

The Autistic Spectrum of Disorders: Issues and Interventions

Learners with Autistic Spectrum Disorders (ASD) face a number of challenges both within and without the learning environment. The advances in technology should enable teachers and practitioners to better support these learners, reducing to some extent the challenges they face.

Christine deGraft-Hanson, SEN & ICT Consultant from SEMERC/GL discusses some ways in which existing technology can be used to support learners on the spectrum of autistic disorders.

Historical background

Reports dating as far back as the 1800s described behaviours, which today are described as autistic. Bleuler in 1911 was the first to use the word 'autism' which is derived from the Greek word for self (autos). In the 1940s Leo Kanner in the USA and Hans Asperger in Austria published their research papers and the first real attempt to give credence to the condition identified by Bleuler was made. Over the successive years, debate raged around the subject from who was to blame (e.g. 'intellectual parents'), through to discussions about frigid home environments until a consensus was reached and the condition was accepted as being developmental.

Over the years it became increasingly obvious that the learners identified by Kanner had significant learning difficulties whilst those identified by Asperger, while still in need of special support, tended to be more able. This led to discussions on the possibility of a continuum or spectrum. Eventually this became universally accepted and the notion of the spectrum of autistic disorders was established with Asperger's syndrome at one end and severe autism at the other.

Causes of autistic spectrum disorders

While the causes of autism and other ASDs have not yet been definitely proven, research has indicated a genetic link and there is likely to be more than one child in a family with Asperger's Syndrome for example. Some research has also suggested a link between problems during pregnancy or birth and Asperger's Syndrome.

Practitioners in this field are agreed that there is not any one single cause but rather there exist a set of triggers, which along with other factors, end up causing the condition.

Issues

Learners with Asperger's Syndrome may exhibit any of the following:

- Mainly literal in their use of language (this is the learner who will bend over to pull up their socks if asked to "pull up your socks")
- Problems making friends and playing with others (for example, may pull at others instead of inviting them to play with them which may be misunderstood for aggression)
- A misunderstanding of how other interact with them (for example, may be convinced that someone accidentally brushing past them was deliberately trying to 'push them aside')
- Obsessions associated with a lack of understanding that their obsession is of little or no interest to others around them
- Aggressive or eccentric behaviours
- A preference for own company
- A preference for working at the computer
- A difficulty understanding body language (e.g. facial expressions)
- A lack of social skills such as turn-taking, not interrupting others when speaking
- An objection to particular objects, sights, sounds or smells for example they may not like to wear certain clothes (or clothes made of particular fabrics because of the 'fee')
- Show a marked preference for routines and may be upset by changes of routine such as the absence of a teacher
- Be an object of 'bullying'

Learners with Autism may exhibit any of the following:

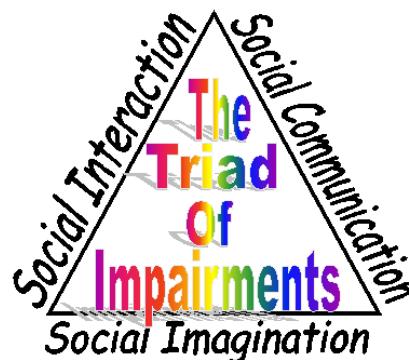
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- Slow to develop speech or may not develop any speech at all
- May have language (words) at one stage in life and then lose this vocabulary all together
- Appear to relate better to objects rather than to people (and may only approach people they know well and vice versa)
- Find it difficult to make sense of people
- May not make eye contact when communicating with others
- Can be upset by changes in routine
- Have little sense of prediction (finding it hard to fathom what someone might do next)
- Can focus on 'specific' objects rather than 'seeing the whole'

The characteristics described above are only a few of those commonly exhibited by learners with ASDs. For those in the field, the **Triad of Impairments** is the most common way of identifying a learner with Classical or Kanner's autism. These three impairments are as follows:



Impairment of social interaction - this basically is where the learner has difficulty interacting on a social level with peers or others around them. This may be the child who plays alone in the playground or 'plays' inappropriately. Even within a group of children, this learner will still be 'playing alone'.

Impairment of social communication - here the learner will have difficulties in understanding verbal communication and may react inappropriately to jokes, changes in facial expression, body language and other gestures.

Impairment of social imagination - this is exhibited by inflexibility of thought. Here the learner has difficulties coping with changes to established routines, has little or no concept of empathy and also lacks the ability to generalise.

An understanding of the Triad of Impairments and the difficulties or characteristics associated with Autism and ASDs is the first step to intervention.

Interventions

Language programmes

Most learners with ASDs have difficulties with social language with approximately 50% of these learners never developing meaningful communicative language. Not knowing when and how to interact on a social level with family and classmates results in any number of misunderstandings, especially in the school playground where other children will probably not have enough understanding of the learner's difficulties.

Programmes such as Sulp (Social Use of Language Programme) and Circle of Friends have been designed to support the development of social skills in a bid to promote the development of social communication and interaction with peers.

The use of sign language, particularly Makaton or increasingly Signalong (in the UK) is also of great benefit to the learner with ASDs. The concept of and practice of 'signing-friendly' schools and learning environments is increasing among schools.

Computers and learners with ASDs

All learners benefit from access to computer technology. Considering the width of the spectrum of autistic disorders, the use of the computer and software or other hardware with learners needs to vary accordingly. The more able, more literate learner with Asperger's Syndrome will use the computer and computer applications differently. Learners on the opposite end of the spectrum will be focusing more on software to develop hand eye co-ordination, software to encourage vocalisation and participation, software to support language development, etc.

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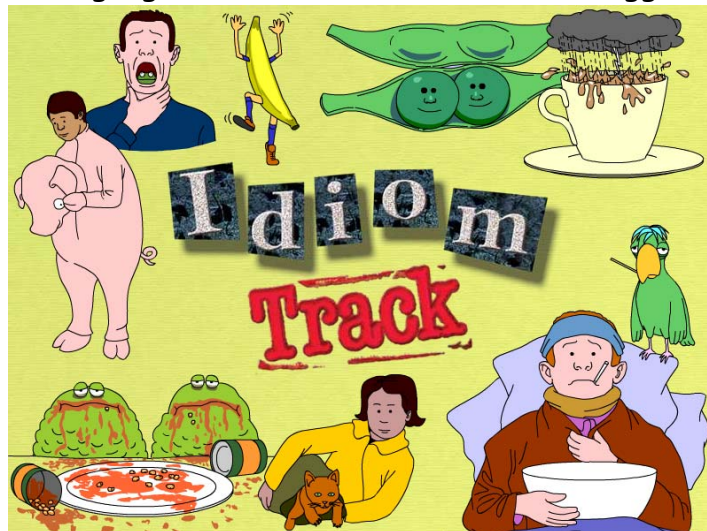
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For the majority of learners with ASDs, the computer provides a non-threatening, non-judgemental and predictive medium within which to work and achieve.

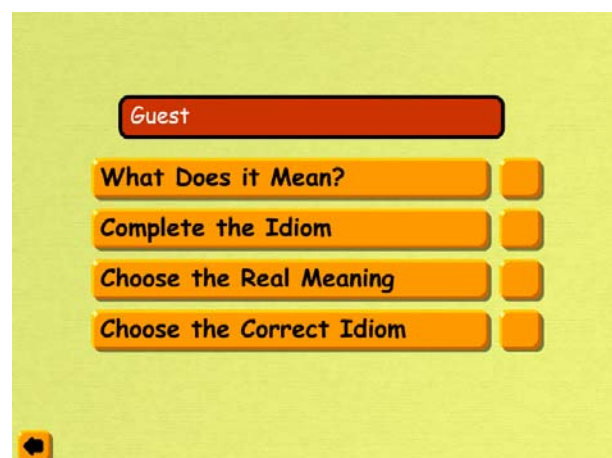
Teachers and practitioners need to carefully select software to use, bearing in mind the tendency towards obsessions and fixations. Certain types of software will encourage the learner with ASDs; some others might not be particularly suitable for particular learners. It will be defeatist providing the learner with access to the computer and good software only to have the difficulties associated with 'weaning' them off a program on which they have become fixated.

Idiom Track from SEMERC/Tool Factory focuses on some of the aspects of language that learners with ASDs struggle with. For example, the



learner who has difficulties understanding sayings such as "pull your socks up", "stand in line", "buck up your ideas", "in hot water", etc; all language areas where misunderstandings commonly occur.

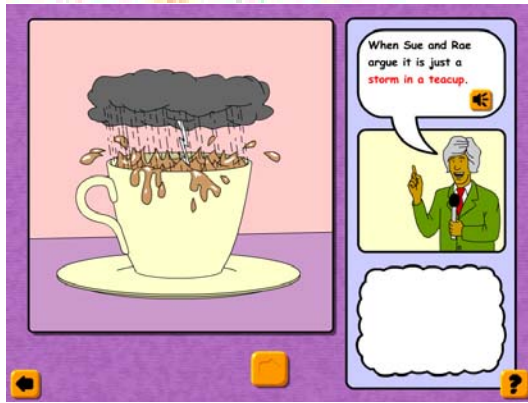
Using eye-catching imagery, *Idiom Track* takes the learner through four different activities.



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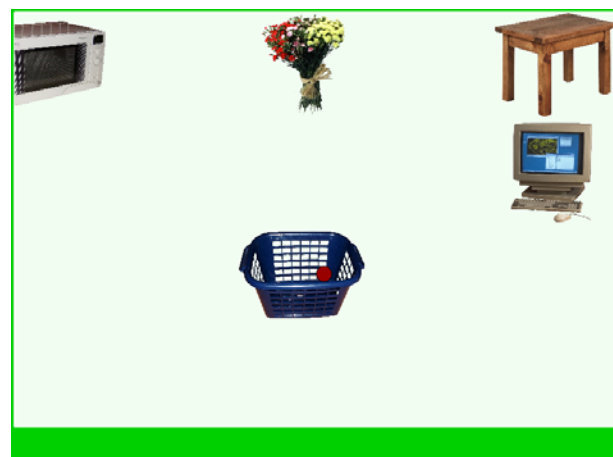
Figs 3 & 4 show an activity from 'What Does it Mean? Here the learner has to decided what exactly " a storm in a tea cup means".

Sound Beginnings, Sound Beginnings 2 and Sound Beginnings Making Sounds all from SEMERC/Tool Factory promote and encourage language development for both speech and vocalisations.

































In the activity shown in the image, the learner is encouraged to use speech in a counting activity. This same activity could be configured differently to meet the needs of the learner without speech who could use vocalisation to indicate recognition of number.

The **Touch ITs** range from SEMERC/Tool Factory support hand-eye co-ordination development. In the activity shown here from Touch IT Objects, the learner's task is to click on each object as is moves across the screen.



There are approximately 60% of learners with autism who also have Severe Learning Difficulties (SLD). For these learners, access to the computer may be through the use of switches, sound or touch screens or interactive white boards.

Teachers may also use technology such as symbol processors or a collection of digital images to create resources to further support learners in the classroom. Such a resource could be a visual timetable. Not only is the information provided visually (rather than using language which the learner might have difficulty understanding), the learner also 'sees' the structure and order of the day.

 Monday	 Tuesday	 Wednesday	 Thursday	 Friday
 assembly	 news	 news	 assembly	 assembly
 music and movement	 pony riding	 literacy	 shopping	 hydro
 number	 drama	 music	 story time	 music
 dinner	 dinner	 dinner	 dinner	 dinner
 PE	 drama	 art	 music	 games

'Crib' sheets or reminders may be produced using MS Word (if the learner has good reading abilities) or again using a symbol processors (e.g. Writing with Symbols 2000) to help the learner remember important things such as bringing a PE (Physical Education) kit to school on particular days or to help them structure a story, or some other such learning activity.

 toothbrush	 toothpaste
 turn on tap	 brush teeth
 rinse toothbrush	 dry hands & mouth

There are many interventions in current use with learners with ASD. Most of the better-known ones such as TEACCH have not been discussed here. The objective here was to consider some of the new software developments, which would be of benefit to the learner with ASD as well as remind the teacher or practitioner of the technology available to help them create resources for their learners.

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For more information, please visit <http://www.semerc.com> or <http://www.toolfactory.com>.

SULP (or further information on it) is available from www.nfer-nelson.co.uk

Writing with Symbols 2000 is available from Mayer-Johnson

Tool Factory is on **Stand 308** at Closing the Gap

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