviewer collects the data from the interviewee, who provides the data. A strength of the interview is that a researcher can freely use probes (prompts used to obtain response clarity or additional information) (Johnson & Christensen 2000:140). This advantage makes it a very valuable tool for this research. Since parents may find it difficult to discuss sensitive issues, probes can aid the researcher in this regard. An unstructured interview with a schedule will be utilised. The unstructured schedule contains a small number of topics or themes that the researcher wants to cover during the interview. However, the sequence of the interview will differ from interview to interview since the natural flow of conversation is followed (Gorman & Clayton 1997:126). Dialogue between researcher and subject allows the interaction to move in new and perhaps unexpected directions, thereby adding both depth and breadth to the understanding of the issues involved. Such self-perceptions and enhanced understanding cannot be achieved in another way, which makes this a cornerstone of qualitative research (Gorman & Clayton 1997:45). The topics for the unstructured interview will be identified during the literature search, which may bring to light relevant questions for the researcher to ask during interviews with parents.

In this research learners with Asperger's Syndrome will be observed in order to discover whether there is a correlation between the impairments listed in the literature review and information gleaned from the parents. In research, observation is defined as the unobtrusive observation of behaviour patterns of people in certain situations with a view to obtaining information about the phenomenon of interest (Johnson & Christensen 2000:147). Qualitative observation involves observing all relevant phenomena and taking extensive field notes without specifying in advance exactly what is to be observed. In other words, qualitative observation is usually done for exploratory purposes. Qualitative observation is usually done in natural settings. In fact, the terms "qualitative" and "naturalistic observation" are frequently treated as synonyms in the research literature (Johnson & Christensen 2000:149). It is the researcher's intention to take on the role of participant observer. According to Burns (2000:404) the participant observer/investigator lives as much as possible in the company of, and in harmony with, the persons being investigated. Researchers take part in the daily activities of people, reconstructing their interactions and activities in field notes taken on the spot, or as soon as possible after the occurrence. Participant observation has been described as a process of waiting to be impressed by recurrent themes that reappear in various contexts (Burns 2000:404).

The parents will be asked to allow the researcher to test the social stories developed for this study and also to participate in the compilation of the stories because it is felt that the learners would be inclined to respond more comfortably and openly to their parents' instructions. After the social stories have been narrated the learners will again be observed in order to detect any modification in social behaviour. The parents will be asked to comment on any noticeable alteration.

A number of strategies will be employed to ensure validity of the design. Prolonged and persistent field work will be conducted to allow interim data analysis and corroboration to ensure that findings match participants' reality. Attempts will be made to use low-inference descriptors by means of tape recordings and field notes made during the interviews. Once the interviews have been conducted each participant will be asked to review the synthesis for accuracy of representation. Note that there may be reluctance to disclose sensitive information, but such data are an essential and invaluable source for ensuring the accuracy of the research results.

Having briefly outlined the research design, the chapter divisions envisioned for this study will be given in the rest of this chapter.

1.7 DIVISION OF CHAPTERS

The six chapters comprising this thesis are briefly outlined in this section.

Chapter One: Introductory orientation and statement of the problem. This chapter is an overview of the study, rationale, problem formulation, problem statement, aims set for the research, definitions of concepts and description of the chosen research methodology. Its purpose is therefore to place the study in perspective and familiarise the reader with its subject matter.

Chapter Two: The exploitation of social stories to assist the social development of learners with Asperger's syndrome. The history of Asperger's Syndrome will be discussed in this chapter. The social impairments of learners with Asperger's Syndrome will be outlined as these are the most significant. The chapter will then focus on one of the techniques which has been used to improve the social

skills of these learners. Finally the positive impact of social stories on the social development of learners with Asperger's Syndrome will be debated.

Chapter Three: Theoretical models of “diff-ability”. In this chapter three models, namely “theory of mind”, “executive functioning” and “central coherence” will be examined in an attempt to understand the basic conditions from which the impairments of learners with Asperger's Syndrome arise.

Chapter Four: Research design. This chapter will focus on the research design to be used in conducting the empirical study. As indicated in chapter one, a qualitative design will be used. A detailed explanation will be given in this chapter of what such a design encompasses.

Chapter Five: Results of the empirical study. The results of the interviews and observation will be discussed in this chapter. As mentioned previously, parents of learners with Asperger's Syndrome will be interviewed and the learners themselves will be observed in their natural settings in order to establish a correlation between the parents' interview responses and what occurs in the natural surroundings of these learners. The critical outcomes of the social stories will be recorded and it is expected that positive consequences will be achieved through the exploitation of these stories.

Chapter Six: Conclusions, recommendations and limitations. The concluding chapter will include a synthesis of the literature study (chapter two and three) and the empirical study (chapter four). This will enable the researcher to determine the extent of correlation between the literature study and the empirical study, in other words, whether what is discovered in the literature corresponds with reality. This chapter will also enable the researcher to determine whether the aims mentioned in

chapter one have been achieved. Any limitations of this research, as well as recommendations for further research, will be noted. Finally, concluding remarks will be made.

1.8 CONCLUSION

This chapter has been critical for orientating and setting the focus of the research and ensuring that it remains focused on its major theme, namely the positive implications of storytelling for the social development of learners with Asperger's Syndrome. The orientation function was accomplished by outlining the three rationales, the problem statement, research aims, definitions of key concepts and a description of the research design. The following chapter of this study will cover the nature of social impairments presented by learners with Asperger's Syndrome and the exploitation of social stories in order to promote their social development.

CHAPTER TWO: THE EXPLOITATION OF SOCIAL STORIES TO ASSIST THE SOCIAL DEVELOPMENT OF LEARNERS WITH ASPERGER'S SYNDROME

“Asperger Syndrome is part and parcel of who the child is – as much as the colour of his eyes. It is not something we separate out from him and “cure”. Although it can be disabling, this condition brings with it many gifts and strengths. With wise and loving guidance, children who have Asperger’s Syndrome can become successful, independent adults – adults with difficulties, to be sure; adults with unique perspectives and talents, almost certainly” (Powers & Poland 2003:20-21).

2.1 INTRODUCTION

In chapter one it was stated that the main aim of this research is to investigate the *technique of social stories*, and to determine *how it can be employed to promote the social development of learners with Asperger’s Syndrome*. It was also stated that to accomplish this aim a study of the nature and severity of the social impairments of learners with Asperger’s Syndrome would be undertaken. This second chapter will therefore comprise a review of the literature on the nature of the main social impairments experienced by learners with Asperger’s Syndrome, as well as a detailed description of the system of social stories.

In this chapter a general profile of learners with Asperger’s Syndrome will be drawn for the reader’s information because it is felt that neither these learners, nor any of their impairments, can be seen in isolation; instead they and all their impairments together should be treated as parts of an indivisible whole. It will be of little use, for example, to single out a particular impairment without taking into account the other difficulties that these learners may experience. After all, one impairment or deficit

may impinge (ie. have a specific conditioning effect) on this learner's personality as a person-in-totality.

Learners with Asperger's Syndrome have the potential to offer society dreams and discoveries as yet unimagined (Safran & Safran 2001:393). As will be described in this chapter, as well as the next chapter, learners with Asperger's Syndrome have many unique abilities that enable them to perceive the world differently and can therefore, according to the researcher, offer society a *unique approach to life*. As evidenced by the quote above the title of this chapter, and in accordance with the "social acceptance and awareness model" adopted for this research, the present chapter will be premised on the fact that *despite the impairments* learners with Asperger's Syndrome have to contend with they can be accommodated into "normal" society with effective support and understanding, that is, their chances of successful coexistence are improved in a conducive environment (Lawson 2003:25). Indeed, with a few adjustments or modifications these learners could be very successful in the "neurotypical" world (Moyer & Breetz 2004:179). Admittedly this is no easy task, especially considering that many negative factors exist (eg. high levels of crime, violence, corruption, and often an inefficient and incompetent South African education system) that can impact on the education of all learners. Evidence abounds in the daily press that bear out these frightening facts (eg. reports that teachers molest learners, and that learners are kidnapped from school). It must be said, if only in passing, that if basic schooling is confronted by shallow, callous indifference, then *what chance* do these deserving learners with special needs have?

However, a full and detailed investigation of the actual changes that need to be made to the South African school system (and society in general) to ensure the acceptance and inclusion of learners with Asperger's Syndrome will not be

undertaken here, as the main emphasis is on examining the social impairments of these learners and the development of a greater understanding of the unique nature of these learners, especially considering that teachers (both regular teachers and teachers qualified in special needs education) often find it difficult to understand this syndrome (Mertz 2005:114).

What will become evident from this research is that “normal” is a rather fluid and shifting concept that is not readily definable in any general or absolute sense. However, the term can be used in more specifically circumscribed contexts. The intent of this research is not to become deeply involved in such debates but rather to bring about an understanding of the uniqueness of learners with Asperger’s Syndrome and in so doing ensure that a more tolerant and accepting attitude is developed towards these learners, and vice versa. More specifically the main point at issue is whether learners with Asperger’s Syndrome can be assimilated into a conducive school environment. The plea here is for an educational environment which tolerates and respects all learners with different and unique educational needs. Teachers in South African schools need to be empowered with the knowledge and skills to ensure that learners with Asperger’s Syndrome can coexist peacefully with the rest of the school community and ensure a non-discriminatory type of education. This carries with it the responsibility to ensure that all learners with and without disabilities develop their learning potential to the fullest (Department of Education 2001:11).

Throughout this research the impairments of learners with Asperger’s Syndrome will also be referred to as “differences”. However, the intent here is not to minimise the “condition” but rather to emphasise, as mentioned in the above paragraph, a more tolerant and accepting way of portraying the difficulties which learners with Asperger’s Syndrome experience. This is especially true of the South African

education system which has to deal with many different learners, each with their own unique and diverse needs.

To begin this chapter, and in keeping with our holistic perspective, the history of Asperger's Syndrome will now be briefly outlined.

2.2 HISTORY OF THE DISCOVERY OF ASPERGER'S SYNDROME

This syndrome was first described in 1944 (Asperger 1991:37) by Hans Asperger (1906-1980), an Austrian psychiatrist and educator (Perlman 2000:221) who published his findings in a paper titled *Autistic psychopathy in childhood*. Asperger lived and worked in Vienna where he qualified as a doctor and specialised in paediatrics. His work brought him into contact with a number of boys who found it difficult to "fit in" socially. In addition to their poor social interaction skills, the boys had difficulties with the social use of language, together with a limited ability to use and understand gesture and facial expression. Also evident were repetitive, stereotypical behaviours, often with "abnormal fixations" on certain objects (Cumine et al. 2000:1). Asperger recognised how severely the syndrome impacted on the everyday lives of the affected children (learners), commenting that teachers despaired at the strenuous efforts required of them (Asperger 1991:76). However, Asperger was also aware of the boys' many positive characteristics – for example, a high capacity for special achievements, such as mathematical talents - but he did not underestimate the impact of their individuality on others with whom they came into contact. He also noted their vulnerability to teasing and bullying (Asperger 1991:37;61). Although Asperger originally reported the "condition" only in boys, reports of girls with the syndrome have appeared. Nevertheless, males are significantly more likely to be affected (Klin & Volkmar 1997b:214-215).

The fact that Asperger's seminal work was made known in German (Hewetson 2002:71) at a time when the turmoil of World War II was approaching its most destructive phase in Germany (anti-German sentiment was probably at an all-time high throughout the developed world then) is probably the principal reason why it did not reach the attention of the international community until 1981, when Dr. Lorna Wing of the United Kingdom reintroduced the "condition" as Asperger's Syndrome (Frith 1991:1; Goble 1995:17; Johnson 2005:9; Wing 1998:11). In the meantime learners in whom Asperger discovered the syndrome described in his paper in 1944 were either dismissed as merely eccentric or peculiar, or they were lumped together with learners with other diagnoses (Powers & Poland 2003:14). For the next twenty years after Wing's paper, research on Asperger's Syndrome began to appear regularly in the United Kingdom and Scandinavia (Bankier, Lenz, Gutierrez, Bach & Katschnig 1999:43-44). Today, however, much debate exists regarding the diagnostic features of Asperger's Syndrome. Despite the publication of the *Diagnostic and statistical manual of mental disorders* (1994) and its revised edition (2000), much discussion still continues regarding the nature of Asperger's Syndrome, and it is the researcher's opinion that such deliberation will continue for a long time, especially considering its overlap with many other syndromes and its overlapping into the "neurotypical" world (see chapter one, paragraph 1.5.4.1).

Perner (2002:2) points out that a significant characteristic of Asperger's Syndrome is that many of its symptoms are shared by "normal" or neurotypical people to some extent. Therefore, it is not surprising that many have had their symptoms dismissed as normal or things to be conquered (Perner 2002:2) and because there is no definitive physical or psychological test for the syndrome, it is rare for a diagnosis to be given immediately (Mertz 2005:19). Ironically, attributes such as absent-mindedness, or being "scatterbrained", could be a typical byproduct of the traumatising demands of modern society in which the slightest misstep carries an

extremely heavy penalty – hence Asperger's Syndrome could be an evolutionary aberration that is finding a niche by default in the hysterical pitch of activity that typifies modern life. However, as mentioned in chapter one, paragraph 1.1, this research will not become deeply involved in such debates, but rather focus on ensuring that a more supportive environment is created for learners with Asperger's Syndrome.

Winter (2004:77) maintains that, as with all other learners (and the spectrum is wide indeed), any suitably qualified person can teach a learner with Asperger's Syndrome, so long as the teacher has the right attitude. Together with a positive, empathetic attitude teachers also require adequate training and support to ensure that learners with Asperger's Syndrome succeed in the classroom – knowledge leads to understanding. Such sentiments are echoed by Koudstaal (2005:319) who argues that teachers should be skilled in identifying and recognising not only the learner's individual and exceptional needs, but also possible emerging skills, areas of strength and special interests in particular contexts. The challenge and responsibility, therefore, rests on everyone, but more specifically on government, to achieve the daunting task of accomplishing not only delivery on basic education, but accommodation of really challenging "conditions" such as Asperger's Syndrome in a South African inclusive classroom (see chapter one, paragraph 1.1). Unfortunately, in many instances, the depiction here is of an idyllic situation, especially considering that the perception of the formal education sector in South Africa is one of consistent non-delivery on basic education over the past decade (De Vries 2005a:12; Laurence 2005:5; Viljoen 2004:10; Zille 2005:16). The need for further thorough investigation into issues such as whether such a utopian education system can be created is definitely required; however, it lies beyond the scope of this research.

The social impairments of learners with Asperger's Syndrome will now be discussed against the brief outline above of how the condition was identified and in light of the holistic perspective adopted for this research.

2.3 SOCIAL IMPAIRMENTS OF LEARNERS WITH ASPERGER'S SYNDROME

An important part of growing up is learning how to understand and behave towards other people in order to be accepted and to cope in society. People have to learn conventions, how to greet others, what can be said, what should not be said, what is tactless and how best to interact with our fellow citizens. That is to say, part of growing up is acquiring conventions that help us to get on well with other people (Cornish & Ross 2004:9), and again, possessing correct social skills is the ability to communicate appropriately and effectively (Kelly 1997:131), including the ability to engage with a peer in social interactions, and to interpret social situations with the aid of both verbal and nonverbal communication (Leventhal-Belfer & Coe 2004:160).

By contrast, deficits in social skills are among the salient characteristics of learners with Asperger's Syndrome (DuCharme & McGrady 2004:16), and such deficits are expressed as socially and emotionally inappropriate behaviours, lack of appreciation of social cues, inability to interact with peers or to develop peer relationships, and an impairment in the ability to use non-verbal behaviours to regulate social interaction (Koning & Magill-Evans 2001:23). Clearly, the social impairments of these learners show up most prominently in a general profile; indeed their social impairments are persistent and life-long and cause appreciable difficulties in inclusive environments, compared to other impairments discussed later in this chapter. It stands to reason that individual learners with Asperger's Syndrome will tend to experience the inclusive system differently in accordance with their own unique characteristics and general predispositions.

To a great extent, society appraises people by the way they look, behave and talk. Learners with Asperger's Syndrome are not known to have distinguishing physical features but are primarily viewed by other people as *different* because of the unusual quality of their social behaviour and conversation skills (Abele & Grenier 2005:217; Attwood 1998:28; Attwood 2000:88).

Social impairments of learners with Asperger's Syndrome remain perhaps the most difficult to support. Some researchers (Asperger's Syndrome nd:5; Klin & Volkmar 1997b:217-218; Marriage, Gordon & Brand 1995:58) even suggest that social impairments are the most prominent characteristic of learners with Asperger's Syndrome. Bashe and Kirby (2001:329) concur with this view by noting that ultimately, for all learners with Asperger's Syndrome, social ability colours virtually every other experience. In fact Asperger (1991:37) himself stated:

In many cases, the social problems are so profound that they overshadow everything else.

It was stated in chapter one that according to the most recent diagnostic criteria for Asperger's Syndrome as contained in the *Diagnostic and statistical manual of mental disorders* (American Psychiatric Association 2000:89), the primary criterion for Asperger's Syndrome is a *qualitative impairment in social interaction*. For example, the learner may lack social and emotional reciprocity. In other words, the learner may dominate the interaction, thus eliminating the possibility of making the contact meaningful.

It has also been pointed out that the social impairments characterising Asperger's Syndrome could be conceived as a "social dyslexia" (Howlin 2001:1; Howlin 2004:113). As the dyslexic learner struggles with the alien world of print, so learners

with Asperger's Syndrome are at a loss to read the subtleties and nuances of social interactions and intent. In both situations, what would be a naturally unfolding developmental process under normal circumstances is dramatically slowed down or absent. Lacking the skills to blend in, and displaying the visible disability that might signal a need for understanding, these learners are truly alone (Safran 2002b:61). As noted by Grandin (1995:43), an adult with Asperger's Syndrome, the author was like a "visitor from another planet who has to learn the strange ways of the aliens and makes social decisions based on intellect and logic."

Here again, it is the researcher's plea for people living in society to develop a more accepting and open-minded approach to all people and support those who are different from the so-called "norm", thereby ensuring that everybody exists together in a harmonious society. Undoubtedly many educators who find themselves in the centre of the changing South African education system may be unable, or even, unwilling to respond to the challenges of the diverse needs of learners in their classrooms. Issues such as these are addressed in such policy documents as *White Paper 6: Special Needs Education* (2001) in order to ensure that the education of all learners is meaningful and worthwhile. However, despite all this, the questions of *whether*, and *how*, learners with diverse needs can be accommodated in a South African inclusive classroom, are becoming ever more challenging and urgent, especially considering the many negative conditions, as mentioned by many teachers themselves and in local newspapers, that exist in our current education system.

The social impairment of "play with other learners" will now be discussed.

2.3.1 Play with other learners

Friendship, even for the most capable of us, requires hard work in order to obtain even minimal payoffs, but from birth the odds are stacked against those born with Asperger's Syndrome (Gutstein & Sheely 2002:11), who tend to be socially isolated (loners) (Myles, Barnhill, Hagiwara, Griswold & Simpson 2001:306). Asperger (1991:36) described a typical case of a learner who was unable to assimilate with a group of playing children and was in fact not interested in them.

Incapacity to understand the emotional aspect of friendships is a persistent trait, with the result that their attempts at socialising remain ineffective. Often learners with Asperger's Syndrome want to establish friendships, but these learners (like many other people) lack the ability to develop and sustain such relationships. In other words, they are aware of the presence of others even though their approach may be inappropriate and peculiar (Asperger's Syndrome nd:3; Howlin 2004:102; Klin & Volkmar 1997b:217-218). Cumine et al. (2000:39) indicate that these learners are not antisocial; rather, they are asocial – at times wanting to be part of the social world, but not knowing how to enter it. Bashe and Kirby (2001:330) and Dychkowski (2000:4) endorse this view, noting that although the “affected” learners want to have friends, they appear to be ineffective when interacting with others because they are weak in the types of skills that, in most cases, lead to the development of friendships.

It seems that these learners are more self-centred than selfish (Forder 1997:8). Some may be observers on the periphery of social play, or they may prefer to be with much younger or older learners. When they are involved in joint play there can be a tendency to impose or dictate the activity. Social contact is tolerated as long as the other learners play their game according to their rules. Learners with Asperger's

Syndrome cannot tolerate interference with their plans or rituals (Forder 1997:8). Sometimes social interaction is avoided, not because of a lack of social play skills, but because of a desire to have complete control over the activity (Attwood 1998:30). Willey (1999:16-17), an adult with Asperger's Syndrome, notes that other children always wanted to use the things she had so carefully arranged. These children would want to rearrange and redo and did not let her control the environment. They (the other children) did not act the way she thought they should act. Not surprisingly, therefore, learners with Asperger's Syndrome are often described as being very controlling. Such learners need to do things a certain way and cannot adapt to others' ideas. For these learners, controlling others is their way of saying "this is the only way I know how to do things, thus it is the right way" (Leventhal-Belfer & Coe 2004:51). Of course, it should be borne in mind that many people insist on a particular way of doing things, and that if the truth be known they would be at a loss to do it another way. However, for this particular study the focus will be on the social implications that the lack of capacity for constructive engagement with other learners in play causes for the social development of learners with Asperger's Syndrome.

The learners are not interested in doing the activities other learners want to do and are disinclined to explain what they are doing. They appear to play in a "bubble" and may resent other learners intruding on their activities; in fact, they can be quite abrupt or even aggressive in ensuring their solitude (Attwood 1998:30-31). Clearly, what constitutes fun for some learners with Asperger's Syndrome is not enjoyable to their peers, and vice versa (Bashe & Kirby 2001:50).

Forder (1997:7) notes that young learners with Asperger's Syndrome do not appear to be concerned about making friends, nor can they effectively define friendship. Correct responses such as "it's someone you like", or "somebody who helps you

read and stuff” have to be learned so that they represent an accommodation within the learners’ metacognitive scaffolding, but that is their limit. For learners with Asperger’s Syndrome the definition of friendship does not hinge on emotions, but on practicalities (Forder 1997:7). Evidently their concept of a friend is qualitatively different from the generally accepted concept of friendship (Wagner & McGrady 2004:114). The subject of defining “friendship” is certainly not unique to learners with Asperger’s Syndrome and many people who are not affected by Asperger’s Syndrome may have difficulty finding and maintaining social relationships; however in this research the focus is on the difficulties that learners with Asperger’s Syndrome experience with regard to such issues.

Most learners enjoy (even love) the times when they can enjoy free play. At school this will usually be at break time. But for learners with Asperger’s Syndrome these are often the most difficult times of all (Boyd 2004:116; Howlin 2004:186). Learners with Asperger’s Syndrome do not know how to get along with their peers in unstructured, unsupervised playtime and thus break times become a cause of increased stress for these learners (Boyd 2004:116; Howlin 2004:186). During school breaks the learners are often found on their own in a secluded area of the playground, sometimes talking to themselves, or they may be in the library, reading about their particular interest. One learner, when asked why he did not talk to other learners in the playground, replied: “No, thank you. I don’t have to” (Attwood 1998:31). Many learners with Asperger’s Syndrome also have difficulties with crowds and feel their “space invaded”, which makes them feel very uncomfortable and at worst can start a panic attack (Jackson 2002:167).

The social impairment of inherently deficient conformity to “codes of conduct” will now be discussed.

2.3.2 Codes of conduct

In South Africa, as in any other society, there will always be rules and assumptions of which tacit knowledge is required to avoid behaviour that is socially inappropriate in some situations, or that will be felt to be hurtful in any situation, but learners with Asperger's Syndrome often appear to be blind to such matters (Gillberg 2002:30), which can be quite confusing to them (Bashe & Kirby 2001:34-35). In other words, learners with Asperger's Syndrome do not seem to be aware of, or capable of apprehending and appreciating the unwritten rules of social conduct and will inadvertently say or do things that may offend or annoy other people (Attwood 1998:31-32).

The conversations of learners with Asperger's Syndrome are often marked by language that is considered inappropriate because they are inclined to be very literal and explicit when expressing their views (Johnson 2005:77). These learners say exactly what comes to mind (Myles & Southwick 1999:15). They do not "say things without saying them" or lace their words with innuendo or hidden meanings. Often they do not really understand their effect on others, or even that they have an effect (Jacobsen 2003:58). This can cause painful feelings and misunderstandings (Klein 2001:1), and strangers may consider them rude, inconsiderate or spoilt, assuming that the learners' unusual social behaviour is a result of parental incompetence (Attwood 1998:32-33; Boyd 2004:39; Hewetson 2005:118). Ultimately, as noted earlier, the necessity exists to increase society's knowledge and understanding of Asperger's Syndrome and in this way develop a more accepting and tolerant attitude towards these learners. According to Swart and Phasha (2005:213) the challenge exists for educators to reflect critically, and therefore honestly, about their personal views and values with regard to learners' learning and development. Teachers should respect, understand and identify the different ways in which learners with

Asperger's Syndrome project their thinking and learning styles which should be incorporated and addressed during teaching and learning sessions (Koudstaal 2005:319).

Once codes of conduct are explained the learners often rigidly enforce them (Howlin 2004:113), perhaps becoming the "class policeman", honest to a fault when such behaviour actually breaks the code of conduct. Other learners are determined to bend or break the rules, but learners with Asperger's Syndrome are intent on enforcing them (Attwood 1998:32). Wing (1997a:254) argues that some are so concerned about rules that they publicly reprimand complete strangers whom they consider to be behaving incorrectly. These learners may be confused about what pleases and what angers someone. They are told what is appropriate and inappropriate, and they may be told that their behaviour is inappropriate. These learners are asked to be aware of the meaning of their behaviour to others. This amounts to asking them to memorise, remember, and apply rules of behaviour that they do not understand. It also means that, to comply and please others, learners with Asperger's Syndrome are often trying to do many things in what, to them, is someone else's meaningless way (Jacobsen 2003:58).

Related to the impairment concerning social codes of conduct is the misunderstanding that learners with Asperger's Syndrome have regarding personal space. This social impairment will now be outlined.

2.3.3 Personal space

Learners with Asperger's Syndrome find it difficult to determine proper body space (Forder 1997:8; Pochomis 2004:41). They may not know how far away from another person to stand or sit and may appear to be ignoring someone by sitting too

far away, or by facing the other way, and conversely, these learners can make other people feel uncomfortable by accidentally sitting or standing too close to them (Wilson 2000:3-4). This may cause the learners to be socially isolated and ostracised and thus further hamper the development of correct social skills.

Difficulties that learners encounter with eye contact will now be discussed.

2.3.4 Eye contact

Inappropriate use of eye contact has also been observed in learners with Asperger's Syndrome (Bashe & Kirby 2001:24; Cumine et al. 2000:19; Johnson 2005:10; Shore 2004:200). Clinical observation indicates that these learners often fail to use eye contact to punctuate key parts of their conversation, for example when starting their utterance, to acknowledge praise or interest, seek clarification, to read body language, or to signify the end of the utterance (Attwood 1998:54). Research studies (Ellis, Ellis, Fraser & Deb 1994:257; Tantam, Holmes & Cordess 1993:111) have also suggested there is a lack of eye gaze when the other person is talking, that is, the significance of eye contact is not appreciated.

There is also a failure to comprehend that the eyes convey information about a person's mental state or feelings. Paradoxically, learners with Asperger's Syndrome do not shy away from eye contact because they fail to comprehend that such contact conveys important information, but because they feel overwhelmed by its significance and a sense of being threatened by such contact. Learning to make appropriate eye contact is important for social success (Bashe & Kirby 2001:25). Learners with Asperger's Syndrome need to learn the importance of looking at the face and eyes of the other person, not just to locate them but to recognise and respond to the subtle cues given in facial expressions (Attwood 1998:54). When

learners do not gaze appropriately they may miss how the speaker feels about what they are saying, such as looking uncomfortable when lying. These learners are also likely to find it harder to follow class discussions when conversation flows between many speakers (Stuart, Blackwith, Cuthbertson, Davison, Grigor, Howey & Wright 2004:41).

People who are not affected by Asperger's Syndrome make assumptions about poor eye contact and may assume that it means such things as shyness, poor self-esteem, disinterest, or even disrespect. After all, correct eye contact is perceived as an attribute of external normality (Osborne 2002:53). However, learners with Asperger's Syndrome can be trained or can train themselves to have more eye contact, and as these learners get older they may get more "comfortable" with this behaviour. These learners learn to have eye contact because they have learned that it is expected by others and not because these learners understand others' use of eye contact. Learners with Asperger's Syndrome have learned that making correct eye contact is respectful, and not looking at the person one is talking to is disrespectful (Jacobsen 2003:71-72). In other words eye contact has to be learnt by rote and by example, almost as one learns a difficult foreign language (Osborne 2002:53).

At times learners with Asperger's Syndrome are compelled, or they even force themselves, to make eye contact because they have been directly taught that it is expected social etiquette. However, the process is experienced as painful, uncomfortable, even impossible and akin to looking directly into the glaring headlights of a car (Bashe & Kirby 2001:24). Jackson (2002:70-71) states that when he looks someone straight in the eye, particularly someone he is not familiar with, he feels as if their eyes are burning him and as if he is looking into the face of an alien. If he gets past that stage and does not look away, then whilst someone is

talking he finds himself staring really hard and looking at their features and completely forgetting to listen to what they are saying. This may be related to the trouble that learners with Asperger's Syndrome have with doing two things at once and find "looking" and "listening" simultaneously nearly impossible (Bashe & Kirby 2001:24; Jackson 2002:71).

Jolliffe, Lansdowns and Robinson (1992:15) capture the essence of the extreme difficulties that learners with Asperger's Syndrome experience with eye gaze and looking at people's faces:

Looking at people's faces, particularly into their eyes, is one of the hardest things for me to do. When I do look at people I have nearly always had to make a conscious effort to do so and then I can usually only do it for a second. If I do look at people for longer periods of time, they usually claim that I seem to be just looking through them rather than actually at them, as if I am unaware that they are actually there. People do not appreciate how unbearably difficult it is for me to look at a person. It disturbs my quietness and is terribly frightening - though the fear decreases with increasing distance away from the person.

The social impairment of "face perception" will now be discussed.

2.3.5 Face perception

One important constituent of social interchange is processing of information provided by facial expressions (Pierce & Courchesne 2000:344). According to Ellis (quoted by Davies, Bishop, Manstead & Tantam 1994:1033-1034), faces are arguably the most important biological and social objects in our environment and

they are certainly one of the primary means of perceiving a person to be a person and not an inanimate object. Facial expressions are also the means of communicating much vital information to us, including facial familiarity, characteristics and attributes and emotional states. Clearly face-perception abnormalities may be a core feature of the social disabilities of learners with Asperger's Syndrome (Howlin 2004:112; Osborne 2002:53; Schultz, Gauthier, Klin, Fulbright, Anderson, Volkmar, Skudlarski, Lacadie, Cohen & Gore 2000:331). This seems to point to a problem that may arise in early infancy since face recognition is one of the earliest accomplishments of the infant in the process of interacting and bonding with the caretaker (Nelson 2001:3). Hence, learners with Asperger's Syndrome may be at a disadvantage since this process does not occur naturally and in the same way as it does for other learners, and even when they manage to decipher what someone's face conveys they do so differently from everyone else, which may be less efficient and take more time (Ozonoff et al. 2002:62). Learners with Asperger's Syndrome themselves sometimes have "wooden" faces that fail to respond to the non-verbal signals of others (Johnson 2005:10). Evidently further social difficulties may be encountered for these unique learners.

Grossman, Klin, Carter and Volkmar (2000:375) assert that there are qualitative differences in how learners with Asperger's Syndrome process facial expressions. It was found in a research study that these learners performed worse than experimental controls on tests of comprehension and production of facial and spoken expressions of emotion (Davies et al. 1994:1034), and it was therefore concluded that unusual processing of facial expressions is just one further manifestation of an innate inability to enter into reciprocal affective relations with others (Davies et al. 1994:1034), especially considering that improper face perception could be misinterpreted by the conversation partner as insulting or rude (Wilson 2000:3).

An interesting part of the social impairments of learners with Asperger's Syndrome concerns the "hidden curriculum", which is the subject of the next section.

2.3.6 Hidden curriculum

Every school and every society has a hidden curriculum (Myles & Simpson 2001:280) of the do's and don'ts that are not spelled out but that everyone is somehow aware of. The hidden curriculum includes the skills that we are not taught directly yet are assumed to have (Myles & Simpson 2001:279). For example, basic conversational skills such as when to listen, how to question, or how to initiate and end interactions are generally assumed to be automatically acquired through our living in a social world. Learners with Asperger's Syndrome rarely gain these skills automatically and remain unable to apply these common conventions (Safran 2003:159). Thus, these learners are at a disadvantage because they usually do not understand the hidden curriculum (Myles and Southwick 1999:70;77) and it causes challenges and even grief for them (Myles & Simpson 2001:280). They inadvertently break rules associated with the hidden curriculum and either get into trouble with adults or are further ostracised or hurt by peers (Myles & Simpson 2001:285). As a result, they (learners with Asperger's Syndrome) require direct instruction on the hidden curriculum. Learners with Asperger's Syndrome therefore *need to know*:

- their teacher's expectations
- teacher-pleasing behaviours
- learners to interact with and those to stay away from, and
- behaviours that attract positive and negative attention (Myles & Simpson 2001:285).

It is the researcher's opinion that understanding the hidden curriculum can make a considerable positive difference to these learners.

Learners with Asperger's Syndrome have difficulties in both social and communication skills which are indeed inseparable (Wagner & McGrady 2004:102). Bearing this in mind, the social relevance of language impairments affecting learners with Asperger's Syndrome will now be discussed.

2.4 SOCIAL ASPECTS AND IMPLICATIONS OF LANGUAGE IMPAIRMENTS

Language is a tool for use in social exchange and for both sharing and gaining knowledge (Coufal & Coufal 2002:110). In other words, people learn to communicate in order to engage with others in social contexts (Yapko 2003:141). Social language ability is crucial to achieving both community integration (ie. assimilating learners with Asperger's Syndrome into the community) and peer acceptance (ie. acceptance of learners with Asperger's Syndrome by their peers) (Paul 2003:87). Learners with Asperger's Syndrome encounter difficulties when using language in a social context (Pochomis 2004:41), they speak to share outside facts but not to share inner thoughts and ideas (Hewetson 2005:158), and what makes matters worse is their having few social contacts and few language models – they have little to gain from television programmes and computer games which are not known for high levels of language, syntax, or metalinguistic examples (DuCharme 2004:48). As should be evident, learners with Asperger's Syndrome prefer and can relate to activities of a solitary nature (such as computer games) in which little or no social contact is required. Playing a computer game is less stressful for these learners than socialising with others, and such solitary activities will be pursued at the expense of making friends. Of course, few people, if any, can be perfectly poised at all times. Indeed many people experience awkwardness and

it can become a serious, even crippling impairment, yet it may have nothing to do with Asperger's Syndrome.

As mentioned earlier (in the third paragraph of the introduction of chapter one), Asperger's Syndrome is characterised by a lack of capacities to develop and practice social skills. Thus the intention of the researcher is to deepen understanding of and generate a more positive attitude towards the characteristic features of this syndrome, thereby creating a more conducive environment in which learners with Asperger's Syndrome can function. As Swart and Pettipher (2005:20) maintain, the inclusion of all learners naturally involves and affects the beliefs, values and attitudes of all concerned about diversity, change, collaboration and learning, and these intangibles become manifest in their influence on teaching practices and decision making. The feasibility of inclusion depends on the (in)adequacy of existing capacity and whether capacity can be created reliably and sustainably to cope with formal basic education in the first place, and in addition with challenging conditions such as Asperger's Syndrome, in an inclusive South African classroom.

Learners with Asperger's Syndrome are thought by many to have a command of "normal" language. This is not the case, however, because the appearance of normal language expression (in terms of grammar and syntax) and even advanced vocabulary usage belies the difficulty they have with the use of language to send and receive messages for the purpose of social communication (Bashe & Kirby 2001:210; Howlin 2004:69). Safran (2002b:61) concurs, noting that the intelligence and vocabulary that many of these "little professors" display may mask the disability, leading to misdiagnoses within learning, behavioural, or attention-deficit categories. Further confusion about the language impairments of these learners arose from misleading diagnostic criteria (American Psychiatric Association 2000:89; World

Health Organisation 1989:257) as expressed in the statement: “There is no clinically significant general delay in language” (eg. single words used by age two, communicative phrases used by age three). This led many to assume – incorrectly – that the feature separating Asperger’s Syndrome from other pervasive developmental disorders is the absence of speech delay before age three.

The social language impairment experienced by these learners in the category referred to as “pragmatics” will now be reviewed.

2.4.1 Pragmatics or the art of conversation

Pragmatic language (the use of language in a social context) is universally impaired in learners with Asperger’s Syndrome (Attwood 1998:68; Leventhal-Belfer & Coe 2004:39; Tantam et al. 1993:111; Wagner & McGrady 2004:102). Pragmatic language refers to the practical use of language, which includes both verbal and nonverbal communication. Broadly speaking pragmatic language means the use of language to have one’s needs met, to find out about the world, and to be appropriately social (Leventhal-Belfer & Coe 2004:192). It involves what is said, why it is said, and when to use certain forms of speech (Wagner & McGrady 2004:120). On close observation it will be noted that learners with Asperger’s Syndrome seem to be unaware of listeners’ verbal or non-verbal responses while they are talking. Indeed, these learners often appear to talk “at” rather than “to” interlocutors, giving information rather than holding proper conversations (Lord 1999:3). Poorly developed pragmatic language skills can cause learners with Asperger’s Syndrome to verbalise tangential thoughts that are loosely related to the discussion (DuCharme & McGrady 2004:13).

Learners with Asperger’s Syndrome seem to take in language “whole”, then use this

language without always understanding it and without knowing its meaning for the person with whom they are speaking. The mechanical process of memorising and then using language, for them, does not require the same level of comprehension that it seems to require of “neurotypical” children (Jacobsen 2003:125). In other words, these learners excel at the outward trappings of language but fail to internalise the emotional and other content that their language use seems to reflect (ie. language pragmatics). Ultimately, learners with Asperger’s Syndrome fail to use language as a means of social interaction and pursuing social interests; instead they learn language as a systematic and rule-based system, almost like a mathematical equation which can be solved by following a few structured, predesigned steps. In other words, learners with Asperger’s Syndrome fail to grasp the finer intricacies which language can portray.

The conversations of learners with Asperger’s Syndrome tend to be one-sided, repetitive, and focused on their own interests (Boyd 2004:143-144; Zwaigenbaum & Szatmari 1999:277). They may launch into a conversation without reference to the ongoing conversation (if in a group) or strike up a conversation without referring to the generally accepted proprieties of connected or apposite ideas (Forder 1997:7). If the conversation shifts beyond a favourite area of interest they are likely to withdraw or to return perseveratively to the initial topic. As a result these learners may be labelled as social misfits and be deliberately ignored by other people (Perlman 2000:223).

The bulk of human communication is non-verbal, and is conveyed in many ways including facial expression, body language, tone of voice, emphasis on certain words and eye contact. It relies heavily on being able to interpret and understand the meaning behind the words (Aston 2003:67). In fact recent research indicates that more than ninety per cent of social interaction consists of non-verbal

communication (Boyd 2004:43). People with the requisite psychic capacities know, seemingly by instinct, that it is not what is said, but the way it is said, that fully communicates what is meant. The adequacy of people's perceptual capacity is too readily taken for granted, and it especially does not come naturally to learners with Asperger's Syndrome (Aston 2003:65; Boyd 2004:43), with the result that these learners appear to be socially naïve and inept (Bashe & Kirby 2001:46), and that they find the social situation in the classroom difficult to understand (Tantam 2000:54).

Pertaining to the pragmatics of conversation, learners with Asperger's Syndrome tend to understand others in a very literal way (Cumine et al. 2000:5), hence the following discussion of "literal interpretation".

2.4.2 Literal interpretation

Asperger's Syndrome learners' difficulty with the use of language in social contexts was explored in the section on pragmatics of language (see paragraph 2.4.1 of this chapter). Included under this topic is the literal interpretation of language. Learners with Asperger's Syndrome tend to interpret other people's utterances overliterally (Asperger's Syndrome nd:2; Attwood 1998:76; Pochomis 2004:41). Literalness of language usage implies that nothing can be taken for granted in these learners' responses to instructions (Connor 1999:84-85; Kerbel & Grunwell 1998:24; Kirkman 1996:2-3). These learners are unable to comprehend the real meaning, and as a result may become confused, or they may totally misunderstand (Stuart et al. 2004:57). Unless all words and terms are used in their literal sense, these learners will have difficulty with listening and little chance of understanding (Aston 2003:49) and as a result may fail to realise that the same word can have two completely different meanings (Hewetson 2005:95).

This characteristic also affects the understanding of common phrases, idioms or metaphors (Attwood 1998:76). Metaphors are an intrinsic part of conversation and are an important way of conveying meaning. To create and understand metaphors is an important linguistic skill for which the human brain seems to have a natural capacity (Szatmari 2004:86). But learners with Asperger's Syndrome sometimes seem to live "without metaphors", not only in their language but in their understanding of the world. Living without metaphors implies there is possibly no distinction between the literal and the figurative; all is literal meaning. Holding two meanings in place at the same time is just not possible (Szatmari 2004:87). It is the researcher's opinion that although many sources claim that learners with Asperger's Syndrome may encounter difficulties with metaphors no definitive statements regarding this impairment can be made because there may be many non-Asperger's Syndrome people who also struggle with metaphors, and after all, learners with Asperger's Syndrome may at times, perhaps through direct instruction and maturity, comprehend the meaning of figurative language. It seems then that the differences may be a matter of degree and pace to which different people experience difficulties with metaphors.

Besides their seeming incapacity to understand idioms and metaphors these learners seem to lack a sense of humour, with the result that they are mystified by subtle jokes or rather, jokes that depend on dual meanings (Perlman 2000:223).

However, as learners with Asperger's Syndrome get older they become more conversant with the nonliteral or figurative aspects of language. These learners then "learn" the meaning of phrases and even use them appropriately (Jackson 2002:110). At the same time it seems logical to assume that developmental context can be a determinant (for better or worse) in the acquisition of these skills. Jacobs,

in describing the literalness of a very dear friend of hers with Asperger's Syndrome, confirms the difficulty with figurative language: "This derived from his two-layered attitude to words. His basic inbuilt layer was totally literal. His self-taught and self-conscious layer was the way other people use words" (Jacobs 2004:57).

The social language impairment termed "prosody of speech" will now be considered.

2.4.3 Prosody or the melody of speech

The tone of voice speakers use conveys a great deal about them and their attitude to the message and the listener (Stuart et al. 2004:42), but learners with Asperger's Syndrome are impervious to this aspect of language and tend to respond to the words alone, taking them literally (Stuart et al. 2004:42). In learners with Asperger's Syndrome there can be a lack of modulation, in other words their tone of voice is unusual (Wagner & McGrady 2004:83), or more particularly, impersonal and non-committal. When listening to the speech of such learners one may be aware that there is a lack of variation in pitch, stress, and rhythm or the melody of speech. Such speech has a monotonous or flat quality, or an overprecise diction with stress on every syllable (Attwood 1998:79; Gillberg 2002:36; Jansson-Verkasalo, Ceponiece, Kielinen, Suominen, Jänti, Linna, Moilanen & Näätänen 2003:197). Many of these learners speak too loud, low, fast or slow (Gillberg 2002:36) and must be told not to speak too loudly or too quietly, but to vary loudness according to the distance between him- or herself and the other person for example, or to lower the tone (speak "sotto voce") and the voice should be softer when confidentiality and privacy are needed (Segar 1997:8). This feature (maladjusted tone) may be particularly noticeable in social settings like a library or a noisy crowd (Klin & Volkmar 1997a:103).

Jackson (2002:102), a young learner with Asperger's Syndrome, explains that:

I am often told that I put an emphasis on the wrong words sometimes and change the meaning when I don't actually want to. This often means I am misunderstood or misunderstand others. This causes loads of arguments because I am always being told off for saying something wrong when most of the time I don't even know I have.

It should be clear from this explanation of the difficulties that learners have with correct voice modulation that other people may find their behaviour eccentric and may feel uncomfortable in their presence, with the result that they may be ostracised, thus further hampering opportunities for enhancing the social development of these learners.

The social language impairment of "pedantic speech" will now be investigated.

2.4.4 Pedantic speech

This is a well-documented language impairment of learners with Asperger's Syndrome (Attwood 1998:80-81; Jansson-Verkasalo et al. 2003:197). According to Ghaziuddin and Gerstein (1996:585-586) pedantic speech may be defined as that type of speech in which the speaker conveys information that is inappropriate to the topic and goals of the conversation, thus vitiating expectations of relevancy and quantity. Sentence structure may have the formality and vocabulary may display the erudition expected of written language. In paragraph 2.4.3 of this chapter it was noted that the speech of learners with Asperger's Syndrome is often overprecise, with the result that they may have an impressive, adultlike vocabulary and an overly formal, almost old-fashioned or quaint manner of speaking (Bashe & Kirby 2001:44-

45; Stuart et al. 2004:56). These characteristics (Blamires 1997:233) sound odd, coming from a child (Stuart et al. 2004:56), but in fact, these learners rarely have more than a superficial understanding of the pedantic forms they use (Koudstaal 2005:313; Leventhal-Belfer & Coe 2004:38).

This is most clearly noticeable when the learner with Asperger's Syndrome is talking about a special interest. Listeners may get the impression that they are being lectured rather than spoken *to* by someone who is more intent on showing off his knowledge in the minutest detail than in participating in a reciprocal conversation (Bashe & Kirby 2001:44-45). Interestingly, though, learners with Asperger's Syndrome often talk in this way when they do not know what else to say or do, and / or when they want to redirect an interaction (Leventhal-Belfer & Coe 2004:38).

Similarly, some learners with Asperger's Syndrome have remarkable reading abilities although one should ascertain whether they also understand the text. The ability to read fluently without understanding the meaning is known as hyperlexia (Dychkowski 2000:4; Lord 1999:3), which means that mechanical reading skills may be excellent, even though comprehension may (or may not) be impaired (Gillberg 2002:35). This "condition" is marked by a learner's precocious ability to read words at a level far beyond the person's years and/or an intense fascination with numbers and letters. Hyperlexic learners may later exhibit problems with appropriate socialisation skills and an inability to understand spoken language. Some of these learners may read extremely well, but may be unable to retain or understand what they have read (Bashe & Kirby 2001:82). These characteristics may be identifying features of learners with Asperger's Syndrome, as they are typically found in these learners (Yapko 2003:57).

No-one has yet determined the reason for this impairment. One possibility is that among the many social behaviours that learners with Asperger's Syndrome do not master is that of imitating and "acting like" others of their own age. Asperger's Syndrome seems to limit the degree to which learners can absorb and model the age-appropriate behaviour of peers (Bashe & Kirby 2001:44-45). Evidently such a pedantic monologue style of certain learners with Asperger's Syndrome would be likely to attract adverse attention in a social situation (Adams, Green, Gilchrist & Cox 2002:687).

This study will now focus on the "idiosyncratic use of words" which has also been observed as a characteristic of the social language impairments of learners with Asperger's Syndrome.

2.4.5 Idiosyncratic use of words

Difficulties in using the right words or forming conversations is part of semantic-pragmatic difficulties (Lord 1999:3). These learners appear to have the ability to invent unique words (or neologisms) and are idiosyncratic or original in their use of language (Attwood 1998:82; Howlin 2004:76), in other words these learners "make up" their own language and way of using it in conversation with others (Yapko 2003:35). Attwood (1998:82) gives the example of the girl who described her ankle as the "wrist of my foot", and ice cubes as "water bones". As Szatmari (2004:viii) maintains these learners see the world from their unique perspectives and their experiences of themselves and others differs from that of "non-Asperger's Syndrome people".

The narrow interests and repetitive routine impairments which may be observable in learners with Asperger's Syndrome will now be discussed.

2.5 NARROW INTERESTS AND REPETITIVE ROUTINES

Perhaps the most distinctive feature of Asperger's Syndrome is the intense and very narrow interests, hobbies, and fascinations of affected learners (Attwood 1998:90). These narrow interests create problems with sharing joint activities with peers, basic play, or taking a trip with the family (Little 2004:139), in other words social interaction is impaired as a result of these impairments. The characteristics of Asperger's Syndrome considered in this section have not been adequately defined in the literature - this despite the clinical evidence that these characteristics have a significant influence on the smooth functioning of the family and the research evidence that this feature is relatively stable over time (Attwood 1998:89; Piven, Palmer, Jacobi, Childress & Arndt 1997:185).

2.5.1 Narrow interests

As indicated in paragraph 2.5 above, many learners with Asperger's Syndrome have unusually intense and/or peculiar areas of circumscribed interests (Adreon & Stello 2001:267; Carrington & Graham 2001:42). Often, when these learners find something that really interests them they become little "geniuses" in specific areas and will talk about their specific topics over and over again (Hoopmann 2001:62-63). The learners with Asperger's Syndrome tend to become preoccupied with unusual topics such as television sitcoms, astrology, numbers, bus timetables and subways. The content of the preoccupation may change with development, but the intensity with which it is pursued in a solitary manner is maintained (Attwood 1998:90; Lord 1999:3). In other words, the hobby is not pursued as a means of developing social relationships, but rather as an expression of an obsessive tendency that has the opposite effect. As mentioned earlier (see paragraph 2.4.1 of this chapter), the learners often become so focused that it is very difficult to distract them. At this

point the focus becomes a significant impairment in their lives (Kohn, Fahum, Ratzon & Apter 1998:293; Zwaigenbaum & Szatmari 1999:277). So much time, energy and thought are spent on it that there is no time left for anything else (Gillberg 2002:33-34); in fact, other social activities are avoided so that the narrow interest can be pursued.

Sometimes the genuine enthusiasm of learners with Asperger's Syndrome for their areas of interests lead to incessant verbalisation. The learners are keen to demonstrate their knowledge and verbal fluency, as well as to learn new information about their interests. A specific subject may dominate their conversations (Attwood 1998:85-86). Once the conversation has begun there seems to be no "off switch" and it only ends when the learner's predetermined and practised "script" is completed. The extreme egocentricity of these learners leaves no room in their repertoire for listening to the conversation of others. They often make it obvious that they are not listening to other speakers, even when the speaker is speaking directly to them. And although it is true that most of us, quite often, are bored with or disinterested in the conversation of others, the difference here is that learners with Asperger's Syndrome cannot dissemble as people have learned to do when we nod appreciatively or smile in the correct contexts. In other words, they have trouble maintaining a topic that makes them feel uneasy (Forder 1997:7; McCroskery 1999:1). There may be people who at times do not dissemble their lack of interest, or who are even incapable of doing so, yet they are not learners with Asperger's Syndrome, the difference being that learners with Asperger's Syndrome do not realise that they are actually being socially naïve and are exposing themselves to ridicule. The impression is that these learners want to participate in conversations, they want to share information, but fail to recognise the rules of reciprocity pertaining to social conversations - for example, listen first and then respond appropriately to what has been said (Koudstaal 2005:313).

Since many people have hobbies a special interest is not significant in itself. The difference between the normal range and the eccentricity observed in learners with Asperger's Syndrome is that these pursuits are often solitary and idiosyncratic, and that these specific interests dominate the learners' time and conversations (Attwood 1998:93). Learners with Asperger's Syndrome who wish to engage in their special interests may not be able to let go of it (Bashe & Kirby 2001:2). They cannot understand that others do not necessarily share a passion for the same hobbies, and because they cannot read non-verbal cues they are frequently unaware that others have lost interest (Boyd 2004:143-144; Stuart et al. 2004:12).

It is therefore not surprising that many of these learners are diagnosed with obsessive tendencies (Bashe & Kirby 2001:24). Their solitariness and eccentricity could hamper their socialisation as they may only be interested in following their interests at the expense of other more socially acceptable activities. Obsessive interests may be a substitute for real conversations and imaginative play which the learners find difficult – too much time spent on the preferred subject will reduce the time available for practising other sorts of interaction (Stuart et al. 2004:12). Bashe and Kirby (2001:42) and Cumine et al. (2000:53) concur with this view in their observation that certain behaviours or interests appear to “take over” at times at the expense of learning, social interaction or other activities.

Unless carefully managed, these learners' special interests can interfere with the ability to attend to the subject at hand (Safran 2003:157) as it can be very difficult for them to focus their minds on a subject in which they have little or no interest. Aston (2003:59) maintains that although these learners may be experts in their chosen field or subject, they may show no interest whatsoever in anything else. Learners with Asperger's Syndrome can actually be observed “switching off” their attention

when the subject being mooted is of no interest to them. Furthermore, it has been observed that in some cases these learners will actually walk away, leaving a conversation standing (Aston 2003:59). It would be easy for other people to read such inattention as rudeness, laziness, inability to share an interest or even sheer snobbery (Lawson 2003:20), and future contact with them may be intentionally avoided. However, it should be pointed out that such idiosyncrasies also occur among other (non-Asperger's Syndrome) people. Learners with Asperger's Syndrome require direct guidance, explaining to them why their behaviour is displeasing to other people. Here again, the paradox of defining the term "normal" becomes evident, and as psychiatrists and neurologists uncover an ever wider variety of brain wiring, the "norm", many agree, may increasingly be deviance (Harmon 2004:1).

Despite all this, special interests do serve a purpose (Bashe & Kirby 2001:43). Learners with Asperger's Syndrome really enjoy their special interests in a world that can be wildly unpredictable, the special interest is an oasis of predictability, calm, and control. The special interest can provide a sense of accomplishment, mastery, and happiness (Bashe & Kirby 2001:43). Often special interests of these learners can build bridges to interaction and enjoyment with others who have similar interests. By joining a club that focuses on a particular interest the learners may gain a real opportunity to interact with others (Bashe & Kirby 2001:43), thus offering a gateway to wider social contacts (Howlin 2004:168). Special interests undoubtedly help to reduce stress in learners with Asperger's Syndrome (Stuart et al. 2004:12) and can also be used as a reward for appropriate behaviour – for example, an interest-related "gift" for the learners who complete an assigned task (Bashe & Kirby 2001:44). Such learners sometimes channel their special interest into a satisfying career. This is especially true if the interest can be applied to a profession that makes few social demands (ie. it allows independent as opposed to

team work and involves limited interaction with the public) and attracts people with similar traits or a generous tolerance for social differences. Computer and internet related jobs have proved a boon for learners with Asperger's Syndrome (Bashe & Kirby 2001:44).

What should be clear from the above explanation is that the special interests of learners with Asperger's Syndrome can be constructively exploited, and that if other people understood and appreciated the reasons for these obsessions these learners might be more accommodating and accepting.

As noted above, repetitive routines are also a major characteristic of Asperger's Syndrome.

2.5.2 Repetitive routines

As noted by Howlin (1997:103; 2004:142), routine is essential for almost everyone if he or she wants to organise his or her life effectively: for example leaving the house at a certain time, eating at regular intervals, developing regular patterns for washing, dressing, going to work or even pursuing leisure activities can be crucial if life is to run smoothly. Problems only arise when such habits become so fixed that these habits cannot be varied for any reason at all, or when a behaviour that was once acceptable can no longer be tolerated because of changing circumstances or expectations.

Johnson (2005:11) and Fowler (2001:1) affirm that one of the most common characteristics that learners with Asperger's Syndrome have is their dislike of change and difficulty in coping with change. These learners may be overwhelmed by even minimal change. They may find coping with everyday life a bewildering task

without sameness and routine to help them control their environment (like everybody else, but it's a matter of degree (Carrington & Graham 2001:43). "Sameness" is expected and reassuring (Stuart et al. 2004:17). Bashe and Kirby (2001:377) and Attwood (1998:99) agree with this sentiment in their contention that for learners with Asperger's Syndrome, sameness and routine provide much-needed structure to an often unpredictable world. Hewetson (2005:122) explains that for her son the very nature of change threatens his basic stability because it "takes away from him the crutches he needs to build on to navigate the course of his day."

Many learners with Asperger's Syndrome do not seem to appreciate that there are times and situations when rules can be bent, renegotiated, or broken (Barnhill 2001:262). The resultant inflexibility of these learners can be very frustrating for all concerned especially since it causes difficulties with imaginative and creative thinking. The learners tend to like the same old thing done in the same old way over and over again. They often cannot see the point of a story or the connection between starting a task and the projected outcome (Lord 1999:4).

Sometimes, because of these learners need for routine and order, other people may misinterpret their actions and consider compulsive preoccupation with their needs to be a sign of plain egocentricity. However, they actually depend upon knowing what will happen next (their routine) because of their difficulties with predicting outcomes and are much less stressed when their daily lives are preplanned and organised (Lawson 2003:113). For these learners change could imply discomfort, suspicion, confusion and fear (Lawson 2003:118-119). Everybody has a "comfort zone" where predictability is the norm, but learners with Asperger's Syndrome have exceptional difficulty in learning to adapt to and function properly during change. What should be evident is that although many people who are not affected by Asperger's Syndrome dislike change, resist change and genuinely cannot cope with change,

these learners usually have the ability to adapt and accept the change whereas some learners with Asperger's Syndrome do not seem to possess this ability.

This impairment can obviously create difficulties because in our unpredictable world people are expected to adapt to changing circumstances, to go with the flow of things when doing so is clearly required to meet the circumstances (Szatmari 2004:32) and not doing so exposes them to the risk of becoming social outcasts who are disliked by peers as everything must be done specifically the way they want, and exactly when they want. As Connor (2000:294) maintains, tactful awareness among peers may reduce some of the social pressures and enhance the probability of acceptance into peer groups. Hence the important rationales of this research, mentioned in the previous chapter, to increase public awareness of this syndrome in context with the full spectrum of conditions encountered in schools with a view to fostering positive attitudes towards all learners, including those with Asperger's Syndrome. Admittedly, as mentioned in paragraph 2.1 of this chapter, this is not an easy task for anyone to accomplish, especially considering the well-founded lack of confidence in the South African education system. Hence, the responsibility remains on everyone, especially the policy makers in the Educational field to ensure delivery of the envisaged outcomes of their policies, thereby increasing public confidence in the education system which will then meet the diverse needs of all learners, including those with Asperger's Syndrome.

As mentioned in chapter one, "social stories" as a technique has successfully enriched the social development of learners with Asperger's Syndrome. This technique will now be analysed in detail.

2.6 SOCIAL STORIES

“Social stories”, as the name implies, denotes the use of a short story form (between twenty and one hundred and fifty words) to inform and advise the learners about a social situation (Gray 1995:222; Smith 2001:338), for example to help teach the rules of social interaction (Shore 2004:201). “Social stories” as a concept describe a particular social situation that an individual learner finds difficult (Smith 2001:338) to cope with and help him or her to understand his or her personal role in the interaction, what he or she is doing and need to do, and the perspective of others in the interaction (Yapko 2003:143). The situation is described in detail with special reference to a few key points: the important social cues, the events and reactions the learners might expect to occur in the situation, the actions and reactions that might be expected of them, and why. The goal of the story is to increase the learners’ understanding of, make them more comfortable in, and possibly suggest some appropriate responses to the situation in question (Sansosti et al. 2004:195; Wallin 2004:1). The stories build on the learners’ strengths and special abilities and help them to shape and change problematic behaviour (Del Valle, McEachern & Chambers 2001:196).

Social stories make explicit – through words, drawings, or both – the kind of information about social behaviour, routines, goals, and academic skills that learners with Asperger’s Syndrome have difficulty comprehending (Bashe & Kirby 2001:193). In other words, social stories are not limited to words on paper; a variety of materials and instructional methods can be used to make them understandable (Gray 1995:222). Such a technique is based on the premise that inappropriate or undesirable behaviour arises from a lack of understanding of what is appropriate or desirable in a given situation (Bashe & Kirby 2001:193). Hoekman (2002:15) uses the analogy of a puzzle to explain the impact of social stories. Experiencing life

through the eyes of learners with Asperger's Syndrome is as though children (learners) are sitting in front of a table full of puzzle pieces, with no picture to guide these children to a finished product. Social stories give learners with special needs (with special reference to learners with Asperger's Syndrome) a specific guideline for piecing together the various people, places, and situations that they encounter, and provide them with a picture of the likely outcome.

As a social story is intended to be written from the perspective of the learner, it is paramount for the author to ascertain that perspective (Bashe & Kirby 2001:194; Haggerty, Black & Garnett 2005:43; Wallin 2004:3). The story should typically be focused on the motivation of current behaviours and not necessarily on the behaviours themselves (Wallin 2004:3). It is crucial to define the expected response very clearly (Wallin 2004:4). Word choice is also important. Obviously, the story must be written at the learners' level of understanding. In addition, the writer must avoid terms and expressions that may be interpreted too literally. For example, words such as *always*, *never*, and *every* may cause confusion or distress. It is wise to exercise extra caution by phrasing the directive sentences so that they don't create an atmosphere of unrealistic expectations and inadvertently set the stage for failure. "I can," "I will," "I should," or "I must" statements have no place in a social story. Not only may the learners not be able to comply with the directive, but they may be hindered from doing so by circumstances entirely beyond their control. Instead directive sentences should begin with: "I will try to ..." / "I will work on..." / "I may [do something] ..." / "I can try to [do something]..." and so on. Directive sentences must be positive and must focus on the appropriate, desired response or behaviour, *not* on the problem behaviour that the social story is designed to address (Bashe & Kirby 2001:195-196). Social stories cannot prescribe or dictate desired behaviour without offering an adequate description of the situation or of the feelings, thoughts, or actions of others. It is important to remember that the primary purpose

of a social story is not to dictate appropriate behaviours and responses, but to increase the learners' awareness and understanding. Ideally, this understanding will make it easier for the learners to demonstrate the desired behaviour (Bashe & Kirby 2001:194).

Social stories have another purpose that is equally important: acknowledging achievement. A learner's first social story should describe a skill or situation that is typically successful and unproblematic. Learners with Asperger's Syndrome may respond much better to written than verbal praise because the former is a permanent record of what they have done well, which is important in building positive self-esteem (Gray 2003:2).

Once a social story is part of an instructional strategy, it is important to closely monitor the learners' response. The response to a social story is often immediate, with improvement apparent within a few days. Observations of the learners in the target situation may provide clues as to how the story should be revised to be more effective (Crozier & Sileo 2005:29; Gray 1995:229).

The stories are written in three types of short, direct sentences: descriptive, directive, and perspectival, with all serving a special purpose (Gray & Garand 1993:3). Descriptive sentences relate what people do in a given situation, and why. Social stories often begin with such statements to "paint the social backdrop" of the targeted situation (Gray & Garand 1993:3; Gray 1995:225) and to define a social setting and what people typically do in a particular situation (Myles 2004:24).

Directive sentences are individualised statements of desired responses. Collectively, these sentences provide a sequential list of expected responses to the targeted situation. Directive sentences focus on what the learners should do to be

successful in a given situation. They (directive sentences) guide the learners to engage in an appropriate response in a defined situation (Myles 2004:24). Directive sentences often begin with: "I can try to..." or these sentences are written as goal statements, beginning with: "I will try to..." (Gray & Garand 1993:3). Perspective sentences describe others' reactions to a situation, or responses depicted in a story (Gray & Garand 1993:4). Perspective sentences may relay the feelings of others as depicted in a social story and may also describe the motivation for a response. Perspective statements should be honest, avoiding overgeneralisation of a typical response (Gray 1995:226).

2.7 THE POSITIVE IMPACT OF SOCIAL STORIES ON SOCIAL DEVELOPMENT

Social stories have gained wide acceptance as an effective way of overcoming social difficulties resulting from problems with social understanding. These social stories are practical too because they are created by an educator and designed to work with learners in the school environment (Bashe & Kirby 2001:194).

The social story technique is easy to implement across many environments and is virtually cost free. It can also be individualised to meet the needs of learners with social interaction deficits (Kuttler, Myles & Carlson 1998:181) and varying abilities and life styles (Myles 2004:24). Social stories can be incorporated into daily routines, are simple to use, adaptable to the language skills and understanding of any learner, and can be tailored for any kind of situation (Safran 2003:162).

Social stories are useful for identifying relevant social cues, introducing new routines and rules, and/or positively defining desired social skills. In addition, social stories in the school setting can prepare learners for unexpected situations such as substitute teachers, fire drills, or school closings. At home, parents may decide to write a

social story to prepare their child for an upcoming event, such as a visit to a relative, or a family vacation, or to introduce a new daily routine. In a community setting, social stories identify naturally occurring cues and events to provide structure to a situation that would otherwise be overwhelming. In any setting, social stories introduce the possibility of unexpected occurrences in such a way that variation is a part of any routine or situation (Gray 1995:222).

Social stories give learners some perspective on the thoughts, emotions, and behaviours of others (Bolick 2005:128). Social stories help them to predict the actions and assumptions of others and also present information on social situations in a structured and consistent manner and give learners direct contact with social information, contact through pictures, and text as opposed to speech or observation. Social stories provide distance between teaching and the possible stresses of the social situation itself; they give the learners a chance to practice the relevant skills often and on their own terms (Wallin 2004:2).

Social stories provide an approach that feels natural to many adults, parents and teachers alike. The naturalness of the story form has advantages in reassuring parents and teachers that they already have a relevant skill that, when used in a focused way, can enhance the learners' social understanding and behaviour. These stories make no demands on the gathering of a group of similar children; make little demand on timetabling; focus on the relevant, idiosyncratic and immediate social difficulties being experienced by the learners; personalise and extend the teaching of social skills beyond the meeting and greeting activities that are common in many social skills programmes; are easily produced and shared by those involved with the learners; and, because of the focus on real-life social situations, social stories do not require further and separate efforts to secure generalisation (Smith 2001:338). Furthermore, no stigma seems to be attached to the intervention (Haggerty et al. 2005:47).

The “beauty” of this technique is that anyone can learn how to use it, or can work with the learners to use it. As long as paper and pencil are handy, social stories can be created anywhere, they are portable and can be referred to as often as necessary (Bashe & Kirby 2001:193). Further, in cases where social stories are effective, results are often dramatic and apparent within one week (Gray & Garand 1993:5).

2.8 CONCLUSION

As indicated in chapter one, it seems there is a lack of research regarding the social impairments affecting learners with Asperger’s Syndrome, and one particular technique was mentioned that has been successfully employed to enhance the social development of these learners, namely social stories. In view of the clear lack of knowledge regarding Asperger’s Syndrome, therefore, the major social impairments of these learners were reviewed in this chapter and the concept and positive implications of social stories was explained. This in-depth look at the nature of Asperger’s Syndrome and social stories will facilitate the researcher’s task when conducting the empirical study in which social stories will be developed for the learners concerned. Throughout this chapter the impairments of learners with Asperger’s Syndrome have also been referred to as “differences”. However, as mentioned in paragraph 2.1 of this chapter, the intent here is not to minimise the “condition” but rather to emphasise a more tolerant and accepting way of portraying the difficulties which learners with Asperger’s Syndrome experience.

The next chapter will focus on three “models” that have been used to explain the reasons for the differences found in learners with Asperger’s, namely the theories of “mind blindness”, “central coherence” and “executive functioning”.

CHAPTER THREE: THEORETICAL MODELS OF “DIFF-ABILITY”

“Coping with my [the author: Lawson’s] difference with our difference, is built upon the foundation of diffability, not disability. I am only disabled in a neurotypical world where my ability is not recognised or utilised!” (Lawson 2003:108).

3.1 INTRODUCTION

Chapter two covered the social impairments of learners with Asperger’s Syndrome and one particular technique which has been used to promote their social adjustment, namely social stories. This chapter will cover three “models” that have been used to explain why the behaviour of the learners with Asperger’s Syndrome deviates from the so-called “norm” and why social situations present difficulties for them. Lawson (2003:108), an adult with Asperger’s Syndrome, conceived the term “diff-ability” to show that Asperger’s Syndrome is not necessarily a disability but rather an expression of alternative individual abilities. She (Lawson 2003:149) claims that difference of this kind can even be “attractive” when viewed with honesty and acceptance. The researcher supports this opinion because each learner with Asperger’s Syndrome (in fact each human being) is a unique individual with his or her own strengths and abilities.

However, it must be admitted that “differences” (specifically in social behaviour) in society, especially in the South African environment, are not always readily accepted and learners with Asperger’s Syndrome, especially learners with these specific “differences” and educational needs living in South Africa, may find themselves placed in a school system which is already overburdened a negative learning environment such as overcrowding, lack of facilities and under- or unqualified teachers, or teachers who for a variety of reasons are unhappy or simply

not interested in the education profession and therefore tend to be negligent or to seek alternative employment, or even to engage in criminal activity. Worse than this, learners with Asperger's Syndrome may be faced with teachers and principals who have never even heard of this syndrome and lack the knowledge and skills to support these unique learners. However, it is the researcher's opinion that a more positive and accepting attitude will, or at least may develop if society's (and specifically the education system's) knowledge and understanding of this syndrome is improved. Note, however, that changing of attitudes may take time because it is a complex process which involves moving, in a series of stages, from one set of attitudes to another (Office of the Deputy President 1997:23-24). This is specifically the case in South Africa where, according to the researcher, there is a lack of knowledge and understanding of learners with Asperger's Syndrome.

A number of psychological models (Jones 2002:11; Lovecky 2004:344) are used to explain the behaviours seen in learners with Asperger's Syndrome and how these models perceive, process and understand the "world". Three recent theories in this regard focus on "theory of mind", "central coherence" and "executive functioning" (Jones 2002:11; Lovecky 2004:344). In this chapter these three theories will be examined in an attempt to understand the basic conditions from which the impairments arise as outlined in chapter two. The reason for the emphasis on these three theories in the present chapter is that social problems of learners with Asperger's Syndrome can be thought of as relating to one or more of these three models (Lovecky 2004:344).

It is the researcher's opinion - and this will be further discussed in the present chapter - that the juxtaposition of Asperger's Syndrome with "neurotypicals" often reveals a dialogic situation. Instead of merely using "normal" as a contrasting medium to define Asperger's Syndrome there is an implied play-off between the two

positions that relativises both, and this situation could be harnessed to their mutual benefit. Hence the reason for the title “diffability” of this chapter, which will also show that there may be significant areas of overlap between “normal” and Asperger’s Syndrome and hence there seems to be a need to widen the “normal” ambit to bring Asperger’s Syndrome cases into the fold, which implies the need to broaden society’s understanding of this syndrome. It is the researcher’s opinion that *with this understanding learners with Asperger’s Syndrome can be accommodated in society* and, more importantly, in a school system which accepts the many idiosyncrasies that these learners may display. Similarly, learners with Asperger’s Syndrome also have to be directly shown that the term “neurotypical” is their own creation and that by continually insisting on calling everybody not diagnosed with Asperger’s Syndrome “neurotypical”, they are in fact militating against inclusivity. Throughout this research mention was made of the fact that society must be supportive and understanding towards learners with Asperger’s Syndrome, but by the same token learners with Asperger’s Syndrome should be taught to extend the same courtesy to others.

It must be admitted that this is not easy to accomplish, especially under typical South African conditions where, as previously mentioned, many difficult issues remain a challenge. However, it is the aim of this research to show that despite all this, learners with Asperger’s Syndrome can be accepted and their differences tolerated. As the *White Paper 6: Special Needs Education: Building an Inclusive Education and Training System* (Department of Education 2001:17) maintains, inclusion is about supporting *all learners, educators and the system as a whole so that the full range of learning needs can be met*. The focus is on teaching and learning actors, with the emphasis on the development of good teaching strategies that will benefit *all learners*.

The major “theory of mind” impairment which influences the social development of learners with Asperger’s Syndrome will now be discussed.

3.2 THEORY OF MIND

“Theory of mind” refers to the ability to think about thoughts and to attribute mental states to others (Blackshaw, Kinderman, Hare & Hatton 2001:148). People in whom theory of mind is sufficiently well-developed are able to think about other people’s thinking - and further, to think about what they think about other people’s thinking - and even further, to think about what they think others think about their thinking, and so on (Cumine et al. 2000:19). Theory of mind is awareness or apprehension of another person’s mind. If a person has this awareness he or she can recognise that another person’s belief is based on his or her experience or knowledge, and not necessarily on what that particular person knows to be true (Jacobsen 2003:34). In other words, “theory of mind” is the ability to understand the thoughts, beliefs, feelings, intentions and points of views of others (Lovecky 2004:136).

Mind reading generally develops naturally and is not specifically taught to children (Jones 2002:11). Gray (1998:169) confirms this observation by asserting that most people observe a “tacit code” in their dealings with each other, a system of unspoken communication that carries essential information; a system that eludes and frustrates learners with Asperger’s Syndrome. These learners find it difficult to understand what other people are thinking or feeling, and therefore find it difficult to relate to them. It is hard (difficult) for these learners to say what they are thinking or feeling (Hoopmann 2001:62-63). In other words these learners lack or have an incomplete understanding of theory of mind (Bashe & Kirby 2001:36; Johnson 2005:10). In 1990 Baron-Cohen (1997:1) described this as a form of “mind blindness”. McCroskery (1999:1) defines this “mind blindness” as inability to

recognise that other people think and feel differently from oneself - incapacity to apprehend the mind states of others. Although many learners with Asperger's Syndrome can develop this interpersonal understanding, its onset is believed to be delayed to an age that may range from nine to fourteen, compared to age four in typical youngsters (Cumine et al. 2000:19-20). Even at this later age, evidence suggests that this skill only comes with "slow, painful effort" (Frith & Happé 1999:1). Although this is not uncommon among "neurotypicals", the difference between "neurotypicals" and learners with Asperger's Syndrome may be that we ("neurotypicals") are more aware of these particular occasions and once other people clarify their feelings we ("neurotypicals") have the ability to empathise with them. Clearly, this overlaps significantly with poor socialisation (discussed in the previous chapter), which can easily be a severe lifelong difficulty. Again, it seems necessary to enlighten people about the differences which exist in our society, and more particularly to ensure that the education system recognises and respects the differences between learners and builds on their similarities (Department of Education 2001:17).

The experiment designed to reveal the characteristic deficits of theory of mind in learners with Asperger's Syndrome is quite famous and is known as "The Sally/ Anne test". It was designed by Simon Baron-Cohen in 1985 to test the prediction that learners with Asperger's Syndrome would lack the ability to understand beliefs (Baron-Cohen 1985:41). In the "Sally/ Anne test", Sally and Anne are two dolls. Sally has a basket and Anne has a box. In the story, which is acted out in front of the learners, Sally puts a marble into her basket while Anne is watching. She then leaves to go for a walk. While she is away, Anne puts Sally's marble into her own box. Sally returns from her walk and wants to play with her marble. The learner is then asked: "Where will Sally look for her marble?" The correct answer is "in her basket", for that is where Sally left her marble, and where she believes it still is.

Learners with Asperger's Syndrome answer that Sally will look "in the box" because that is where the marble actually is - even though Sally has not seen Anne taking it from the basket and placing it in the box. This contrasts with the learners in the control groups who give the correct answer (Connor 1999:81-82; Cumine et al. 2000:19; Fine, Lumsden & Blair 2001:287-289; Forder 1997:8-9; Greenway 2000:475-476; Jacobsen 2003:34-35).

Having briefly explained what theory of mind entails, the implications (both negative and positive) of a lack of theory of mind will be outlined with particular reference to learners with Asperger's Syndrome.

3.2.1 Implications of theory of mind deficits

Theory of mind studies are important because these studies suggest why learners with Asperger's Syndrome may make certain types of social mistakes (Bartlett, Armstrong & Roberts 2005:204; Lovecky 2004:135) and why these learners may deliberately avoid other people (Abele & Grenier 2005:226); in fact theory of mind posits that being able to conceive of mental phenomena is the foundation of human social interaction (Klin 2000:831). Thus, individual differences in theory of mind ability presumably have important implications for everyday social interactions (Astington 2003:14; Slaughter & Repacholi 2003:1). Intelligence and disposition have nothing to do with the ability to read the minds of others. Despite a high Intelligence Quotient (IQ) and a loving, generous disposition, learners with Asperger's Syndrome may still find themselves saying or doing the "wrong" thing, or even worse, being unable to defend themselves against being deliberately misled by others (Bashe & Kirby 2001:36). The ability to understand another person's perspective, a key element of theory of mind, and to infer mental states, is governed in large measure by indirect, socially mediated cues. Thus, because learners with

Asperger's Syndrome have specific difficulty in understanding social information, they are particularly compromised in their ability to engage in presuppositional behaviour – much of which has to do with the attribution of mental states (Twachtman-Cullen 1998:211).

Although this characteristic is not unique to learners with Asperger's Syndrome, these learners are certainly more vulnerable than "neurotypicals" who may at times comprehend subliminally when other people are deceitful. Evidently people without Asperger's Syndrome need to learn how to accept learners with Asperger's Syndrome as a unique culture, rather than as a defective culture that must be changed to suit the will of the many (Willey 2001:142). However, *learning to accept each other is a two-way process in which both parties (learners with Asperger's Syndrome and those without) need to work hard on creating a mutual trusting and accepting relationship in which everyone realises that we all have a unique contribution to make towards our diverse society.* The problem, however, lies with the opposition of the huge class of "neurotypicals" and the small class of learners with Asperger's Syndrome, because the implication, unfortunately, is that "neurotypicals" are a monolithic class of people who are called upon to accommodate learners with Asperger's Syndrome. In this regard, *White Paper 6: Special Needs Education* (Department of Education 2001:6;16) urges society to respect diversity and to acknowledge and respect differences in learners; and to respect the fact that all learners are different in some way and have different learning needs which are equally valued and an ordinary part of our human experience. Despite this, the question remains whether the objectives set by the White Paper are attainable, at what cost, and within what time frame. Ultimately the point that needs to be debated (and urgently resolved) is how far the actual situation (or even, perhaps, the clearly problematic predicament) of education in South Africa must be lifted up from where it is to meet the requirements and ideals set out by the

White Paper, thereby ensuring the accommodation of learners with diverse needs, specifically those with Asperger's Syndrome, which is the main focus of this research.

These difficulties, which arise from the theory of mind impairment, may inhibit the affected learners' ability to interact socially in the classroom and in the wider school environment. Blackshaw et al. (2001:148) concurs with this view by pointing out that the "theory of mind" deficits that affect learners with Asperger's Syndrome is the main reason why these learners tend to misconstrue or fail to apprehend subtle social cues and, therefore, the overall purport of social situations. Without the quality of theory of mind it would be impossible to apprehend the mental states of people, in which case their actions would naturally have to be taken "at face value" without understanding the underlying intentions, wishes, hopes or feelings. "Common sense" skills would be deficient unless specifically taught or instilled by rigorous "training" (Gillberg 2002:80). People with the requisite psychic capacity do have difficulty reading social cues as well and they may even display considerable variation in this ability; of that there is no doubt. The difference is that this occurs from time to time, not continuously, and mainly in situations that are ambiguous. The difficulties here stem from a lack of maturity; they are not intrinsic to the person. For learners with Asperger's Syndrome these difficulties occur in situations that others would find self-explanatory, which means that their predicament in this regard is never-ending. Moreover, learners with Asperger's Syndrome are often not even aware of their lack of understanding of the rules of social interaction. People without Asperger's Syndrome are often acutely aware of their misinterpretation when it is pointed out to them. The difference is that for them it is emotions, impulses, or inexperience that get in the way of understanding social cues, rather than a fundamental cognitive deficit, as it is for learners with Asperger's Syndrome (Szatmari 2004:66).

The problem of *metarepresentational deficit*, which describes a situation where the learners cannot hold two conflicting ideas simultaneously, has been associatively linked to the theory of mind deficiency (Connor 1999:83). For example, if an object is to be used as a “pretend” for something else - say, a cardboard tube for a telephone - then the learner must have, for example a clear idea of what a telephone is and must be able to recognise that the tube and the telephone are quite different objects (decoupling). The learner with Asperger’s Syndrome must also know what the metarepresentational element is on which the analogy is based (tube / conduit). Learners with Asperger’s Syndrome do not engage in this kind of symbolic play. There is no capacity to cope with mental states such as (suspended) belief, or pretence. The fact that learners with Asperger’s Syndrome have such difficulty in imaginative play (Szatmari 2004:39) is probably due to the difficulty they have to see things from a different point of view (Stuart et al. 2004:31).

The problem of *metarepresentational deficit* may also be the reason why learners with Asperger’s Syndrome, (including many people without Asperger’s Syndrome) find it difficult to empathise with others (eg. because they are emotionally situated for some reason). Frith and Happé (1999:1-2) go beyond the theory of mind perspective and question whether disorders of empathy also relate to a lack of self-awareness, of not understanding one’s place in the world, in other words of not understanding societal expectations of “correct” conduct. Empathy requires understanding of the other person’s experience and the ability to share that person’s emotional experience (Shamay-Tsoory, Tomer, Yaniv & Aharon-Peretz 2002:242). If people have acquired “theory of mind” they have some understanding of how others feel and think (Safran 2001:154-155). Without it there is only one way of seeing the world – your way. Learners with Asperger’s Syndrome typically suffer from a deficit of theory of mind, which means that they may lack the ability to empathise with others in the sense that they cannot assume the personality and

imaginatively enter into the experiences of other persons. The general lack of flexibility in their thinking and what seems to be their poor capacity to acquire imaginative skills prevent them from connecting with other children to the extent that they cannot imagine the others' individual feelings (Stuart et al. 2004:68). Moreover, because these learners seem to lack the ability to reflect on their own experiences, thoughts and feelings (Safran 2001:154-155), they often give the impression that they do not have any feelings (Aston 2003:39). Admittedly, many people without Asperger's Syndrome may also experience this so-called "disorder of empathy". The difference may be with regard to the degrees of intensity and consistency of this impairment, remembering that it will not be only one symptom that leads to a diagnosis of Asperger's Syndrome but a range of symptoms (as outlined in chapter one). Indeed further investigation is required to discover this critical diagnostic information. With this understanding attitude perhaps every person can support each other so that everyone can live in a harmoniously functional society.

The poor communication skills displayed by learners with Asperger's Syndrome can also be explained on the basis of poor theory of mind. After all, to build a conversation one has to understand what the other person is expecting in the way of background and context. One has to give the listener what he is expecting from the conversation (Szatmari 2004:68).

The next section will cover certain approaches that can be used to assist learners with Asperger's Syndrome whose behaviour is indicative of a theory of mind deficiency.

3.2.2 Support for theory of mind differences

Scenarios can be acted out to help learners with Asperger's Syndrome understand the perspective or thoughts of others (Attwood 1998:114). Such role play can have a beneficial effect and can help learners with Asperger's Syndrome to improve their understanding of other people's minds.

Parents and teachers have to teach the learners to think of the consequences before they act, a form of "Stop, Think, Do": Stop and think how the person at the receiving end will feel before you do it because the thoughts and feelings of other people are always relevant (Attwood 1998:115).

Colourful picture charts could be placed in conspicuous areas depicting faces with different emotions. A weather chart could be developed but instead of the usual values, emotional values could be depicted (Sanders 2003:144). Such strategies could help learners with Asperger's Syndrome to gain some insight into the minds and feelings of other people.

Relevant social stories (as discussed in the previous chapter) could be devised by outlining specific deficits that learners with Asperger's Syndrome display when attempting to understand the mind states of other people. For example, people can explain to learners with Asperger's Syndrome what is expected of them in certain contexts and how others may perceive the same social situation (Yapko 2003:53).

A technique called "barrier games" has also been used successfully to address theory of mind deficits. The basic premise of a barrier game is to provide a situation in which learners with Asperger's Syndrome can see how other people think and perceive things differently. This allows experiential rather than intellectual or

cognitive learning. In other words, the person actually experiences in a concrete way how another person's thinking differs from his or hers, and then learns how to change this limiting perspective (Yapko 2003:53).

The discussion will now proceed to the second model, namely "central coherence", which has been used to explain the social impairments of learners with Asperger's Syndrome.

3.3 CENTRAL COHERENCE

Extensive studies undertaken by the British researcher Uta Frith (1989:95-98) led her to believe that what is lacking in the way of thinking of learners with Asperger's is "central coherence", which is the process of constructing and synthesising a higher meaning from diverse information (Jacobsen 2003:45). It is the ability to "get the point", putting many pieces of information together to make sense of the whole picture in a particular context (Abele & Grenier 2005:226; Yapko 2003:55).

Central coherence is a cohesive force that is so strong in typical brains (Powers & Poland 2003:36). For example, in recalling the gist of a story people who are adequately endowed with this faculty use it when they pick out the important parts and recall these, not all the details, and quickly discern the meaning of two words that look alike and pick out the correct one ("she had a tear in her dress" versus "she had a tear in her eye"). This also occurs with nonverbal material (Lovecky 2004:136). However, this essential contextual information is what many learners with Asperger's Syndrome cannot access without a great deal of training and concentration (Bashe & Kirby 2001:310; Cumine et al. 2000:25). It is the researcher's opinion that although there are numerous instances where people without Asperger's Syndrome evidently lack central coherence, for many this skill seems to

be inborn and they apply this skill without any conscious effort in day to day life. For those who lack central coherence (both Asperger's Syndrome learners and non-Asperger's Syndrome) this lack of integrative function can be equally disabling and extensive guidance and assistance may be needed to ensure that such an understanding and supportive attitude is developed; as Jacobs (2004:84) maintains, the way forward has to be in understanding.

People without the typical impairments of Asperger's Syndrome usually see figures against a background and integrate information from fore- and background to generate meaning; indeed they may even find it difficult to disentangle fore- and background. In contrast, learners with Asperger's Syndrome seem to pay specific, if not exclusive, attention to the figure and ignore the background (Szatmari 2004:39). Barbara Erasmus, a mother of a learner with Asperger's Syndrome, illustrates this difficulty aptly in describing her daughter Amy. She states: "... at the end of the day, the rest of us decide what to remember and what to discard. I don't think Amy can do that. She can't forget unimportant detail so the main events are swamped ..." (Erasmus 2004:171).

In what is called an "embedded figure test" learners with Asperger's Syndrome will do particularly well at picking out an image that is hidden, or embedded, in a larger figure. They are able to easily override the cohesive sense that presses most of us to look at an image as a whole (Powers & Poland 2003:37). This observation is borne out by additional tests done by Jolliffe and Baron-Cohen (1999:149-185; 2000:1169-1187) which demonstrate that learners with Asperger's Syndrome are impaired in achieving central coherence, and they have a preference not to strive for coherence unless instructed to do so, or unless they make a conscious decision to do so. The conclusion in both works is that learners with Asperger's Syndrome are definitely at a disadvantage with respect to achieving central coherence.

Evidently it must be stated that central coherence is not independent of theory of mind (discussed in the previous sections) as these two elements work together to produce social functioning. In order to appreciate others' thoughts and feelings in real life, people must *be able to take account of context and to integrate diverse information* (Lovecky 2004:137). The following section will describe the implications (both negative and positive) of weak central coherence.

3.3.1 Implications of central coherence differences

The concept of central coherence can help people to understand some of the strengths and deficits of learners with Asperger's Syndrome (Jacobsen 2003:45). According to Powers and Poland (2003:37) much that is difficult for learners with Asperger's Syndrome can be explained in terms of the central coherence model. As mentioned in the above section, weak central coherence refers to the inability of learners with Asperger's Syndrome to construct and synthesise a higher meaning from diverse information. Instead of understanding that there is a larger picture, these learners focus on the details. Thus, they miss the relevance of certain types of knowledge to themselves or to a particular problem. In normal information processing a person draws together different types of information to construct a concept at a higher level of meaning, the big picture (Lovecky 2004:136).

This requires attention to detail, but with a view to constructing meaning of a higher order by a process of synthesis, which many successful people do in their areas of interest or their work. In this instance, therefore, attention to detail is actually the opposite of an indication of poor central coherence. People who routinely perform this exercise are familiar with and attentive to detail but still able to comfortably recognise and describe the global with the detail, when that is important (Jacobsen 2003:50). Learners with Asperger's Syndrome seem to either lack or have a deficit

of this capacity to achieve this kind of discrimination between global synthesis and discrete particulars within the overall picture without considerable support and direct instruction, and even then it will never be instinctive for them. In other words, even after considerable support is given to these learners this kind of discrimination may never occur naturally for them and requires considerable effort from all concerned.

Rather than small, mathematically accurate behaviours or statements, conversations and social conventions involve overall sensing of the situation, of the mind states of others, of what is best in a particular situation (Powers & Poland 2003:37). In order to appreciate others' thoughts and feelings in real life, people *must be able to take account of context and integrate diverse information*. Consequently, learners with weaker central coherence and detail-focused processing find it more difficult than others to integrate (put together) information (ie. to "sum up a situation") (Happé 2000:203). These learners are more likely to focus on an aspect of the situation that is salient to them but not necessarily important to understanding the context (Lovecky 2004:137). Learners with Asperger's Syndrome tend to be unenthusiastic about new ideas that one would expect them to find exciting and interesting and simply do not recognise the potential appeal (Cumine et al. 2000:26).

The social impairments of repetitive routines and aversion to change were examined in the previous chapter. The central coherence model has been used to explain the reasons for these impairments (Bashe & Kirby 2001:310-311; Cumine et al. 2000:52). Learners with Asperger's Syndrome are deficient in social imagination (despite often having a wonderful imagination in other areas). Learners with Asperger's Syndrome find it extremely difficult to visualise (conceptualise) any difference between what they are and what they might be. When caught in an unpleasant interaction, they also see no way to change things. Selecting an alternative strategy requires the ability to imagine something different. *A lack of*

social imagination can also imply that learners with Asperger's Syndrome have no sense of the future and have trouble predicting what will happen next (Lovecky 2004:346), in other words these learners are unable to mentally envisage occurrences which they have not observed previously. Because learners with Asperger's Syndrome have so much trouble seeing the "whole picture" (weak central coherence), they have many times no sense of what the bigger picture could be, or what could possibly happen. Consequently, everything that happens is a "surprise" for these learners – it is unpredictable and could cause anxiety (Lovecky 2004:346), with the result that their comfort zones consist of strict routines to control everything and keep it the same (ie. all activities are highly ritualised and jealously preserved).

An internalised locus of control may be the key to the ability to generalise (Jacobsen 2003:51). Generalising requires recognising what is pivotal / universal so that it can be recognised in new situations. Recognition of general relevance and transferability from one situation to another makes the second situation similar and familiar, even when the details are not all the same. With strong central coherence one does not become distracted or overwhelmed by details that seem less relevant, or even irrelevant, to the central concept (Jacobsen 2003:51). Learners with Asperger's Syndrome are often unable to extract meaning from the context of a situation and are thus stuck in a constant round or loop of compulsively repeating the same stereotyped responses to the environment because they cannot integrate information from other sources to modify their behaviour (Szatmari 2004:40). In other words, if details are very important, then an environmental change may be experienced as very different, something that has to be learned anew (Jacobsen 2003:46-47).

It seems appropriate here to advocate or appeal for an education system that is more “user friendly” in the sense of relevant constructive and meaningful integration with the real world at large, and especially with the world of work - an education system that can accommodate and integrate all learners and provide a meaningful experience for all concerned. The real question here seems to be whether learners with Asperger's Syndrome can be included in a learning environment that can be helpful to them. The problems that teachers have to contend with seem all but insurmountable in any case, and it is a debatable question whether teachers are in any kind of position to appreciate what learners with Asperger's Syndrome are truly experiencing, and whether they can, or indeed want to be supportive towards such learners in a way that will really help them. Hence the reason for two of the rationales of this research (as mentioned in chapter one) which envisage the need for increased awareness of the nature of social impairments associated with Asperger's Syndrome and the fostering of positive responses towards learners with this syndrome.

The challenges that learners with Asperger's Syndrome have to overcome in completing homework assignments have also been explained from the perspective of central coherence. These learners generally cannot rate facts in order of importance. Therefore, knowing what is more, or less, important to learn is difficult or impossible for them. In an area of special interest to them they want to know every fact, every detail, and may actually know more than the teacher expects them to learn, perhaps even more than the teacher knows, about the area concerned. Homework, of course, is not necessarily an area of interest to them. It is understandable that learning new information could be overwhelming if every detail might be as important as any other. Learners with Asperger's Syndrome may even not know where to begin or where to end (Jacobsen 2003:46).

It was shown in the previous chapter that learners with Asperger's Syndrome are overliteral in their use of language because of their inherent difficulty with context (ie. central coherence), which has been proposed as a contributing cause or reason for the striking literalness displayed by these learners (Lovecky 2004:345; Powers & Poland 2003:37).

Weak central coherence also undermines and inhibits the ability to engage in imaginative play, which requires the ability, for example, to think of and pretend that a plastic object like a doll is a real baby. These learners have to go beyond the thing in front of them and imitate a repertoire of behaviours illustrated by another person. The imitation integrates information from another time and place with the object in front of the learner's eyes. The ability to imitate and integrate is a prerequisite for the experience of the gratification associated with play (Szatmari 2004:40).

Weak central coherence hinders these learners' ability to blend in with their class group in school. It restricts their ability to cooperate with, or even to simply notice the demands of others – affecting not only behaviour, but also thinking, and thus the ability to benefit from exposure to the school curriculum in a teaching / learning situation (Cumine et al. 2000:26-27). Gray (1998:169) concurs with this view by stating that realisation of the significance of strong central coherence raises awareness of another reason for the inability of learners with Asperger's Syndrome to understand and relate meaningfully to daily encounters and activities (Gray 1998:169).

However, in keeping with the "social acceptance and awareness model" adopted for this research, weak central coherence is not always a disadvantage. Jacobsen (2003:46) endorses this view by asserting that it is not a deficit model. Weak central

coherence effectively conduces to strength by causing greater emphasis and reliance on the ability to attend to detail. The likelihood of detail errors is greatly reduced in people who attribute inordinate significance, and therefore pay close attention to and remember them (Jacobsen 2003:46). Accordingly learners with Asperger's Syndrome often have very good visual memories for unrelated strings of information and complex patterns (Jones 2002:11). Evidently learners with Asperger's Syndrome can offer society a different, yet increasingly important, way of visualising our progressively complex world.

According to Ratey and Johnson (1998:277) if people lost the unusual ability to see parts over wholes we would lose some of our geniuses, perhaps many of our geniuses. Being able to see something out of context is the starting point of invention; it is the ability to see a thing anew, to apprehend it separately from its usual context, unique and uncontaminated by longstanding cliché of science or belief. It is to begin the process of creation (Ratey & Johnson 1998:277). Learners with Asperger's Syndrome seem to have the aptitude to discover amazing inventions as a result of their weaker central coherence.

Weak central coherence is responsible for some of the savant characteristics, specifically the intense specific interests found in learners with Asperger's Syndrome (Jones 2002:11; Lovecky 2004:136; Wahlberg 2001:12). Skills such as perfect pitch, savant drawing skills, upside-down recognition of faces and patterns, finding smaller shapes within bigger ones (embedded figures) and detecting patterns in numbers and music, all formed the initial building blocks upon which savant skills depend (Lovecky 2004:136).

The next section will cover certain approaches that can be used to assist learners with Asperger's Syndrome who show indications of weak central coherence.

3.3.2 Support for learners with weak central coherence

Many teachers have never been faced with learners who can read a passage perfectly but have trouble understanding what it means. Likewise, organisational and planning difficulties are not typical forms of learning disability. Teachers often have trouble believing that learners who are bright in so many ways can “forget” about a long-planned field trip or fail to anticipate what materials are needed to complete an assignment. Because of the relative rarity of these academic difficulties, learners with Asperger’s Syndrome can frustrate even the most understanding teachers and parents. Occasionally this could lead to misinterpretation of and negative attributions to learners’ behaviours – for example that they are lazy, stubborn, wilfully disobedient or defiant. This can be a *harmful attitude* (Ozonoff et al. 2002:161). Not only can it set up an adversarial relationship between learner and teacher, but even worse, it may prevent learners from getting the services or accommodations that they might need to succeed in school and later life. This unempathetic attitude can also have a negative effect on learners’ self-esteem and feelings about school (Ozonoff et al. 2002:161).

Strategies for helping learners with weak central coherence include making the beginning and ending of tasks clear (Yapko 2003:55). This is especially important in the classroom situation where teachers need to deliberately explain what is involved in commencing and finalising a particular project.

Ambiguity must be avoided when giving instructions to learners with Asperger’s Syndrome (Yapko 2003:55). Nothing must be assumed and everything must be explicitly and clearly articulated. Teachers may become very frustrated if they are not aware that weak central coherence may be the reason why learners with Asperger’s Syndrome misunderstand their instructions and therefore cannot carry

them out correctly. A great deal of unnecessary anxiety (according to the researcher) can be eliminated if all instructions are clearly presented to learners with Asperger's Syndrome.

It was mentioned in paragraph 3.3.1 of this chapter that weak central coherence inhibits the ability to generalise, with the result that learners with Asperger's Syndrome are unable to make connections to previous learnings. It is essential that learners with Asperger's Syndrome be given opportunities to practise and try to reduce / overcome this impediment (Yapko 2003:55). A great deal of stress can be eliminated if all who teach learners with Asperger's Syndrome are conscious of these difficulties and never assume that the learners will automatically pick up and continue from earlier lessons, which means everything must be taught anew. As Willey (2001:104) argues, wonderful "things" can happen when learners with Asperger's Syndrome and "neurotypicals" grow up side by side. Each will learn more about life's angles than they would have, had they grown up independent of one another.

The discussion will now proceed to the third model, namely "executive functioning", which has been used to explain the social impairments of learners with Asperger's Syndrome.

3.4 EXECUTIVE FUNCTIONING

Executive functionability is essentially the ability to "prepare for and execute complex behaviour, including planning, inhibition, mental flexibility, and mental representation of tasks and goals" (Ozonoff & Griffith 2000:86). Executive functionability is a complicated cognitive skill comprising many constituent parts (Szatmari 2004:40) and refers to the voluntary control, monitoring, and execution of

behaviours and actions. It allows the person to disengage from the immediate focus of attention in order to pursue a goal, taking into account all available information (Szatmari 2004:40). Executive functioning is the capacity to control our own attentional focus and enables one to do or to attend to more than one thing at a time and to recognise what is relevant and shift our attention. With strong executive functioning we are not distracted by the irrelevant and can shift our focus to the relevant (Jacobsen 2003:42).

Executive functioning has also been described as “purposeful, future oriented activities”, that is, as the ability to conceive of a sequence of events (a sequence is the order in which events occur), and the ability to understand cause and effect (Gillberg 2002:85). According to the researcher it is the ability to function as a presiding, coordinating, prioritising, integrating agency or intelligence.

It should be evident from the above that executive functioning is the ability to identify a goal, to work out how to accomplish it, and to pursue it flexibly while coping with setbacks and, ignoring distractions, stay focused on it until the task is completed. Executive functionability includes the ability to shift from one concept to another, to change behaviour, to use acquired knowledge, and to manage multiple sources of information (Berney 1997:161). The process of developing this ability is long and painful for many people and yet this does not necessarily imply that Asperger’s Syndrome is the cause. However, this impairment combined with the many other features of the syndrome may be the definitive distinguishing feature of Asperger’s Syndrome. In other words, it is incorrect to assume that just one listed indicative feature results in a diagnosis of Asperger’s Syndrome. Here again the paradox of the term “normal” must be borne in mind, and as mentioned on numerous occasions in this research, defining the term “normal” is an extremely difficult, if not an impossible task.

Executive functioning has also been compared to the “maestro” who conducts the orchestra (Packer 2005:2) because it is similar to the overarching managerial function of a business or company executive, which involves setting goals, monitoring progress towards goals, and recognising when goals have been achieved (Mesibov et al. 2001:61; Ozonoff 1998:264). Jacobsen (2003:42) concurs by asserting that executive functioning is like having “an executive” as part of the brain, which pays attention while you are doing other things, knows what is happening around you, and directs your attention. The executive knows when someone says your name or talks about something you are interested in, even when you are engaged in an activity or another conversation. Thus according to the researcher, executive functionability is the ability to perform coordinating, prioritising and integrating functions.

It is well documented that learners with Asperger’s Syndrome have considerable problems with executive functioning (Gillberg 2002:85). In a recent study (Ozonoff & Griffith 2000:86) ninety percent of learners with Asperger’s Syndrome scored below average in executive functioning tests. In fact, the researcher (Lovecky 2004:138) sees Asperger’s Syndrome as an executive functioning disorder.

Having briefly explained what executive function entails, the implications (both negative and positive) of weak executive functioning will be outlined with particular reference to learners with Asperger’s Syndrome.

3.4.1 Implications of executive functioning differences

Planning and organising actions are obvious areas of difficulty for learners with Asperger’s Syndrome. These learners often do not know how to proceed and cannot make sense of directions that are given to them and fixate on details and fail

to grasp the overall plan or goal. They become engrossed in irrelevancies that may be important to them but not because they are primarily concerned about achieving the goal. Internal distractions impede progress, so organising a plan of action is difficult (Lovecky 2004:139).

As a result of weak executive functioning learners with Asperger's Syndrome do not apply the same organising principles as others. Their behaviour is informed by a mixture of facts, personal experience, and interesting associations. Thus, these learners appear to organise in units that are based on mixtures of factual and personal data. These pieces are put together to make a whole, but they do not necessarily fit well together. Judgements and conclusions are then based on a fragmented picture that is relevant to them as individual learners and to nothing else. This difficulty with part-to-whole relationships hampers realistic judgement and may be the underlying reason for some of the emotional and social deficits associated with Asperger's Syndrome (Lovecky 2004:139). Interestingly, the term "cultural relativism" may be used to explain why certain behaviours are seen as unfitting in some cultures while being more readily accepted in others. "Cultural relativism" refers to how behaviour that may be considered normal in one culture or social grouping may seem quite alien or abnormal to another (Holmes 1998:2). What is the norm in one culture may be abnormal in another (Davidson et al. 2004:4). This applies specifically in South Africa where many different cultures are all attempting to live side by side. Hence the responsibility rests on everyone to acknowledge and respect differences in learners; and to respect the fact that all learners are different in some way and have different learning needs which are equally valued and an ordinary part of our human experience (Department of Education 2001:6;16).

It is the researcher's opinion that in education all concerned must be equipped to handle not only Asperger's Syndrome, but whatever chance may throw at them. However, as mentioned previously, in many cases the South African education sector is not delivering on basic education, let alone catering for anything beyond that. Ultimately many parents have no, or very little, confidence in the South African education system and are opting, where the means avail themselves, to send their children to private schools. This sentiment has been echoed on numerous occasions (De Vries 2005b:8; Merton 2005:1), and government has been condemned for its haphazard efforts to ensure a quality education system which will supposedly produce well-educated and well-adapted learners who can make a contribution to the prosperity and general well-being of our society. Such issues are gaining increasing urgency with the rapid increase of dysfunctionality in our society, and more specifically in schools where conditions are cause for grave concern instead of the safe, sheltered, welcoming environment they are supposed to offer. Virtually incessant press coverage provides ample evidence of the benighted state of affairs in education.

Learners with Asperger's Syndrome find it very difficult to conceptualise a time structure within which to fit their behaviour, so all sorts of breakdowns occur when structure is not imposed upon them. The capacity to self-structure is related to executive functioning. It requires the ability to plan, and to impose order on a random environment. Break times at school are often a difficult time (an issue discussed in the previous chapter), because there is no clear script for behaviour (Powers & Poland 2003:96).

Learners with Asperger's Syndrome often struggle with two "bookend" difficulties: starting and stopping, that is, beginning and ending an activity or behaviour (Cumine et al. 2000:28). Some of the problems with initiation may lie with deficits in

executive functioning and the inability to plan the steps of something like gathering all the books and notebooks for tonight's homework. Over time, learners may become so used to making mistakes in carrying out the simplest activities, such as getting a snack from the refrigerator or getting the right materials on their desks for the test, that they may fall into the habit of not even trying (Bashe & Kirby 2001:307). This behaviour pattern is known as learned helplessness (Bashe & Kirby 2001:57).

Executive functioning deficits are also at the core of the problems with understanding emotion and imitating the behaviour of others (Bashe & Kirby 2001:311). There is an inability to hold images of the different forms of expression internally and as a result learners with Asperger's Syndrome are guided by the external appearance of the face or the perceptual pattern, so that an open mouth can equally be an expression of fear or surprise (Cumine et al. 2000:28). Although such a skill may be absent in many "neurotypicals", it is possible that such deficits are experienced only at certain times and not for every task that is undertaken. For learners with Asperger's Syndrome this is a common experience which may ultimately cause further social problems.

In the previous chapter it was noted that learners with Asperger's Syndrome are often extremely inflexible. One of the reasons for this inflexibility may be weak executive functioning. The resultant rigid problem-solving strategies affect school performance, even when motivation and intellectual abilities are high, as well as everyday functioning at home and in other environments (Ozonoff 1998:276).

As noted earlier, strong or "normal" executive functioning includes the ability to shift attention voluntarily and effortlessly from one setting or stimulus to another. By contrast, it has been shown (Szatmari 2004:40) that the attention of learners with Asperger's Syndrome gets "stuck" in the moment, becomes locked into a particular stimulus, and they cannot easily shift their attention (particularly visual attention) to

something else and may therefore do the same thing over and over again with no variation: they may become fascinated with perceptual detail (Szatmari 2004:40). This impairment (repetitive behaviour) was discussed in chapter two. An executive functioning deficit can also cause repetitive behaviour as a result of inability to respond appropriately to suddenly changing circumstances, which requires transference in the sense of applying something learned in one setting to another. As a result an inappropriate routine would be repeated over and over as a substitute for responding aptly and in keeping with the situation (Szatmari 2004:41). Lovecky (2004:139) endorses this observation by stating that learners with Asperger's Syndrome apply the same strategy or use the same solution to different situations because they cannot change their approach. Learners with Asperger's Syndrome cannot integrate the new element into the existing whole because they cannot relate it to a previous solution and see how to change the response so it will fit better.

This inability to measure aspects of proposed actions against situations and then customise or tailor a response to suit the situation is a critical factor in the social problems of learners with Asperger's Syndrome. Although it is easy to think of everyday examples of ill-fitting routines repeatedly applied by people without Asperger's Syndrome who may or may not understand that such behaviours are socially unacceptable and may or may not show embarrassment when the inappropriateness of such actions is revealed to them. However, learners with Asperger's Syndrome will repeatedly perform such actions and be unconscious and unconcerned about the fact that others perceive such actions as inappropriate. Again the point needs to be made that culture impinges on abnormal psychology in that the norms of different cultures can produce behaviour that, while appropriate for people of that culture, may seem pathological to people of other cultures (Alloy, Jacobsen & Acocella 1999:8). In certain cultures the behaviour of learners with Asperger's Syndrome may be seen as more acceptable than in others. As mentioned in

paragraph 2.3 of chapter two, the changed South African situation in which diverse cultures live close together attempts have been made to ensure that there is respect and tolerance for all people.

However, as also mentioned in paragraph 2.3.2 of chapter two, this requires a change in attitudes, which is a slow process and one which requires fostering of a deeper understanding of each unique minority group; hence the attempt in this particular study to change the attitudes of people towards being more accepting of learners with Asperger's Syndrome. The researcher is well aware that a range of requirements besides this envisaged change of attitudes will have to be met to ensure that a conducive climate is created and maintained in South Africa to accommodate learners with Asperger's Syndrome and any other challenging conditions or problems facing implementation of the government's declared inclusive education policy.

Executive functioning deficits translate into a number of problems in the classroom. Many learners with Asperger's Syndrome find it difficult to adjust to classroom procedures, resulting in failure to complete work on time, off-task behaviour, and failure to take home what is needed to complete homework assignments. These learners are often unable to distinguish major tasks from minor details and allocate time and energy accordingly. Difficulties with self-regulation, goal selection, attentional control, and attention shifting may result in spells of daydreaming or absorption in inner thoughts and processes (Ozonoff 1998:276).

Executive functioning deficits cause more or less serious problems for all members of society. When people forget where they put their glasses or car keys; when they simply cannot get around to calculating their taxes; when they have attacks of disorganisation; or when they struggle with decisions about their next career move, they are experiencing perfectly normal shortcomings in this important function. What

is *different* about learners with Asperger's Syndrome is that these shortfalls occur *more often and are much more difficult to overcome* (Powers & Poland 2003:33).

As mentioned in paragraph 2.5.1 of chapter two, learners with Asperger's Syndrome tend to hyperfocus, as they focus their attention for a prolonged period on something of interest to them (Lovecky 2004:138). Hyperfocusing may be caused by weak executive functioning, but it is not necessarily always an impediment. In keeping with the "social acceptance and awareness model" adopted for this research, it must be recognised that with this ability, learners may excel in areas of their special interest and even gain a considerable reputation for their amazing knowledge. Career opportunities could be sought in these areas and popularity amongst peers may be increased when information in this specific area is sought.

Strategies to help learners in whom executive functioning deficits are evident will be discussed in the next section.

3.4.2 Support for learners with executive functioning deficits

Teachers and parents may be unaware of this particular difficulty and may label learners with Asperger's Syndrome as naughty, badly behaved and noncompliant, with the result that despite average or better intelligence, learners with Asperger's Syndrome may not receive the level of support that they need to succeed in school (Ozonoff 1998:277). This section will therefore be used to propose support strategies that can help learners to overcome problems resulting from an executive functioning impairment.

A weekly homework log that is sent from school to home and back, keeping all parties informed of work due and progress on it, can benefit all concerned. A description of

the homework and the due date are entered in the log by the learners, often with the teacher's help. Teachers may need to check that the learners have all homework and associated materials before leaving school. Parents can then enter their initials in the log to indicate that the assignments have been done at home and teachers can sign off when it has been turned in. Teachers can indicate grades received as well as the number of times that homework assignments were not completed on time and therefore teachers should also give learners with Asperger's Syndrome warning in advance of due dates of assignments, even before other learners in the class, so that they have extra time to complete the assignments (Ozonoff et al. 2002:174-175).

Assignment checklists can be used to help break down large, often overwhelming, tasks into manageable units. For example, an assignment checklist might contain information about how to get started (begin with question on page four), what to do (every other item, for example), where to store or hand in the completed product (for example, a backpack near the door), and a reminder to clean up. With regard to larger assignments, timelines might be supplied along with a list of subgoals. Otherwise, these learners may start the process only a day or two in advance since they have not realised the length of time that each of the smaller goals will require. It is also helpful to provide a list of materials needed for each assignment (perhaps a calculator, specific assignment sheet, the correct book, a writing implement). While this may seem obvious, one of the most common reasons why learners with Asperger's Syndrome, and indeed many people without Asperger's Syndrome, fail to complete work is that they do not have the right materials ready when they sit down to work (Ozonoff et al. 2002:175).

Day planners, simplified versions of the kind that many adults use, can also help learners with Asperger's Syndrome. All events with a designated time should be entered in the planner, including, for example, time to wake up, eat breakfast, and get

to the bus stop; time for major school activities and after-school appointments; and times for dinner, homework, relaxation and bed (Ozonoff et al. 2002:175). Learners with Asperger's Syndrome can have a weekend schedule that outlines their free-time activities in detail: television time, breakfast, chores, lessons, quiet time for reading or computer games or outdoor play with brothers and sisters, and so on. It is wise to review the schedules every so often, making sure to include the learners' input if they wish and have them practise routines aimed at following the schedule and making the transitions from one activity to another (Powers & Poland 2003:96). Learners enjoy it when an empty box is placed next to each item, to be filled with a check mark or sticker once the activity has been completed. This provides a concrete visual cue by which to identify completed and upcoming events. Since day planners are relatively widely used and do not make the learners stand out from peers, they tend to be well accepted. It may also be helpful for parents to adopt a day planner themselves, modelling its use for their children (Ozonoff et al. 2002:175). Such a technique has been used for many years, and is certainly not a unique technique in assisting learners with Asperger's Syndrome. However, many of the people involved with the support of learners with Asperger's Syndrome may not realise that such a tool can be hugely advantageous provided it is properly implemented and its use clearly explained to such learners.

"To do" lists can be included in the day planner for tasks that need to get done but do not have specific designated times (errands, telephone calls, chores, and so on). Parents will have to teach their children to cross out times as the relevant obligations are disposed of, and then each evening to transfer deferred items to the next day's list. Items on the list can be prioritised with a numbering or colour-coding system (Ozonoff et al. 2002:176). A reward system can be instituted. For example, after the completion of three tasks on the "to do" lists, learners with Asperger's Syndrome can have freedom to pursue their obsessive interests for a certain time limit. Teachers

may have already implemented some of these strategies in their inclusive classrooms for all their learners; however, the teachers need to be more conscious of the fact that implementation is particularly important for learners with Asperger's Syndrome (Winter 2004:29). All the above recommendations have been described in an effort to support all those people involved in the education of learners with Asperger's Syndrome.

3.5 CONCLUSION

Three separate models or pivotal criteria, namely "theory of mind", "central coherence" and "executive functioning", which have been used in exploring the abilities found in learners with Asperger's Syndrome were considered in some depth in this chapter. In each case the implications of deficits in relation to these three criteria, as well as potential advantages for educational purposes were discussed. The researcher was at pains to show that, in line with the "social acceptance and awareness model" adopted for this research and with a positive attitude and empathetic understanding, as well as effective support, *learners with Asperger's Syndrome can overcome the negative implications of weak theory of mind, central coherence and executive functioning.*

Ultimately the purpose of this chapter was to outline the "strengths" of learners with Asperger's Syndrome. Ozonoff et al. (2002:15) captures the tone of this chapter: *"Having Asperger's Syndrome ... is not all bad. There are special gifts, talents, and inclinations that come along with the challenges and make ... a very special, unique, and interesting person."*

The next chapter will focus on the qualitative research design adopted for this research, with a view to efficiency in conducting the empirical study.

CHAPTER FOUR: RESEARCH DESIGN

“... researchers conduct qualitative studies not merely for their own sake, but rather in the reasonable hope of bringing something grander than the case to the attention of others. Researchers hope for a description and analysis of its complexity that identify concepts not previously seen or fully appreciated” (Glesne 1998:153).

4.1 INTRODUCTION

Chapters two and three contained a survey of the literature consulted for the research under review. Chapter two covered the social impairments experienced by learners with Asperger’s Syndrome, as well as the nature of social stories – a technique used to improve the social development of learners with Asperger’s Syndrome. Chapter three brought three theoretical models into focus that have been used to explain the “different” abilities seen in learners with Asperger’s Syndrome and how they perceive, process and understand the world. These two chapters served as background for the empirical study.

To ensure the required quality of this study clarity must be gained about the critical elements of a qualitative research design with specific reference to an ethnographic research design that will complement the literature study covered in the preceding chapters. The attention to qualitative research is required because, as indicated in chapter one, this method will be used to gain information about, and understanding of, the nature of the social impairments that afflict learners with Asperger’s Syndrome and the value of social stories in assisting the social development of affected learners. The design of the research under review was outlined very briefly in chapter one and will therefore be treated in greater depth in this chapter.

To begin this chapter, then, the ethical considerations involved in any research design will be discussed and explained.

4.2 ETHICAL CONSIDERATIONS

The matter of ethics is important for educational researchers (Tuckman 1999:13). It is critical that researchers design and implement such research with due allowance for its ethical implications (David & Sutton 2004:17) because the subjects of studies on ethics are the learning and behaviour of human beings (often children), which means that the findings of such research may embarrass, hurt, frighten, impose on, or otherwise negatively affect the lives of the people concerned (Tuckman 1999:13).

Evidently, researchers also need to guard against cultural bias, especially when conducting research across cultural boundaries. Researchers should be alert to the social and cultural context in which the research is to be conducted so that communities and individual persons can be informed of any aspect of the research that may cause particular concern for them (Lancaster University: faculty of social sciences committee on ethics nd:1). This can cause a great deal of concern and conflict for researchers, especially considering that cultures have different cultural conceptions of privacy, research risk and benefit, and also of the roles of parents and communities in allowing children and adolescents to participate in research (Carpenter 2001:2). In other words, what is acceptable in one culture may be offensive and out of bounds in another, which obviously means that researchers need to be extremely sensitive to the cultural precepts of people taking part in research, for example by applying ethical principles flexibly with due consideration for the ethical norms of a given social or ethnic group. Flexibility on the part of the researcher may be one way to deal with such cultural differences (Marshall & Batten

2004:5). The researcher endeavoured to choose participants from cultural backgrounds similar to her own. This prevented any cultural bias from appearing in this study and also helped her understand the cultural “norms” by which the participants lived.

The first and foremost consideration for research ethics is that a prospective subject has the full right not to participate at all in a study. Prospective participants must therefore be informed about the research so that their formal consent to participate can be obtained on legitimate grounds (Tuckman 1999:4), that is, with their informed consent, which means consent given of their own free will without undue influence such as fraud, deceit, duress, or similar unfair inducement or manipulation (Berg 1998:47). It refers to the express willingness to participate of those being subjected to investigation and is based upon a full disclosure by the researcher, in terms that subjects can understand, of the aims, methods and intended uses of the research (David & Sutton 2004:363-364). This ensures that informants are aware not only of the benefits of the research but also of the risks they take (Holloway & Wheeler 1996:43). Such information offers the respondents the opportunity to withdraw from the investigation if they so wish (Strydom 1998:25). Permission must be obtained from a parent or guardian if prospective research participants are children (Tuckman 1999:14). With regard to this research the parents of learners with Asperger's Syndrome were asked to sign a consent form (see appendices six and seven). This consent form informed them of the nature of the research and also gave them permission to withdraw from the research if they felt that they no longer wanted to participate in this study.

Though informed consent neither precludes the abuse of research findings, nor creates a symmetrical relationship between researchers and researched, it can contribute to the empowering of research participants (Glesne 1998:116).

The process of informed consent is set firmly within the principle of respect for privacy (Holloway & Wheeler 1996:43). Participants have a right to expect that when they give the researcher permission to observe and interview, their anonymity will be preserved (Glesne 1998:122) by neither recording nor disclosing the identity of a research participant for the purposes of research (David & Sutton 2004:357). Many people are prepared to divulge information of a very private nature for the sake of scientific progress, on condition that their names are not mentioned as sources of information. Thus, either the names of participants can be omitted altogether or respondents can be identified by number instead of by name (Bless & Higson-Smith 1995:103; Tuckman 1999:15-16). This number or code is used in the filing of data, while a separate list is kept on which real names are linked with their assigned code reference. This procedure minimises the likelihood that the identities of research subjects will be revealed (David & Sutton 2004:19). The researcher promised the parents that their names (both first and surname) would not appear in the research. The learners were only referred to by their initials. In this way the parents were assured of their anonymity and felt more comfortable to divulge personal and sensitive information.

According to Bless and Higson-Smith (1995:103) anonymity cannot be maintained, especially when data are collected by means of interviews. The interviewer has direct contact with all participants and can identify each one of them, which means that respondents must be assured that the information given will be treated as confidential (Bless & Higson-Smith 1995:103) by not sharing it with anyone but keeping it to him- or herself (David & Sutton 2004:359) and using it exclusively for the stated purpose of the research and that no other person will have access to the interview data (Bless & Higson-Smith 1995:103). If interviewees sense that the offered information will be treated confidentially, they (the interviewees) will feel freer

and more secure in their interaction with the interviewer and therefore be more willing to open up and allow a relationship of trust to develop (Schurink 1998b:306).

An important way in which a relationship of trust between the two parties can be reinforced and confidentiality preserved is by agreeing that all transcriptions or notes based on the interviews as well as the final report must be made available to interviewees for comment prior to being released (Schurink 1998b:307). The researcher requested the parents to avail themselves of the opportunity to read the final transcripts which resulted from both the interviews and observations. They were asked to comment on the accuracy of the data and make any necessary changes which the researcher promised would be evident in the final product. This also made the researcher vigilant when capturing the data as she knew that it would be read by the direct sources of the information (namely the parents).

The above is especially true for the Asperger's Syndrome research at issue here. Confidentiality may be particularly critical here because of the sensitivity of some of the research issues. For the purpose of this study parents may not wish to divulge such sensitive information but they may relent if they are told that their personal experiences may help others in similar situations. The researcher carefully explained to the parents that they were making a valuable contribution towards research in this field and that their input would ensure that society would develop a more understanding and empathetic attitude towards learners with Asperger's Syndrome.

The next section will focus on the research design chosen for this study.

4.3 RESEARCH DESIGN

Thyer (1993:94) defines a research design as “a blueprint or detailed plan for how a research study is to be conducted – operationalising variables so that they can be measured; selecting a sample of interest to study; collecting data to be used as a basis for testing hypotheses; and analysing the results”. Huysamen (1993:10) offers a rather similar definition of design as “the plan or blueprint according to which data are collected to investigate the research hypothesis or question in the most economical manner”. It helps the researcher conceptualise how each step will follow the one before to build knowledge and understanding (Fetterman 1998:6).

Clearly the research design is the plan and structure of the investigation used to obtain evidence from which the most valid, accurate answers possible to research questions can be construed (McMillan & Schumacher 1997:34). It provides the “glue” that holds the research project together and is used to structure the research, to show how all the major parts of the research project (the samples or groups, measures, treatments or programmes, and methods of assignment) work together to try to address the central research questions (Trochim 2005:1). It is therefore the planning of any scientific research from the first to the last step (Bless & Higson-Smith 1995:63), including the process of collecting and analysing data (David & Sutton 2004:369). It is a prerequisite for all research of whatever style (Brewer 2000:58-59). Very often this process is described as research management or planning (Bless & Higson-Smith 1995:63).

Since there are many types of research questions and many types of design it is important to match the design to the methodological requirements and therefore the type and processing of data implied by the research question (Henning, Van Rensburg & Smit 2004:36). The design must also be chosen with a view to

ensuring that the limitations and cautions pertaining to the interpretation of results, as well as the method of data analysis that it implies, are in line with the research question (McMillan & Schumacher 1997:34).

In qualitative research the design is determined by the researcher's choices and actions. In other words, during the research process, qualitative researchers will create the most suitable research design (De Vos & Fouchè 1998a:80). Few research studies develop exactly according to the original plan, but without such a plan few inquiries would develop at all. It is therefore better to have an emergent plan with a strong logic than no plan. It is also better to have one emerging in a good argument and design logic than to have a finely articulated and very specific plan in terms of methods with little logic or coherence. Most researchers accept that a plan may change because it is failing or because the topic has been adjusted as a result of interesting data that compelled the researcher to change direction (Henning et al. 2004:142). In the present case it was important for the researcher to choose a design that will be flexible as the topic of this study is relatively new and it is expected that new literature may emerge during the study. Thus a qualitative research design that allows such flexibility was chosen and will now be explained.

4.3.1 Qualitative research design

The purpose of qualitative research is to shed light on a particular social phenomenon in its natural setting. More particularly, its objectives are to discover, describe and analyse common phenomena through observation and involvement in a research setting because the observation of such phenomena for extended periods can reveal remarkable levels of complexity (Gorman & Clayton 1997:177). The assumption underlying qualitative research is that knowledge is socially constructed. This is an acknowledgement that researchers and their respondents all

have unique values and experience unique realities. It is therefore an acknowledgement that multiple realities exist (Holloway & Wheeler 1996:1).

It was shown in chapter one that instead of being predetermined, qualitative research procedures develop in the course of research because each step depends on prior information collected during the study with a view to understanding the person(s) or phenomena concerned. Qualitative designs are typically used to investigate behaviour as it occurs naturally in a non-contrived situation, and there is no manipulation of conditions or experience. In this sense qualitative designs are non-experimental. The data also consist of words in the form of rich verbal descriptions rather than numbers (McMillan & Schumacher 1997:39-40). Thus, when researchers refer to “qualitative” research, they are using a term that denotes the type of inquiry in which the qualities, the characteristics or the properties of a phenomenon are examined for better understanding and explanation (Henning et al. 2004:5).

An ethnographic research design has been chosen to assist the researcher in the task of systematically obtaining valuable information needed for this research.

4.3.2 Ethnographic research design

Ethnography is one of the most commonly used types of qualitative research (Rossman & Rallis 2003:95; Schurink 1998a:240). The word “ethnography” denotes the recording of people’s directly observed behaviour. Literally the word means “writing about people” (Johnson & Christensen 2000:29). In a broad sense, ethnography is any study of a group of people for the purpose of describing their sociocultural activities and patterns. In ethnography people are not treated as subjects but as experts on what the ethnographer wants to discover (Burns

2000:393; Johnson & Christensen 2000:29). The design therefore ensured that due deference was paid to the parents of learners with Asperger's Syndrome as experts on the welfare of their children. After all, they had first-hand experience of day-to-day living with these learners, which obviously made them an invaluable source of information for the purpose at hand. The ethnographic method was therefore virtually a guarantee in itself that the researcher would be able to gather the required information.

Ethnography is the study of people in their natural settings or "fields" by methods of data collection which capture their social meanings and ordinary activities (Brewer 2000:6; David & Sutton 2004:103). Ethnography involves time spent by the researcher "within" a culture or group, that is in close association with the researcher's respondents as a fully integrated member of the target group (David & Sutton 2004:103), which enables him or her to capture the way of life within that group and to become familiar with the people and their practices as these occur in everyday actions (Henning et al. 2004:42; Thorne 2000:69). This ensures that the data are collected systematically without imposing meaning (Brewer 2000:6). The time spent by the researcher in close contact with the learners with Asperger's Syndrome helped the researcher to gain a deeper understanding and develop a more empathetic attitude towards the challenges faced by these learners and by their caregivers. In this respect the ethnographic research design proved invaluable.

Ethnography presents a dynamic "picture" of the way of life of some social group. As a process, it is the science of cultural description (Burns 2000:393). Those working in the ethnographic tradition therefore stress the need to see social life within the general context of a culture, subculture or organisation as a whole. The actions of individuals are motivated by events within the larger whole and thus

cannot be understood apart from it (Burns 2000:397-398). Walford (2001:7) agrees that persons, whether as individuals or in groups, can only be understood in a cultural context. Ethnography therefore locates the details of individual lives in wider structures as integral parts of a whole, thus demonstrating that the group is more than the sum of its parts (Johnson & Christensen 2000:29). This cultural aspect of the ethnographic research design thus enabled the researcher to be alert to observations that could indicate whether learners with Asperger's Syndrome could be assimilated properly and effectively into the society in which they live.

Ethnography bears a significant resemblance to the methods people are naturally inclined to use to make sense of what they observe and experience (Hammersley 1998:2). In the final analysis it helps them to "make sense of personal stories and the way in which they intersect" (Marks, Schrader, Longaker & Levine 2000:3). This particular aspect of an ethnographic research design ensured that the researcher could readily give meaning to personal encounters related by the parents of learners with Asperger's Syndrome as well as to the recorded observations.

The flexibility of ethnography permits last-minute adaptations to any design without causing any major upset (Brewer 2000:58). This feature made the approach particularly appealing to the researcher, considering the sensitive nature of the proposed research topic. It allowed the researcher to use her initiative to change direction where necessary, and to use her intuitive judgement to gauge the appropriateness of any questions addressed to the parents. Using an ethnographic research design also enabled the researcher to adapt her research in the light of any new research that may develop during the course of this particular study. This is extremely important, especially considering the increase in the number of people diagnosed with Asperger's Syndrome and thus the quickening interest in this research topic.

Chapter one very briefly outlined the purpose of the literature review. The following section will review this purpose of the literature study in more depth.

4.4 LITERATURE STUDY

A literature review has been defined as the selection and evaluation of all available documents (both published and unpublished) that contain information, ideas, data and evidence written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated (Hart 1998:13). According to Johnson and Christensen (2000:41) the general purpose of the literature review is to gain an understanding of the current state of knowledge about the research topic. Specifically, a review of the literature will tell the researcher whether the problem concerned has been researched and if it has, then the researcher should either revise the problem or relinquish the proposed study in the light of information gained from other studies; if it has not then the research design could be adapted according to the results of related studies. Thus the literature review may suggest a number of directions worth pursuing to interpret prior findings, to choose between alternative explanations, or to indicate useful applications (Tuckman 1999:49). Evidently a literature review helps researchers clarify *what* they wish to investigate and *why* (Wagstaff 2000:59), and it provides the means for researchers to justify the area of investigation and the selected research design (Bluff 2000:182). It also confirms that the researchers are thoroughly conversant with related research and the intellectual traditions that surround and support the study (De Vos & Fouchè 1998b:104).

The literature review can stimulate questions. It can assist researchers in deriving an initial list of pertinent questions to ask or behaviours that they may want to

observe. The questions asked or observations made may change as the study progresses, but the prior literature can help in formulating the basis for proceeding with the research project (Johnson & Christensen 2000:41). In other words reviewing the literature is a continuous process (Glesne 1998:20).

Gaining familiarity with the literature will also help researchers after they have collected the data and analysed the results. One of the last stages of a research project is to prepare a research report in which the results of the study are communicated to others. In doing so the researchers not only have to describe the study conducted and the results found, but also have to explain or interpret the results of the study. In trying to make sense of the data collected from a study it is often valuable to be aware of the literature because it can frequently provide clues as to why the effects occurred. If the researchers are familiar with the literature, they can also discuss the results, in terms of whether they support or contradict prior studies. If the results of a study are at odds with others the researchers can speculate about the reasons for the difference, and this speculation then forms the basis for another study to attempt to resolve the contradictory findings (Johnson & Christensen 2000:41).

The following section will explain the concept “sample” as applied to this research.

4.5 SAMPLING

Sampling theory is a technical accounting device to rationalise the collection of information, to choose in an appropriate way the restricted set of objects, persons whom and events from which the actual information will be drawn (Bless & Higson-Smith 1995:85). According to Stocker (1989:100) and Turney and Robb (1989:107), a sample for a study is a selected finite set of persons, objects or things that

researchers involve in their studies. As such a sample forms a subset of elements of the population. Researchers cannot collect all the primary material that could possibly be relevant to their study (mainly because of size, cost, limited time and unfeasibility of access to the whole target population) and must be content with a partial sample of all the relevant material (Hackley 2003:25; Stocker 1989:100).

For this particular research purposeful sampling was used which will be explained in the next section.

4.5.1 Purposeful sampling

The main criterion for purposeful sampling in qualitative research is the selection of information rich informants, groups, places and events (Bless & Higson-Smith 1995:106; Paton 1990:169), which means that sampling is often based on purposive or convenience criteria (Hackley 2003:75). In purposeful sampling, researchers handpick the cases to be included in the sample on the basis of their judgment of their typicality. In this way they build up a sample that satisfies their specific needs. As its name suggests, the sample has been chosen for a specific purpose (Cohen, Manion & Morrison 2000:103). Thus this technique enables the researcher to seek out groups, settings, and individual persons where the processes at issue are most likely to occur (Denzin & Lincoln 2000:370; Silverman 2000:104). This means that researchers take a portion of the population and consider it to be representative (Strydom & De Vos 1998:190).

Merriam (1991:48) recommends that in choosing the research sample one should choose subjects from whom one can learn the most. This means that the sample should consist of people who can serve as rich sources of the information sought by the researcher. As mentioned in paragraph 4.3.2 of this chapter, in ethnography

people are the experts concerning what the researcher wants to investigate. The researcher intends to gain relevant information by interviewing the parents of learners with Asperger's Syndrome and by observing the learners in their "natural settings". Thus the parents of these learners will form the sample for this study, especially because they are the experts on their children, and may even be better informed about Asperger's Syndrome than some of the professionals (Bashe & Kirby 2001:287). The researcher supports the statement of Hartnett (2004:106) that ultimately the *parents are best qualified to speak for their children*.

First the researcher obtained a list of members of the Asperger's Syndrome group. The researcher felt that if the parents had become members of the support group they would be at least willing to acknowledge that their children had Asperger's Syndrome. From this list the researcher selected members who lived conveniently close to her home and sent e-mails to them explaining the nature of the proposed research and the involvement that would be expected of them. Only three parents responded to the twelve e-mails sent out by the researcher who then made telephonic contact with the respondents in order to introduce herself and explain in more detail what would be required from them. Unfortunately one parent declined because she felt too pressured by her job commitments, especially as her term of service as full-time employee had commenced quite recently. The researcher then made a personal appointment to meet the other two parents, who were willing to be part of the research, so that she could sense if they would in reality be a valuable source of information for this research, and if they would really be prepared to share extremely sensitive and personal information which may be very difficult to express to an outsider. On personally meeting both parents the researcher realised that they were generally helpful and friendly, approachable, easily accessible and willing to share their personal experiences with the researcher.

4.5.2 Criteria for sample selection

The following criteria guided selection of the sample:

- The parents' consent to participate had to be gained first.
- More specifically, parents' consent had to be gained to try the technique of social stories and give their personal opinions on the outcomes of the trial application.
- The parents had to be easily accessible, in other words relatively close contact had to be assured so that no difficulties in later meetings between the researcher and participants (subjects) were encountered.
- The parents obviously had to be literate so that they could read and comment on the researcher's report after the empirical study had been conducted. The parents also had to be able to speak and read the language in which the research was written. In other words language barriers had to be eliminated from the outset.
- The parents' children had to be primary school learners because it was felt that any intervention, such as social stories, would be more effective with this age group. The researcher also felt more comfortable dealing with this group of children, as her experience is mainly confined to teaching primary school learners.

The concept of observation will now be explored with reference to the research concerned here.

4.6 OBSERVATION

Data gathering often includes unobtrusive observation (Hackley 2003:85) of people's behaviour to obtain information about the phenomenon of interest (Johnson

& Christensen 2000:147). Observational data are attractive because they are gained directly from “live situations” (Cohen et al. 2000:305) and therefore take the researcher “inside the setting” (Rossman & Rallis 2003:194). In fact, observation is something that human beings cannot fail to do as people: human beings are all expert observers (Hackley 2003:85). Observation is important as a means of verifying what people say about themselves and their actions (Johnson & Christensen 2000:147) and hence the researchers are able to understand the context of programmes, to be open-ended and inductive, to see things that might otherwise be unconsciously missed, to discover things that participants might not freely talk about in interview situations, to move beyond perception-based data (eg. opinions in interviews), and to access personal knowledge (Cohen et al. 2000:305). Because observed incidents are less predictable there is a certain freshness to this form of data collection that is often denied in other forms, such as a questionnaire or a test (Cohen et al. 2000:305).

Whenever a researcher conducts qualitative observations he or she must remember exactly *what* has been observed. In fact, the researcher is said to be the data-collection instrument in qualitative observation because it is the researcher who must decide *what is important* and *what data are to be recorded* (Johnson & Christensen 2000:149).

From the observations the researcher is expected to gain fundamental information regarding the social impairments that afflict learners with Asperger’s Syndrome, and then to use the information to develop specific social stories for these learners. The researcher intends to assume the role of participant observer for the present purpose. This role will be explained in the next section.

4.6.1 The role of researcher-participant observation

Participant observation is generally regarded as the principal data-gathering strategy of qualitative research (Schurink 1998c:279) and the hallmark method of ethnography (Henning et al. 2004:82). Participant observation involves the researcher directly in community life, which means that people's views are determined by observing and talking to them (Agar 1996:163). More specifically participant observers assume an insider role – often that of a snoop or shadow – although they are known as researchers and can ask respondents for feedback and an explanation of what is observed (Donovan 2000:138). Participant observation depends on the establishment and maintenance of a relationship of trust between the researcher and the respondents so that subjects will confide in the researcher and give information that might otherwise be withheld (Glesne 1998:43).

Because participant observers generally believe that human behaviour is influenced in many ways by the milieu or setting in which it occurs, they believe that researchers should as far as possible visit, and preferably spend considerable time in, their subjects' natural habitat where they can obtain first-hand data on how their subjects go about their everyday lives (Schurink 1998c:280). This extended period of time helps to reduce reactivity effects (the effects of the researcher on the researched) and also enables researchers to see how events evolve over time and to capture the dynamics of situations, people, personalities, contexts, resources, roles and so forth (Cohen et al. 2000:311).

It should be noted that where researchers make use of participant observation the researcher's own attitude when engaging in and living with the people in the field form part of the data, which must therefore be read and understood with due

cognisance of the participant observer's autobiographical experiences in the field (Brewer 2000:59) as captured in the field notes (Henning et al. 2004:42).

Participant observation is particularly flexible. When participant observers notice a particular activity that may shed light on what they are studying, they may direct their research so that the activity is also studied (Schurink 1998c:292). The immediacy of the present research topic is well-served by the flexibility of this kind of observation because many issues to which the researcher will have to attend may evolve during the empirical research.

As mentioned in paragraph 1.6 of chapter 1, together with participant observation, the researcher will conduct interviews with the parents of learners with Asperger's Syndrome, hence the concept of the ethnographic interview will be considered now.

4.7 ETHNOGRAPHIC INTERVIEW

In chapter one an interview was described as a data collection method (Johnson & Christensen 2000:140) that involves asking people questions and then listening carefully to their answers (David & Sutton 2004:87). To be precise, a verbal stimulus is used to elicit verbal responses (Brewer 2000:63), and the researcher seeks to draw inferences about the social life of interviewees (David & Sutton 2004:99) with specific reference to how people conceive their worlds and how they explain or "make sense" of the important events in their lives. Interviews can be the primary data collection strategy or a natural outgrowth of observation strategies (McMillan & Schumacher 1997:447), which effectively means that the interview is not simply concerned with collecting data about life, but is part of life itself because its human embeddedness is inescapable (Cohen et al. 2000:267). Henning et al. (2004:52) concur by saying that the main aim of interview data is to bring to our

attention what individuals think, feel and do and what they have to say about it in an interview, giving us their subjective reality in a “formatted” discussion, which is guided and managed by an interviewer and later integrated into a research report.

An interview as an interpersonal encounter should be friendly. It is important that the interviewer establish rapport with the interviewee. At the same time, the interviewer must be impartial to whatever the interviewee says. If the researcher reacts positively or negatively to the content of the interviewee’s statement, it may bias the responses. It is also important that in establishing rapport with the interviewee a relationship of implicit trust is developed between the researcher and the interviewee because there can be no guarantee that responses will be unbiased if there is a lack of trust (Johnson & Christensen 2000:140).

In spite of the many difficulties attending interviews there are compelling reasons why this technique is so widely used in qualitative research. Clearly, interviews allow the researcher to generate a great deal of data relatively quickly. Interviewing allows people to concentrate their views about a wide range of issues in one session (or several), whereas to wait for such information to be generated in naturally occurring situations would be very time consuming, or the researcher may even wait in vain. Again, questions can be asked during interviews that would be impossible in other situations (Walford 2001:92).

Researchers can use prompts or probing questions during the interviews to allay research informant anxiety on the part of both researcher and interviewee, and to provide opportunities for elaboration and the emergence of meaning or reasons (Holloway & Wheeler 1996:58) so that full justice can be done to the complexity of the researcher’s topic (Glesne 1998:87).

The next section will be devoted to the unstructured interview with a schedule.

4.7.1 Unstructured interview with a schedule

The unstructured interview was briefly described in chapter one (see paragraph 1.6). The structural element of the interview is that it is generally guided by a predetermined list (schedule) of issues that have to be investigated. The issues are formulated as precise questions and alternative or subquestions, depending on the answers to main questions. The researcher is free, however, to pose impromptu questions as the occasion arises. Respondents are not confronted with ready-made definitions or multiple-choice answers ("correct" answers inserted among alternatives), but are free to formulate definitions, describe situations, express views and suggest answers to problems as they choose and according to their specific insight (Bless & Higson-Smith 1995:107; Rossman & Rallis 2003:181), the object being to let them tell their own story and largely determine the flow of the dialogue (David & Sutton 2004:87).

Unstructured interviewing is essentially social interaction between equals to obtain research-relevant information, but instead of expressing their own feelings, thoughts or observations the interviewers endeavour to elicit those of the interviewees (Schurink 1998b:298). This procedure typifies the qualitative principle that the phenomenon of interest should unfold according to the participant views, which have to be recorded by the researcher (Rossman & Rallis 2003:181-182).

The main advantage of unstructured interviews with a schedule is that they allow relatively systematic collection of data and at the same time ensure that important data are not forgotten (Schurink 1998b:300).

Once the interviews have been completed the data will need to be analysed and interpreted. This process will be explained in the following section will explain.

4.8 DATA ANALYSIS AND INTERPRETATION

Analysis can be defined as the process of ordering data by organising it into and looking for relationships between patterns, categories and descriptive units (Brewer 2000:105). It is a process of deep immersion in the interview transcripts, field notes and other materials collected (Rossman & Rallis 2003:270). Ultimately, analysing data means categorising, ordering, manipulating and summarising data in order to obtain answers to a research problem (Kerlinger 1989:125-126).

Researchers must draw a conclusion from the data with a view to answering their initial research questions (ie. achieving the purpose of the study). The researcher is the main analytical instrument because his/her knowledge, understanding and expertise will determine what happens to the data (Henning et al. 2004:6). The data analysis here is almost inevitably interpretive, which means that instead of being an accurate or literal account (as in the numerical, positivist tradition) it takes the form of reflexive, reactive interaction between the researcher and the decontextualised data, which are already interpretations of a social encounter (Cohen et al. 2000:282).

Analysing qualitative data is an eclectic activity; there is no one "right" way. Most qualitative researchers are wary of prescriptions and wish to avoid standardising the process, because a hallmark of qualitative research is the creative involvement of the researcher. There is no fixed formula; data can be analysed in more than one way (McMillan & Schumacher 1997:505).

Data analysis tends to be a continuous process (Donovan 2000:145; Henning et al. 2004:127) that accompanies the observation and interviews (Holloway & Wheeler 1996:92), that is, the data collection (Huberman & Miles 1998:180), from start to finish. Gaps and inadequacies can be filled later by collecting more data or by refocusing on the initial aims of the study (Holloway & Wheeler 1996:92-93). Thorne (2000:69) concurs in stating that because data collection tends to coincide with analysis it is important to realise that qualitative data collection and analysis tend to merge indistinguishably as they determine and inform each other. The theoretical lens through which the researcher approaches the phenomenon, the strategies used by the researcher to collect or construct data, and the researcher's views concerning what might be conducive to answering the research question are all analytic processes that influence the data. Furthermore, the method of data analysis depends on the nature of the data produced by the chosen research instrument and research design (Mason & Bramble 1997:194). In the present instance the researcher began analysing the raw data (ie. the interview responses and observations) from the beginning, by which means it became possible to detect and fill whatever gaps there might be.

Often qualitative researchers use coding to analyse their data (David & Sutton 2004:359). Coding is the process of applying codes to chunks of text so that those chunks can be interlinked to highlight similarities and differences within and between texts. Codes are keywords, themes or phrases that may or may not correspond to actual terms in the text being analysed. Coding enables data reduction. By flagging up chunks of text where key themes seem to recur the researcher can focus more precisely on areas that seem particularly significant (David & Sutton 2004:203).

The usual analytic procedure begins with descriptive analyses, exploration and gaining a "feel" for the data. The analyst then concentrates on specific questions

forming part of the study aims or hypotheses, or that arise from the findings, from studies reported in the literature, and from patterns suggested by the descriptive analyses (Schoenback 2004:452). For this study the responses to the results of the verbatim accounts of the interviews will be transcribed. Categories relating to the research topic will be extracted / deduced from information gained from the literature review, in other words certain themes (codes) will be identified. The information gained from the interviews with the parents will be analysed and slotted into these categories. The researcher's observations will also be analysed and slotted into these categories. By these means the data will be organised in a way that will readily enable the researcher to note the correlations (as well as any contradictions) between the interview responses and the observations. The identified themes will form the basis of the next chapter in which the researcher will report the findings gained from the actual empirical study. The outcomes of applying the social stories that were specifically developed for learners with Asperger's Syndrome will also be documented with due reference to the categories that evolved during the literature study. The purpose of this "exercise" is to underscore the relevance and enhance the readability of the reported information and to facilitate correlation of the literature research with the empirical evidence. However, the data have to be validated. This step will be outlined in the next section.

4.9 VALIDITY

A commonly accepted definition of validity (cf. Hammersley 1987:69) is that an account is valid or true if it accurately represents features of phenomena that it is intended to describe, explain or subsume into theory. Validity is attained if the research truly measures that which it was intended to measure and if the research results are truthful in the sense that the research instrument serves the purpose of achieving the research objective (Joppe 2000:1). However, the exact nature of

“validity” is the subject of considerable debate in both educational and social research since there is no universally accepted or common definition of the term (Winter 2000:1).

Unlike quantitative research, there are no standardised or accepted tests within qualitative research, and often the nature of the investigation is determined and adapted by the research itself. There may be no hypothesis nor even any findings. Instead the essential “validity” of the research resides with the representation of the actors, the conception and pursuit of the research objectives and the appropriateness of the processes involved (Winter 2000:8). Ultimately, validity depends on the degree of consistency between observed realities and the concept in question (Bless & Higson-Smith 1995:129), that is, the closeness of fit between data and reality. The issue is whether the data really “reflects” what is “out there” (David & Sutton 2004:28).

The different ways in which the validity of this particular study was ensured will now be discussed.

4.9.1 Maintaining the validity of qualitative research

Key (1997:4) sketches certain guidelines for maintaining the validity of qualitative research. These proved very useful for the research and will now be briefly discussed.

Key (1997:4) maintains that the researcher must be a listener. The subjects of qualitative research should provide most of the research input. In this regard the researcher allowed the participants to openly express their feelings and never commented on or criticised their verbalisations. The researcher also continually reassured them of the value of their frank responses in parting with such sensitive

information, and always tried to make them feel calm, at ease, and confident that they were adding to the store of knowledge about the subject.

As indicated in chapter one (see paragraph 1.6), prolonged and persistent field work was conducted with a view to interim data analysis and corroboration to ensure that findings match participants' reality. This field work enabled the researcher to note any inconsistencies between the interviews with the parents and what actually happened.

It is important that the primary data be included in the final report as this allows the reader to see exactly the basis upon which the researcher's conclusions were made (Key 1997:4). All the primary data for this research, namely the two interviews and the three social stories, are included in the appendices of this research (see appendices 1-5) so that readers can judge for themselves exactly how the research was conducted. In other words, the approach was transparent.

The exercise of determining validity can be aided by asking participants (who can be involved at any level of research) whether the findings make sense to them and what they see as the "main themes". Their (the participants') views are bound to differ from those of researchers because they theorise from different positions and knowledge bases, but they will alert the researchers to continue to question themselves and to include the participants' views at a type of "metalevel" of analysis (Henning et al. 2004:149). Key (1997:5) is of the same opinion and maintains that the researcher should seek feedback by allowing others to critique the research manuscript. Research subjects (participants) should be included in this process to ensure that the information is reported accurately and completely (Key 1997:5). For this particular research the parents were asked to review the researcher's notes and make relevant comments before any conclusions were drawn. The parents were

specifically asked to check that the researcher had captured their views accurately and to make any necessary changes.

A potential problem that may compromise validity and that researchers must be careful to avoid is researcher bias, because qualitative research is open-ended and less structured than quantitative research and tends to be exploratory. Researcher bias tends to result from selective observation and selective recording of information, and also from allowing personal views and perspectives to affect how data are interpreted and how the research is conducted. The key strategy used to understand researcher bias is called reflexivity, which means that the researcher actively engages in critical self-reflection about his or her potential biases and predispositions. Through reflexivity, researchers become more self-aware, and they monitor and attempt to control their biases (Johnson 1997:1-2). The researcher attempted in all instances to keep an open mind and never to impose her own meaning on the raw data, but rather to focus on reporting the data exactly as they were observed and reported by the parents.

The exact procedures adopted for this research will now be explained.

4.10 ADMINISTRATION OF THIS RESEARCH

To begin with the researcher chose this research topic because of certain personal academic interests. The researcher also became aware that recently there has been a huge increase in awareness regarding Asperger's Syndrome, and especially, the social difficulties encountered by affected learners. After initially surveying the literature the researcher realised that further research was required on the use of social stories as a technique to assist the social development of learners with Asperger's Syndrome. The literature mentioned that this technique was very easy to implement and that hardly any additional costs were involved in developing social

stories. The literature also stressed that improvements were remarkable and immediately noticeable after the implementation of social stories. A further advantage of social stories is that with a few minor adaptations they could easily be applied in different social settings. With these points in mind the researcher decided to test the technique personally. Initially the parents were interviewed and permission was requested to make use of these stories. The researcher requested that the parents assist with the implementation of the stories as it was felt that the learners would respond better to their parents than to the researcher. The parents were also asked to suggest situations in which their children were inclined to find it difficult to behave in a socially acceptable manner. The researcher then developed social stories in conformity with the parents' suggestions after making sure that the learners' behaviour tallied with her own observations. This verification procedure enabled her to detect any and all changes in the learners' behaviour after the social stories were put into practice. After the social stories were implemented the researcher again observed the learners in similar situations and in this way she was able to observe and report any changes in their behaviour.

4.11 CONCLUSION

To ensure that the elements of qualitative research design, with special reference to the ethnographic research used here, as well as the key concepts of "literature study", "sampling", "participant observation", "unstructured interviews with a schedule", "data analysis and interpretation", as well as "validity" were explained in this chapter to ensure that the empirical research will be systematic and efficient. The results of the empirical study conducted for this research will be outlined in chapter five with due reference to the guidelines set out in this chapter.

CHAPTER FIVE: RESULTS OF THE EMPIRICAL STUDY

“... if we are only interested in changing the Asperger’s Syndrome person so that they can better meld themselves into society ... then perhaps we are misguided. The Asperger’s Syndrome community gives us much cause to celebrate... We should only suggest whatever help they need to insure they have every opportunity of leading productive, rewarding and self-sufficient lives” (Willey 1999:14-15).

5.1 INTRODUCTION

The research design to be used for this particular study was outlined in the previous chapter. A qualitative investigation conducted as part of this study serves as an indispensable source of practical information that can be used to diagnose the social differences experienced by learners with Asperger’s Syndrome. It was structured to complement the literature study as reported in chapters two and three. It is anticipated that the personal experiences of the parents’ interviews and observation of the learners will provide valuable information with a view to comparative analysis. Together, the literature study and the empirical study, will provide a holistic perspective on the differences of learners with Asperger’s Syndrome and the extent to which the technique of social stories can help them to cope with these specific differences. As mentioned in paragraph six of the introduction to chapter two, the impairments of learners with Asperger’s Syndrome are also referred to as “differences”. However, the intent is not to minimise the condition but rather to emphasise a more tolerant and accepting way of portraying the difficulties which learners with Asperger’s Syndrome experience.

In this chapter a summary will be given of the two interviews, as well as the results of the observation of two learners with Asperger’s Syndrome. The researcher

intends to identify *major themes* and *patterns* which emerged from the literature study and to use these themes and patterns to describe the outcomes of the interviews and observations with a view to developing a chain of evidence. The information will place the researcher in a favourable position to attribute meaning to the data and draw specific conclusions from the outcomes of the social stories developed especially for these learners.

It should be evident from the quote given as the introduction to this chapter that the researcher's aim in devising and implementing the social stories is not to change these unique learners. After all, each learner with Asperger's Syndrome is a unique individual (Mertz 2005:31). Instead the objective was to guide them in order to ensure that they develop the social skills for meaningful assimilation / integration into society.

To begin with a summary will be given of the general biographical details of the two learners with Asperger's Syndrome who were observed for this study.

5.2 PROFILES OF CASE STUDIES

5.2.1 Case study: R

The first case study used for this research will be referred to as R in order to ensure the anonymity of the learner and his family. R's mother was very cooperative and was willing to assist the researcher in any way she could. R's family live in a respectable and very tidy home in the northern suburbs of Johannesburg. His mother mentioned that when she first got married, she and her husband worked very hard to meet their monthly expenses. Fortunately they now have sufficient income and manage to fulfil their financial obligations. R, a male, is currently six years and six months old. R attends a regular government school and has always

been in a regular class. He is presently in Grade One and has never had to repeat a year. R was diagnosed with Asperger's Syndrome by a pediatrician just after his fourth birthday; this after being diagnosed with Attention Deficit Disorder at age three and a half. The possibility has also been entertained that his behaviour could be indicative of non-verbal disability, but no further investigations were made in this regard. Nobody else in his family has been diagnosed with Asperger's Syndrome. R is the youngest child in the family. He has three brothers who seem to enjoy normal sibling relationships. One of his brothers (his immediate senior) has been diagnosed with Attention Deficit Disorder.

R's mother experienced a few minor complications towards the end of her pregnancy. She had high blood pressure in the last couple of weeks of the pregnancy and was admitted to hospital early and induced ten days early. R is a healthy child and has only been afflicted with a mild dose of chicken pox.

R's father is a fitter and has worked at the same steel mill for the last thirteen years. His mother is trained as a preprimary school teacher and worked for the last six months of last year at a privately run play school. She has decided not to continue working as her family and the smooth functioning of the home keep her well occupied. However, she feels that it is important to provide herself with stress relief, to which end she cultivates the pastime of patchwork.

When R was diagnosed with Asperger's Syndrome his mother felt sad because she might not be able to muster the energy and emotional strength to cope with another difficult child. She also felt a little bit annoyed that they should have two special-needs children and others had none. She believes that there is a grieving process that one goes through and for her it was all about losing her "perfect" baby. These feelings of grief at the discovery did not last long and she immediately began

focusing on how to deal with the problem. Her husband tends to leave the children's education to his wife but was nevertheless adamant that R was not to be placed in a special school and insisted that he attend a regular school.

R's performance at school seems to fluctuate between fabulous and really appalling. He has hit his teacher on numerous occasions. He seems to hit out when his frustration levels are very high. Lack of sleep and ill health, however slight, changes the balance of how he functions at school. It seems to take R a long time to settle into the routine of a new school year and his mother mentioned that it would be beneficial if he could have the same teacher all the way through his school career. Mention was made of R having to repeat this school year but his mother was very reluctant as socially it would be difficult for R to become acquainted with a whole new group of learners.

With regard to support for R, he attends speech therapy twice a week and much progress has been noted. He has also just begun attending occupational therapy once a week, however it is still too soon to detect any improvements in this regard. No extra help is available at school.

5.2.2 Case study: O

The second case study used for this research will be referred to as O in order to ensure the anonymity of the learner and his family. O's mother was very approachable and welcomed any feedback concerning Asperger's Syndrome. She mentioned that she was delighted that the researcher was interested in Asperger's Syndrome as according to her very few people are aware of this syndrome. O's family live in a relatively small flat in Benoni, a suburb on the East Rand, and it was evident to the researcher that the family were careful and lived on a fairly tight

budget. Both parents had to work to maintain an adequate monthly income. O, their son, is seven years and ten months old. He is a well-mannered learner who always says "excuse me", "please" and "thank you" and attends a regular government school, and has always been in a regular class. O is in Grade Three and has never had to repeat a year. R was diagnosed with Asperger's Syndrome by a specialist pediatrician when he was seven years old. The specialist believes that O's Asperger's Syndrome is relatively mild and suspects that this, as well as the fact that he copes fairly well at school, was the reason why it was only diagnosed at age seven. Despite all this he is still far from what would be a "typical" boy of seven. O also has Attention Deficit Hyperactivity Disorder which was diagnosed at age six. Fortunately the medication taken by O seems to keep the condition under control. Nobody else in this family has been diagnosed with Asperger's Syndrome. O is the eldest child in the family. He has one sister who is almost five years old. They get along fairly well although at times they annoy each other. O's parents often compare the development of their two children and there are distinctive differences between them, particularly with regard to their social abilities. As O's sister is getting older, their mother realises how deficient O's social skills have always been, especially with regard to certain social protocols that are generally taken for granted, like respecting someone's personal space and taking turns. He is also very self-centred and it never occurs to him how another person is feeling or that he might be hurting them.

There were no complications in the pregnancy or birth of O. O's mother is employed as a receptionist at a school. Previously she worked in sales for a bank for fifteen years. O's father manages the head office of an international freight forwarding company.

O's mother and father both felt disappointed when O was diagnosed with Asperger's Syndrome since he already had the burden of Attention Deficit Hyperactivity Disorder to contend with. The parents knew very little about the syndrome and as they have learnt more about the syndrome they have felt quite sad as they have realised that the social impairments of the syndrome can have quite far-reaching consequences and outcomes for O and his caregivers.

O has never had any academic problems. He has always read and spelt at or above the required level for his age. His mathematics ability is well above average and he has always been in the top maths group in his class. He also has a really good long-term memory. With regard to his school work the only problem mentioned by his teacher is his untidy writing, mainly because he is always in such a rush to complete his work.

With regard to support for O, he attended occupational therapy sessions during the latter part of last year in order to practise social skills and some gross-motor coordination exercises to aid his balance, coordination and ball skills. His problems with his sense of balance and his gross-motor skills are apparently quite common in learners with Asperger's Syndrome. O tried very hard during these sessions and great improvements have been accomplished. O's mother has also recently been giving him a supplement called "eye q" which is made up of fish oils and long-chain fatty acids which are reputedly good for brain function, memory and concentration. Definite improvements in O's behaviour have been noted and he is much more settled, even in the afternoons (when he used to be somewhat uncooperative).

The following section will be devoted to a tabular summary of the data obtained from the empirical study (two interviews).

5.3 TABULAR SUMMARY OF EMPIRICAL STUDY (TWO INTERVIEWS)

TABLE 5.1 Summary of interviews

The following table provides a brief summary of the results of the interviews. The categories (or codes) (see chapter four, paragraph 4.8) were gleaned from the literature review (chapters two and three). The researcher used a scale (see the key below) to draw certain inferences from the interview responses. This will also form the basis of the subsequent discussion (and divisions) in this chapter.

<p>Key for the following table:</p> <ol style="list-style-type: none"> 1. Strongly agree / or impairment predominantly present. 2. Neither agree nor disagree / or some evidence of the impairment. 3. Strongly disagree / or impairment completely absent.

Parents' responses	<u>R (first case study)</u>	<u>O (second case study)</u>
Social impairments	1	1
Ability to play with other learners	2	3
Awareness of social conventions	3	3
Correct distance from listener	3	3
Correct eye contact	3	3
Body language / face perception understood	2	1
Understanding of the hidden curriculum	3	3
Temper tantrums	1	1
Language impairments	1	1
<i>Pragmatics</i>		
Ability to retrieve a conversation	3	3

One-sided conversations	1	1
Literal interpretation of comments	1	2
<i>Prosody or the melody of speech</i>		
Unusual tone of voice (monotone)	2	2
Pedantic speech	2	1
Idiosyncratic use of words	1	3
Narrow interests and repetitive routines		
Narrow interests	1	1
Repetitive routines	1	1
Theory of mind		
Ability to understand emotions	2	1
Lack of the means to display empathy	1	2
Expectation that others know their thoughts	1	1
Ability to deceive	1	3
Ability to take turns	3	3
Ability to understand "pretend" play	2	1
Preference for fact rather than fiction	3	2
Central coherence		
Ability to focus on specific details	1	1
Not receptive to new ideas	1	3
Ability to make decisions	3	2
Ability to generalise	3	3
Ability to learn from previous mistakes	3	3
Understanding different word contexts	3	1
Exceptional long-term memory	2	1

Executive functioning		
Ability to plan a task	3	1
Ability to start and stop activities	2	3
Ability to arrange sentences correctly	2	1
Ability to manage time	2	3
Organisational skills	2	2
Social acceptance		
Blame for poor parenting	3	1
Social adaptation to specific learners' needs	2	2
Society's willingness to respect learners' diversity	2	3
Teacher's positive attitude essential	1	1
The impact of social stories	2	2

The following section is an analysis of all the interviews and observations undertaken for this research.

5.4 DISCUSSION OF RESULTS

5.4.1 Social impairments

Throughout the previous chapters mention was made that social impairments are the earliest and most serious manifestations of Asperger's Syndrome. This assertion was *confirmed by the interviews*. With regard to R, his mother mentioned that he struggles with *social issues* at school and she felt that this problem would remain with him all through his schooling and the rest of his life. O's mother also confirmed the view that social issues impact the most on everyday life. She pointed out that he overreacts to any form of teasing. He often misunderstands a situation,

imagining that someone is making fun of him, and then reacts with physical aggression.

5.4.1.1 *Ability to play with other learners*

Both mothers agreed that their sons had difficulties playing with other learners, although R's mother noted that there was improvement in this area since his teacher had introduced cooperative games in an effort to get him to interact appropriately with other children. O's mother mentioned that her son's main difficulties were about pushing and hitting other children and always wanting to win. He is also very domineering and always wants to control how games are played. He wants everything done his way and the other participant does not have much input at all. The whole situation becomes one-sided. If the game is played entirely his way then everything is peaceful. If anyone challenges him he will either become aggressive or just disappear until he has calmed down and then return and act as if nothing has happened, completely unaware that he has hurt someone's feelings with his actions or words. It was these behaviour concerns, such as becoming very aggressive if another learner wanted to use the playground equipment which he was using even though he had finished playing with it, which led O's teachers to realise that he was different. O's mother expressed the view that although he is very bright and can be aware of his unruly behaviour, he just seems to lack control over it. It is as if he really wants to do something but he just cannot.

This impairment was apparent when the researcher had occasion to visit O's home when a friend had been invited to play. The children never once played together but rather focused on their own individual games. When O's mother tried to encourage them to play a game together the episode became very strained and O immediately went off on his own to his room. It also became evident to the researcher that O is

very possessive about his belongings and refused to let his friend play with his toys and, especially when his friend asked if he could play with one of O's fluffy toys, his favourite penguin, he refused and kept touching it himself to make sure that his friend would not take it from him. At one time he even put it under his jumper to hide it away even though everyone could see it sticking out.

The researcher also observed that both learners spent their break time sitting alone and eating their lunch separately. R in particular took ages to finish his lunch, compared to the other learners who devoured their lunches as quickly as possible so that they could go and play.

5.4.1.2 Awareness of social conventions

In chapter two it was stated that learners with Asperger's Syndrome cannot appreciate the significance of social conventions. Being impulsive and not aware of the consequences, learners with Asperger's Syndrome say the first thing that comes into their mind. Strangers may consider the learner to be rude, inconsiderate or spoilt (Attwood 1998:32-33). Both mothers agreed that their sons were impervious to social conventions. R's mother mentioned that such incidents happen very frequently and gave the example of when R told his teacher that her drawing of a cat was a "pathetic imitation". O's mother referred to the episode when O made a classmate cry by asking why there were "black bits" on her teeth.

This difficulty became evident to the researcher when O, on being introduced to the researcher, looked directly at her face and asked why her one eye looked slightly different to the other. If the researcher had been unaware of his condition, she would have felt very uncomfortable and cast him as an extremely rude child.

R was also very obstinate and on two occasions in class he refused to follow the instructions that his teacher had given the whole class even though she came up privately to him and explained what he had to do. When the teacher admonished him for not doing his work he simply walked away and lay down on the carpet. The teacher had no choice but to leave him alone. Apparently R often does this when his teacher reprimands him. She mentioned that she has been advised to just let him lie quietly on the carpet as this is his way of calming down. Subconsciously, however, he is hoping that she will react to his behaviour because he is seeking attention.

5.4.1.3 *Correct distance from listener*

In chapter two it was mentioned that learners with Asperger's Syndrome may not know how far away from another person to stand or sit. R and O both displayed this social impediment. The researcher noted that O stood right up against her when he showed her his new library book. He was so close that she could feel him breathing on her face. If she had been unaware of his condition she might have been tempted to admonish him to stand back. However, he was just trying to be friendly and was so excited about his new book and just wanted to show the researcher. R's mother also confirmed this impairment when she remarked that R often stands "in" her face to talk to her - so close that she feels that she is cross-eyed. However, if she tells him to move back he complies without demur.

5.4.1.4 *Correct eye contact*

Learners with Asperger's Syndrome often fail to use eye contact to punctuate key parts of the conversation. Recent research findings (Attwood 1998:54; Tantam et al.

1993:111) suggested there is a lack of eye gaze when the other person is talking (see chapter two).

On all occasions when simple conversation was attempted by the researcher, with both these learners, no eye contact was made. Engaging in communication with these learners who never made proper eye contact was disconcerting as the feeling was conveyed that they were not interested in the conversation and just wanted to remove themselves from the room and be on their own. However, the primary reason for this improper eye contact may not necessarily be the learners' lack of interest but rather an indication that they find exposure to the other person's gaze overwhelming because they feel threatened by it. On the one occasion R's mother admonished him to look at the researcher when she was talking to him and only then did he quickly glance at her and then promptly looked back at his shoes.

5.4.1.5 *Body language / face perception understood*

It was mentioned in chapter two that learners with Asperger's Syndrome process facial expressions in a typical, distinctive way, but this characteristic was not particularly evident in the behaviour of R and O, in fact O's mother indicated that he will interpret specific body language correctly, while R's mother remarked that with the help of his speech therapist he can recognise an expression of displeasure on his mother's face. To test this skill the researcher, when looking at a model with trains in O's room, displayed a facial expression to indicate that she was very intrigued and impressed by the model. O seemed to comprehend the expression and was even more enthusiastic to tell the researcher all about the different types of model trains that formed part of the display in his room.

5.4.1.6 *Understanding the hidden curriculum*

As indicated in chapter two, learners with Asperger's Syndrome can only gain the skills of understanding the conventions of the hidden curriculum with a concerted effort. Neither R nor O could understand the hidden curriculum. They did not understand people-pleasing behaviours and the unwritten expectations which seem to be instinctive to most other people. This was corroborated by both mothers.

During the observation of R this impairment became evident to the researcher. He could not comprehend that at the end of each school day he had to take out his class reader and open it up to the back. His teacher had to constantly remind him about this expectation despite the fact that she had specifically discussed this requirement with the class.

5.4.1.7 *Temper tantrums*

Both learners were prone to outbursts of aggression or frustration (ie. temper tantrums). Discipline was best achieved by "time outs". R's mother mentioned that she sometimes verbalises instructions to R and walks away, or she holds his face in her hands to make eye contact and gets him to calm down and listen to what she has to say. O's mother mentioned that she tries to distract him and prevent the tantrum. She maintained that he responds well to alternatives and time limits.

The researcher observed that a temper tantrum resulted when O's teacher told the learners that it was "tidy up" time. The teacher noted that O was just sitting and not doing what he was supposed to be doing. She went up to him and asked him again to please start tidying up all of his crayons from his desk and help the other learners who were cleaning in the front of the class. O just got out of his seat and started

running around shouting and hitting all the other learners. He also started to throw all of the cushions out of the reading corner. It was a very difficult situation for the teacher to control. Eventually he stopped running around and sat down on his chair as if nothing had happened. The temper tantrum ceased as quickly as it started. Perhaps it was the fact that “tidy up” time was very unstructured and as mentioned, in both chapters two and three, learners with Asperger’s Syndrome require a very structured and rigid routine.

5.4.2 Language impairments

It was noted in chapter two that learners with Asperger’s Syndrome encounter difficulties when using language in a social context. Both mothers agreed that their children displayed some form of language impairment, and in fact the delay in R’s language development was the first indication, to his mother, that he was different from the other children.

5.4.2.1 One-sided conversations

In chapter two it was shown that the conversations of learners with Asperger’s Syndrome tend to be self-centred, repetitive, and focused on their own interests. Both parents expressed the view that their sons’ conversations were one-sided. R’s mother commented that if he is not interested in the topic of the conversation he will just pick up his things and walk away. He does not realise that the other person finds this quite rude. O’s mother mentioned that he tends to talk “over her”. He does not pause and wait for any feedback at all and did not even notice whether she was listening to him at all.

This difficulty became evident to the researcher when she was talking to R about his most recent discoveries on the latest innovations in his favourite motor-car. After a while, when the researcher attempted to talk about a different topic, he simply turned around and walked off to his room. Such actions would seem extremely rude and very hurtful to the researcher had she been unfamiliar regarding this impairment.

O was very excited and had not stopped talking about his upcoming birthday party which was to be held in six weeks' time – a long time away. He asked if he could do a survey in the class to find out who wanted to come to his party before he handed out invitations. He then wrote down the names of those who put up their hands - only a handful of boys – and then asked if any of the girls would like to be invited to his party, but unfortunately not one of them volunteered. He did not seem too concerned about this as he kept on talking about his plans, even though it was evident that the other learners were not really interested. His action of asking who wanted to come to his party before giving the invitations is perhaps an indication of how he would like everything to be preplanned and predictable. Interestingly his teacher discovered that in fact his parents had not planned such a party for him and just wanted him to invite two or three friends to go with them to MacDonalds.

5.4.2.2 Ability to retrieve a conversation

Both mothers remarked that their sons had difficulties retrieving a conversation. R's mother stressed that he would rather ignore the problem than ask anyone for clarification. O's mother remarked that he definitely continues with what he is doing rather than acknowledging that he does not understand. The researcher had occasion to observe O in an English-language lesson. The teacher explained that a full stop must be placed after each sentence, and then the next sentence must begin

with a capital letter. From the look on the learner's face, it was evident that he had not understood the explanation. However, he just sat quietly staring into space instead of asking the teacher for help as she had so often requested the class to do if they were confused. Only after the teacher saw that he was not proceeding with the writing exercise and came up to him, did he say that he did not know what to do.

5.4.2.3 *Literal interpretation of comments*

The theme that learners with Asperger's Syndrome interpret other people's utterances overliterally was explored in chapter two. R and O both had difficulties with literal interpretation, although R was more affected than O. O's mother remarked that they tend to refrain from using literal expressions with him and keep everything straightforward and easy for him to understand. R's mother mentioned that he had been very upset when his teacher said to the whole class "you will drive me to drink". R wanted to know where this place was to which he had to take his teacher and was very concerned as to whether he would be the one to drive the car. To test this difficulty the researcher mentioned to R that the juice she was drinking was as "sweet as sugar". His facial expression clearly showed that he was confused by that statement and he immediately turned to his mother and asked her how it was possible for juice to taste like sugar. He clearly did not understand that the researcher was using an analogy.

The researcher also heard the teacher tell the class that they were "really sweet little boys and girls" because they had brought the most knitted squares which the school was collecting to distribute to various charities who would then sew them together to make blankets for homeless people. The researcher immediately noted that O became very unsettled and fidgety. This lasted a while until he took out a pencil and

piece of paper and wrote “To Mrs S – I am not your sweet little boy not not your sweet”. This illustrated that he misinterpreted his teacher’s comment.

5.4.2.4 *Unusual tone of voice*

The impairment relating to prosody of speech was indicated in chapter two. However, both mothers felt that this was not a major issue for their sons. R’s mother commented that he had picked up an American accent from the computer, but this had ceased and problems with pronunciation had recently become easy to correct. His teacher remarked, however, that he tends to speak in a monotone. O’s mother mentioned that he too speaks in a monotone but not incessantly. With regard to this characteristic tone of voice, while listening to the learners, the researcher felt that there were definite tendencies of monotony. O, in particular, appeared to be whining as if he was spoiled. He tended to raise his voice and moan as if he was complaining loudly about something. It is possible that his mother has become so accustomed to his voice tone that she does not even notice its prominence.

5.4.2.5 *Pedantic speech*

It was mentioned in chapter two that the speech of learners with Asperger’s Syndrome is often pedantic. R’s mother remarked that his speech is sometimes pedantic but not excessively so. This was evident to the researcher when listening to him tell his granny about his new book. However, this may only be noticeable if a conscious effort is made to listen for evidence of this type of speech. O’s mother felt that there was definite evidence of this pedantic tendency in her son’s speech. When listening to this learner describe a picture of the latest model of the Toyota Camry car, which is his favourite, the pedantic tendency became quite noticeable,

particularly his formation of specific, exact sentences. Even though he was only six years old his vocabulary was extensive and sophisticated. For example, he described his picture as “an amazing construction of a designer motor vehicle with the latest engine which makes use of modern technological inventions and capabilities”.

5.4.2.6 *Idiosyncratic use of words*

Learners with Asperger’s Syndrome often make up their own language and way of using it in conversations with others. This impairment was referred to in chapter two. R’s mother indicated that he does not invent words, but when he likes the sound of words he customises them. She gave the example of "nests" which becomes a loud, drawn-out nasal "NEEESTS" repeated endlessly. O’s mother felt that there were no difficulties in this regard. This was not an easy impairment to observe; however on one occasion when the researcher observed R showing his teacher the new library book which he had just borrowed from the school library, he spoke about the “LIB A RARRIE”.

5.4.3 *Narrow interests and repetitive routines*

5.4.3.1 *Narrow interests*

In chapter two it was stated that a characteristic feature of Asperger’s Syndrome is the intense interests, hobbies, and fascinations shown by these learners. These learners tend to become preoccupied with unusual topics. The content of the preoccupation may change with development, but the intensity with which it is pursued in a solitary manner is maintained (Attwood 1998:90). Notably, both interviews with the mothers revealed that obsessive interests were evident in the behaviour of their sons. R’s obsessive interests seem to change quite frequently.

He has been interested in bones of the human skeleton and extraterrestrial / interstellar / outer space, and at the moment he is obsessive about a playstation game called WORMS. The new interests generally come from computer or playstation games, and sometimes from television programmes or adverts. Both mothers endeavoured to limit the time that their sons spend pursuing their obsessional interests, and also used them as a reward or punishment for good or bad behaviour.

It was informative for the researcher to note that R's teacher had specifically adapted a mathematics lesson to suit his interest in outer space. The exercise that the class had to complete was on simple story sums. The content of the story sums revolved around this topic. His teacher mentioned that previously R could not complete such an exercise even though his mathematical ability is above average. It was only when he became interested in the content that he saw the purpose of completing the exercise.

5.4.3.2 *Repetitive routines*

In chapter two it was mentioned that learners with Asperger's Syndrome often impose rigid routines on themselves and find change unbearable. Both mothers remarked that their children disliked change. R's mother asserted that it takes a huge effort to change an existing course of action and gave the example of R being very upset if supper is delayed by five minutes – for him supper is at half past six and not a minute earlier or later. O's mother mentioned that he needs constant reassurance when routines change unexpectedly, and when change is unavoidable as much warning as possible is required to help alleviate his stress. He insists on having a particular blanket which goes on top of him but under the duvet on his bed at night. He has never actually been without it as his mother makes sure it is

washed and dried on the same day or fixes it if it is torn, before he goes to sleep. She felt that he would be very upset if he could not find it, hence it definitely stays in the house and usually in his bedroom.

5.4.4 Theory of mind

In chapter three “theory of mind” was referred to as the ability to think about thoughts and to attribute mental states to others. Essentially, being able to conceive of mental phenomena is the foundation of human social interaction. The following section will thus be used to outline the different aspects of theory of mind as revealed to the researcher during the empirical investigation.

5.4.4.1 Ability to understand emotions

According to R’s mother his understanding of emotions is an area identified by the school as needing attention. R often describes his emotions but his explanations can be somewhat outlandish. His speech therapist is dealing with this issue and there have been definite improvements. R has also not realised that he is different from the other children.

This difficulty with regard to emotions became evident to the researcher when she visited R’s home. R had dropped the glass of juice that he was drinking and was very upset by this incident and began to cry. He came running into the room where the researcher and his mother were sitting and told his mother very quickly what had happened. The researcher requested his mother to ask him to explain how he was feeling and all he answered was “kind of okay”.

With regard to O, he understands being sad and his speech teacher noticed that he can read a sad face. O is also beginning to realise that he is different. He asked why the training wheels were still on his bike and wondered what would happen if they were still necessary when he turns eight.

5.4.4.2 *Lack of capacity to display empathy*

In chapter three it was mentioned that empathy requires understanding of other people's experience and how they feel about it. Thus a learner who lacks theory of mind may lack the means to display or utilise empathy correctly in social interactions. R's mother indicated that R does not appreciate how another person is feeling, and although he will apologise on demand he does not understand why he is doing it – he has just learned that it is required because his mother has taught her children to apologise for behaviour that is normally considered objectionable.

O's mother indicated that he finds it difficult to show empathy, especially where the consequences of his own actions are concerned, and will usually only show empathy when it has been pointed out to him that the other person is sick or hurt. Then he can be very affectionate and enquire how they are and offer hugs and kisses. Sometimes he will apologise if prompted, but mostly not, and certainly not of his own accord.

On the one occasion when the researcher visited R's class, one of the other learners was crying because she had dropped her whole lunch tin and all her juice had spilt and spoilt her sandwiches. The teacher asked the class to sit quietly and carry on with their work while she attended to this child. R ignored her and went up to the teacher and asked her when they were going to receive their reward which

she had promised earlier because the class was so well mannered and polite when they went to see the science exhibition displayed by older learners.

5.4.4.3 *Expectation that others know their thoughts*

One of the functional characteristics of theory of mind is the realisation that in a social conversation one has to understand what people with whom one converses expect in the way of background and context. Both learners showed that they did not realise the need to contextualise what they communicate to other people because they expected that other people would automatically be aware of their thoughts and what they were thinking. R's mother commented that sometimes when he comes home from school he will just start talking about an occurrence that happened at school, but he will not give the finer details (ie. the contextual information) so that she could follow the gist of the story. O's mother gave the example of the time when he was building with his blocks and she asked if she could build something. He said yes but became extremely upset as she did not use all the green blocks first like he wanted her to. He never once conveyed to his mother his expectations.

This impairment of expecting people to know their thoughts was noted by the researcher when observing O. The teacher asked him why his homework book was not signed one day. He just answered that it was because it was in his case. He failed to explain to the teacher that they had accidentally left his school case in the car and his father had decided to use the car that afternoon because he had to travel a far distance to meet one of his clients and felt that his wife's car was more reliable and comfortable.

5.4.4.4 Ability to deceive

According to R's mother he can lie to conceal something he knows is wrong, or if he does not want to tidy his room because he is watching television. This is in contrast to O who cannot tell a lie. His mother gave the following example: Soon after he first started school, three or four children went outside the school grounds (completely against the rules). A passerby saw them outside and phoned the school and when they asked the whole class who went outside the gates at lunchtime, O was the only one to put up his hand and admit that he was one of the learners. Not one of the other children admitted to disobeying one of the school rules, and they just remained silent.

5.4.4.5 Ability to take turns

Both learners found it very difficult to wait their turn. R's mother confirmed this characteristic and noted that he is very impatient and if he has something to say he will say it no matter who is talking. It is as if he does not even notice that someone else is talking. R's mother has tried very hard to explain to him that it is rude to interrupt and he must wait patiently, but it really seems as if he just cannot. O's mother mentioned that his failure to understand the concept of waiting his turn makes it even more difficult for him to play games with anyone as he becomes so impatient. The researcher noted that on one occasion when the class had to wait in line to show their teacher their mathematics books, R was very fidgety and kept going out of line and trying to push in front. This made the other learners very uncomfortable and the teacher had to admonish him to go back to his correct place in the line. It was evident that it was difficult for him to wait his turn.

Although this characteristic is not unique to learners with Asperger's Syndrome, as mentioned in chapter three, they are certainly more vulnerable than “neurotypicals” who may consciously conceal their frustrations at times and make a deliberate effort to wait patiently until it is their turn because these learners realise that this is correct social etiquette.

5.4.4.6 Ability to understand “pretend” play

In chapter three it was stated that learners with Asperger's Syndrome tend towards concreteness with the result that deficits may occur in the development of their capacity for imaginative play. In particular, objects are not used as representations of something else: a cardboard tube is a cardboard tube, not a telescope. The purpose of games, such as playground football, may not be appreciated and the use of coats for goalposts would be very puzzling (Connor 1999:84-85).

Surprisingly, both learners were able to pretend play. R manages to play pretend games but often has props like little human figures or animals. He constructs objects out of the cardboard packets from CD ROM games and is currently turning WeetBix boxes into cards for a game. O's mother pointed out that he seems to be able to combine two conflicting or ostensibly disconnected ideas, for instance by using an item for a purpose other than the intended use. For example, he uses a kitchen-towel roll as a tunnel for his matchbox cars. O has a lively imagination and he and his sister role play situations quite often. For example, he uses his Spiderman action figure to rescue Barbie from a tower (windowsill).

5.4.4.7 Preference for fact rather than fiction

R finds it difficult to understand the concept of “fiction” and prefers to read non-fiction and generally informative books. He does not like fiction and refuses to listen if his mother reads any novels to him. In contrast, O is an avid reader and loves reading anything, fiction or non-fiction. However, all the books he has brought home from the school library (his choice) are non-fiction. He selects the same four or five books all the time. They (the books selected) are primarily about trains, bridges, trucks and transport. He has also recently discovered comics and really enjoys reading these. O can keep himself occupied for hours reading the comics.

During a media centre lesson the researcher noticed that the books taken out by R related to outer space. The researcher tried to encourage him to rather choose a brand-new fiction book which had just been accessioned. He flatly refused the researcher’s offer, insisting on taking out the same book on outer space that he had selected the previous week.

5.4.5 Central coherence

In chapter three “central coherence” was defined as the process of constructing and synthesising a higher meaning from diverse information. The results of the empirical study of deficient central coherence as found in learners with Asperger’s Syndrome will be reported in the next section.

5.4.5.1 Ability to focus on specific details

Learners with Asperger’s Syndrome pay specific, if not exclusive, attention to the focal figure in the foreground and ignore the background. This theme was examined in chapter three. The researcher discovered that both R and O are able to focus on

specific details. R's mother gave the example of the time when her husband brought home a new painting as a present for their anniversary. The painting was of a waterfall with some people standing and watching. R immediately commented that the colouring of the left-hand side of the figure of a lady was slightly darker than the right-hand side. Only when the family looked really closely could they see what he meant. Similarly, O's mother mentioned that on one occasion her son discovered that in the right-hand corner of a picture of a policeman's badge there were three tiny flames burning.

5.4.5.2 *Not receptive to new ideas*

In chapter three it was noted that as a result of a lack of central coherence learners with Asperger's Syndrome tend to be unenthusiastic about new ideas that one would expect them to find exciting and interesting. R's mother noted that her son absolutely refuses to listen to new ideas and is not interested in change. He has his set ways of doing things and nothing and nobody will change him. In contrast, O is receptive to new ideas, providing that he can have sufficient time to digest the idea.

5.4.5.3 *Ability to make decisions*

As pointed out in chapter three, selecting an alternative strategy requires the ability to imagine something different. Learners with Asperger's Syndrome find such a task extremely difficult. R can never give an immediate answer to any question. He always has to go and think first and then come back and, only then, relay his answer. For example, if his mother asks him what he wants for lunch, he will first go to his room for a while and then come back and ask what his choices are and then go away again and only then come back with an answer. Similarly, O will not be able to make a choice immediately. However, if he is given enough time to think

about the choices he will respond accurately. To test this skill the researcher asked O to choose between the “Bar One” chocolate and the “Kit Kat” chocolate which she had brought for him. He hesitated and it seemed as if he was too shy to take a chocolate. His mother asked him if he would like to think about his choice first, and after five minutes he came back and chose the “Kit Kat”.

5.4.5.4 Ability to generalise

In chapter three (see paragraph 3.3.1) it was mentioned that as a result of a lack of central coherence learners with Asperger’s Syndrome fail to generalise and everything has to be learned anew. Both learners could not generalise. Last year R’s teacher often complained that he never seemed to remember what they had learnt the previous day or week and she always had to begin the lesson by recapping specifically for him. Likewise, O also requires that everything be recapped. The researcher observed that during the library lesson the librarian had to remind O of the rules to be followed when borrowing a library book. He also forgot to return his book to the issue desk even though it was in his hand at the beginning of the lesson.

5.4.5.5 Ability to learn from previous mistakes

In paragraph 5.4.5.4 of this chapter it was mentioned that learners with Asperger’s Syndrome fail to generalise – as a result they find it very difficult to learn from previous mistakes. Both learners tended to repeat the same mistakes several times before comprehending their error. O’s mother commented that in theory, he knows what to do in most situations, but he cannot seem to apply the theory to reality or even link it to another scenario, with the result that he repeats past bad behaviours. In other words, afterwards he can tell you what he did wrong but is unable to make

the connection in practice or relay it to a similar situation. This causes difficulties at school as the consequences of any negative actions have to be immediate for it to have any effect, and even then there is no guarantee that he will not go and do the same thing all over again the next day.

The researcher had occasion to observe R shouting out the answers to the mathematics questions that the teacher was asking. The teacher told him a few times to please put up his hand and wait his turn until she asked him for the answer. The next time she asked another mathematics question he again shouted out the answer. Apparently this has been going on since the beginning of the year. His teacher has tried to explain to him that he must wait his turn as the other learners in the class also want a chance to give the answers. Nonetheless he refuses to stop shouting out the answers to the questions.

5.4.5.6 Understanding different word contexts

Strong central coherence enables learners to quickly discern the meaning of two words that look alike and pick out the correct one (Lovecky 2004:136). However, learners with Asperger's Syndrome seldom possess this ability (Bashe & Kirby 2001:310; Cumine et al. 2000:25). This difficulty was debated in chapter three. R's mother informed the researcher that he experiences difficulties with regard to understanding the meaning of words in different contexts. She gave the example where he had misunderstood reference to her car brakes as a reference to the "breaks" that they have at school and was concerned as to how they were going to organise the car to have breaks at his school. However, improvements have been noted since the speech therapist has been facilitating this skill. In contrast, O's language abilities are satisfactory, in fact above average, and he managed to understand different word contexts. The researcher's observation revealed that O

comprehended the difference between the phrase “the race ended in a tie” (when the teacher was reading the class a story) and “tie your shoe laces”.

5.4.5.7 *Exceptional long-term memory*

It was pointed out in chapter three that one of the consequences of a lack of strong central coherence is that learners with Asperger’s Syndrome often have exceptional visual memories for unrelated strings of information and complex patterns (Jones 2002:11), as opposed to non-Asperger’s Syndrome learners who find it difficult to recall unstructured information.

Both mothers indicated that their sons were able to recall an incredible amount of facts. R’s powers of recall seem to be centred on his current favourite topic, which changes from time to time. O can remember things from a long time ago, like small details of a family trip from when he was three. O’s mother asked him to tell the researcher all about their holiday in Zambia which occurred when he was three years old. The researcher was amazed at his recollection of the hotel’s name where they had stayed, their room number, the name of the porter who had helped them with their luggage and the telephone number of the hotel.

5.4.6 *Executive functioning*

In chapter three “executive functioning” (see paragraph 3.4) was defined as the ability to prepare for and execute complex behaviour, including planning, inhibition, mental flexibility, and mental representation of tasks and goals. The results of the empirical study of executive functioning will be reported in this section.

5.4.6.1 Ability to plan a task

Learners with Asperger's Syndrome find it difficult to organise a plan of action as a result of poor executive functioning skills. This issue was referred to in chapter three (see paragraph 3.4.1). R's mother observed that her son is very disorganised and cannot plan a task properly. She mentioned, for example, that when he makes himself a sandwich he walks repeatedly back and forth between the fridge and the cupboard where the crockery and cutlery are kept. During a media lesson at school the researcher observed that R found it very difficult to follow a logical sequence of events when borrowing a school library book. Once the learners had chosen the particular book that they wanted to borrow, they had to turn to the back page and remove the issue card, then they had to go and get a pencil from the desk and fill in their names and class. Once this was done they had to take the card to the librarian who would check and stamp the issue card. This was a simple process for the learners in R's class who completed the task in no time while R was extremely slow, and it was interesting to note that he had removed the card from his library book and seated himself at the table before he realised that he did not have a pencil to fill in his name. He then put the card back into the book's pocket and went to get a pencil and then started the whole process again. This was in contrast to O who can plan a simple task. He sits at his desk and gathers all the equipment that he needs to complete the specific task, for example pencils, sellotape, stapler, scissors.

5.4.6.2 Ability to start and stop activities

Chapter three (see paragraph 3.4.1) referred to the fact that as a result of weak executive functioning, learners with Asperger's Syndrome often struggle with two "bookend" difficulties: starting and stopping, that is, beginning and ending an activity or behaviour. R's mother remarked that he can stop and start activities if asked to

do so, although he prefers to finish one activity and only then move onto the next. She mentioned, for example, that he managed to stop halfway through making himself a sandwich when she asked him to answer the phone. R's mother was surprised as she had thought that he would insist on finishing with his sandwich and only then decide to answer the phone, which would have been too late of course.

O's mother maintained that he finds it hard to stop an activity once he has started, especially when there is a time limit. He insists on completing it to his satisfaction and finds it very difficult to move on if he feels that the task is not completed. His reluctance to begin a new task when his previous task was unfinished was a major issue last year. The teacher started using an electronic timer with success and this also helped to give him ample warning when time was running out. Offering an alternative, for example: "If you don't finish now you can have some extra time later", also helped. The researcher observed that O refused to respond to his mother's call to come and get his cooldrink and biscuit. On closer observation it was noted that he was watching his water fountain, a make-shift water scene, which simulated the appearance of a real waterfall when a button was pressed. O was so enthralled by this activity that he preferred to wait until the movement ceased and only then did he request his refreshments, proving that he had actually heard his mother's summons.

5.4.6.3 Ability to arrange sentences correctly

Improvements as a result of the work practised at his speech therapy were noted in R's competence to arrange individual words to make proper sentences. When the speech therapist first introduced this activity he did not enjoy it and struggled to put the sentences in the correct order. In contrast, O is able to organise cards with sentences on them to complete a story. He enjoyed using his sight words (first hundred words for five-year olds to learn) and arranging them to make weird and

funny sentences. The researcher made flash cards and asked O's mother to ask him to arrange sentences. It was interesting to observe that it took O a little while as he read each word twice and then arranged two different sentences. On completing this activity he seemed very proud of himself. With regard to R, the researcher decided to use simpler words as he was younger and again requested his mother to ask him to arrange sentences. In the beginning he seemed reluctant and only after quite a while managed to make a simple sentence, but later he was still not sure if he had completed the task correctly as he asked his mother to check the work.

5.4.6.4 Ability to manage time

In chapter three (see paragraph 3.4.1) it was stated that learners with Asperger's Syndrome are often unable to distinguish major tasks from minor details and fail to allocate time and energy accordingly. This may arise from poor executive functionability. R's mother felt that it was too early to pronounce definitively on his time management skills although she mentioned that he would probably encounter difficulties with this in later years as the school tasks get more complex.

O simply cannot prioritise his time at all and needs constant prompting. He usually completes the activity that he likes first, forgetting about the other activities, and in fact often expresses reluctance to complete such tasks. The researcher observed that O first insisted on completing his mathematics work and forgot to take out his English spelling book even though the teacher had told them to put their mathematics book away as she wanted them to copy a few new words into their spelling books. She even mentioned that she realised that none of them had completed the mathematics exercises, but she needed them to quickly copy the spelling words as it was almost time for assembly and then they would be going to sport, so she did not have much time left for the class to complete both the

mathematics exercises and copy the spelling words as well (which was much more urgent at the time).

As mentioned in chapter three, time management cause more or less serious problems for all members of society and many experience perfectly normal shortcomings in this important function. What is different about learners with Asperger's Syndrome is that these shortfalls occur more often and are much more difficult to overcome (Powers & Poland 2003:33).

5.4.6.5 Organisational skills

As noted in chapter three, executive functioning relates to organisational skills. Before the end of the school day R's teacher is very thorough and usually checks that all the learners in the class have packed their school bags correctly. R's mother also checks in the mornings that he has the correct items in his school bag. This safeguards everyone and prevents any needed item from being left behind.

In contrast, O is very untidy and disorganised and his mother organises everything that he needs for the next day and he just packs it into his school bag. Every morning when she says goodbye to him at school she makes sure that he has everything that he needs, for example his library book and homework. She also reminds him of what he must have with him when he meets her after school (ie. shoes, socks, book bag, and sweater). Usually he is successful.

5.4.7 Social acceptance

Throughout this research mention was made of the fact that this particular study was based on the "social acceptance and awareness model". Ultimately the purpose of

this research is to foster a more positive, understanding and empathetic attitude towards learners with Asperger's Syndrome and bring about an increase in public awareness of the uniqueness of this syndrome. The following section outlines the findings from the empirical study regarding these same issues.

5.4.7.1 Blame for poor parenting

As stated in chapter two, strangers may assume that the unusual social behaviour of learners with Asperger's Syndrome is a result of parental incompetence. The findings of the empirical study of this research revealed that R's parents were not aware of such criticism. In contrast, O's parents have been assessed and warned that their son's behaviour was "learned behaviour".

5.4.7.2 Social adaptation to specific learners' needs

R's mother intimated that his teachers make an effort to accommodate his idiosyncrasies. For example, they often spend extra time with him, giving him clear instructions and repeating instructions for him. His peer group adapt to his idiosyncrasies and usually become protective of him and quickly learn how to deal with him. It became apparent during the researcher's observation that R's classmates speak to him as if to a younger child. Their voices automatically changed as if they were talking to a young child. The peer group's helpfulness and kindness was a real delight for the researcher to witness. However, it is uncertain whether such acceptance, amongst the peer group, will continue as older learners can become quite spiteful.

R's mother also mentioned that learners with Asperger's Syndrome should be able to adapt to the situation if they receive the necessary attention and support from

teachers. She felt that the classroom teaching method where a whole class is taught in a large group is unsuitable for the teaching of learners with Asperger's Syndrome as they require individualised tuition, which includes plenty of variations, in order to succeed. O's mother stressed that learners with Asperger's Syndrome require plenty of reassurance and things often need to be explained to them a few times before they understand – visual aids are also very beneficial for these learners. However, this is becoming more and more difficult due to the enormous classes and many teachers may not have the time, the skills or motivation to support learners with Asperger's Syndrome.

R's mother mentioned that it is important that open communication channels exist between parents and teachers. She has daily contact with his teacher because she takes him to school each morning and in this way manages to keep up to date with what is happening at school through very brief conversations with the teacher each day. She has also endeavoured to maintain a regular habit of keeping up such contact after school, especially since the work load is increasing. For O's mother such open communication channels have not always been possible as certain of his teachers were very reluctant to take any outside advice and refused any parental support.

5.4.7.3 Society's willingness to respect learners' diversity

R's mother expressed the view that considerable ignorance prevails in the community about the variety of special needs of learners with Asperger's Syndrome and gave the example of her children being ignored and overlooked because people do not know how to relate to them. She believes that as they progress through the school system, they will be educating the people that they encounter, especially the other learners, who are very supportive of her son's idiosyncrasies, accepting the

explanations that they are offered, very open about their feelings and very comfortable about asking any questions regarding the syndrome. Hopefully their positive attitudes will extend into their homes and in this way a change of attitude can be engendered. This is critical as often the parent body attached to a class react negatively to learners with special needs.

O's mother asserted that there are definite expectations from society to conform or behave in a certain way. O's school and some of his teachers had some unrealistic expectations of him. Often people do not understand how a minor occurrence, something that other people would just disregard, may have a huge impact on the behaviour of learners with Asperger's Syndrome. Teachers, in particular, need to be aware of such trigger factors so that they can prevent them - prevention is definitely better than cure. One of O's teachers in particular was very negative and very quick to convey to his mother information regarding bad incidents that happened during the day, not once telling her that he had had a good day, nor commenting on any of his achievements. Despite his diagnosis she did not understand the whole nature of the syndrome and therefore did not like him. She often hinted that he was making conscious decisions to behave inappropriately, whereas if she was really informed about Asperger's Syndrome she would have realised that there was a valid explanation for his behaviours.

5.4.7.4 Teacher's positive attitude essential

A positive attitude on the part of teachers is essential to ensure that learners with Asperger's Syndrome are accommodated in society, and more specifically the South African education system. The findings of this empirical study revealed that at the beginning some of the staff at R's school were reluctant to accept his idiosyncrasies because of a previous experience with another learner with autistic spectrum

disorder who was very demanding and expressed some of her behaviours physically. However, they soon learnt that R was different, and also that his parents were willing to support the school in any way that they could and were always available to lend a helping hand. This brought about a change in attitude, namely the manner in which the teachers treated R and his family.

Last year R's teacher had personal experience of Asperger's Syndrome and was very positive towards having him in her class and receptive to ideas about how to accommodate him. She also knew what to expect and knew how to integrate R and his needs into the class. The other staff have also become familiar with some of her ideas and an impression of what it is like to teach him in their classes, so it is hoped that this will help in the future when they may have to teach R themselves.

The principal is very positive about R's presence in the school, and this attitude has filtered down to the staff. In this school there is plenty of help and a feeling of being supported and part of a team with the learner as the focus. This is in contrast to the school of R's eldest brother where no support was offered to the family and negative attitudes made the whole situation extremely stressful and very frustrating.

O's mother also believed that a positive attitude on the part of teachers can make a huge difference towards the education of these learners, if only because the learners are quick to pick up negative feelings towards them, and will then become unresponsive. Furthermore, the teacher's positive attitude will have to be characterised by flexibility because the learners do not respond to rigidity. She mentioned that if O likes his teacher he will endeavour to please her and gain her approval and this can make a huge difference to his whole demeanour.

5.4.8 The impact of social stories

Three specific social stories were devised for the purpose of this research (see appendices 3-5). Two were written for R and one for O. With regard to R, the first social story was devised to support the difficulty that he encounters when taking part in games played at children's parties, for example "pin the tail on the donkey". The second social story designed for R related to his problem of continually shouting out answers to the mathematics questions. As indicated above, R insists on answering whenever his teacher puts mathematics questions to the whole class. Both R's mother and his teacher were very enthusiastic and willing to sample this technique.

Interestingly, in the beginning R was very reluctant to listen to and read the stories, and he was very unresponsive, especially during the first reading of the social story about party games. He told his mother that he disliked the social story and did not want to read it again. His mother asked him if he would like to change any of the words of the social story and he immediately responded "maybe" but would not comment any further. The researcher suggested that they leave the social story for a few days and try again at a later stage. On the day before R was going to attend another learner's party his mother again tried to read the story to him and this time encouraged him to read it aloud together with her. He never commented at all but seemed to be more responsive and interested in the content. The next day, the day of the party, R's mother asked him if he would like to read the story quietly by himself in his room. He never responded but she noticed that he took the story and went up to his room. When she went to check he was reading the story silently to himself. At the party there were noticeable improvements in R's behaviour, especially when playing the specific game mentioned in the social story (ie. "pin the tail on the donkey"). However, these improvements ceased when the game was changed and different games were played. His mother silently reminded him of the

story that they had read and progress was again perceived as he began playing the games again. He seemed to manage to control his emotional state when he did not win all the games, although he was still relatively disappointed about losing. However, no major temper tantrum or signs of aggression erupted.

The story relating to shouting out answers in class was an amazing accomplishment. Although it took a good deal of prompting on the part of his teacher to get him to read the story, she remarked that his behaviour was much better. He seemed to understand that he is not the only one in the class and the other learners also want to have a chance to answer the mathematics questions. His whole demeanour did brighten up, however, when he was given a chance to answer the questions. It was significant for the researcher to observe that R consciously began to restrain himself from shouting out the answers. It was evident that often he was just about to shout the answer when he stopped himself.

The sample story prepared for O dealt with the issue of his possessiveness of his belongings. As mentioned by his mother, O is overprotective of his toys and refuses to allow anyone (even herself) to play with or even touch his belongings. The social story focused on sharing his toys and playing properly with another learner when this learner comes to his house to play. O was very interested when his mother first read him the story, but his concentration level began to dwindle towards the end of the story. His mother stopped reading and asked him to explain to her what she had read. He managed to repeat the story word for word. She then told him that she wanted to finish reading the story and he listened to the end of the story. The next day she again read the story to him and this time they managed to complete the whole story without stopping. That same night she encouraged him to read the story on his own as by now he was very familiar with the content and in fact could recite the story off by heart.

The researcher encouraged O's mother to check whether he had really understood the precise meaning of the story. His mother revealed that he understood the basics of the story but felt that the real proof would be when a friend actually came over to play. The following day the mother arranged for one of her friend's sons, who was the same age as O, to come over and play for a short while. Just before the friend arrived they again read the story. This time the reading took much less time than before. She noticed that in the beginning O was willing to share his toy cars with the visitor, though not without considerable prompting from his mother who continually encouraged him to allow his friend to play with his favourite car – a makeshift model of the Toyota Camry. She also continually reminded him about his "special story". Although the situation was not perfect, definite improvement was evident in O's behaviour. He was attempting to share his toys and trying to socialise whereas before he would just snatch any toy which another learner attempted to play with and would even lash out in aggression.

The following section will describe the influence that the above social stories had on the learners with Asperger's Syndrome. The following subthemes will be discussed because it was in these areas that the impact was most noticeable: social acceptance; increased empathy; play with other learners as well as the ability to take turns.

5.4.8.1 Social acceptance

Throughout this research mention was made of the fact that this particular study was based on the "social acceptance and awareness model" in which it was argued that *despite the impairments* learners with Asperger's Syndrome have to contend with they can be assimilated into regular society (see chapter one, paragraph 1.1). After

testing the social stories technique it was evident to the researcher that the learners with Asperger's Syndrome were more readily accepted by their peers as well as other adults. These learners were beginning to demonstrate socially acceptable behaviour and were thus managing (although admittedly at times with encouragement from the parents and teachers) to participate correctly in different social activities and behave themselves in a classroom situation.

5.4.8.2 *Increased empathy*

The main aim of this research is to raise public awareness of Asperger's Syndrome and the uniqueness of the condition, and further, to promote a more positive perception of and empathetic attitude towards learners with Asperger's Syndrome (see paragraph 5.4.7 of this chapter). The social stories helped both of the learners with Asperger's Syndrome and other people (teachers and peers) in that the learners gained empathy for peers (and therefore other people too), while teachers and peers gained empathy for them. When R's teacher noticed that he consciously refrained from shouting out the answers to the mathematics questions, she relented towards him and the whole classroom situation was much more relaxed. R's peers were also much more sympathetic towards him as they no longer felt that they would never receive a chance to answer the questions. R's actions also clearly showed a certain degree of empathy for his peers' feelings.

5.4.8.3 *Play with other learners*

In chapter two (see paragraph 2.3.1) it was mentioned that learners with Asperger's Syndrome are very self-centred and when they are involved in joint play there can be a tendency to dictate the activity. Thus any social contact with their peer group can turn into a very stressful episode. The social story written for O (see appendix

5) proved that by taking a lesson from a social story the learner was able to consciously adopt correct manners when playing with a friend. O managed to share his toys when another learner came to his house to play with him.

5.4.8.4 Ability to take turns

In paragraph 5.4.4.5 (of this chapter) it was mentioned that learners with Asperger's Syndrome find it difficult to wait their turn. It was suggested by R's mother that a social story on correct behaviour when playing children's party games be written specifically for him as he finds it very difficult to lose and thus insists on always being first and not waiting his turn (see appendix 3). Improvements in his behaviour were noted by both his mother and the researcher. R managed to control his emotions when he never won the game and no temper tantrum erupted (which had been the rule before). Admittedly, he did find it difficult to generalise this story because when the game played at the party was not the one specifically mentioned in the story these improvements ceased. However, it would be very easy to change the story and adapt it to a similar yet slightly different situation.

In conclusion it must be said that the social stories developed for this research were easy to implement, and the improvements were immediately noticeable to both the parents and the researcher. The parents also remarked that it would be easy for them to adapt the stories to similar circumstances.

5.5 CONCLUSION

The interviews with two mothers of learners with Asperger's Syndrome, supplemented by the researcher's observations, were summarised in this chapter. The use of interviews based on the experiences and perceptions of parents of

learners with Asperger's Syndrome and unobtrusive observation of the learners in their natural surroundings, has empowered the researcher to evaluate the information covered in the literature study (see chapter two and chapter three). Major themes and patterns which emerged from the literature study were identified in order to interpret and give meaning to the data obtained from the interviews and the researcher's observation. This has placed the researcher in the favourable position to draw inferences and reach a synthesis between the empirical study and the literature review. The focus of the last chapter will thus be the articulation of significant conclusions, the outlining of any limitations found in this study and the formulation of relevant recommendations.

CHAPTER SIX: CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

“For, in the end, perhaps the most powerful treatment we have at our disposal is knowledge, knowledge that clears away misunderstandings, restores hope and a sense of control over one’s destiny” (Szatmari 2004:ix).

6.1 INTRODUCTION

Throughout the previous chapters of this thesis, the focus has been on the social impairments of learners with Asperger’s Syndrome and one specific technique of enhancing the social development of these learners, namely the technique of social stories. The relevant literature has been reviewed in chapters two and three. Chapter four outlined the actual research design which was used in chapter five to elicit first-hand accounts from two parents of learners with Asperger’s Syndrome. This enabled the researcher to glean valuable information from their practical experience in living with learners with Asperger’s Syndrome. The literature study and the parent interviews were given substance by the observed behaviour as reported together with the interviews in the previous chapter.

In this last chapter the central objectives of this study (as outlined in chapter one) are systematically organised and will mainly comprise a summary of the major findings that emerged from the interviews and observations as outlined in chapter five in relation to the theoretical propositions outlined in chapters two and three (the literature review). This will enable the reader to gain a holistic perspective and to simplify the results announced in the previous chapters (ie. literature study and empirical research). This summary is followed by an analysis of areas in which future research is required. Finally, the study’s limitations will be enunciated.

This chapter begins with a summary of all the findings (ie. a comparison of the literature study and empirical research).

6.2 COMPARISON OF THE LITERATURE STUDY AND THE EMPIRICAL RESEARCH

The researcher's findings from the literature research (see chapters two and three) as well as the empirical study (see chapter five) will be outlined in the following table.

TABLE 6.1 Summary of findings

<u>FINDINGS FROM THE LITERATURE STUDY</u>	<u>FINDINGS FROM THE EMPIRICAL STUDY</u>
<p>Social impairments</p> <p>The social impairments of Asperger's Syndrome have been well researched as these are predominant for all learners with Asperger's Syndrome. All the relevant literature consulted stressed the centrality of these social impairments, which may be the cause of the development of secondary impairments (like depression, withdrawal from groups and so forth).</p>	<p>Social impairments</p> <p>Both of the interviewed parents noted that their children need targeted support towards effective socialisation. One mother even felt that this problem would remain with her son all through his schooling and the rest of his life.</p> <p>Both learners observed by the researcher) displayed some degree of social impairment as will be shown in the following sections.</p>

<p><i>Play with other learners</i></p> <p>Making and maintaining friendships is a devastating experience requiring great effort for learners with Asperger's Syndrome. As mentioned in chapter two, learners with Asperger' Syndrome often wish that they could have friends, but do not possess the skills to initiate and maintain any kind of friendship.</p> <p>Learners with Asperger's Syndrome tend to insist on dominating and controlling the situation. Social contact is tolerated as long as the other learners play their game according to their rules. Sometimes social interaction is avoided, not because of a lack of social play skills, but because of a desire to have complete control over the activity. This results in their alienation from the other learners and the development of friendships is almost impossible.</p>	<p><i>Play with other learners</i></p> <p>Both mothers agreed that their sons had difficulty playing with other learners. One of the mothers mentioned that her son's main difficulties were about pushing and hitting other children and always wanting to win. He is also very domineering and always wants to control how games are played.</p> <p>This impairment was apparent when the researcher had occasion to visit the home of one of the learners when a friend had been invited to play. The children never once played together but rather focused on their own individual games. The possessiveness about belongings was obvious.</p> <p>The learners also tended to keep to themselves at school and shy away from other learners at break times. They were often observed sitting alone eating their school lunches.</p>
<p><i>Codes of conduct</i></p> <p>Learners with Asperger's Syndrome are</p>	<p><i>Codes of conduct</i></p> <p>Both mothers agreed that their children</p>

<p>unaware of and incapable of apprehending and appreciating the unwritten rules of social conduct. They unconsciously say or do things that may insult and upset other people. However, they are not being deliberately rude but merely honest and truthful, which they feel they are obliged to be at all times.</p> <p>Once these codes of conduct have been deliberately taught to learners with Asperger's Syndrome they will insist on rigidly enforcing these, even in inappropriate situations.</p>	<p>were unaware of and, indeed, incapable of apprehending and appreciating social conventions, and that their actions and comments were inclined to be inopportune and inappropriate.</p> <p>This impairment became evident to the researcher when one learner confronted her directly and asked why her one eye looked slightly different to the other. If the researcher had been unaware of his "condition" she would have felt very uncomfortable and would have cast him as an extremely rude child.</p>
<p><i>Personal space</i></p> <p>Learners with Asperger's Syndrome find it difficult to determine proper body space and may not know how far from another person to stand or sit. They create an uncomfortable atmosphere by standing much too close (almost touching) or much too far away from the other person during a conversation.</p>	<p><i>Personal space</i></p> <p>Both mothers confirmed that their sons were inclined to stand at an incorrect distance from people while talking to them.</p> <p>The researcher's observation revealed the unpleasantness of this impairment, especially when the learners stood so close that they were almost touching her.</p>

<p>Eye contact</p> <p>Learners with Asperger's Syndrome often fail to use eye contact to punctuate key parts of their conversation because the significance of eye contact is not appreciated. By their own testimony eye contact is a devastating experience for them which they try to avoid (reminiscent of animals who interpret a direct gaze as threat behaviour).</p> <p>There is a failure to comprehend that the eyes convey information about a person's mental state or feelings. Learning to make appropriate eye contact is important for social success.</p>	<p>Eye contact</p> <p>Whenever the researcher attempted a simple conversation with the two learners no eye contact was made. It was disconcerting to engage in communication with these learners as it felt as if they were not interested in the conversation and just wanted to remove themselves from the room and be on their own.</p>
<p>Face perception</p> <p>Learners with Asperger's Syndrome misunderstand facial expressions. As a result they cannot ascertain what the other person is trying to explain to them. Much learning in the social classroom takes place in this way, with the result that learners may fail to notice important details which are not explicitly stated. A great deal of social interaction is lost in</p>	<p>Face perception</p> <p>This characteristic was not particularly evident in the behaviour of either of the learners. To test this skill the researcher displayed a facial expression to indicate that she was very intrigued and impressed by a model with trains in one learner's room. He seemed to comprehend the expression and was even more enthusiastic to tell the</p>

<p>this way.</p>	<p>researcher all about the different types of model trains that formed part of the display in his room.</p>
<p><i>Hidden curriculum</i></p> <p>Learners with Asperger's Syndrome misconstrue any rules that are not explicitly laid out, in other words the hidden curriculum, which includes the skills that we are not taught directly yet are assumed to have. Further socialisation problems are encountered because the hidden curriculum is part of any regular school day.</p>	<p><i>Hidden curriculum</i></p> <p>Neither of the learners could understand the hidden curriculum. This was corroborated by both mothers. These learners did not understand and fulfil their teacher's expectations even though the instructions were continually reinforced.</p>
<p><i>Temper tantrums</i></p> <p>Learners with Asperger's Syndrome are easily overwhelmed when things are not as their rigid views dictate they should be, and they seldom seem stress-free. Rage reactions / temper outbursts are a common consequence of this stress and frustration.</p>	<p><i>Temper tantrums</i></p> <p>Both learners were prone to outbursts of aggression or frustration (temper tantrums). One mother mentioned that she attempts, and manages, to distract her son to prevent outbursts.</p> <p>The temper tantrums were observed by the researcher, and in many cases these were caused by the need for rigid structure in the learners' activities.</p>

LANGUAGE IMPAIRMENTS	LANGUAGE IMPAIRMENTS
<p>Learners with Asperger's Syndrome encounter difficulties when using language in a social context. The appearance of normal language expression (in terms of grammar and syntax) and even advanced vocabulary usage belies the difficulty they have with the use of language to send and receive messages for the purpose of social communication.</p>	<p>Both parents agreed that their children displayed some form of language impairment. The numerous observations of the researcher confirmed the views of the parents. In fact, the delay in language development of one of the learners was the first indication to his mother that he was different from other children.</p>
<p><i>One-sided conversations</i></p> <p>The conversations of learners with Asperger's Syndrome tend to be one-sided, repetitive, and focused on their own interests. If the conversation shifts beyond a favourite area of interest they are likely to withdraw or to return perseveratively to the initial topic. As a result these learners may be labelled as social misfits and be deliberately ignored by other people.</p>	<p><i>One-sided conversations</i></p> <p>Both mothers agreed that their children were uninterested in the other parties' side of the conversation. They would only talk about their own interests or at best show some interest in the other parties' conversations if it was related to their particular fascinations.</p> <p>The researcher took particular note of the conversations of these learners and deduced that they were often narrowly focused on one particular topic of interest.</p>

<p><i>Ability to retrieve a conversation</i></p> <p>Learners with Asperger’s Syndrome find it difficult to ask for clarification when they are confused and often prefer to just ignore the predicament rather than ask for explanations.</p> <p>When in doubt as to what to say, learners with Asperger’s Syndrome have a tendency to have long pauses for thought before replying or they just switch to familiar topics. This leads to a very ponderous conversation, or gives the impression that the dialogue always turns to the learners’ favourite interest (Attwood 1998:69).</p>	<p><i>Ability to retrieve a conversation</i></p> <p>Both learners experienced difficulties with retrieving a conversation. One mother stressed that her son would rather ignore the problem than ask anyone for clarification and the other mother remarked that her son definitely continues with what he is doing rather than acknowledging that he does not understand.</p>
<p><i>Literal Interpretation</i></p> <p>Learners with Asperger’s Syndrome tend to interpret other people’s utterances overliterally. This implies that nothing can be taken for granted in these learners’ responses to instructions and that they will be bewildered by idioms, metaphors and harmless jokes.</p>	<p><i>Literal interpretation</i></p> <p>Both mothers mentioned that their sons understood every comment only in its literal sense and failed to grasp any implied meaning.</p> <p>The researcher discovered that one of the learners misunderstood his teacher’s comment that her class were “really sweet little boys and girls” and became very</p>

	<p>unsettled and fidgety to the extent that he wrote a note to his teacher which demonstrated that he had completely misinterpreted her comment.</p>
<p><i>Prosody or the melody of speech</i></p> <p>Learners with Asperger's Syndrome are inclined to speak without variation in pitch, stress, and rhythm. In other words, the tone of voice is monotonous or there is an overprecise diction with stress on every syllable. The relevance of a change in tone or emphasis on certain words in the speech of another person is frequently misunderstood.</p>	<p><i>Prosody or the melody of speech</i></p> <p>From listening to these learners, the researcher felt that there were definite tendencies of monotony in their tone of voice. However, the mothers felt that this was not a major issue for their sons. Admittedly it is possible that they have just become accustomed to their sons' tone of voice.</p>
<p><i>Pedantic speech</i></p> <p>Learners with Asperger's Syndrome often use large and complex words (ie. their sentence structure may have the formality and vocabulary may display the erudition expected of written language). This gives the impression that their vocabulary is extremely impressive. However, it is very seldom the case that they actually understand all of the words. Often they merely replicate what they have heard or</p>	<p><i>Pedantic speech</i></p> <p>One of the mothers admitted that her son's speech displayed evidence of pedantry. The other mother mentioned that her son's speech is pedantic but not excessively so. The researcher's observations confirmed that there were definite signs of pedantry in these learners' speech.</p>

<p>read.</p>	
<p><i>Idiosyncratic use of words</i></p> <p>The learners appear to have the ability to invent unique words (or neologisms), or are idiosyncratic or original in their use of language. It seems as if they use a secret language to communicate and see the world from a unique perspective. This is part of semantic-pragmatic difficulties that they experience.</p>	<p><i>Idiosyncratic use of words</i></p> <p>One mother agreed that there were definite signs of idiosyncrasy in her son's vocabulary. The other mother indicated that her son does not invent words, but when he likes the sound of words he customises them.</p> <p>This was not an easy impairment to observe; however on one occasion the researcher overheard one learner talking to his teacher while showing her his new library book and there was definite evidence of idiosyncratic word usage.</p>
<p>NARROW INTERESTS AND REPETITIVE ROUTINES</p>	<p>NARROW INTERESTS AND REPETITIVE ROUTINES</p>
<p><i>Narrow interests</i></p> <p>Learners with Asperger's Syndrome display abnormally passionate curiosities about unusual matters. Often, when they find something that really interests them, they become little geniuses in that area and will talk about that topic incessantly.</p>	<p><i>Narrow interests</i></p> <p>Both learners presented with obsessive interests, though one mother noted that her son's interests seemed to change from time to time.</p> <p>Both mothers endeavoured to limit the</p>

<p>The content of the preoccupation may change, but the infatuation with which it is pursued is sustained.</p> <p>Narrow interests may be a substitute for real conversations and imaginative play, with the result that certain behaviours or interests appear to “take over” at the expense of learning, social interaction or other activities.</p>	<p>time that their sons spend pursuing their obsessional interests, and also used time spent on such pursuits as a reward or punishment for good or bad behaviour.</p> <p>It was wonderful to witness that one learner’s teacher had specifically adapted her lessons to his narrow interest and thereby managed to capture and maintain his attention.</p>
<p><i>Repetitive routines</i></p> <p>Learners with Asperger’s Syndrome often impose rigid routines on themselves. This makes life predictable and ordered, as novelty, disorder or ambiguity are unendurable.</p> <p>Unexpected change can cause unpleasant or intolerable behaviours, such as tantrums or aggressive outbursts. The learners may be overwhelmed by even minimal change and may find coping with everyday life a bewildering task without sameness and routine to help them control their environment.</p>	<p><i>Repetitive routines</i></p> <p>Both mothers remarked that their sons disliked change. One mother asserted that it takes a huge effort to change an existing course of action and gave the example of his being very upset if supper was delayed by five minutes. The other mother mentioned that her son needs constant reassurance when routines change unexpectedly, and that as much warning as possible is required to help alleviate his stress when change is unavoidable.</p>

<p>THEORY OF MIND</p> <p>Theory of mind refers to the ability to think about thoughts and to attribute mental states to others. It means that we are able to think about other people's thinking - and further, to think about what they think about our thinking - and even further, to think about what they think we think about their thinking, and so on.</p>	<p>THEORY OF MIND</p> <p>Although this was not always easy for the mothers to comment on and for the researcher to observe, the various aspects of theory of mind were evident in the learners with Asperger's Syndrome. The following section outlines these findings.</p>
<p><i>Ability to understand emotions</i></p> <p>Learners with Asperger's Syndrome find it hard to understand what other people are thinking or feeling, and therefore find it difficult to relate to them. It is hard for them to say what they are thinking or feeling. They not only have difficulty recognising others' emotions but often also find it hard to understand their own feelings and their own state of mind.</p>	<p><i>Ability to understand emotions</i></p> <p>One of the mothers intimated that her son can describe his emotions but his explanations can be somewhat outlandish and support is being offered in this regard. The researcher noted how ineffective his descriptions of his emotions were when he accidentally broke a glass. The other mother maintained that her son understands being sad and can read a sad face.</p>
<p><i>Lack of the means to display empathy</i></p> <p>Empathy requires understanding of other people's experience and the ability to share their emotional experience (ie. how they feel about it). Thus a learner who</p>	<p><i>Lack of the means to display empathy</i></p> <p>Both mothers were adamant that their children displayed signs of lack of empathy and could not understand that others have feelings. One learner often</p>

<p>lacks theory of mind may find it difficult to empathise with others. This will also clearly overlap significantly with poor socialisation as learners with Asperger's Syndrome will be unable to connect with other learners to the extent that they cannot imagine the others' individual feelings.</p>	<p>apologised because he had been directly taught that it is correct behaviour. The other learner will only display empathy when it has been directly pointed out to him that the other person is sick or sad.</p> <p>The observations undertaken exposed this impairment in that the learners seemed self-centred and only concerned with their own interests.</p>
<p><i>Expectation that others know their thoughts</i></p> <p>One of the functional characteristics of theory of mind is the realisation that in a social conversation one has to understand what people with whom one converses expect in the way of background and context. Thus the difficulties that learners with Asperger's Syndrome experience with theory of mind may make it difficult for them to take account of what other people know or can be expected to know.</p>	<p><i>Expectation that others know their thoughts</i></p> <p>Both learners showed that they did not realise the need to contextualise what they communicate to other people because they expected that other people would automatically be aware of their thoughts and what they were thinking. One mother commented that her son starts talking about an occurrence suddenly and out of context without giving contextual information so that she can follow the gist of the story.</p>
<p><i>Ability to deceive</i></p> <p>Ability to deceive or to understand</p>	<p><i>Ability to deceive</i></p> <p>One learner understood that at times he</p>

<p>deception is impaired because of a lack of theory of mind. Learners with Asperger's Syndrome may become a tattletale, insisting on always informing the teacher about learners who disobey classroom rules.</p>	<p>could lie to get out of doing tasks that he was not particularly fond of; this was unlike the other learner who failed to understand the concept of "deception" and insisted on always telling the truth.</p>
<p><i>Ability to take turns</i></p> <p>Learners with Asperger's Syndrome find it difficult to wait patiently for their turn and thus further socialisation awkwardness may be encountered as other people may become very irritated and angry if they continually queue-jump or interrupt existing conversations. This may be caused by a lack of theory of mind.</p>	<p><i>Ability to take turns</i></p> <p>Both learners found it very difficult to wait their turn. One mother maintained that her son fails to understand that it is rude to interrupt others who are talking. The other mentioned that this caused difficulties for her son when he played games with other learners as he becomes very impatient. The observations undertaken proved how difficult it was for these learners to wait patiently for their turn.</p>
<p><i>Ability to understand "pretend" play</i></p> <p>Learners with Asperger's Syndrome cannot hold two conflicting ideas simultaneously, and cannot pretend that an object is to be used for something else. Their thinking tends towards concreteness with the result that deficits</p>	<p><i>Ability to understand "pretend" play</i></p> <p>Surprisingly, the empirical study found that both learners were able to pretend play. One mother maintained that her son seems to be able to combine two conflicting or ostensibly disconnected ideas and has a lively / vivid imagination.</p>

<p>may occur in the development of their capacity for imaginative play and the purpose of games may not be appreciated.</p>	
<p><i>Preference for fact rather than fiction</i></p> <p>The lack of theory of mind explains these learners' preference for non-fiction and their inability to understand the concept of 'fiction'. Fiction emphasises social and emotional experiences, in contrast to non-fiction, which does not require an understanding of people and their thoughts, feelings and experiences to the same degree.</p>	<p><i>Preference for fact rather than fiction</i></p> <p>One mother mentioned that her son only reads non-fiction. The other noted that her son is an avid reader and will read any type of book, but when he selects books from the library he will choose the same non-fiction books each time.</p> <p>The school media lessons were an ideal opportunity for the researcher to observe that these learners insisted on only borrowing non-fiction books.</p>
<p>Central coherence</p> <p>Central coherence is the process of constructing and synthesising a higher meaning from diverse information. It is the ability to "get the point", putting many pieces of information together to make sense of the whole picture in a particular context.</p>	<p>Central coherence</p> <p>Both learners displayed difficulties in certain areas as a result of weak central coherence. These will be considered in the following subsections.</p>

<p><i>Ability to focus on specific details</i></p> <p>Instead of understanding that there is a larger picture, learners with Asperger's Syndrome focus on minor details. Thus, they miss the relevance of certain types of knowledge to themselves or to a particular problem because they fail to integrate different types of information to form a composite mental construct with a higher level of meaning.</p>	<p><i>Ability to focus on specific details</i></p> <p>The researcher discovered that both learners were inclined to focus on specific details. An example given by one mother was that her son noticed the three tiny flames in the right-hand corner of a policeman's badge that was visible in a photograph.</p>
<p><i>Receptive to new ideas</i></p> <p>In chapter three it was noted that as a result of a lack of central coherence learners with Asperger's Syndrome tend to be unenthusiastic about new ideas that one would expect them to find exciting and interesting. They simply do not recognise the potential appeal.</p>	<p><i>Receptive to new ideas</i></p> <p>The empirical study revealed that one learner absolutely refuses to listen to new ideas and is not interested in change. He has his set ways of doing things and nothing and nobody will change him. This was in contrast to the other learner who is receptive to new ideas, providing that he can have sufficient time to digest the idea.</p>
<p><i>Ability to make decisions</i></p> <p>As pointed out in chapter three, selecting an alternative strategy requires the ability to imagine something different. Learners with Asperger's Syndrome find such a task extremely difficult. They cannot</p>	<p><i>Ability to make decisions</i></p> <p>This study revealed that neither of the learners with Asperger's Syndrome can give an immediate answer to any question. They always have to go and think first and then come back and, then</p>

<p>visualise (conceptualise) any difference between what they are and what they might be. When caught in an unpleasant interaction, they also see no way to change things.</p>	<p>given enough time, will relay their answers.</p>
<p><i>Ability to generalise</i></p> <p>Weak central coherence makes details very important, and thus an environmental change may be experienced as very different, something that has to be learned anew. This significantly impairs the ability of learners with Asperger's Syndrome to generalise.</p>	<p><i>Ability to generalise</i></p> <p>Both learners could not generalise. The teacher of one of the learners often complained to his mother that he never seemed to remember what they had learnt the previous day or week and she always had to begin the lesson by recapping specifically for him.</p> <p>During a school library lesson the researcher noted that the rules of borrowing books from the library had to be recapped each time specifically for the learner with Asperger's Syndrome, otherwise he failed to complete the process successfully.</p>
<p><i>Ability to learn from previous mistakes</i></p> <p>It was mentioned in the previous section that learners with Asperger's Syndrome fail to generalise – as a result they find it</p>	<p><i>Ability to learn from previous mistakes</i></p> <p>Both mothers agreed that their sons were unable to learn from previous mistakes. They claimed that they would continually</p>

<p>very difficult to learn from previous mistakes. They are unable to extract meaning from the context of a situation and are thus stuck in a constant round or loop of compulsively repeating the same stereotyped responses to the environment because they cannot integrate information from other sources to modify their behaviour.</p>	<p>repeat the same errors even though they had previously been told that their actions were wrong and should not be repeated in the future. One mother commented that in theory her son knows what to do in most situations, but he seems unable to apply the theory to reality or even to link it to another scenario.</p> <p>This impairment was revealed to the researcher in the inclusive classroom of one of the learners with Asperger's Syndrome who continually shouted out the answers to mathematics questions even though he was admonished on numerous occasions not to do so.</p>
<p><i>Understanding different word contexts</i></p> <p>Strong central coherence enables learners to quickly discern the meaning of two words that look alike and pick out the correct one. However, learners with Asperger's Syndrome seldom possess this ability and thus their insistence on understanding every word in its literal sense has been attributed to their weak</p>	<p><i>Understanding different word contexts</i></p> <p>Only one of the learners with Asperger's Syndrome experienced difficulties with regard to understanding the meaning of words in different contexts. His mother gave the example where he had misunderstood reference to her car brakes as a reference to the "breaks" that they have at school and was concerned</p>

<p>central coherence.</p>	<p>as to how they were going to organise the car to have breaks at his school. However, improvements have been noted since the speech therapist has been facilitating this skill.</p>
<p>Exceptional long-term memory</p> <p>One of the consequences of a lack of strong central coherence is that learners with Asperger's Syndrome often have exceptional visual memories for unrelated strings of information and complex patterns, as opposed to "neurotypicals" who find it difficult to recall unstructured information. As a result they usually excel at rote recall and will remember the minutest of details of events which occurred many years ago.</p>	<p>Exceptional long-term memory</p> <p>The interviews with the two mothers revealed that their sons had exceptional long-term memories. However, in many circumstances these learners only remembered information that interested them.</p> <p>The researcher's observation correlated with the parents' views, especially with one learner who recalled the exact details of a family trip that occurred when he was three years old.</p>
<p>Executive functioning</p> <p>Executive functionability is the ability to prepare for and execute complex behaviour, including planning, inhibition, mental flexibility, and mental representation of tasks and goals.</p>	<p>Executive functioning</p> <p>The results of the empirical study of executive functioning will be reported in this section.</p>

<p>Ability to plan a task</p> <p>Learners with Asperger's Syndrome find it difficult to organise a plan of action as a result of poor executive functioning skills. They often do not know how to proceed and cannot make sense of directions that are given to them. They fixate on details and fail to grasp the overall plan or goal. They become engrossed in irrelevancies.</p>	<p>Ability to plan a task</p> <p>This particular study revealed that one of the learners is very disorganised and cannot plan a task properly. This was in contrast to the other learner who could plan a simple task by first gathering all the equipment that he needs to complete the specific task, for example pencils, sellotape, stapler, and scissors.</p>
<p>Ability to start and stop activities</p> <p>Learners with Asperger's Syndrome often struggle with two "bookend" difficulties: starting and stopping, that is, beginning and ending an activity or behaviour. This may be caused by deficits in executive functioning and the inability to plan the steps of correctly completing a specific assignment. Over time, learners may become so used to making mistakes in carrying out the simplest activities that they may even refuse to attempt any challenging tasks. This behaviour pattern is known as learned helplessness.</p>	<p>Ability to start and stop activities</p> <p>In this regard the findings of the research revealed that one of the learners can stop and start activities if asked to do so, although he prefers to finish one activity and only then move on to the next. The other learner insists on completing a task to his satisfaction and finds it very difficult to move on if he feels that the task is not completed. His reluctance to begin a new task before his previous task was completed was a major issue last year. The teacher started using an electronic timer with success and this helped to give him ample warning when time was running out.</p>

<p>Ability to arrange sentences correctly</p> <p>Executive functionability may be tested by checking learners' ability to arrange sentences correctly. Learners with weak executive functionability will be unsuccessful when asked to arrange single words into a single meaningful coherent sentence.</p>	<p>Ability to arrange sentences correctly</p> <p>One mother felt that as a result of her son's speech therapy, improvements were noted in her son's competence to arrange individual words to make proper sentences. The other mother maintained that her son can organise cards with sentences on them to complete a story and words to make weird and funny sentences. The flash cards made by the researcher especially for the purpose of testing this skill confirmed the mother's opinions.</p>
<p>Ability to manage time</p> <p>In chapter three it was stated that learners with Asperger's Syndrome are often unable to distinguish major tasks from minor details and fail to allocate time and energy accordingly. This may result in failure to complete work on time. Difficulties with self-regulation, goal selection, attention control and attention shifting may result in spells of daydreaming or absorption in inner thoughts and processes. All the above may arise from poor executive</p>	<p>Ability to manage time</p> <p>One mother felt that it was too early to pronounce definitively on her son's time management skills although she mentioned that he would probably encounter difficulties with this in later years as the school tasks get more complex. The other learner simply cannot prioritise his time at all and needs constant prompting. He usually completes the activity that he likes first, forgetting about the other activities, and in fact often expresses reluctance to</p>

functionability.	complete such tasks.
<p>Organisational skills</p> <p>As noted in chapter three, executive functioning relates to organisational skills. Poor organisational skills can cause numerous difficulties for learners with Asperger’s Syndrome, especially when they find themselves in an inclusive education system in which the other learners may benefit from well-developed organisational skills.</p>	<p>Organisational skills</p> <p>Both learners displayed difficulties with organisational skills, although constant checking and prompting by all concerned (mothers and teachers) prevented any problematic incidents. One mother noted that she always makes sure that her son has everything that he needs for the whole school day and always reminds him of what he must have with him when he meets her after school.</p>
<p>Social acceptance</p> <p>Throughout this research mention was made of the fact that this particular study was based on the “social acceptance and awareness model”. Ultimately the purpose of this research is to foster a more positive attitude towards these learners with special needs and bring about an increase in public awareness of the uniqueness of this syndrome (with due allowance, of course, for considerable overlap in many respects with the broadly (over-)generalised class of so-called “neurotypicals”).</p>	<p>Social acceptance</p> <p>The following section outlines the findings from the empirical study regarding issues of “social acceptance and awareness”.</p>

<p><i>Blame for poor parenting</i></p> <p>As noted in chapter two, parents are blamed in some instances for the idiosyncratic social behaviour of learners with Asperger's Syndrome.</p>	<p><i>Blame for poor parenting</i></p> <p>With regard to being blamed for poor parenting the findings of the empirical study involved in this research revealed that one learner's parents were unaware of any criticism directed towards them for poor parenting. In contrast, the other parental couple have been assessed and warned that their son's behaviour was "learned behaviour".</p>
<p><i>Social adaptation to specific learners' needs</i></p> <p>One of the premises of the "social acceptance and awareness model" adopted for this research is that it is critical for society to adapt to the specific needs of learners with Asperger's Syndrome. In this way a more conducive environment can be created in which everyone coexists in a peaceful and harmonious society. Admittedly, as mentioned previously, this is the envisaged ideal situation and is certainly not an easy task to accomplish, especially considering the rising levels of dysfunctionality in society (with particular</p>	<p><i>Social adaptation to specific learners' needs</i></p> <p>One mother remarked that learners with Asperger's Syndrome should be able to adapt to social circumstances if they receive the necessary attention and support from teachers. She felt that the method of teaching a whole class in a single group is unsuitable for the teaching of learners with Asperger's Syndrome as they require individualised tuition, which has to include plenty of variations in order to succeed. The other mother stressed that learners with Asperger's Syndrome require plenty of reassurance and things often need to be explained to them a few</p>

<p>reference to the challenging educational context in South Africa). Many people may have problems of their own that prevent them from offering significant support for learners with Asperger's Syndrome.</p>	<p>times before they understand. However, this is becoming more and more difficult due to the enormous classes and many teachers may not have the time, the skills or motivation to support learners with Asperger's Syndrome.</p> <p>It was wonderful for the researcher to witness that the peer group of one of the learners had adapted to his idiosyncrasies and were very helpful and protective towards him. However, it is uncertain whether such acceptance by the peer group will continue as older learners can become quite spiteful, and many of them have problems of their own that could range to extremes of severity (eg. teenage suicide).</p>
<p><i>Society's willingness to respect learners' diversity</i></p> <p>For learners with Asperger's Syndrome to be accepted in the inclusive classroom, and more specifically society as a whole, society must demonstrate a willingness to respect the diversity of its population. In this way each person can be valued as a</p>	<p><i>Society's willingness to respect learners' diversity</i></p> <p>One mother expressed the view that considerable ignorance prevails in the community about the variety of special needs of learners with Asperger's Syndrome. She believes that as they progress through the school system they</p>

unique individual who is capable of making a positive contribution to the society of which he or she is a member.

will be educating the people that they encounter, especially the other learners, who are very supportive of her son's idiosyncrasies. Hopefully the positive attitude of these learners will extend into their homes and in this way a change of attitude can be engendered. This is critical as often the parent body attached to a class react negatively to learners with special needs.

The other mother asserted that some of her son's teachers had unrealistic expectations of him. One of her son's teachers in particular was very negative and very quick to convey information regarding bad incidents that happened during the day, not once telling that he had had a good day, nor commenting on any of his achievements. She often hinted that he was making conscious decisions to behave inappropriately, whereas if she was really informed about Asperger's Syndrome she would have realised that there was a valid explanation for his behaviours.

<i>Teacher's positive attitude essential</i>	<i>Teacher's positive attitude essential</i>
<p>Teachers' values and attitudes are fundamental in guaranteeing the accomplishment of the successful education of learners with Asperger's Syndrome as well as their acceptance in the school environment. Ultimately the teachers' positive attitude towards learners with impairments is the solution towards the inclusion of the learners in the regular class.</p>	<p>The empirical research revealed that it was critical for teachers to project a positive attitude towards learners with Asperger's Syndrome. This was corroborated by one mother who maintained that it is critical for teachers to adopt a flexible attitude towards these learners as they will not be cooperative in response to any form of rigidity. They also quickly perceive any feelings of negativity on the part of teachers and will refuse to respond to their instructions. She mentioned that if her son likes his teacher he will endeavour to please her and gain her approval, and this can make a huge difference to his whole demeanour.</p>
<p>The shifting of attitudes and human behaviour concerning the perception of diversity are an important step towards creating inclusive systems and societies. There should be a paradigm shift in the teachers' attitudes towards learners with Asperger's Syndrome.</p>	<p>The principal of any school is undoubtedly the key to effective attitude change. If the principal is positive and supports inclusion, then the teachers he or she employs will also develop such a positive attitude.</p>

THE POSITIVE IMPACT OF SOCIAL

STORIES ON SOCIAL DEVELOPMENT

Social stories are short stories that are used to inform and advise learners about a social situation. A particular social situation is described that an individual learner finds difficult to cope with, and it is designed to help him or her to understand his or her personal role in the interaction, what he or she is doing and needs to do, and the perspective of others in the interaction. The goal of the story is to increase the learners' understanding of, make them more comfortable with, and possibly suggest some appropriate responses to the situation in question. The stories build on the learners' strengths and special abilities and help them to shape and change problematic behaviour.

Social stories give learners a specific guideline for piecing together the various people, places and situations that they encounter, and provide them with a picture of the likely outcome.

THE POSITIVE IMPACT OF SOCIAL

STORIES ON SOCIAL DEVELOPMENT

Three specific social stories were devised for the purpose of this research. Two were written for one of the learners and one for the other learner. Parents and teachers were equally enthusiastic about this approach, and were willing to try the technique.

The first social story was devised to help the learner with the difficulty that he experiences when taking part in games played at children's parties. Interestingly, in the beginning he was very reluctant to listen to and read the story, but after a few days he became more responsive. At a party that he was invited to there were noticeable improvements in his behaviour, especially when playing the specific game mentioned in the social story. However, these improvements ceased when the game was changed and different games were played - this could have been as a result of his failure to generalise the story. However, he seemed to manage to control his emotional state when he did

<p>Social stories must also acknowledge the achievements of learners with Asperger's Syndrome. A learner's first social story should describe a skill or situation that is typically successful and unproblematic. Written praise may be far more meaningful for learners with Asperger's Syndrome than its verbal counterpart because it creates a permanent record of what the learners do well and is important in building positive self-esteem.</p> <p>Besides explaining to the learners what to do and say, they supply critical information about the social situation, highlighting certain social cues, and other people's motives or expectations. Most important, social stories provide a rationale for why the learner should do or say what he or she is told to do or say.</p> <p>Social stories are thought to be helpful not only in providing justification for social behaviour, but also in being highly visually structured. They provide a written product that the learner can refer to at any time as a prompt or reminder. Social</p>	<p>not win all the games, although he was still relatively disappointed about losing.</p> <p>The second social story related to the learner's problem of continually shouting out answers to mathematics questions. The influence of this story on improving the learner's behaviour was remarkable. He seemed to understand that he is not the only one in the class and that other learners also want to have a chance to answer the mathematics questions. He consciously began to refrain from shouting out the answers.</p> <p>The third sample story dealt with the issue of one of the learners' possessiveness about his belongings. The social story focused on sharing his toys and playing properly with another learner when this learner comes to his house to play. The mother remarked that when a friend came to play her son was willing to share his toy cars with the visitor, though not without considerable prompting from her, and she also had to continually encourage him to allow his friend to play with his favourite</p>
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<p>stories can be written on index cards and taped to the learner's desk to remind him or her of appropriate social behaviours in the classroom. Many learners keep their social stories organised in a notebook and enjoy rereading them with family or saving ones they no longer need as evidence of the progress they are making.</p> <p>The social-story technique is easy to implement across many environments and is virtually cost free. It can also be individualised to meet the needs of learners with social interaction deficits and varying abilities and life styles. They can be incorporated into daily routines, are simple to use, adaptable to the language skills and understanding of any learner, and can be tailored for any kind of situation.</p> <p>Social stories provide an approach that feels natural to many adults, parents and teachers alike. The naturalness of the story form has advantages in reassuring parents and teachers that they already have a relevant skill that, when used in a</p>	<p>toy car. She also constantly reminded him about his "special story". Although the situation was not perfect, definite improvement was evident in his behaviour as he was attempting to share his toys and trying to socialise whereas before he would just snatch any toy which another learner attempted to play with and would even lash out in aggression.</p> <p>Four areas were identified in which the impact of the social stories was most noticeable: social acceptance; increased empathy; play with other learners as well as the ability to take turns (see paragraphs 5.4.8.1-4). The researcher noted that as a result of their exposure to the social stories the learners with Asperger's Syndrome were able to display socially acceptable behaviour and were thus more readily integrated into society.</p> <p>In the final analysis it must be noted that the social stories were easy to implement and the improvements were immediately apparent to both the parents and the</p>
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<p>focused way, can enhance the learners' social understanding and behaviour.</p>	<p>researcher. The parents also felt that it would be easy for them to adapt the stories to similar circumstances.</p>
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The following section outlines certain recommendations for further research.

6.3 RECOMMENDATIONS FOR FURTHER RESEARCH

This section will be divided into four main sections, in each of which recommendations for further research will be made.

6.3.1 South African National Department of Education

In this section certain recommendations for further research will be given with regard to the South African National Department of Education:

- According to prevalent media coverage of education in South Africa conditions in that sector are seriously dysfunctional. Further research is required to determine the exact state of affairs in education and to work out a blueprint for drastic improvement, which would have to include an effective system to ensure optimal performance (ie. real delivery that meets the highest international standards).
- As mentioned on numerous occasions in this research, the National Department of Education has often been blamed for lack of delivery of the envisaged outcomes of its policies. Further research is required to determine the exact nature and extent of this incapacity and its disabling effect.
- Related to the above point is the fact that policy makers require guidance to ensure that they meet the diverse needs of all learners. Further research is

required to investigate whether learners with diverse needs, specifically learners with Asperger's Syndrome, can really be accommodated in the complex and constantly changing South African inclusive classroom, and if so, what factors need to be taken into account in order to ensure the success of this process.

- The curriculum offered in South African schools has often been condemned for failing to meet the needs of learners with Asperger's Syndrome. Further research is required into modifications of the current curriculum in order to ensure that it can accommodate the diversity of the society in which we live, specifically learners with Asperger's Syndrome.

6.3.2 South African society

In this section certain recommendations for further research will be given with regard to South African society in its broader context:

- Throughout this research mention was made that a conducive environment needs to be created in which people, especially including learners with Asperger's Syndrome, can coexist in peace and harmony. Further research is required to determine how such a society can be created, especially considering that a search in the electronic library databases revealed that no references on this particular topic were available.
- A feasibility study needs to be undertaken to determine how society can adapt to the specific needs of learners with Asperger's Syndrome. Many people are ignorant of Asperger's Syndrome and are therefore unaware of ways to support learners with this condition. Further research into practical support strategies is necessary.
- Throughout this research mention was made that it is based on "the social acceptance and awareness model" and that a positive attitude is a definite

requirement in ensuring the accommodation and acceptance of learners with Asperger's Syndrome in the school environment, and more specifically in society as a whole. The researcher is well aware that a range of requirements besides this envisaged change of attitudes will have to be met to ensure that a conducive climate is created and maintained in South Africa to accommodate learners with Asperger's Syndrome. Further research into these specific requirements is needed.

- Often the unique contribution that learners with Asperger's Syndrome can offer society is not recognised as they are only seen in terms of their social impairments which are manifest in behaviour that does not conform to society's expectations. Further research is required into how to ensure that the valuable contribution of learners with Asperger's Syndrome is appreciated and recognised by society; in other words how society can be sensitised towards realising that learners with Asperger's Syndrome have many "gifts" to offer.
- The public media, if closely monitored, with the necessary discernment and selectivity, are a useful source of information regarding education in general and Asperger's Syndrome in particular. Although research has been done in this area, further research is required to determine exactly how the mass media can be utilised in the investigation, suggested earlier, to determine the specific conditions that exist in the South African system and how these can be improved.

6.3.3 The school community

In this section certain recommendations for further research will be given with regard to the South African school community.

6.3.3.1 The principal

- One of the mothers interviewed for this research mentioned that the positive attitude of the principal is critical for the acceptance of her son in the school community. She stressed that this attitude filters down throughout the rest of the school. However, further research is required to determine what is needed to ensure that all principals in all schools display such an accepting attitude, especially considering the fact that a search in the electronic library databases revealed only seven related references with only one reference being published in a South Africa source.
- The manner in which school principals implement the policy of inclusion and eliminate or avoid discrimination between the differences found in the learner population, is an area requiring further research. In other words, further research is required to determine the methods that school principals use to ensure the successful integration of all learners in their schools.

6.3.3.2 The teacher

- Teachers need training to enable them to assist the assimilation of learners with Asperger's Syndrome into the inclusive classroom. Further research into such issues is a definite requirement, especially considering that in many cases teachers may be using strategies which they consider suitable, but which are in fact impacting negatively on the education of learners with Asperger's Syndrome.
- Related to the above question is the fact that teachers require training on Asperger's Syndrome. Further research is required to establish how a programme of intensive and sustained cultural conditioning, specifically for teachers, can be installed and maintained in order to ensure that teachers

can meet the culturally diverse needs of all the learners in their inclusive classrooms.

- Teacher training should include methods which empower them to identify learners with Asperger's Syndrome. Often the syndrome is only identified in the teenage years or even adulthood because of a lack of knowledge of the syndrome. If learners with Asperger's Syndrome are identified in early life, supportive intervention can be implemented immediately. This is a critical issue into which further research is necessary.
- Teachers have a critical role as facilitators and mentors to ensure the development of a school climate that is conducive to learning. Further research is required to determine how such unconditional acceptance of all learners, especially learners with Asperger's Syndrome, can be accomplished.
- Considering that many learners with Asperger's Syndrome respond positively to the use of visual aids, the exploitation of such aids in supporting the inclusion of these learners is an area into which further research is recommended.
- Further research into the technique of "social stories" is a definite requirement as there is a dearth of literature on this technique, and limited empirical research is available to directly support it.
- The social stories developed for this research were designed for primary school learners. The literature stresses, however, that this technique is suitable for all age groups. Further research is required to determine the effectiveness of these stories for adolescents and even adults diagnosed with Asperger's Syndrome and what (if any) differences exist between the social stories written for primary school learners and older learners or even adults.

6.3.3.3 Learners with Asperger's Syndrome

- A critical point in ensuring the acceptance of learners with Asperger's Syndrome is that their opinions and views (ie. their voices) need to be heard by the public at large. Further research is required to determine exactly how to accomplish this challenging task.
- Labelling of learners with Asperger's Syndrome often causes them to feel inferior and demoralised, with the result that they may develop a low self-esteem. Further research is required towards developing strategies that can empower these learners to cope with their diagnosis.
- Related to the above recommendation is the issue of depression which is very prominent among learners with Asperger's Syndrome. Further research into such matters is critical.

6.3.4 Parents

In this section certain recommendations for further research will be given with regard to the parents of learners with Asperger's Syndrome:

- Parents of learners with Asperger's Syndrome often feel that they do not know how to manage their children correctly. Further research is required into the feasibility of specialised training for parents to enlighten them about methods and programmes that they can perhaps use when dealing with their children.
- Parents of learners with Asperger's Syndrome often mention that they are erroneously blamed for the behaviour of their children. Further research is required to determine appropriate methods of responding to such misguided allegations.

- Parent support groups are often seen in a negative light and many parents may feel reluctant to join such groups for fear of being intimidated. Further research is required to determine how to increase the positive contribution that such support groups can offer to everyone.

6.3.5 General social concerns

In this section certain recommendations for further research will be given with regard to general issues relating to Asperger's Syndrome:

- Controversy still exists as to where exactly Asperger's Syndrome should be placed on the continuum of autistic-spectrum disorders. Further research is required into the exact differentiation between autism, Asperger's Syndrome, high-functioning autism and autistic-spectrum disorders.
- Further research is required into the exact causes of Asperger's Syndrome, especially considering recent investigations into genetic causes (eg. faulty genes such as the serotonin transporter gene).
- Many of the traits found in learners with Asperger's Syndrome are also found in many other learners, who are conveniently and mistakenly called "neurotypicals" - a blanket term coined by people with Asperger's Syndrome as a derogatory way of referring to the vast, incomprehensible complexity outside their own narrowly self-centred and circumscribed world – hence the critical need to undertake extensive research to trace the ramifications of the condition accurately in order to see, among other things, how it compares, overlaps and interrelates with other similar conditions for instance and the average profile, if any, of non-Asperger's Syndrome persons, especially schoolgoing learners.

The following section will delineate the limitations of this particular research.

6.4 LIMITATIONS

- In conducting this study the researcher was forced to rely on the use of numerous foreign sources, mainly because related research literature published in South Africa lacked the breadth and depth required to complete such a study. This extensive use of literature published overseas may be seen as a limitation.
- Each learner with Asperger's Syndrome is unique and may not necessarily display all the characteristic traits of the syndrome (as mentioned in chapters two and three), which may also be more pronounced in some learners than in others. Thus it cannot be assumed that the results of this study would be replicable with other learners with Asperger's Syndrome, and indeed the question could be raised whether the diagnosis itself is infallible.
- The rather small sample used in this study may also be seen as a limitation, mainly because of the uniqueness of the syndrome and the *extremely sensitive nature of the research*. Many parents may deny the fact that their children have Asperger's Syndrome and may be unwilling to divulge any of their personal experiences to an outsider, such as the researcher.
- It has to be recognised that because of the sensitive nature of this research, it is possible that the two parents who were interviewed were not completely forthcoming and relevant information could have been withheld.
- As a result of the unique individuality of each learner with Asperger's Syndrome, each social story also had to be learner specific; thus finding a significant number of learners who could benefit from the specific information in any one social story, and therefore generalisation would be extremely difficult.
- Many people may experience the same impairments, effectively, as learners with Asperger's Syndrome in their day to day lives. Differentiation between

the behaviour of learners with Asperger's Syndrome and the general public is not an easy task.

6.5 CONCLUSION

This chapter has brought the research to its culmination in that it is evident from the content that the problems formulated in chapter one have been investigated and the aims met. In particular, the main findings from the literature review and the empirical study are summarised in order to simplify the in-depth investigations reported and discussed in the previous chapters. The recommendations for further research are gleaned from both the literature and empirical investigations. Areas that require supplementary research are also stipulated. Finally, the limitations of this study are discussed.

Considering that this research was based on the "social acceptance and awareness model" it seems apt to close with the words of Jacobs (2004:84) who states the following:

"... awareness of Asperger's Syndrome in the general public is what's needed for all of us to accept and work with what is, and can be shown to be, just a different and fascinating way of thinking and operating. The way forward has to be in understanding." (own emphasis).

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APPENDIX 1: FIRST INTERVIEW

Researcher: Thank you for your willingness to cooperate and answer my questions. I really do appreciate your time and support. I think from our previous telephonic contact you do understand the purpose of my research and why I would like to ask you some questions.

Parent: It really is a pleasure and I am happy to be of assistance. I will try and answer all your questions to the best of my ability.

Researcher: How old is your child?

Parent: He is currently 6 years 6 months.

Researcher: Is your child male or female?

Parent: Male.

Researcher: What does your husband do for a living?

Parent: He works at a steel mill as a fitter. He has been there for thirteen years.

Researcher: Do you work for wages at all?

Parent: I did work for the last six months of last year at a privately run play school. I am trained as a preprimary school teacher. I'm not working this year and plan to keep it this way. I seem to be busy enough with my boys and seeing to the running of the home. I patchwork for a pastime and spend some time

each week indulging myself. This is a really important part of my life because it provides stress relief and an opportunity to be just me who does patchwork.

Researcher: Do you have any other children besides R? How do they get along?

Parent: I have four sons and they seem to enjoy normal sibling relationships. R is the youngest.

Researcher: Does R attend a special school or a regular government school, or a regular private school?

Parent: Regular government school.

Researcher: What grade is R currently in?

Parent: Grade One.

Researcher: Has R ever repeated a school year?

Parent: None.

Researcher: Can you tell me briefly about R's academic performance?

Parent: R's academic performance seems to fluctuate at school between fabulous and really off. He has hit his teacher a couple of times. It seems that lack of sleep and ill health, even slightly, changes the balance of how things go at school. If he is starting to come down with a cold, he has less

ability to have a good positive day at school. He seems to hit out when the frustration levels are very high.

I'm not entirely sure how R is doing academically. Last year he took six months to settle into the routine and it has taken the same amount of time again this year. It would be good if he was able to have the same teacher all the way through but that's not how the system works. He also has a wonderful group of children in class with him at the moment, and the thought of holding him back a year sent me into hyperspace when I actually had time to think about it. This has actually been suggested as a possibility for next year. The social side of things is still an area of concern for R and throwing him in with a whole new group of kids would be a huge mistake. Anyway, he's started to talk about being in Room 12 next year with Miss L, in other words moving on and up, and I've been very surprised about this. I didn't think that he had grasped the concept of shifting class every year. R continually surprises me, as does any other child his age, with the things that they actually observe and understand.

Homework is almost a swear word in our house. Not one of my sons is good at homework and the discipline required to get it done efficiently and without any fuss. R is no different, unfortunately.

Researcher: I suppose we all have our good days and bad days and being tired can make any of us irritable.

Parent: Yes, I know what you are saying about tiredness and being unwell but most of us have a tolerance level where we can hold it together for a while before it gets too hard to cope with the sickness and the demands of life. R does not seem to have that tolerance level and he goes down in a heap and his behaviour goes haywire very quickly. In fact, his worsening behaviour is often an indicator that he is getting a cold or something of that nature.

Researcher: Who diagnosed R with Asperger's Syndrome?

Parent: A pediatrician.

Researcher: How old was R when he was diagnosed with Asperger's Syndrome?

Parent: Just over four years.

Researcher: When did you first have a feeling that R may be different, and why?

Parent: The delay in his language development made me think that R was different, he had only approximately six to twelve words at age three and a half years.

Researcher: Was R ever misdiagnosed - for example with Attention Deficit Disorder (ADD)?

Parent: Yes, at age three and a half he was diagnosed with ADD. There was also talk of non-verbal disability but no further investigations were made in this area.

Researcher: Were there any complications during your pregnancy or during the birth of R?

Parent: I did have a few minor complications towards the end of my pregnancy. I had high blood pressure in the last couple of weeks, was admitted to hospital early and induced ten days early.

Researcher: Did R suffer from any major childhood diseases?

Parent: R has only had a mild dose of chicken pox. No other diseases come to mind.

Researcher: At what age did R start speaking?

Parent: It's hard to remember, but I would guess at about two and a half years. The complication is that he didn't continue to pick up and use new words.

Researcher: How would you describe R's language abilities?

Parent: His language was very weak and I know behind the normal development level. Now it has really improved because he attends speech therapy sessions that have really got him going.

Researcher: What assistance has been offered for R both at school and also after school?

Parent: R attends speech therapy twice a week, which has really made a huge difference. He also goes once a week to an occupational therapist - we have only just begun the occupational therapy, so time will tell if there are improvements. No extra help is available at school.

Researcher: Do you agree that the social / emotional impairments are the most significant? Please give reasons for your views.

Parent: They are certainly significant for R. He does struggle at school with social issues but I feel that the learning process is also significant for him. The processing of social information is going to be a problem for him all through his schooling and for the rest of his life.

Researcher: Does R understand how to play with other children? For example, is he aware of the unwritten rules of social play?

Parent: Yes, although his teacher is trying to introduce cooperative games in an effort to get him interacting appropriately with other children.

Researcher: Have these cooperative games helped at all?

Parent: To a certain degree yes, I think that they have had some beneficial results, but we will also have to wait and see as they have only recently introduced these games.

Researcher: Does R appear to be unaware of social conventions or codes of conduct, and is he inclined to inappropriate actions and comments? For example, does he address a personal comment to someone, but apparently without being aware that the comment could offend?

Parent: Absolutely, he has no understanding of social etiquette. Just the other day he told his teacher that her drawing of a cat (which the class had to copy for art) was a "pathetic imitation". This type of thing happens very frequently.

Researcher: Will R understand the concept of the hidden agenda, in other words, people-pleasing behaviours. Does he understand what each individual teacher expects even though it is not specifically outlined in each lesson, or even which learners to avoid because of their unruly behaviour?

Parent: I don't think so. He responds really well to a sticker chart at school, but the reward at the end of the goal of twelve stickers over a week is for him, not anyone else.

Researcher: Does R need constant and intensive reassurance, especially if things are changed or go wrong?

Parent: Yes, he is very dependent on routines and very inflexible. It takes a huge effort to change a previous course of action.

Researcher: Can you elaborate on this by perhaps giving an example of when R is upset by changes in routine?

Parent: Yes, he cannot understand, for example, if supper is delayed by five minutes - for him supper is at 6.30 and not a minute earlier or later.

Researcher: Is R indifferent to peer pressure? For example, does he follow the latest craze in toys or clothes?

Parent: Yes, from other children, but he recounts adverts from TV when he is in the appropriate shop or wants to go to McDonalds for lunch so that he can get a toy.

Researcher: Does R interpret comments literally? For example, is he confused by phrases such as "pull your socks up", "looks can kill" or "hop on the scales"?

Parent: Yes, I have to be careful when I speak to R as he tends to take everything I say literally.

Researcher: Can you give an example of this literalness?

Parent: R was very upset the other day when his teacher said to the whole class "you will drive me to drink" - R wanted to know where this place was to which he had to take his teacher and was very concerned as to whether he would be the one to drive the car.

Researcher: Does R have an unusual tone of voice? For example, does he seem to have a "foreign" accent or monotone that lacks emphasis on key words?

Parent: R has picked up an American accent from a CD ROM on the computer, but thankfully his pronunciation is now easily corrected. Otherwise I have not noticed any problems with R's tone of voice, although his teacher has noted that he tends to use a monotone.

Researcher: When talking to R, does he appear uninterested in your side of the conversation? For example, can it be said that this impression is created because he does not ask about or comment on your thoughts or opinions on the topic?

Parent: Yes, if R is not interested in the topic of the conversation he will just pick up his things and walk away. He does not realise that the other person finds this quite rude.

Researcher: Does R tend to use less eye contact than you would expect in a conversation?

Parent: Definitely, eye contact is very difficult to establish at times.

Researcher: When you communicate with R, does he perhaps stand too close or too far to another person?

Parent: Yes, R often stands really in my face to talk to me - so close that I feel that I'm going cross-eyed. He will move back though, when asked.

Researcher: Is R's speech overprecise or pedantic? For example, does he talk in a formal way or like a walking dictionary?

Parent: Sometimes, but nothing so serious.

Researcher: Have you ever noticed if R has the ability to invent unique words (neologisms), or that he is idiosyncratic or original in his use of language?

Parent: He doesn't invent words, but when he likes the sound of words he customises them, for example, "nests" becomes a loud, drawn-out nasal "NEEESTS" repeated ad nauseum. He seems to derive pleasure from driving us distracted.

Researcher: Does R find it difficult to retrieve a conversation? For example, when he is confused, he does not ask for clarification but simply switches to a familiar topic, or takes ages to think of a reply.

Parent: Definitely, he would rather ignore the problem than ask anyone for clarification.

Researcher: Do you think that R is visually oriented? For example, will he understand something better if you explain it to him in pictures?

Parent: Yes, I think so as recently my husband and I have been trying to explain things in pictures rather than words, and it seems to be working, especially if we really want to explain something very specific to R.

Researcher: Is R fascinated by a particular topic and avidly collects information or statistics on that interest? For example, is he becoming a walking encyclopaedia of knowledge on subjects like vehicles, maps or league tables?

Parent: Yes. R's obsessive interests seem to change more frequently these days, which is great. We have been through the bones in the skeleton, space more recently, and at the moment he plays a playstation game called WORMS. The new interests generally come from computer or playstation games and sometimes TV programmes or adverts. His school is looking to harness this and extend the topics for learning purposes.

Researcher: How do you deal with his specific interests - do you ever try and limit his playing or use it as a reward when he has done something good?

Parent: Yes, I do try to limit his play. The computer and the playstation are a problem. We do get a bit too much feedback from games at times, and if this flows through to school too much or his language gets off track, I move to limit what is played. The feedback from school is invaluable. His teacher also uses his computer there as a reward to get curriculum work covered.

Researcher: Does R develop elaborate routines or rituals that must be punctiliously observed, such as lining up toys before going to bed?

Parent: Not as a great issue, but he has started taking things to his room and putting them on a stool beside his bed, especially the cardboard things he has crafted.

Researcher: Have you had any specific training in how to deal with R?

Parent: No.

Researcher: What was your first reaction when you found out that R has Asperger's Syndrome?

Parent: An amount of sadness because my oldest son has ADD and I felt a little bit down.

Researcher: Can you elaborate on your feelings? You say you felt sad?

Parent: Yes, I did feel sad when I first found out because I didn't know whether I had the energy and emotional strength for another difficult child. I also felt a little bit annoyed that we should have two special-needs children and others had none. These feelings of grief at the discovery didn't last longer than about one hour. I'm very much a practical person and had to focus on what to do next. One thing that made this more difficult was that my husband was shift-working at the time and he was often at work or sleeping because he'd been at work when things needed to be dealt with. I tended to do things on my own rather than bother to wake him. Life, at that time, was a bit of a balancing act, but we got through it and now I am able to be direct and not be intimidated by professionals. This doesn't endear me to them, but in the long run that doesn't really matter, it's R that matters.

There is also a grieving process that you go through and it was all about losing my "perfect" baby for me. I've had to do that bit twice and it isn't easy having children who look beautiful healthy kids but they do this really "strange stuff". I guess that what I'm saying is that you can be moving through that grief process quite nicely and then someone's comment or a look can bring the feelings of being cheated back again. I don't know whether you ever come to terms with that. I take people at face value and try to accommodate their individual quirks, but then I've had first-hand experience of what it's like to be

ignored or overlooked because people don't know what to say or how to relate to my special children and me.

Researcher: What was your husband's reaction when R was diagnosed with Asperger's Syndrome?

Parent: I'm not entirely sure how he felt about all of this, we've never actually sat down and directly discussed it. He had definite feelings about him starting at a special school and encouraged me to do the mainstreaming thing. The opportunity arose to mainstream R and we went for it. My husband does listen to everything I tell him about what is happening with the boys' education but it is generally me who does the school things and he takes them to blokey places that I don't want to go to, for example they went to an air show recently.

Researcher: Has anyone else in your family been diagnosed with Asperger's Syndrome?

Parent: No.

Researcher: Does R have many temper tantrums? How do you deal with them?

Parent: Yes, I sometimes say what I need to happen and walk away, or I hold his face in my hands to make eye contact, get him to calm down and listen to what I have to say.

Researcher: Could you describe R's strengths?

Parent: He is very strong-willed about some things; he is a lovely little boy, and he is beautiful to look at, which endears him to some people.

Researcher: Does R realise that he is different? Does he ever mention to you that he wishes he could be like the other children in his class?

Parent: No, I think R hasn't yet realised that he is different from the other children.

Researcher: Does R play with any learners diagnosed with Asperger's Syndrome? What about support groups, do you attend any of these?

Parent: I do know one lady whose child is AS but no, R doesn't play with any Asperger's children. I tend not to join support groups because I feel supported enough and sometimes these groups can just be pity parties sharing grief and misery.

Researcher: Does R lack empathy, that is the intuitive understanding of another person's feelings? For example, not realising an apology can help the other person feel better.

Parent: Yes, R lacks empathy. Although he does apologise because that is something that I get my children to do when a wrong has been committed. But I don't think he really understands how the other person feels and why he is actually apologising - he has just learned that it is required.

Researcher: Will R understand the meaning of a smile or frown - for example if you show a cross face, will he understand that there is something wrong - in other words, does he know the meaning of body language?

Parent: R is learning about emotions because this is an area identified by the school as needing to be addressed and his speech therapist is dealing with this issue. He certainly recognises a cross voice and really hates me counting him off. Counting down to zero in order to get him moving in the right direction.

Researcher: Can R explain his own emotions, in other words, can he tell you how he feels?

Parent: R has learnt about emotions. He often describes his emotions but his explanation can be somewhat outlandish.

Researcher: Does R seem to expect other people to know his thoughts, experiences and opinions? For example, not realising you could not know about something because you were not with him at the time.

Parent: Yes, sometimes when he comes home from school he will just start talking about an occurrence that happened at school, but he will not give the finer details - like the names of the kids involved and so forth.

Researcher: Does R lack social imaginative play? For example, are other children excluded from his imaginative games, or is he confused by the pretend games of other children?

Parent: R can play pretend games but often has props like little human figures or animals. He has been making things out of the cardboard packets from CD Rom games.

Researcher: Can R hold two conflicting ideas simultaneously. For example, is he able to use an object and pretend that it is something else - say, a cardboard tube for a telephone?

Parent: Yes. R is currently turning WeetBix boxes into cards for a game.

Researcher: If R is given a double-barrelled instruction to follow, will he accomplish all the tasks required?

Parent: Not necessarily. Often I get one instruction completed and I have to remind him about the other.

Researcher: Would you say that R has a one-track mind in the sense that he has to concentrate on one thing at a time?

Parent: Absolutely! It is very difficult to get R to change track once he has started on something, especially if my way is not that enticing. For example, getting ready for school rather than playing or watching TV.

Researcher: Related to the above question, will R get very angry if you tell him he is wrong? In other words, does he find it difficult to be wrong, and is he adamant that his views are always correct?

Parent: Yes, definitely.

Researcher: Does R read books primarily for information, not seeming to be interested in fictional works? For example, is he an avid reader of encyclopaedias and science books but not keen on adventure stories?

Parent: R prefers to look at non-fiction and generally informative books. He does not like fiction books and refuses to listen if I read any novels to him even though I have tried on a number of occasions.

Researcher: Is R able to wait patiently for his turn?

Parent: No, he is very impatient and if he has something to say he will say it no matter who is talking. It's as if he does not even notice that someone else is talking. I have tried very hard to explain to him that it is rude to interrupt and he must wait patiently, but it really seems as if he just can't. I hope with time it will improve.

Researcher: Can R tell a lie or will he always insist on telling the truth, even becoming a tattletale?

Parent: Yes, he does tell lies to cover for something he knows is wrong, or if he doesn't want to tidy his room because he is watching TV.

Researcher: When he looks at a picture, will R perhaps notice a purely incidental detail that is not really an essential part of the picture - for example, in a picture of a street scene, will he perhaps just focus on a telephone wire?

Parent: Absolutely, the one time my husband brought home a new painting for me as it was our anniversary. The painting was of a waterfall with some people standing and watching. R immediately commented that the colouring of the left hand of the one lady was slightly darker than the right hand - when we looked closely you could see what he meant. My husband said that he thought the painter specially did this to give the effect of the fading sun.

Researcher: Will R be receptive to new ideas - for example telling him about something new and exciting which has just happened?

Parent: Absolutely not. He has his set ways of doing things and nothing and nobody will change him. He really is not interested in change.

Researcher: When given a few choices, will R be able to easily make a choice?

Parent: No, he can never immediately give an answer to any of my questions. He always has to go and think first and then come back and tell me the answer. For example, if I ask him what he wants for lunch, he will first go to his room for a while and then come back and ask what his choices are and then go away again and only then come back with an answer.

Researcher: Can R generalise - in other words apply what he has learnt in one situation to another situation?

Parent: I don't think so as last year his teacher often complained that R never seemed to remember what they had learnt the previous day or week and she always had to start off by recapping for him.

Researcher: Is R able to learn from previous mistakes, in other words not repeat the same errors?

Parent: Evidently he does make the same mistakes several times before learning the lesson.

Researcher: Is R able to derive the meaning of a word by noting its context in a sentence or paragraph, for example the difference between "he saw a boat arriving" and "he has to saw wood in the forest in order to start the fire?"

Parent: Again this is something that the speech therapist is working on - I think that he has improved and I am sure with age it will improve even more. A while back while we were driving home I commented to my kids that the brakes of my car needed to be checked as they were making a squeaking noise. R immediately commented that they had two breaks at school and was not sure how we were going to organise the car to have breaks at his school.

Researcher: Does R have an exceptional long-term memory for events and facts, for example remembering the neighbour's car registration of several years ago, or clearly recalling scenes that happened many years ago?

Parent: We haven't experienced this particularly, but he does store an incredible amount of facts on his current favourite topic, which changes from time to time.

Researcher: Can R plan a task? For example, can he analyse the sequence in which the different sections of the task need to be done in order to complete the whole task? To put it simply, if you ask him to draw a picture, will he be able to understand that he first needs to obtain the picture that must be copied, then the paper to draw on, then the pencils and crayons, and so forth?

Parent: Absolutely not - he seems very disorganised, even when he makes himself a sandwich he will walk back and forth between the fridge and the cupboard where the crockery and cutlery are kept.

Researcher: Can R start and stop activities easily? For example, in the above example of copying a picture, will he know exactly how to begin the task, or will he need lots of prompting from others - and once he has started, will he understand when the task is completed?

Parent: I have noticed that R prefers to finish one activity and only then move onto the next, although I don't think that this is really such a major issue for him. The other day he did manage to stop half way though making himself a

sandwich when I asked him to answer the phone because my hands were dirty. I was pleased as I had a feeling that he would perhaps first insist on finishing with his sandwich and only then decide to answer the phone.

Researcher: If given flash cards with different sentences on them, will R be able to organise the cards so that they make up a complete story?

Parent: Interestingly, this is something I know that he does often at speech therapy. I asked the speech therapist how he was progressing and she mentioned that in the beginning he did not enjoy this activity and battled to put the sentences in the correct order. However, according to her, he has recently begun to understand how this activity works and she has noticed that he can manage to complete the easier activities that she has. I am sure now they will progress to the more complex sentences.

Researcher: Can R manage his time correctly - for example by prioritising which task is the most important and needs to be completed first?

Parent: I think that R is still a little bit too young to judge this concept as school tasks are not yet so complicated. But he will probably have difficulty with this in later years as the tasks get more and more detailed.

Researcher: Will R manage to pack all his school togs correctly for the next day, and also, will he manage to bring home all the books that he needs in the afternoon to do his homework?

Parent: Again I think he is still a bit young to judge this as his teacher is very careful and usually checks that all the kids in the class have packed up correctly - they are still young. I also check in the mornings that he has the right things in his school bag.

Researcher: Before R's diagnosis with Asperger's Syndrome, were you ever blamed for bad parenting?

Parent: No, not that I am aware of.

Researcher: Have you had any problems with other parents or learners who object to R being in the class?

Parent: I'm very aware of how a parent body attached to a class of children talk and react because my oldest son shared a class with a cerebral palsied boy many years ago and I listened. There is still a lot of ignorance in the community about the variety of special needs conditions in it. I have come to the belief that as we go through the school system, we will be educating people as we go. Last year we had a very confident teacher who, at regular intervals, used to talk to the class about why R did various things or why he sometimes did different things to them in the class. The children were all very supportive with him and some of those children are in the class with him this year, but we

are having to teach the others about R and his ways. I figure that as the years go on we will have most of the school covered, and he will have an impressive set of advocates. I also feel that as we educate the children we are educating those at home, and hopefully we shall engineer a change in attitude. I'm really pleased that we decided to mainstream when we did because his peers are very accepting of the explanations that we are offering, and they are very open about their feelings and have asked the questions that they have.

Researcher: Do R's teachers, and generally the school staff, have a positive attitude towards his presence in the classroom and in the school as a whole?

Parent: At this stage I would say that the staff at the school are pretty much on board with having R there. They were reluctant though at first, because the school had had a girl with ASD who had been a little bit of a handful and presented some of her behaviours physically. Because of this, some of the staff were hesitant but R is a totally different kettle of fish and I feel that some have been won over. Certainly, the staff know that I am there in total support of R and the school. I do parent help in other classes and on trips. My husband goes on camps with the other boys and I have now joined the PTA as treasurer. We have made ourselves available and I think that that has made a difference. The little girl's family kept a very low profile and were seldom seen at school, for their own reasons.

Last years teacher had personal experience of ASD and was really great

because she knew what to expect and knew a little of how to integrate R and his needs into the class. I think the other staff also picked up some of her ideas and an impression of what it is like to have him in the class, so hopefully other staff members will not be so daunted at having him in their classes. R's teacher last year was very positive towards having him in her class and receptive towards ideas about how to accommodate him. For example, I made cushions for two chairs and the floor to try to help with this sore leg, and she was cool with that. My husband sourced a supply of a free second-hand computer for R in the school.

The principal is very positive about R's presence in the school and that seems to filter down through the staff.

My oldest son has a diagnosis of ADD, no hyperactivity. He went to a different primary school to R. We shifted primary schools because we were dissatisfied with attitudes. We, as a family, have seen both sides of the coin - no help whatsoever and negative attitudes, which is majorly frustrating, and heaps of help and feeling really supported and part of a team with our son as the focus.

Researcher: Do you feel that R's differences are respected in society? For example, is his teacher willing to change to accommodate any unusual behaviours that he may display?

Parent: The teachers make an effort to accommodate R's differences, for example spending extra time giving clear instructions. His peer group get used to his differences and usually become protective of him and also quickly learn how to deal with him. I hope this continues, but I worry as the older kids get the nastier they can become.

Researcher: Do you think there are social barriers that make it difficult for R to be accepted in society, for example labelling that is imposed on him, and wanting him to change instead of trying to change to meet your child's needs?

Parent: I think these children should be able to adapt if they get the necessary attention and support from the teachers. This however is becoming more and more impossible due to the enormously large classes.

Researcher: Do you find it easy to communicate with his teacher?

Parent: I have daily contact with them because I drop him at the door each morning. I certainly keep up to date with what is going on through very brief conversations with the teacher each day. I have endeavoured to maintain a regular habit of this after school, especially since the work is increasing, and now besides just reading homework we have to do worksheets as well.

Researcher: Have any particular teaching methods really helped your child (for example, social stories, cartooning, videos and so forth)?

Parent: Using a whiteboard, a computer, plenty of variety.

Researcher: Have there been any teaching methods that you found useless?

Parent: Generally the classroom teaching method where a whole class is taught in a herd doesn't work. One on one is the key to promoting his learning.

Researcher: As mentioned earlier, learners with Asperger's Syndrome are more visually oriented. Have you or any of his teachers attempted to utilise visual aids when explaining things to R?

Parent: I have not noticed any of his teachers utilising visual aids in their classrooms, but then I have never really been present during class. These kids need a lot more visual aids and need a lot of role-playing to explain things to them clearly.

Researcher: Have you ever heard of social stories - if so, have you used them at all?

Parent: No, how do they work?

Researcher: Carol Gray developed these. Social stories are very easy to make up and anyone can use them. Basically, they are short, simple stories explaining correct social behaviour to the learner in certain situations - they also tend to explain why certain behaviour is seen as inappropriate.

Parent: Sounds interesting.

Researcher: I was wondering if you might be willing to try this technique of social stories? I would be willing to write a specific social story for R, and then we could try it out together (including his teacher), and hopefully there would be positive outcomes.

Parent: I am happy to try it out but I will also have to ask his teacher if she is willing.

Researcher: That would be fantastic, and I would be so grateful for all your support. I was wondering if you could think of a specific area of concern in R's social behaviour that we could use to make up this social story.

Parent: A social story about how it is okay if things are not perfect would be good, or even that it is okay if you don't win all the time (or are picked first) as we are finding R is so competitive and it is a major problem if he isn't always first. It is always a race to be first, whether in a line or in a game. He has no concept of waiting his turn. We went to a birthday party yesterday (friends of ours whose daughter was turning five). This is a minefield for us with R, especially with the party games. They had to pin the tail on the donkey and R

did not win so he got very upset. They had to pass the parcel and he didn't get the main prize (of which there was only one), so that was another issue. Also a lolly scramble was done, and there was a major competition over who could have the most lollies at the end of it. In the end another child gave R some of her sweets as she saw how upset he was because he didn't have the most. So this is a major issue with R, which often causes trouble. He will quite easily, and without thinking about it, push someone out of the way to get somewhere first. So a social story about this would be great.

I know his teacher complained the other day that he just loves to answer maths questions and always shouts out the answers so that he is first to answer. I will certainly ask her if she is willing to try, if you are willing to make up the specific stories and tell us how to go about implementing them.

Researcher: Finally, would you like to add any further information that has not been covered by the questions?

Parent: I don't think so, except to say that R is a very special child and I would never swop him, even with all his complications.

APPENDIX 2: SECOND INTERVIEW

Researcher: Thank you for your willingness to cooperate and answer my questions. I really do appreciate your time and support. I think from our previous telephonic contact you do understand the purpose of my research and why I would like to ask you some questions.

Parent: I don't mind at all answering your questions regarding O; in fact we welcome any info or feedback/insight into Asperger's Syndrome. I am very happy to talk to you and so pleased that you are interested in Asperger's Disorder as really hardly anyone knows about this syndrome.

Researcher: How old is your child?

Parent: He is currently 7 years 10 months.

Researcher: Is your child male or female?

Parent: Male.

Researcher: Do you work for wages at all?

Parent: Yes.

Researcher: What type of work do you do?

Parent: I am a receptionist in a school. Previously I worked in sales for a bank for fifteen years.

Researcher: What does your husband do for a living?

Parent: My husband manages the head office of an international freight forwarding company.

Researcher: Do you have any other children besides O? How do they get along?

Parent: Yes, I have a daughter aged four, nearly five. She is showing no signs of either ADHD or Asperger's Syndrome at all. As she is developing and we are comparing them at the same ages/stages we are seeing definite differences between her and O. They get along fairly well. However, my daughter does know how to wind O up.

Researcher: Can you explain the differences that you have noticed between the developmental stages of O and your daughter?

Parent: In just about every aspect they are different. To a certain extent it is personalities but especially socially. As my daughter is getting older it makes me realise how pretty much non-existent O's social skills were/are. The things that we just take for granted like respecting someone's personal space and taking turns O just doesn't have. O is just so self-centred most of the time and it doesn't occur to him what the other person is feeling or that he might be hurting them. He has a real sense of fairness and if he thinks it isn't right he will argue and argue and even hit someone to make his point.

Researcher: Does O attend a special school or a regular government school, or a regular private school?

Parent: Regular government school and always has been. I feel that this is important as he will learn more from "typical children", not others with similar problems.

Researcher: What grade is O currently in?

Parent: Grade Three.

Researcher: Has O ever repeated a school year?

Parent: None.

Researcher: Can you tell me briefly about O's academic performance?

Parent: He has no problems whatsoever, academically, and never has had up until now, so hopefully that will continue. He has always read and spelt at or above the required level for his age. His maths ability is well above average and has always been in the top maths group in his class. He has a really good long-term memory as well. His teacher's comment at parent-teacher interviews last term was that she had no problems with his work, except that she wished his writing was tidier, and it would be if he wasn't always in such a blinding rush.

Researcher: What assistance has been offered for O both at school and also after school?

Parent: O had an occupational therapist working with him for the latter part of last year, practising social skills and doing some gross-motor coordination exercises as well for his balance and coordination. I have a copy of the report they did for us and suggested exercises that would help him. If you like you may make a copy with pleasure. We found these really helpful and his teacher noticed great improvements socially. He was really trying very hard. His problems with his gross-motor skills are apparently quite common in Asperger's children. He has difficulty in throwing and catching a ball or kicking a ball. He has improved just lately with lots of practice.

I have recently been giving O a supplement called "eye q" which is made up of fish oils and long chain fatty acids and is supposedly good for brain function, memory and concentration. We have noticed definite improvements in his behaviour and he is much more settled, even in the afternoons (when he generally wasn't too good). This particular supplement has been featured in the BBC's "Child of our Time" with Doctor Robert Winston, with excellent results. So far we have seen these too. We are both very open-minded to anything that may help O, so will give anything a go (within reason!!). Fingers crossed anyway.

We are hoping that with some additional support he will continue to make improvements this year.

Researcher: Who diagnosed O with Asperger's Syndrome?

Parent: A specialist pediatrician.

Researcher: How old was O when he was diagnosed with Asperger's Syndrome?

Parent: The Asperger's Disorder was only diagnosed late last year at age seven. Although he has improved dramatically in some areas there are still a number of concerns, mainly socially and emotionally. Our specialist believes the Asperger's is only quite mild, thankfully, and seems to explain why it was hard to pick up for so long and also why he is coping fairly well at school. He is still a long way from what would be a "typical" seven-year-old boy although in lots of ways he can be quite normal.

Researcher: When did you first have a feeling that O may be different, and why?

Parent: At about the age of three and a half, due to behaviour concerns brought up by his teacher.

Researcher: Can you elaborate on these behaviour concerns?

Parent: About two weeks after he started school his teacher raised these concerns. He was quite possessive of certain playground equipment (trolleys

and trucks in particular) and if anyone tried to use them or take them away from him he would be very aggressive and would hit and push. Even if he had been playing with a trolley and left it to play with something else he would still consider it his property and not allow anyone else to use it. It could be something quite minor that could set him off, something that would be considered not a big deal at all that another child would just accept and get on with it.

Researcher: Was O ever misdiagnosed - for example with Attention Deficit Disorder (ADD)?

Parent: O has ADHD which was diagnosed at age six. He has been on slow-release Ritalin with good results since then. We are just thankful that O's ADHD is pretty much under control with the medication, and that he should hopefully outgrow many of the symptoms.

Researcher: Were there any complications during your pregnancy or during the birth of O?

Parent: None.

Researcher: Did O suffer from any major childhood diseases?

Parent: None.

Researcher: At what age did O start speaking?

Parent: At age two - his language seemed to develop normally.

Researcher: How would you describe O's language abilities?

Parent: Very good, although he tends to mumble or talk too fast and can be a bit unclear.

Researcher: Do you agree that the social / emotional impairments are the most significant? Please give reasons for your views.

Parent: I would definitely agree that by far the most difficult aspect of Asperger's Disorder (for O anyway) would be the social aspect. They are the things that have the most impact on everyday life. He has been pretty lucky so far that in general most of his classmates have been very tolerant and quite understanding, but we still have had some clashes with certain children who found it was good fun to "wind him up". He overreacts to any form of teasing or even if he thinks someone is making fun of him. I feel this will be a major problem for him and we are trying to encourage him to just walk away from that sort of situation. He can quite often misunderstand a situation as well, often imagining someone is making fun of him and reacting with physical aggression. He is on the whole coping a lot better than he used to and I think the speech and language teacher that he goes to was talking to him about feelings, and specific situations where he could have reacted better.

Researcher: Does O understand how to play with other children? For example, is he aware of the unwritten rules of social play?

Parent: Yes.

Researcher: Can you please elaborate on this point?

Parent: His main difficulties are about pushing and hitting and always wanting to win. Other difficulties are that he is quite domineering in always wanting control of how things are played. If anyone challenges him he will either become aggressive or just storm off in a huff. We are noticing this more and more lately - if something doesn't go his way he will stomp off, arms crossed and a mutinous expression on his face. Once he has cooled off he will often return and act as if nothing has happened, completely unaware that he has hurt someone's feelings with his actions or words.

Researcher: Does O appear to be unaware of social conventions or codes of conduct, and is he inclined to inappropriate actions and comments? For example, does he address a personal comment to someone, but apparently without being aware that the comment could offend?

Parent: Yes, O can be quite oblivious to social conventions. For example, one day he pointed to his grandfather and described him as "that big fat man over there" (within earshot of him!!!). He also told me recently that I had no brain as he had already told me something once and he shouldn't have to tell me

again. He made a female classmate cry once as he asked her why her teeth had black bits on them.

Researcher: Will O understand the concept of the hidden agenda, in other words, people-pleasing behaviours. Does he understand what each individual teacher expects even though it is not specifically outlined in each lesson, or even which learners to avoid because of their unruly behaviour?

Parent: Not at all.

Researcher: Is O indifferent to peer pressure? For example, does he follow the latest craze in toys or clothes?

Parent: He is influenced by other classmates in things like the latest cards, or marbles, to collect. But not with regard to clothing - he doesn't care what he wears.

Researcher: Does O interpret comments literally? For example, is he confused by phrases such as "pull your socks up", "looks can kill" or "hop on the scales"?

Parent: He isn't too bad at this but did ask once how you could kill someone with a look (he had read that expression in a book). We try not to use literal kinds of expressions with him and keep everything quite straightforward and easy for him to understand.

Researcher: Does O have an unusual tone of voice? For example, does he seem to have a "foreign" accent or monotone that lacks emphasis on key words?

Parent: He does sometimes talk in a monotone, but not all the time.

Researcher: When talking to O, does he appear uninterested in your side of the conversation? For example, can it be said that this impression is created because he does not ask about or comment on your thoughts or opinions on the topic?

Parent: Yes. He often appears uninterested in my side of the conversation and tends to talk over me. He doesn't pause and wait for any feedback at all; in fact I don't think he even notices whether I am listening to him at all.

Researcher: Does O tend to use less eye contact than you would expect in a conversation?

Parent: Yes, eye contact is an issue for O.

Researcher: When you communicate with O, does he perhaps stand too close or too far?

Parent: When he is angry or frustrated he can invade someone's personal space.

Researcher: Is O's speech overprecise or pedantic? For example, does he talk in a formal way or like a walking dictionary?

Parent: Definitely, particularly when he is talking about his favourite topic or showing off his collection of cars.

Researcher: Have you ever noticed if O has the ability to invent unique words (neologisms), or that he is idiosyncratic or original in his use of language?

Parent: No.

Researcher: Does O find it difficult to follow a conversation? For example, when he is confused, he does not ask for clarification but simply switches to a familiar topic, or takes ages to think of a reply?

Parent: I cannot recall an example of a conversation that O had trouble replying to but he definitely continues with what he is doing rather than acknowledging that he doesn't understand. He has trouble acknowledging you if he is engrossed in something as well. You will speak to him or ask him to do something and there is no sign whatsoever that he has even heard you. When you finally go right up to him and gain eye contact he will say that he heard you but he was just finishing what he was doing first. It doesn't matter how many times we ask him to just say that he has heard us, he just doesn't, he has a real problem doing so. It is like he expects us to know what he is thinking.

Researcher: Do you think that O is visually oriented? For example, will he understand something better if you explain it to him in pictures?

Parent: Yes, he is definitely a visual learner.

Researcher: Is O fascinated by a particular topic and avidly collects information or statistics on that interest? For example, is he becoming a walking encyclopaedia of knowledge on subjects like vehicles, maps or league tables?

Parent: He has definite interests in particular topics but doesn't have a collection of anything.

Researcher: Can you name some of the topics O is interested in? Do these change from time to time or has it been one particular topic all the time?

Parent: He has always loved trains and cars.

Researcher: How do you deal with his specific interests - do you ever try and limit his playing or use it as a reward when he has done something good?

Parent: He loves using the playstation and computer. We limit the use of these and also use them as a reward, or as punishment for bad behaviour.

Researcher: Does O need constant and intensive reassurance, especially if things are changed or go wrong?

Parent: He does need constant reassurance when routines change unexpectedly. As much notice as possible is required and if he can be warned it does help to alleviate his stress.

Researcher: Does O develop elaborate routines or rituals that must be punctiliously observed, such as lining up toys before going to bed?

Parent: He likes to have a particular blanket which goes on top of him but under the duvet on his bed at night. He has never actually been without it as I make sure it is washed and dried on the same day. I would think that he would be very upset if he couldn't find it. He found a hole in it a while ago and I had to sew it up before he would go to sleep. If he is sick he will have it over him on the sofa or chair in the lounge. Last week when he was sick it pretty much followed him around the house. We tend not to let him have it except at bedtime or if he is unwell. It definitely stays in the house and usually in his bedroom.

Researcher: Have you had any specific training in how to deal with O?

Parent: No, besides the fact that I have read some of Tony Attwood's books. We are still learning about this disorder and probably will be for a long time to come.

Researcher: What about support groups, do you attend any of these?

Parent: I have not been in contact with any support groups. I think speaking to other parents with children like O could be an invaluable resource.

Researcher: What was your first reaction when you found out that O has Asperger's Syndrome?

Parent: I didn't know much about it at all. At first I was quite disappointed.

Researcher: What was your husband's reaction when you first found out that O has Asperger's Syndrome?

Parent: He felt the same as me when O was diagnosed with Asperger's Disorder. Very disappointed as it seemed hard enough to cope with the ADHD. We didn't know too much about Asperger's but as time has gone on and we found out more we are also quite sad as it can have quite far-reaching consequences and outcomes due to the social side. We are eternally grateful that it is only fairly mild.

Researcher: Has anyone else in your family been diagnosed with Asperger's Syndrome?

Parent: No.

Researcher: Does O have many temper tantrums? How do you deal with them?

Parent: He does have a lot of tantrums. If he doesn't get too upset I try to distract him. If he gets very upset he needs some "time-out" to calm down.

Researcher: Does O realise that he is different? Does he ever mention to you that he wishes he could be like the other children in his class?

Parent: He is beginning to realise that he is different. He made a comment yesterday asking his granny why he still has training wheels on his bike. He asked what will happen if he is eight and still has them.

Researcher: Does O play with any learners diagnosed with Asperger's Syndrome?

Parent: He has never socialised with other Asperger's children.

Researcher: Does O lack empathy, that is the intuitive understanding of another person's feelings? For example, not realising an apology can help the other person feel better.

Parent: O can show empathy but usually only when it has been pointed out to him that I am sick or hurt. Then he can be very affectionate and enquire how I am and give big hugs and kisses. Sometimes he will apologise if prompted, but mostly not and certainly not of his own accord.

Researcher: Will O understand the meaning of a smile or frown - for example if you show a cross face, will he understand that there is something wrong - in other words, does he know the meaning of body language?

Parent: Yes, he understands body language.

Researcher: Can O explain his own emotions, in other words, can he tell you how he feels?

Parent: O does understand being sad, his speech teacher actually noticed that he is able to read a sad face, and has a bit of an understanding of being sad. So he understands himself being sad, but where he has a bit of a problem is the empathy thing, understanding someone else being sad, especially in relation to his actions.

Researcher: Does O seem to expect other people to know his thoughts, experiences and opinions? For example, not realising you could not know about something because you were not with him at the time.

Parent: Yes. An example of him expecting another person to know what he is thinking is the other day he was building with his blocks and I asked if I could build something. He said yes but got upset as I didn't use all the green blocks first like he wanted me to. Also playing with his trains he got upset when his friend picked up a train to use that he said he was going to play with next. This is quite a problem as he wants everything done his way and the whole playing

situation is a bit one-sided. It is all peaceful as long as the game is played entirely his way, the other participant doesn't have much input at all.

Researcher: Does O lack social imaginative play? For example, are other children excluded from his imaginative games, or is he confused by the pretend games of other children?

Parent: I really am not sure.

Researcher: Can O hold two conflicting ideas simultaneously. For example, is he able to use an object and pretend that it is something else - say, a cardboard tube for a telephone?

Parent: O seems to be able to use two conflicting ideas and he quite often will make something out of another item. For example, he uses an empty kitchen towel roll as a tunnel for his matchbox cars. He has a very good imagination and his sister and him quite often role play different situations. For example, he uses his Spiderman action figure to rescue Barbie from a tower (windowsill). He will make a cave by draping his blanket from the top bunk in his bedroom.

Researcher: If O is given a double-barrelled instruction to follow, will he accomplish all the tasks required?

Parent: He will usually complete the first task but is likely to forget the second. If the instructions are written down he is much better as he can keep referring to that.

Researcher: Would you say that O has a one-track mind in the sense that he has to concentrate on one thing at a time?

Parent: Yes, you cannot give him too many instructions at once. He gets overloaded very often and I find it pays to simplify instructions as much as possible. One or two at a time is good as he gets confused or can forget the next one if given too many at once.

Researcher: Will O get very angry if you tell him he is wrong? In other words, does he find it difficult to be wrong, and is he adamant that his views are always correct?

Parent: Very much so.

Researcher: Could you explain how he displays this anger?

Parent: O doesn't like being told he is wrong and will argue and argue if he thinks he is right. He absolutely believes one hundred percent in what is in his head and can get really upset if you don't agree with him. I find I quite often just give up as it is quite near impossible to win an argument with him. He just will not give up and will follow me around the house giving me his opinion, quite often repeating himself over and over.

All the above behaviours are worse at some times than others, particularly when he is tired, not well or stressed over something. He is also quite unpredictable as there might be a situation where you know how he will react

and then he goes and reacts in a completely different way than expected. He is constantly surprising me, and not always in a bad way!!

His teacher has commented that if there is an incident, then even after he has calmed down and it has been resolved he is much more volatile and something quite small can set him off again. This is particularly so in the afternoons as he is getting tired and also his Ritalin which he takes for the ADHD is wearing off slowly. While the Ritalin does nothing for the Asperger's it does have an overall calming effect, thus he is more settled.

Researcher: Does O read books primarily for information, not seeming to be interested in fictional works? For example, is he an avid reader of encyclopaedias and science books but not keen on adventure stories?

Parent: O loves reading anything, fiction or non-fiction. He is an avid reader, but all the books he has brought home from the school library (his choice) are non-fiction. He gets the same four or five books out all the time. They are primarily about trains, bridges, trucks and transport. At home he will read anything. He has recently discovered comics as we bought one for him to read on the two-hour plane trip home from Cape Town. Needless to say we hardly heard a peep from him the whole journey!!!! So perhaps in this way he is not typical Asperger's. Although they are all individuals and no two will be the same.

Researcher: Is O able to wait patiently for his turn?

Parent: No.

Researcher: Can O tell a lie or will he always insist on telling the truth, even becoming a tattletale?

Parent: No. O cannot tell a lie, even to save his own skin, so to speak. When he first started at school three or four children went outside the school grounds (completely against the rules). A passerby saw them outside and phoned the school. When they eventually tracked down the class they were from, only O put up his hand and owned up when they asked the whole class who went outside the gates at lunchtime. Not one other child did and there were at least another two children there.

Researcher: When he looks at a picture, will O perhaps notice a purely incidental detail that is not really an essential part of the picture - for example, in a picture of a street scene, will he perhaps just focus on a telephone wire?

Parent: I think so. I have only noticed it once, but a while back he spotted that in the picture of a road scene which was in one of his class readers the policeman's badge had a tiny picture of three burning flames in the right hand corner.

Researcher: Will O be receptive to new ideas - for example telling him about something new and exciting which has just happened?

Parent: Yes, as long as he does not have to respond immediately he is fine. He usually needs some time to think about the new idea before he is willing to go with the idea.

Researcher: When given a few choices, will O be able to easily make a choice?

Parent: As long as he is given enough time to think about the choices, but he will not be able to make a choice immediately. He always needs a few minutes to think about the choices.

Researcher: Can O generalise - in other words apply what he has learnt in one situation to another situation?

Parent: No, I don't think so.

Researcher: Is O able to learn from previous mistakes, in other words not repeat the same errors?

Parent: No. He knows in theory what to do in most situations, but he cannot seem to relate that to reality or even to another scenario. In other words, afterwards he can tell you what he did wrong but is unable to make the connection in practice or relay it to a similar situation. So he will repeat past bad behaviours. We often find this very frustrating at home as he **doesn't seem to learn from his mistakes**, and will keep repeating past behaviours. It

makes it very difficult at school as the consequences of any negative actions have to be immediate for it to have any effect, and even then there is no guarantee that he will not go and do the same thing all over again the next day.

Researcher: Is O able to derive the meaning of a word by noting its context in a sentence or paragraph, for example the difference between "he saw a boat arriving" and "he has to saw wood in the forest in order to start the fire?"

Parent: Yes, his language is relatively good and I am very pleased about this. It will help him in the future.

Researcher: Does O have an exceptional long-term memory for events and facts? For example will he remember the neighbour's car registration of several years ago, or clearly recall scenes that happened many years ago?

Parent: He can remember things from quite a long time ago, like small details of a family trip from when he was three.

Researcher: Can O plan a task? For example, can he analyse the sequence in which the different sections of the task need to be done in order to complete the whole task? To put it simply, if you ask him to draw a picture, will he be able to understand that he first needs to obtain the picture that must be copied, then the paper to draw on, then the pencils and crayons, and so forth?

Parent: O can plan a simple task. He will sit at his desk and gather all the things around him that he would need, for example pencils, sellotape, stapler, scissors.

Researcher: Can O start and stop activities easily? For example, in the above example of copying a picture, will he know exactly how to begin the task, or will he need lots of prompting from others - and once he has started, will he understand when the task is completed?

Parent: O finds it quite hard to stop an activity once he has started, especially when there is a time limit. He will want to complete it to his satisfaction and can find it very difficult to move on if he feels it isn't completed. His reluctance to move on to something else, even if the task he was working on wasn't finished, was quite a big issue last year. The teachers started using an electronic timer with success, and it also helped to give him loads of warning when time was running out. Also offering an alternative, for example: "if you don't finish it now we can give you some time when other children are doing ... to complete it".

Researcher: If given flash cards with different sentences on them, will O be able to organise the cards so that they make up a complete story?

Parent: O is able to organise cards with sentences on them to complete a story. He liked using his sight words (first hundred words for five-year-olds to learn) and arranging them to make weird and funny sentences.

Researcher: Can O manage his time correctly - for example by prioritising which task is the most important and needs to be completed first?

Parent: O is hopeless at prioritising his time and needs constant prompting. He will usually go to the thing he likes first, forgetting about the rest and quite reluctant to complete those tasks.

Researcher: Will O manage to pack all his school togs correctly for the next day, and also, will he manage to bring home all the books that he needs in the afternoon to do his homework?

Parent: He is very untidy and disorganised, and I get everything out that he needs for the next day and he just packs it. Every morning when I say goodbye to him at school I run through everything he needs to hand in (ie. library book, homework) and then what he must have with him when he comes down to me after school (ie. shoes, socks, bookbag, sweater). Usually he is successful.

Researcher: Before O's diagnosis with Asperger's Syndrome, were you ever blamed for bad parenting?

Parent: Before O's diagnosis of ADHD and subsequently Asperger's, we were assessed and were told that O's behaviour was "learned behaviour".

Researcher: Have you had any problems with other parents or learners who object to O being in the class?

Parent: Occasionally I have had some complaints from some of the parents, but this is usually because they don't understand O and just feel that he is being rude or badly behaved. But generally the parents who know about his condition don't complain, at least not to me.

Researcher: Do O's teachers, and generally the school staff, have a positive attitude towards his presence in the classroom and in the school as a whole?

Parent: I am really pleased with his teacher this year as well, as a positive attitude can make a lot of difference and O definitely seems to pick up on this. His teacher seems really nice and even in the space of the first week of school, she learnt some things about him and a couple of things that work with him. I think one of the most important things with O is to be a bit more flexible, but also quite firm, so he has set boundaries as well. One of his teachers last year was really quite rigid in her attitude and I'm sure she thought O was just being difficult and was manipulating situations to his advantage. While I admit O is very bright and can be aware of his behaviour he just seems to lack that control over it. It is almost like even though he wants to do something he just can't. His teacher this year knows that he is not a horrible child and can in fact be very caring and affectionate.

The good thing is that he really does seem to like his teacher this year, which makes a huge difference to his whole demeanour. The fact that he wants to please her and have her approval will go a long way I think.

Researcher: Do you feel that O's differences are respected in society? For example, is his teacher willing to change to accommodate any unusual behaviours that he may display?

Parent: His teacher this year is, but this has not always been so. One teacher in particular was very negative and very quick to tell me any bad incidents during the day, not once telling me he had had a good day or about something nice he had done. I actually don't think she liked him very much, and that despite his diagnosis she didn't understand the whole nature of the disorder. In fact she often hinted that he was making conscious decisions to behave this way. She used to make comments about him choosing a particular behaviour, but if she knew anything about ADHD or Asperger's Disorder she wouldn't have made those comments.

Researcher: Do you think there are social barriers that make it difficult for O to be accepted in society, for example labelling that is imposed on him, and wanting him to change instead of trying to change to meet your child's needs?

Parent: Yes, there is a definite expectation from society to conform or behave in a certain way. O's school and teachers (some) had some unrealistic expectations of him, and I think of young children in general. Just for example,

last Monday O had a dreadful day. Pretty much the whole day was a write-off. It started with something small and just upset him so much that he was affected for the whole day. Thankfully those days are few and far between and he has had days ranging from good to very good ever since. This is something that people don't tend to understand is how something very small and not a big deal to someone else has a big impact on a person with Asperger's. It can all snowball and on a day like that pretty much nothing will work with O. His teacher realised after talking to my mum (who picked O up that day after school) and to me that she was probably trying too hard and it is better to just back off and give him some space. She kept trying to get him back on track and on with his work and now she realises that academically he won't suffer if he does no work for a day, as long as it is an isolated incident. Hopefully he won't have another bad day for a while and I think what is really important with O is to avoid the known triggers to the behaviour. Prevention is definitely better than the cure in this case!!!! That is also where being flexible comes in, having the ability to say: "Okay, this is a bad day," and then try to put it out of your mind and remind yourself that tomorrow is another day.

Researcher: Do you find it easy to communicate with his teacher?

Parent: At times it has been very easy to communicate with his teachers, however this has not always been the case and certain teachers are very reluctant to take any advice or help that I may offer. Last year his teacher refused to read any of the information that I tried to give her, as opposed to

his teacher this year who is really very open to any ideas I may give her and willing to read any reading material that I offer her.

Researcher: With the new inclusion policy parents are required to be very involved in their child's education, and to cooperate and be a major form of support - do you think that this is a good policy?

Parent: Yes, most definitely. It has to be a two-way partnership between school and parents.

Researcher: Have any particular teaching methods really helped your child? For example, social stories, cartooning, videos and so forth.

Parent: I have not tried any of the above. I have been doing some social skills training with a lot of success. I do know that his speech therapist has been using cartoon strips to explain certain situations to O and he has to put them in order, but I have personally never used it myself.

Researcher: Have there been any teaching methods that you found useless?

Parent: Simple verbal instructions do not work for these learners. They need a lot of reassurance and often things to be explained to them two or three times before they understand - pictures do help. However, I wonder how many teachers really have the time or even the motivation to go the extra mile for these kids. Many teachers have never even heard of Asperger's Syndrome.

Researcher: As mentioned earlier, learners with Asperger's Syndrome are more visually oriented. Have you or any of his teachers attempted to utilise visual aids when explaining things to O?

Parent: O is visually oriented, he likes to see something written down. The work he has been doing with his speech therapist is all on flash cards, for example people's feelings, happy face, sad face, angry face. They also do a cartoon strip of a real situation in sequence and discuss what happened and how it could have been better. He really enjoys this. For example, when doing times tables at home in his maths homework, if the question is 4×4 he will draw four groups of four jellybeans or four cars to work it out.

Researcher: Have you ever heard of social stories - if so, have you used them at all?

Parent: I have heard of social stories but have never used them or really had access to them.

Researcher: I was wondering if you would perhaps be willing to try this technique of social stories. I would be willing to write a specific social story for O and then, if you don't mind, I would be grateful if you could guide me with regard to wording that O may or may not respond to. Once we are both satisfied with the story we could test it together and hopefully there would be positive outcomes.

Parent: It's worth a try, and I don't see any harm at all.

Researcher: That would be terrific - thank you so much. I was wondering if you could think of a specific area of concern in O's social behaviour so that we could use that information to make up this social story.

Parent: A social story about being possessive about his belongings would be great. As I mentioned previously, he is highly possessive about his toys and won't let anyone near them, even I can't touch them. So if the story could be written about sharing toys when others come over to play that may help a lot as he really needs to learn how to play properly with other kids.

Researcher: Could you describe O's strengths?

Parent: O's strengths are definitely in maths. He loves reading books (both fiction and non-fiction). He is very creative and just loves building amazing creations with his lego and duplo blocks, and he spends hours building on his constructions. Unfortunately he gets very upset and frustrated if something doesn't work. He is a bit of a perfectionist and sets himself pretty high standards which can be a problem at school if he can't do something. He is very affectionate and mostly very happy.

Researcher: Finally, would you like to add any further information that has not been covered by the questions?

Parent: Not that I can think of, just to say thank you for your interest in Asperger's Syndrome. We really need to make more people aware of this syndrome.

ROWAN

LIKES TO

BE FIRST.

**Sometimes Rowan
is invited to a
birthday party.**

**Sometimes at the
birthday party the
children play
games like Pin the
tail on the
Donkey.**

Every child
playing the game
would like to be
the winner.

**Rowan also likes to
be the winner.**

**Only one child can
win the game.**

Sometimes Rowan
will win the game,
then Rowan is very
happy.

**Sometimes
another child will
win the game, then
Rowan gets very
sad and wants to
push and hit the
other children.**

**When Rowan
pushes and hits the
other children they
get very sad.**

**The mummies and
daddies also get
very sad when
Rowan pushes and
hits the other
children.**

**Rowan can try and
be happy for the
child who won the
game.**

**Rowan can try and
not push and hit
the other children.**

**When Rowan tries
not to push the
other children they
are very proud.**

**The mommies and
daddies are also
very proud when
Rowan tries not to
push and hit the
other children.**

**Rowan can try to
be happy for the
children when they
win the game.**

ROWAN
LOVES TO
ANSWER
MATHS
QUESTIONS.

**Rowan loves
to answer
maths
questions.**

**Sometimes Rowan
is in a great hurry
to answer maths
questions and to
show that he
knows the correct
answers.**

**Sometimes Rowan
forgets that he can
try to put up his
hand and wait for
his turn to answer
the maths
questions.**

**Sometimes Rowan
shouts out the
answers to the
maths questions.**

**When Rowan
shouts out the
answers to the
maths questions
the other children
are very
disappointed.**

**Rowan's teacher is
also disappointed
when Rowan
shouts out the
answers to the
maths questions.**

**Rowan can try to
WAIT his turn to
tell his teacher the
answers to the
maths questions.**

**The other children
in Rowan's class
can also try to
WAIT their turn to
tell the teacher the
answers to the
maths questions.**

**When Rowan tries
to WAIT his turn,
he sometimes gets
a chance to answer
some of the maths
questions.**

**When Rowan tries
to WAIT for his
turn to answer the
maths questions
Rowan's teacher is
very proud.**

**When Rowan tries
to WAIT for his
turn to answer the
maths questions
the other children
in the class are also
very proud.**

**Rowan can try to
WAIT patiently
until his teacher
asks him to answer
the maths
questions.**

OWEN

PLAYS

WITH

DAVID

**Sometimes
David comes to
Owen's house
to play with
him.**

**Sometimes
Owen wants to
play with his
cars.**

**Sometimes
David wants to
play with the
same cars as
Owen.**

**Sometimes
Owen gets very
sad because
David wants to
play with his
cars.**

Owen can try
and let David
play with his
cars.

David is very
proud when
Owen tries to
let David play
with his cars.

Owen and
David's
mommies are
also proud when
Owen tries to let
David play with
his cars.

Owen can try
and let David
play with his
cars when
David comes to
play at Owen's
house.

APPENDIX 6: CONSENT FORM - FIRST PARTICIPANT

I voluntary and of my own free will consent to be a participant in the research project entitled ***The impact of storytelling on the social development of learners with Asperger's Syndrome.*** I understand that the purpose of the research is to increase awareness of the social impairments of learners with Asperger's Syndrome as well as to test the effectiveness of social stories in enhancing their social development.

I understand that there will be no penalty should I choose not to participate in this research, and I may discontinue at any time without penalty. I also have been assured my name will never appear on any research document.

I understand that this research may help us learn more about Asperger's Syndrome, and I retain the right to ask and have answered any questions I have about the research. I also retain the right to receive a summary of the research results after the project has been completed and request that any data which I feel has not be accurately captured be amended. These assurances have been provided to me by the researcher Debbie Anne Sanders.

I have read and understand this consent form.

Participant: 

Date: 17 January 2005

APPENDIX 7: CONSENT FORM - SECOND PARTICIPANT

I voluntary and of my own free will consent to be a participant in the research project entitled ***The impact of storytelling on the social development of learners with Asperger's Syndrome.*** I understand that the purpose of the research is to increase awareness of the social impairments of learners with Asperger's Syndrome as well as to test the effectiveness of social stories in enhancing their social development.

I understand that there will be no penalty should I choose not to participate in this research, and I may discontinue at any time without penalty. I also have been assured my name will never appear on any research document.

I understand that this research may help us learn more about Asperger's Syndrome, and I retain the right to ask and have answered any questions I have about the research. I also retain the right to receive a summary of the research results after the project has been completed and request that any data which I feel has not be accurately captured be amended. These assurances have been provided to me by the researcher Debbie Anne Sanders.

I have read and understand this consent form.

Participant: 

Date: 23 November 2004