

## **Exploring the Educational Consequences of how Children with Autistic Spectrum Disorders Think and Learn**

“Autism is a neurological disorder of development that causes discrepancies or differences in the way information is processed”

Janzen (1996 p.5)

Many able adults with autistic spectrum disorders (ASD) have highlighted the apparent differences in cognitive, perceptual and emotional processes that constitute an autistic style of thinking and learning (Grandin, 1995; Williams, 1996; Sinclair, 1992). These differences in information processing affect the individual’s ability to:

- understand and use language to interact and communicate with others
- understand and relate in typical ways to people, events and objects in the environment
- understand and respond to sensory stimuli
- think and learn in the same way as those without ASD

The educator needs to be aware of and understand this autistic style of thinking and learning in order to effectively teach the child with autistic spectrum disorders.

### **The ability to understand and use language to interact and communicate with people**

Communication takes many forms: language, gestures, facial expressions and body stance. It allows interactions to occur between people which indicate their needs, feelings opinions and emotions. However Wing (1988) points out that a deficit in social communication is one of the triad of impairments associated with ASD.

In order to communicate there must be

- A means of communication

- An understanding of what is the purpose of communication
- A need to communicate

(Kiernan et al (1987) cited in Jordan & Powell (1995 p.52)

A means for communication however is very often absent in the child with ASD. Given that autism is a spectrum disorder (Wing, 1988), the ability of children with ASD to communicate varies between those who are non verbal, those who use echolalia (those who repeat phrases in parrot like fashion), those who use single words to request and, at the other end of the spectrum, those who are fluent speakers but who may not have good receptive language. Due to their impairment in communication, children with autistic spectrum disorders also have difficulty understanding language used by others, and especially the non-verbal communication of others.

The range of abilities of communication will have huge implications for educators, as the simplest and most traditional method of teaching is through the use of language. Teachers in regular classrooms talk frequently during the day explaining every facet of skills to be mastered e.g. how to use a scissors, how to write a sentence, how to ask for help etc. Teachers also use language to prompt, praise, correct and motivate. They use language to assess the comprehension of the pupil, to probe for difficulties experienced by the child, and to highlight topics/interests for the child. Children with ASD thus present teachers with the challenge of presenting information and lessons in a medium which will be comprehended. There is also the difficulty of assessing what the child can/cannot comprehend, what is of interest and what is motivating.

The teacher needs to know how to carry out a comprehensive assessment of how the child communicates and at what level that communication takes place. Teachers must devise language/communication programs with the child's ability in mind to provide strategies to enable the development of language/communication (Schloper et al, 1980). Those with little or no language may need objects, pictures, symbols, or the written word as a means of communication. Howlin (1998) indicates that there is a need also for teachers to modify their language to the level of comprehension of the verbally able child with ASD. It is so easy for teachers to presume that because children have good expressive language that their receptive language is equally as good and this is not always the case.

However when the teacher has provided the child with a means to communicate it does not necessarily mean that communication will occur. There is evidence to suggest that children with autistic spectrum disorders have difficulty with what communication is, rather than with the language itself (Jordan, 1996; Schopler & Mesibov 1985).

“I didn't communicate by talking, not because I was incapable of learning to use language, but because I simply didn't know that was what talking was for”

(Jim Sinclair, 1992)

The majority of children a teacher will have taught prior to taking a class/ child with autism will have the ability / the need to communicate innately, but for the child with ASD this ability to communicate may not be present. Many children will need to be taught the purpose of communication i.e. that, it is a means of influencing their

environment, it is a means through which people relate to others, maintain contact, learn about the world and interact to exchange information.

If the child with ASD does not communicate then interactions may not be reinforced. Consequently a range of experiences which help the child to learn may be lost to the child. Educators will need to be adept at teaching what communication is, recognizing small developments in the child's communication and building on those. When teaching communication, they will need to develop strategies that are functional so the child sees the purpose of communicating.

The child with ASD needs a reason to communicate. However from an early age they become self sufficient enough to fulfill their own needs. Very often if they cannot fulfill these needs and find it difficult to communicate, challenging behaviors may be developed as a communication function in order to achieve outcomes desired by the child. Thus the teacher will need to observe and analyze the behavior in order to interpret the needs being expressed and also to teach alternative ways of expressing those needs.

Teachers may also need to set up situations where communication is needed as very often the needs of the child with autistic spectrum disorders are anticipated before they are expressed so there may be no need for the child to communicate at all.

The ability to understand and relate in typical ways to people events and objects in the environment.

Learning develops through a series of interactions between individuals (Wray & Lewis 1997) e.g. discussion, teasing out, complaining, asking questions, commenting, sharing information, imitation etc. However Hobson (1992) points out that “What makes autistic children autistic is the quality of their engagement with others”. Children with autistic spectrum disorders may have difficulty interacting, which may be the result of their impairments in communication and socialisation abilities.

Wing and Attwood (1997) suggest that children with ASD can be grouped into three categories according to the way they behave in social settings

- The Aloof group- those who do not initiate interactions, and are oblivious to interactions around them and who do not really tolerate interactions.
- The Passive group- those who will not initiate interactions but will tolerate them.
- The Active but Odd group- those who like to interact but do not have the social skills required to do so.

The quality of engagement with others will have implications for teaching. Each group will have specific needs, thus curriculum and teaching strategies will have to be adapted to address those needs.

Most children without ASD will need instruction to compliment their own experiences discovery and exploration if optimal learning is to be achieved. A teacher needs to intervene regularly in the learning process in order to manipulate and shape the learning opportunities to facilitate the child’s learning. However, for children with ASD who

have difficulty with interactions i.e. those who do not like anyone in their space or those who will not seek an interaction, learning may be hindered (Jordan 1999).

Many children with ASD do not learn through their environment (Elgar cited in Everard 1976). They show little curiosity or interest in new activities. There is evidence of fear of failure, criticism or imperfection among those children (Attwood 1998). Many children without ASD will learn through failure but children with autism do not like to fail. The challenge for the teacher is to develop tasks which are within the ability of the child while at the same time extending him/her. An accurate assessment of the child's cognitive and comprehension level will be required in order to develop these tasks. The resistance to try new learning may also arise from lack of motivation so the challenge for the teacher is to present the learning in a way that is motivating for the child.

The child with ASD will also have impairment in imagination (Wing & Gould 1979). It is through imaginative play that children make new discoveries, try out new ideas without fear of failure and practice skills and language (Newman 1999). It is through play that turn-taking, shared attention, imitation, tolerance of others and communication can be developed. We as teachers take the ability to play for granted when teaching children without ASD, but children with ASD need to be taught to play otherwise they miss out in the development of these abilities. Teachers need to set up situations where play can occur, and look for opportunities where play can develop. Teachers also need to learn how to observe situations, deciding when to intervene and interact with the child and when to hold back.

Much has been written about the inability of those with ASD to understand others e.g. Theory of Mind (Baron-Cohen et al 1985; Frith 1989b). Teachers will need to be aware of this inability, as much learning is dependent on the student realizing what it is the teacher wants. Many children with ASD cannot go beyond the obvious so the non-verbal cues of teachers can cause enormous problems for the child with ASD. Non-compliance due to lack of understanding of what the teacher wants may be perceived as challenging behavior by a teacher who does not understand autism. In order to understand the child the teacher needs to have a good knowledge of autism.

### **The ability to understand and respond to sensory stimuli**

We learn about our environment through our sensory system by seeing hearing smelling, tasting, touching, and moving.

- We can scan the environment for important events.
- We can switch our concentration off and on if something important ends or begins.
- We can fade out the unimportant stimulation so as to concentrate.

(Janzen 1996)

However the reaction of children with ASD to sensory experiences is often baffling; many have inconsistent reactions to sounds, sights, smells, or items that touch them. The reaction may be hypo or hyper. Many able adults with ASD have spoken about these inconsistencies. Donna Williams (1994) explained how she couldn't attend to two channels of information at once i.e. she couldn't see and hear at the same time. Temple Grandin described her ears as open microphones; she was unable to filter irrelevant

background noise (Grandin & Scariano 1986). These inconsistencies can cause problems for the child with ASD in the classroom, as they may not be able to concentrate thus missing out in important information or indeed the teacher who does not understand the problem may regard them as non-compliant.

Many children with ASD have difficulty processing language it may be due to having difficulty seeing and hearing at the same time. Often these children have excellent expressive language, thus teachers are baffled by their inability to comprehend directions given orally in class. An able adult with autistic spectrum disorders says, "Pictures are my mother tongue, words are my second language". Children with ASD who have difficulty processing language may try to understand each word as they receive it without trying to understand it in context. Teachers need to give the child time to process what is being said.

Many children with ASD are over attentive to detail, observing minute details especially visual details which can cause them to miss vital information from the overall picture. If they are engaged in a task they may not be able to switch immediately to listen to the teacher thus receiving half the instruction. If the teacher does not understand the nature of the problem s/he may not give the child time to switch to the task in hand or guide them towards the information needed. The reactions of children with ASD to sensory experiences differs from child to child, thus teachers need to understand the implications of sensory issues in order to understand the child and to maximize the learning opportunities for the child.

The ability to think and learn in the same way as those without ASD



The triad of impairment (Wing & Gould 1979), which is central to autism, will weaken the learning a child can derive from play, imagination, communication. These children may also have learning difficulties, and these, combined with motor difficulties and sensory issues, will make up a very distinctive child with very distinctive cognitive and learning processes.

The transfer of knowledge is problematic for children with ASD. When they have learned a skill; it is learned in that context only (Grandin 1995). It cannot be assumed that while the child knows how to do something that they will be able to do it in another context. The transfer of knowledge often needs to be taught rather than assumed. Children with autistic spectrum disorders may only use one method to approach a problem (Prior & Hoffmann, 1990 cited in Attwood, 1998) yet much learning occurs through investigation. These children have difficulty solving problems as it requires manipulating meaningful information creatively. Teachers need to teach children with autistic spectrum disorders to stop, to think, and to ask for assistance.

Children with autistic spectrum disorders commit information to memory without meaning and in unrelated chunks and as a result cannot retrieve information in a sequential order and thus may have difficulty learning from their experience and from the consequences of their actions. They have difficulty manipulating information to predict and prepare for coming events, explain or relate events, or use the information they already have, to generate new ideas (Minshew et al (1992) cited in Attwood 1998). They have less ability to apply and adapt rules to fit changing situations. Routines are quickly learned but without understanding their function or purpose. Many children

with autistic spectrum disorders like to repeat memorized routines even when they are meaningless.

Children with autistic spectrum disorders have strengths as well as deficits and it is through these strengths that learning will best occur. They will use visual information meaningfully, take information in quickly in chunks, remember what they have learnt for a long time and will concentrate on what they find interesting (Janzen, 1996). Teachers will need to become aware of these strengths through assessment and make use of them when introducing new concepts and skills to pupils with autistic spectrum disorders.

What the teacher needs to understand about the cognitive style of those with autistic spectrum disorders is that the talent to add meaning to perceptions which children are born with, is disturbed in children with autistic spectrum disorders. They see, they hear, but they seem to have difficulty understanding their perceptions. Thus the child with autistic spectrum disorders has to learn scientifically what other children learn intuitively. In order for the teacher to understand and teach the child s/he needs to have a good understanding of autism.

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